

CHAPTER

Where Is China's Economy Headed?

by Hanming Fang

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Where Is China's Economy Headed?

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ABSTRACT

The arc of the Chinese economy over the next 10 to 15 years will depend on three sets of forces, each of which interacts with the others: (1) Domestically, the internal political economy will determine the relationship between the state and the market. (2) Externally, the relationship between China as a nation and the US-led West will determine China's access to foreign technology, finances, and markets. (3) Traditional economic forces such as total factor productivity (TFP), population and human capital, and capital and investment will determine China's growth potential. Even though most studies focus on this third set of traditional economic forces—the ones determining growth potential—the first two sets of forces will ultimately determine how close the Chinese economy can come to *realizing* that potential. This paper examines the range of outcomes for China's economy through this lens: growth rates could reach 6 percent if China focuses on market-oriented reforms, or they could stagnate if, in response to external or internal pressures, leaders instead continue to turn to more centralized decision-making and to top-down planned resource allocation.

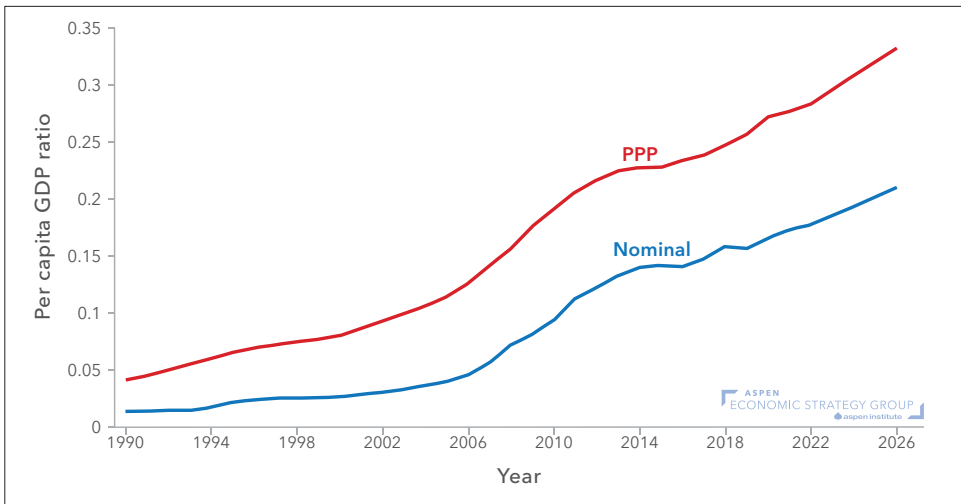
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1. Introduction

This paper examines China’s economic prospects over the next 10 to 15 years primarily through the lens of the country’s international environment and domestic political economy because they are the key to understanding where the Chinese economy is headed. While I discuss economic factors that are frequent topics of debate—such as productivity, population aging, and capital investment versus consumption—I contend that the main uncertainties in China’s economic growth rates are the internal political economy and the external environment, which react to each other in unpredictable ways.

Figure 1. Per Capita GDP Ratio (China/US)



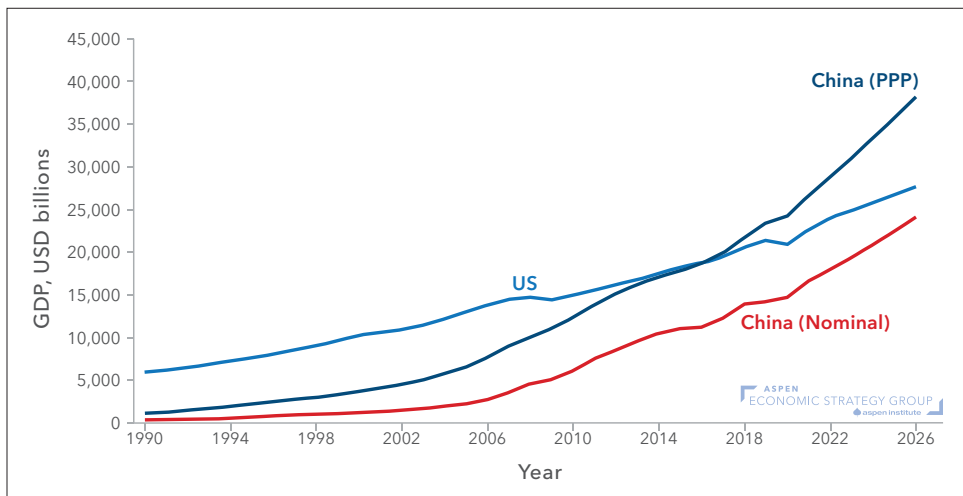
Sources: GDP per capita estimates over 1990-2022 are by World Bank (World Bank 2023a, 2023b). Forecasts over 2023-2026 are by International Monetary Fund (IMF 2021).

The growth of the Chinese economy over the last four decades is one of the most transformative events of global economic history in centuries, especially considering the country’s population size, sweeping territory, and vast heterogeneity. According to national income criteria established by the World Bank, China became a lower-middle-income country in 2001 and transformed into an upper-middle-income country in 2010. Figure 1 plots China’s real per capita GDP compared to the United States’. In purchasing power parity (PPP) terms, this ratio has grown from 4.1 percent of the US per capita GDP level in 1990 to 28.4 percent of the US level in 2022, according to World Bank data (World Bank 2023a). In nominal terms, China’s per capita GDP

was only 1.33 percent of that of the US in 1990, and it rose to 17.75 percent in 2022 (World Bank 2023b).

According to per capita GDP, mainland China was in 2022 ranked 64th (measured nominally) or 73rd (measured according to PPP), among separately administered economies (IMF 2023a, IMF 2023b). China is clearly still a developing country. China's large population, however, makes the total size of its economy much more significant globally than its per capita GDP would suggest. In 2022, China's nominal GDP was 18 trillion USD, or three-quarters the size of the US economy at 24 trillion USD. In PPP terms, however, China's economy took over that of the United States between 2016 and 2017 as largest in the world. In 2022, China's GDP in PPP terms was 28.8 trillion USD, about 20 percent larger than that of the US, as shown in figure 2.

Figure 2. United States vs. China by GDP, 1990-2006



Source: GDP estimates over 1990-2022 are by World Bank (World Bank 2023c, 2023d). Forecasts over 2023-2026 are by International Monetary Fund (IMF 2021).

It is worth pointing out at the outset that the Chinese economic growth miracle is not a productivity miracle. As we will elaborate in section 5.1, at similar levels of development (as measured by per capita GDP relative to the US), Chinese productivity growth appears to have underperformed by a wide margin when compared to that of East Asian miracle economies such as Japan, South Korea, Singapore, Taiwan, and Hong Kong. Thus, China's historically strong productivity performance appears more to reflect its low starting point, the deep inefficiencies plaguing its centrally planned economy, and the large catch-up dividends unleashed over the ensuing decades by gradual market-oriented reforms. Where the Chinese economy heads in

the next decade will depend on whether deeper reforms are implemented to further reduce the current system's inefficiencies.

The Chinese economic growth miracle of the last four decades was a result of the country's embrace of market-oriented reforms and globalization. In 1979, when these reforms began, the US-led West had a warm relationship with China and welcomed it into the global economic system. However, the next decade is likely to look very different. National security concerns—or, more accurately, *regime* security concerns,

as I argue below—will have a profound impact on the direction of Chinese economic and foreign policies and thus on the country's economic growth. As Alfred Wu recently wrote, “The stark reality in China...is that security now trumps everything, from economy to diplomacy” (Tian and Pomfret 2023). President Xi Jinping, in his speech to the 20th National Congress of the Chinese Communist Party (CCP) in October 2022, also singled out national security as an area of concern—a broad concept incorporating issues ranging from politics and economics to technology and territorial disputes. Through this lens it becomes

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relatively straightforward to understand the seemingly mixed messages sent in recent years by Chinese leadership regarding economic policy.

In this brief, I argue that the arc of the Chinese economy over the next 10 to 15 years will depend on three sets of forces, each of which interacts with the others: (1) Domestically, the internal political economy will determine the relationship between the state and the market. (2) Externally, the relationship between China as a nation and the US-led West will determine China's access to foreign technology, finances, and markets. (3) Traditional economic forces such as total factor productivity (TFP), population and human capital, and capital and investment will determine China's growth potential. Even though most studies focus on this third set of traditional economic forces—the ones determining growth potential—the first two sets of forces will ultimately determine how close the Chinese economy can come to *realizing* that potential.

2. Chinese Economic Growth: Past, Present, and Future

2.a. China's Growth from 1979 to 2022

At the dawn of China's "reform and opening up" in December 1978, China was one of the poorest countries in the world, having just emerged from the Cultural Revolution. The country's nominal per capita GDP was only 156 USD, and the World Bank ranked it at 172nd globally. At that time, the per capita GDP of China was only at 1.5 percent of the US level, lower than India's and many sub-Saharan countries', less than a third of the Philippines' and Ghana's, and one-tenth of Brazil's. Most of the population lived in poverty, earning less than 1 USD per day.

Agriculture accounted for almost 30 percent of China's GDP in 1978, and industry accounted for 48 percent; the services sector was underdeveloped. More than 80 percent of the Chinese population lived in rural areas; labor mobility from rural to urban areas, or from one region to another, was severely restricted under the hukou system.

China's economic system in 1978 was one of classic central planning, with private commercial activity either banned or limited. State planning agencies decided on production plans, resource allocations, and distribution of goods and services. There was no financial system in a modern sense; there were no commercial banks, no securities, no insurance companies, and no financial markets. China was isolated from the rest of the world with no foreign investment and no foreign businesses. China's trade accounted for less than 1 percent of total world trade, and its exports were mostly primary products such as food and coal, sold to obtain foreign currency needed to import machinery and materials that it could not produce domestically.

However, China also had several advantages in 1978. First, China scored significantly better on human-development indicators than did countries at a similar stage of development at the time. According to World Bank development indicators, China's life expectancy was 66 years in 1978 compared with 53 years for India and 60 years for the average middle-income country; its adult literacy rate was 65.5 percent in 1982 compared with India's 40.1 percent.¹ China's population was large, growing, and young; it had grown rapidly in the two decades prior to 1980 to about one billion, with 46 percent of the population under the age of 20 in 1982.²

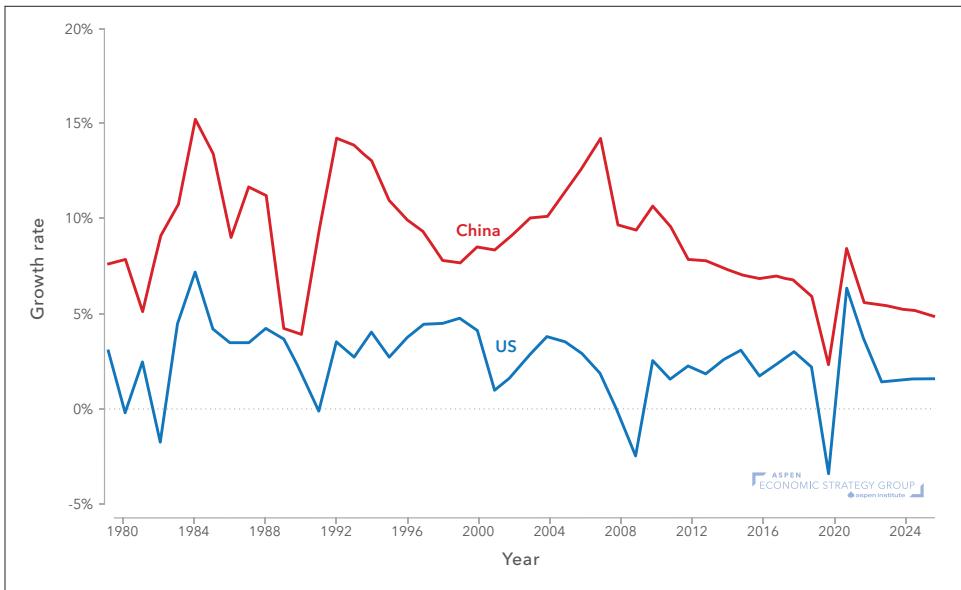
1 See World Bank DataBank, s.v. "World Development Indicators," accessed June 24, 2023, <https://databank.worldbank.org/source/world-development-indicators>; and UNESCO Institute for Statistics: <http://data.uis.unesco.org/>.

2 China initiated its stringent family-planning policies in the early 1970s with a campaign known as "Later, Longer, Fewer," which preceded the well-known one-child policy that came into effect in 1979. The total fertility rate of Chinese women declined drastically from 5.7 in 1969 to 2.7 in 1978. See Chen and Fang 2021.

China's most important advantage in 1978, however, was the normalization of its relationship with the US. The United States and China signed an agreement on December 16, 1978, that paved the way to the establishment of formal diplomatic relations on January 1, 1979—when the US shifted its diplomatic recognition from Taipei to Beijing, acknowledging the People's Republic of China (PRC) as the country's sole legal government. The architect of Chinese economic reform, then-vice premier Deng Xiaoping, visited the United States in January 1979; his visit was seen as a crucial step toward opening up China to the world and initiating economic reforms.³

This warming relationship with the US-led West was the key factor that led to China's reform, both in its internal governance and in its eventual embrace of its market economy with Chinese characteristics. Deng's gradual decentralization of decision-making powers to individuals and firms was possible because of the virtuous cycle created by the warming relationship with the West in general and the United States in particular.

Figure 3. Annual Economic Growth Rate of US and China, 1980-2026



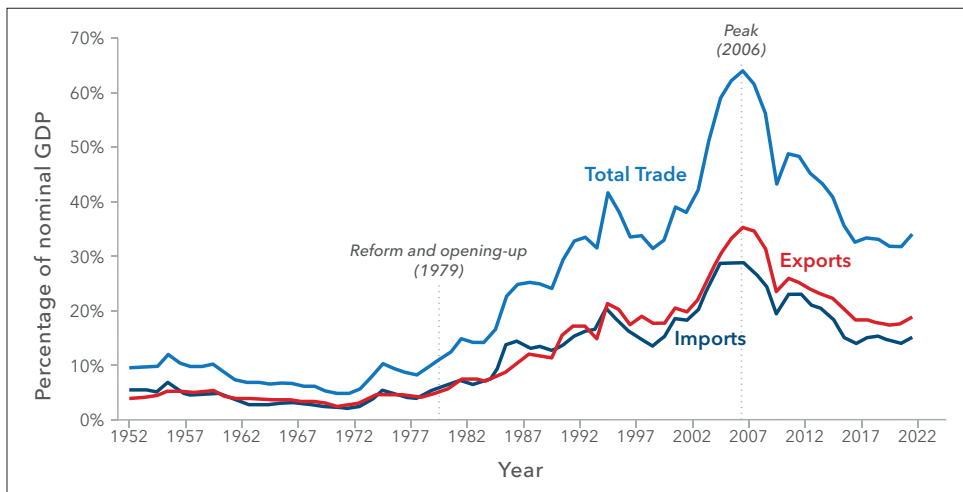
Source: GDP growth estimates over 1990-2022 are by World Bank (World Bank 2023c, 2023d). Forecasts over 2023-2026 are by International Monetary Fund (IMF 2021).

3 "Chronology of U.S.-China Relations, 1784-2000," Office of the Historian, US Department of State, accessed June 24, 2023, <https://history.state.gov/countries/issues/china-us-relations>.

Between 1980 and 2012, China averaged an astonishing annual growth rate of about 10 percent. Its growth rate did start to slow down after 2005, but even in 2020 when the COVID-19 pandemic broke out, the Chinese economic growth rate remained positive; indeed, China's was the only major economy with positive growth in that year. Figure 3 plots annual economic growth rates in China, together with those of the US, for the four decades following 1980.

During that time span, the Chinese economy radically transformed from an agrarian economy to an economy dominated by service and industry. By 2021, agriculture accounted for just 7 percent of China's GDP, while the service sector accounted for 53.3 percent. In addition, by 2013, China had become the world's top trading nation. Figure 4 shows the remarkable transformation of China into a global trade powerhouse. At its peak in 2006, Chinese total trade accounted for close to 60 percent of the country's GDP.

Figure 4. China's Exports, Imports, and Total Trade Relative to GDP, 1952-2022

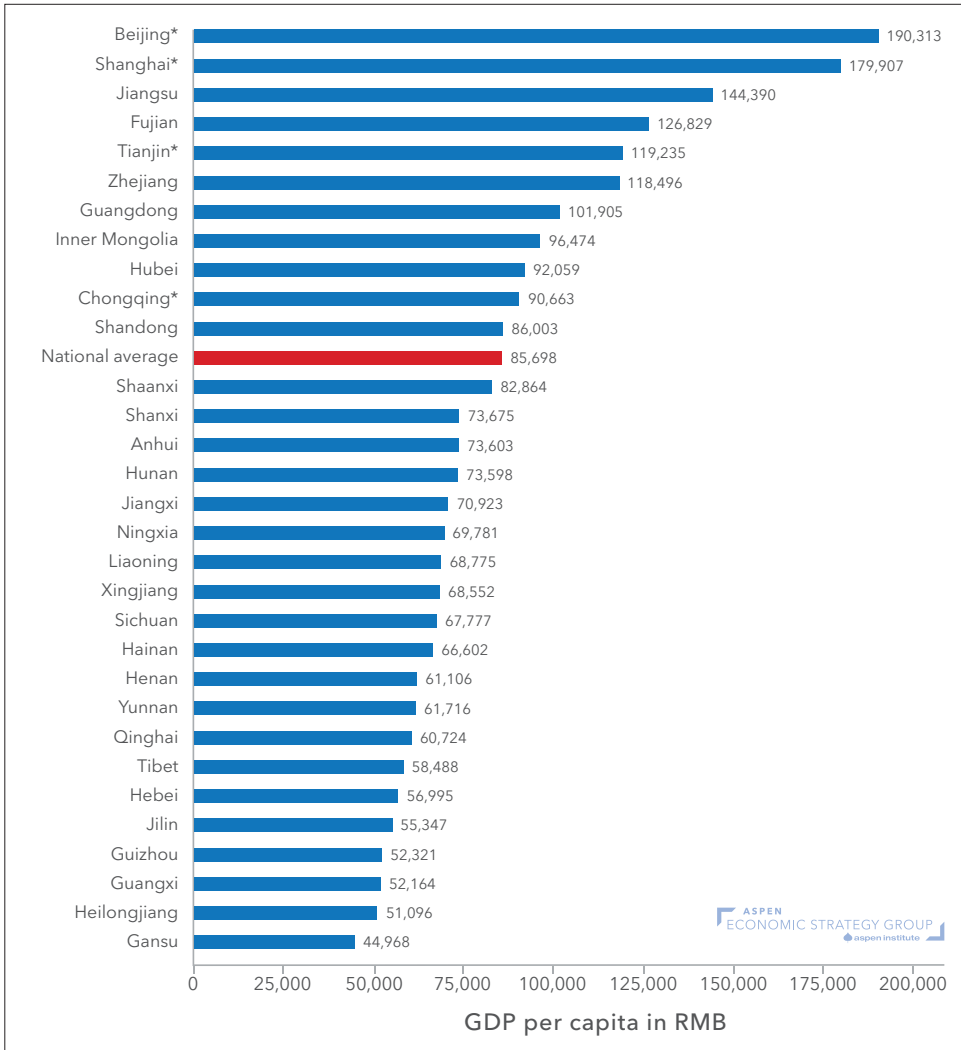


Source: Wei and Yu (2023).

Despite its impressive growth since 1979, the Chinese economy is full of paradoxes. First, though China's is the world's largest economy by PPP, the average living standard for Chinese people (as measured by per capita GDP) is still only just above one-quarter that of the United States, Japan, and Western Europe. Living standards

also vary greatly by region. Gross regional product (GRP) varies enormously across provinces, as documented in figure 5. In 2022, GRP per capita in Beijing (190,313 RMB, more than twice China's national average per capita GDP) was about 4.23 times that in Gansu (44,968 RMB, about half China's national average). China's top cities—including Shanghai, Beijing, Guangzhou, and Shenzhen—boast world-class, state-of-the-art infrastructure, while many inland regions are still very poor.

Second, the Chinese economic system features vibrant and sometimes “Wild West-style” markets and firms alongside giant state-owned enterprises (SOEs), all operating under the long shadows of various levels of government. Most importantly, China is a clumsy “new kid on the block” with its newly acquired economic influence, and it is seemingly falling into Thucydides' Trap. As articulated by Graham Allison (2017), this term refers to a deadly pattern of structural stress that results when a rising power (China) challenges a ruling one (the US). In the US, anti-China attitudes are becoming a rare point of bipartisan and public-opinion consensus. According to a Pew Research Center survey, between 2018 and 2022 the share of US adults expressing an unfavorable opinion of China rose from 47 percent to 82 percent (Silver 2022). I argue below that these facts have shaped and will continue to shape China's external environment. This environment, in turn, impacts the nation's domestic policy choices.

Figure 5. Per Capita Gross Regional Product in China in 2022, by Province or Region

Source: National Bureau of Statistics of China data, as listed in Statista (2023).

2.b. Forecasting the Growth Rate of the Chinese Economy

Where the Chinese economy will head in the *medium term*, say by 2035, and in the longer run, say by 2050, has enormous implications for both China and the rest of the world. While it is now well accepted that double-digit annual growth rates in China are a thing of the past, analysts predict future annual growth rates ranging anywhere from 1 percent to 8 percent over the next 10 to 15 years.

On the most optimistic end of the spectrum is Justin Lin, former chief economist of the World Bank. He argues that China could *potentially* sustain an annual per capita growth rate of 8 percent until 2035; and he asserts that China will most likely be able to achieve an annual growth rate of 5–6 percent, barring black-swan events such as a systematic financial crisis, a major geopolitical conflict, or another global pandemic. Lin’s main argument for his bullish assessment is that China still enjoys a large latecomers’ advantage, in the sense that the nation is still far from the world’s technological frontier and thus still has a lot of catching up to do. According to the Penn World Table (PWT), China’s per capita GDP was 22.6 percent that of the US in 2019 (Feenstra et al. 2015). This ratio was similar to Germany’s in 1946, Japan’s in 1956, and Korea’s in 1985. Germany enjoyed an annual per capita GDP growth rate of 8.6 percent from 1946 to 1962; Japan also achieved an annual per capita GDP growth rate of 8.6 percent from 1956 to 1972; and Korea’s annual per capita GDP growth rate was 8.1 percent from 1985 to 2001. If China follows this pattern, it has the potential to grow at 8 percent per annum from 2019 to 2035.

Lin argues that China will most likely achieve a 5–6 percent annual growth rate (instead of reaching its 8 percent potential rate) because the country also needs to address issues such as climate change and environmental sustainability, regional and urban-rural income disparity, and the needs of other social programs—all of which will inevitably compete for investment. Lin further argues that investment should remain the key engine of Chinese economic growth, but that the investment that will drive future Chinese growth needs to be in innovation and industrial upgrading aimed at improving productivity, generating jobs, and raising wages and household income (thereby increasing domestic consumption).⁴

On the other hand, Roland Rajah and Alyssa Leng (2022) predict that annual average Chinese economic growth can be expected to decelerate sharply to roughly 3 percent by 2030 and 2 percent by 2040 and that, while 5 percent or greater growth is possible, China does not have a track record of improving productivity to suggest such growth is likely.⁵

Analysts on the pessimistic end have highlighted headwinds China faces currently and in the foreseeable future:

1. The core drivers of China’s “miracle” growth have been heavy infrastructure, property development, and urbanization. By the end of this decade those drivers will have been largely exhausted (Overholt 2023).⁶

⁴ See section 5.3 for further discussion.

⁵ Roland and Leng (2022) also summarize 20 other forecasts of Chinese economic growth for 2020–2030 or 2020–2050, ranging from 9 percent to 3 percent annual growth.

⁶ See also Overholt 1993; 2018.

2. The recent evolution of private-sector policies—exemplified by the calling-off of Ant Group's IPO and the hefty fines against Didi Global, Alibaba, Tencent, Meituan, and other e-commerce giants—indicates that economic growth will be sacrificed whenever necessary to maintain regime stability and the CCP's absolute power (Xu 2023).⁷
3. China is unlikely to escape the “middle-income trap” (Rozelle and Hell 2022).
4. Chinese economic growth will likely suffer reversion to the mean, slowing down to a rate of a little less than 4 percent a year and possibly as low as 2 percent (Pritchett and Summers 2014).
5. China's total factor productivity growth slowed down drastically from 2007, suggesting that its catching-up growth is unlikely to continue. China's relative per capita GDP level will asymptote to about 41 percent (from about 25 percent in 2019) of the US level around 2050; given China's declining workforce, the US economy will likely be growing faster (at 2.19 percent) than China's (at 2.06 percent) by 2036; and if so, the US economy will again be larger than China's in PPP terms by 2100 (Fernández-Villaverde, Ohanian, and Yao 2023).

Forecast bases tend to differ by source. Most predictions extrapolate from past growth rates, either of China or of other economies. Investment banks tend to focus on annual or even quarterly growth rates instead of medium- or long-run rates, and they tend to pay more attention to the fiscal and monetary policy stances of the Chinese government than they do to more fundamental forces that will shape the trajectory of the Chinese economy.⁸ Commentators associated with the US defense establishment tend to project higher Chinese growth, perhaps as a way to make the case for diverting more US resources to American defense (e.g., Allison, Kiersznowski, and Fitzek 2022). And forecasts from economists tend to focus on economic fundamentals, such as China's declining workforce, returns to investment, productivity growth, and the consequences of potential technological decoupling from the West.

2.c. *The Arc of the Chinese Economy*

I believe the arc of the Chinese economy over the next 10 to 15 years will depend on three sets of forces, each of which interacts with the others:

- **Domestically**, the internal political economy will determine the relationship between the state and the market.

7 Xu also notes that, on average, official growth statistics exaggerate the actual growth rate by 2 percentage points; he thus cites a current growth rate of 3.5 percent. Chen et al. (2019) argue that China's official statistics overstate GDP growth by about 1.8 percentage points per annum over the period 2010–2016.

8 See, as an exception, Wang 2023.

- **Externally**, the relationship between China as a nation and the US-led West will determine China's access to foreign technology, finances, and markets.
- **Traditional economic forces** such as total factor productivity (TFP), population (L) and human capital (HC), and capital and investment (K) will determine China's growth potential.

Even though most studies focus on this third set of traditional economic forces—the ones determining growth potential—the first two sets of forces will ultimately determine how close the Chinese economy can come to *realizing* that potential. I see three main reasons for this argument:

1. *The primary objective for the Chinese Communist Party is maintaining its power.* This ideal is one of the “Four Cardinal Principles” enshrined in China's constitution, and the regime's stability arguably is the guiding principle for all of China's policymaking.⁹ Many analysts considered Xi's anti-corruption campaign (which commenced immediately after he took office in November 2012) an effort to consolidate power, but a more accurate interpretation is likely that he perceived corruption as the most serious threat to the regime's stability.¹⁰ In this light, economic growth and other policies are secondary objectives to maintaining stability.
2. *The external relationship between China and the US-led West is at a 40-year low and could get worse.* The action-reaction cycle of external environment and internal political economy is self-reinforcing, unfortunately, and has formed a negative feedback loop over the last 10 years. Unless cool heads prevail in both Beijing and Washington, the relationship between China and the West is likely to stay tense or even become openly hostile.
3. *A negative external environment will make China's internal political economy more centralized and less market-oriented.* Lower-level government officials care more about promotion than about regime stability per se (unless regime loyalty is the key to promotion), and market forces are harder to control than direct central planning.

These action-reaction dynamics between China's internal political economy and its external geopolitical environment worked in the opposite direction in 1978. Emerging from the Cultural Revolution, CCP leadership decided that “reform and

9 The “Four Cardinal Principles” were put forward by Deng Xiaoping: adherence to the socialist road; adherence to the people's democratic dictatorship; adherence to the leadership of the Communist Party of China; and adherence to Marxism-Leninism and Mao Zedong Thought. See “‘Four Cardinal Principles’ (Mar. 1979),” *China.org.cn*, June 22, 2011, http://www.china.org.cn/china/CPC_90_anniversary/2011-06/22/content_22838756.htm.

10 In fact, in his very first speech to the Chinese Communist Party's elite Politburo, Xi “denounced the prevalence of corruption and said officials needed to guard against its spread or it would ‘doom the party and the state’” (Wong 2012).

opening up” could rescue the Chinese economy and best prevent the CCP from collapsing. President Jiang Zemin’s signature “Three Represents” expansion of CCP membership to include private entrepreneurs was a reaction to the decline in party membership after 1989; it also aimed to boost regime stability. The same can be said of recent seeming reversals of many reform measures—reversals that President Xi saw as necessary to combat internal threats to CCP power in the form of rampant corruption and weakening party ideology. And the CCP has seen an increasing threat from the West, exemplified by President Obama’s 2012 identification of China as America’s major strategic threat (this occurring just weeks before Xi took power) and by President Trump’s more insidious rhetoric and anti-China policies.

In the next section, I describe how this worsening external geopolitical environment allows one to make sense of a recent series of seemingly contradictory economic-policy moves by Chinese authorities. The CCP leadership clearly sees a storm looming on the horizon, in the form of real or perceived external threats from the US-led West. In reaction, it is seeking to maintain regime stability, primarily by suppressing any perceived internal threats and thereby getting the “house in order.” If necessary, it may even choose to “board up the house,” that is, decouple from the US-led West.

While China does face some serious challenges to traditional economic factors—for example, an aging population and declining workforce, a bubbly real estate sector ready to implode, and drastic income inequality that may impede transition to a consumption-driven growth model—I argue that these issues can be addressed by appropriate reform measures. The risk is that necessary reform efforts may be blocked by vested interests spurred by perceived external threats to China’s national security and perceived internal threats to social stability. These vested interests include executives and workers of SOEs, local governments, and the military, among others.

3. Internal Political Economy: The Evolving Relationship between the State and the Market

3.a. Market-Oriented Reforms until 2007

China’s miraculous growth from 1979 to 2007 was driven by the gradual decentralization of decision-making powers from government bureaucrats to individuals and firms, by increasing the market’s role in allocating resources, and by using competition to improve efficiency.

The first major reform in the late 1970s was the introduction of the household responsibility system, which gave farmers greater autonomy in decision-making. In the 1980s, special economic zones were established in coastal areas. Together with

new “open-door” policies, these zones attracted foreign investment and experimented with market-oriented policies. Township and village enterprises (TVEs) then emerged in large numbers; these enterprises accounted for one-third of China’s industrial production by the early to mid-1990s. Price reforms were gradually implemented, starting in 1979. China’s top leadership pushed for full price liberalization in 1987 and 1988; the resulting inflation led the government to pause reforms and impose more controls on the economy.

The pause proved to be short-lived, as Deng Xiaoping pushed for additional bold, market-oriented reforms in his famous “Southern Tour” in January 1992. Later that year, in its 14th National Congress, the CCP formally incorporated the idea of a market economy into China’s socialist ideology. New reforms—including changes to state ownership of enterprise, the legal system, the fiscal policy, and the central bank, as well as the establishment of factor markets, a social safety net, and a personal income tax—made a hybrid market system the economy’s main operating system rather than a mere supplement to central planning.

These sweeping and historic market-oriented reform measures led to China’s 2001 accession to the World Trade Organization (WTO), which further committed China to additional market liberalization and integration into the global economy. China’s global trade soared (see figure 4). By 2007, China’s exports had risen to 32 percent of GDP and its current-account surplus had ballooned to about 10 percent of GDP, with net exports contributing 2.5–3 percentage points a year to GDP growth in the three years immediately prior. In the first decade of the 2000s, we also witnessed rapid growth of the private sector, which in turn drove economic growth. The employment share of the state and collector sector dropped from nearly 100 percent in 1978 to 23.9 percent in 2007, and the share of state-owned firms in industrial output declined from 50 percent in 1998 to less than 30 percent by 2007 (see Cai, Du, and Wang 2009; Hsieh and Song 2015).

The most consequential political reform has been Jiang’s “Three Represents” theory of 2001, which promoted CCP membership for entrepreneurs and private businesspeople and led to a “de facto alliance between the CCP and China’s business class” (Naughton 2023). Capitalist representation in the National People’s Congress and the Chinese People’s Political Consultative Conference, although always limited, followed.¹¹

Despite these reforms, the Chinese government still cast a shadow—or rather multiple shadows at the state, local, and national levels—on Chinese firms and individuals. Firms operate in these sometimes-conflicting shadows, managing them via connections, bribes, and personnel arrangements.

11 In 2018, the *New York Times* reported that “the net worth of the 153 members of China’s Parliament and its advisory body that it deems ‘super-rich’ amounts to \$650 billion” (Wee 2018).

China's reforms could be described as lightening these shadows. In the central-planning era, the shadow was a suffocating blanket, with reforms providing more breathing room for firms and individuals and showing that markets are more efficient in resource allocation than government is. But government is still needed to correct market failures, provide public goods, and address inequality and externalities such as environmental damage.

3.b. The Global Financial Crisis and the "60 Reform Items"

The global financial crisis of 2007–2009, which originated from the large-scale default of subprime mortgages in the US housing market, shook China's confidence in the Western-style financial system. China's global exports as a percentage of GDP plummeted and never recovered, partly because of weak external demand but also because of rising Chinese labor costs. To stimulate the economy, China rolled out a 4 trillion RMB stimulus package to support domestic growth and offset the unprecedented external-demand shock. This move ushered in an infrastructure-investment boom led by local government and fueled by bank lending. China's economy continued to grow throughout the global financial crisis at close to 10 percent annually.

The global financial crisis may have catalyzed the rise of SOEs. First, after the global financial crisis, there was a broad understanding that China had done things right in its economic development under the CCP, and that the market system had its own flaws and could not address some of the country's central domestic challenges. Chinese leaders gained confidence in the country's hybrid, state-led market system. Second, the four trillion RMB stimulus package was fueled by debt, and SOEs received favorable credit terms.¹² However, most analysts expected deeper market-oriented reforms to eventually continue.

Indeed, in November 2013, the CCP unveiled an ambitious agenda for economic, social, and political reforms known as the "60 Reform Items." The agenda emphasized economic growth as the central goal of the Chinese government and, for the first time, called for the market to play a "decisive role" in resource allocation.¹³

12 Cong et al. (2019) document that the credit stimulus of 2009–2010 favored state-owned firms and firms with lower returns to capital.

13 "Market to Play 'Decisive' Role in Allocating Resources," China.org.cn, November 12, 2013, http://www.china.org.cn/china/third_plenary_session/2013-11/12/content_30577689.htm. International reactions to the Third Plenum of the 18th CPC Congress were positive. Commentary in *Foreign Affairs* claimed that "most analysts have focused on the meeting's wide-ranging economic reform agenda. No wonder; the announced economic changes are more sweeping than most people expected and, if implemented, could usher in yet another run of sustained economic growth. The reforms include allowing private ownership stakes in state companies, reducing regulatory hurdles for commercial enterprises, handing rural residents greater control over their land, liberalizing the financial sector, and much more" (Li 2014). Brookings Institution China expert Cheng Li said: "This is another turning point in China's economic development. If in the previous decade we did not see the expansion of the middle class, this is the beginning of another wave of private sector development. There is no question about that. Because party leadership embraced the idea. This is already being seen as the mandate of the Xi Jinping administration" (Dews 2013).

While the agenda laid out in the 60 Reform Items was widely acclaimed as “unprecedented,” it is by now broadly agreed that this ambitious plan, particularly in its economic and political reforms, was at best partially fulfilled (Yao and Blanchard 2013). The aspiration of making the market “decisive” in resource allocation definitely remains unfulfilled; if anything, since 2013 there has been a sense that the state is “striking back” (see Lardy 2019; Rudd and Rosen 2020). Regulatory tightening in the summer of 2021, described below, has further enhanced such beliefs.

3.c. Market vs. State: The Pendulum Swings Back

State influence over markets has clearly increased since the 60 Reform Items were introduced. The government has taken (and continues to take) several approaches to expanding its influence over private firms’ governance and decisions.

First, the state increasingly uses mixed ownership to leverage state capital to exert state presence (and thus some control) over private firms. Allen et al. (2022) used the information contained in China’s firm-registration data to study ownership networks of 40 million firms for 1990–2017. They found that declarations of firm ownership mask the influence of the state on firms via indirect equity ownership. They propose to measure state ownership based on firm-to-firm equity investment relationships—thereby accounting for multiple ownership layers as when, for example, an SOE invests in a firm that subsequently invests in another firm.

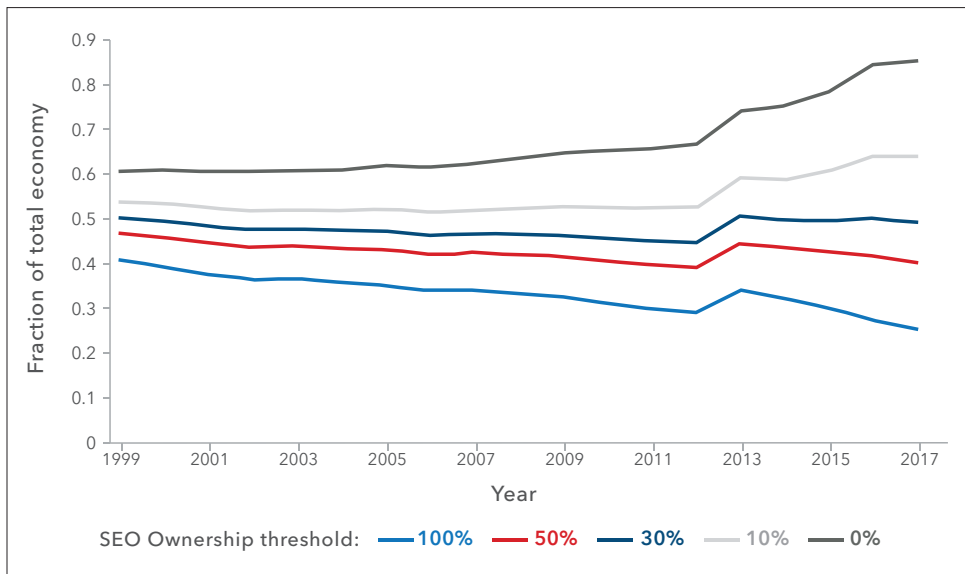
Figure 6, from Allen et al. (2022), summarizes their key findings. Panel A plots the proportion of the aggregated capital of all SOEs over total capital in the Chinese economy from 1999 to 2017, using different equity thresholds to define SOEs. For example, a threshold of 100 percent means that only firms owned entirely by the state are considered SOEs; a threshold of 0 percent means that firms with any positive state equity are considered SOEs, and so on. Allen et al. first trace the ownership trees of all SOEs that receive either direct or indirect investment from various government levels. They set multiple ownership thresholds (0 percent, 10 percent, 30 percent, 50 percent, and 100 percent) and then, for each threshold, calculate the proportion of total registered capital of all SOEs over total registered capital of all registered firms in China. The figure shows that when the ownership threshold is set at or above 30 percent, the total capital of all SOEs has been declining from 1999 to 2017, while for thresholds set below 30 percent, the total capital of all SOEs has been increasing.

Panel B plots the total capital of all SOEs and partial SOEs owned by various levels of government (central, provincial, and city) when the ownership threshold is set at zero (i.e., any presence of state capital qualifies a firm for SOE status). The figure shows that local-government investment in SOEs across the economy increased continuously from 1999 to 2017, while central-government investment declined.

The interpretation of the above findings is nuanced. If one uses the traditional definition of a controlling shareholder as one who owns more than 50 percent of a corporation's stock—or as the largest shareholder owning more than 25 percent of stock—then the state is not a controlling shareholder in most firms. Instead, the state seems to be investing more broadly over a larger share of Chinese firms. A low and mostly indirect state-equity presence does not necessarily imply state control or even state influence, at least not in normal times; but it does make state intervention more likely in unusual circumstances, as when, for example, regime stability or national security is at stake.¹⁴

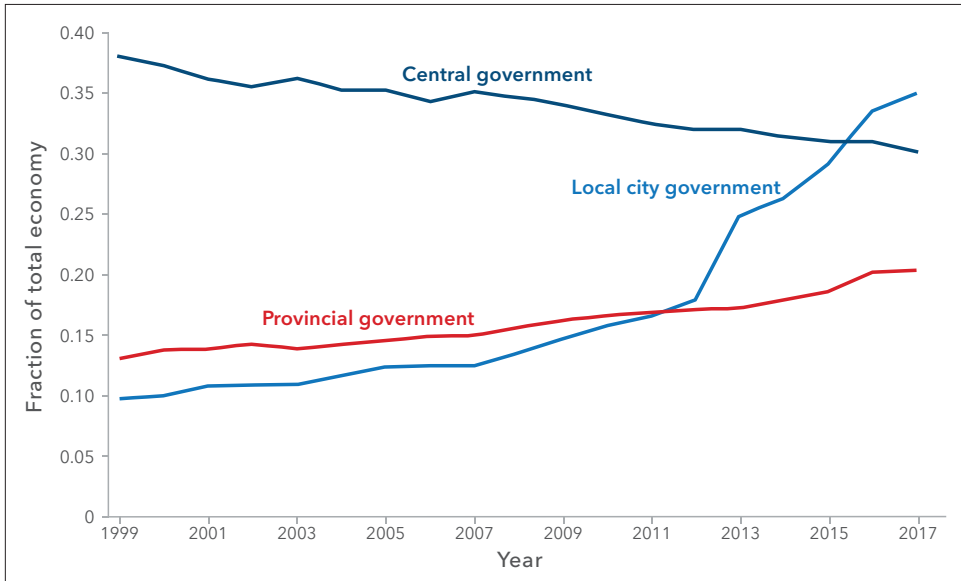
Figure 6. Presence of State Capital in the Chinese Economy

Panel A. Fraction of the Chinese economy occupied by SOEs, at different ownership thresholds



14 Bai et al. (2021) use the same firm-registration data to find that the largest privately owned firms have direct equity ties with state-owned firms; the next-largest privately owned firms have equity ties with privately owned firms that themselves have equity ties with state owners; and the smallest privately owned firms do not have any ties with state ownership. The network of "state-connected" private owners has expanded over the last two decades. The share of registered capital of "state-connected" private owners in China increased by almost 20 percentage points between 2000 and 2019.

Panel B. Fraction of the Chinese economy occupied by SOEs (0% ownership threshold), by government investment level



Source: Allen et al. (2022).

A second avenue for state control over private enterprise is political. According to the CCP constitution, any organization with three or more CCP members should establish a Party cell. While CCP cells have always been encouraged in the private sector, most companies were allowed to operate in an environment of benign neglect for the past few decades. In 2002, less than 27 percent of private companies contained a party cell. But by 2018, China's regulators made establishment of Party cells a requirement for any company to be listed on domestic stock exchanges. Around that time, Party cells within companies began advocating to their boards for greater say in corporate governance. China's top leaders have become increasingly explicit about their expectations for increased Party engagement in private companies, calling for CCP cells to better understand and interact with private companies and to help "improve their corporate governance structure" (Livingston 2021).

The third control approach has been the heightened regulation of private firms, which was notable in late 2020 and through the summer of 2021 (Naughton 2023). Under President Jiang, business elites such as Jack Ma (Alibaba), Pony Ma (Tencent), Xu Jiayin (Evergrand), and other top private businesspeople were celebrities and national champions who wielded enormous political influence as they forged strong

connections with powerful top officials in the Chinese government.¹⁵ As described in detail in Naughton (2023), Chinese regulators in 2020 introduced tough new rules for Chinese real estate developers, known as the “three red lines,” to rein in the highly indebted property-development sector and cool down the bubbly real estate sector.¹⁶ This episode demonstrated a willingness to take a much tougher line with Chinese domestic businesses than had previously been evident. Then, on November 3, 2020, the IPO of Ant Financial was abruptly suspended following a speech by Alibaba chairman Jack Ma that criticized China’s financial regulators for being too conservative. Table 1 summarizes the list of regulatory crackdowns on prominent private businesses in the summer of 2021.

Naughton notes that “there were regulatory rationales to nearly every facet of this crackdown.” For example, Ant Financial was operating on the basis of a single license from the city of Chongqing, and several of its financial activities operated in gaps in the financial regulatory framework. Regulations against market power to limit competition and promote data security were also reasonable. However, these regulations were not rolled out with China’s usual deliberation and were seen as arbitrary by many in selectively targeting certain sectors and firms, primarily private firms rather than SOEs. I argue below that concern for regime stability and internal security is likely a more plausible explanation for the sudden surge in regulation.

15 For a detailed discussion of this business-government fusion, see Hou 2019.

16 The “three red lines” stated that property owners should adhere to the following rules: (1) liabilities should not exceed 70 percent of assets (excluding advance proceeds from projects sold on contract); (2) net debt should not be greater than 100 percent equity; and (3) money reserves must be at least 100 percent of short-term debt.

Table 1. The Regulatory Storm: Major Milestones

Regulatory action began	Target company	Official rationale	Outcome
November 2020	Ant Financial (Fintech)	<ul style="list-style-type: none"> - Financial risk - Control of payments network 	<ul style="list-style-type: none"> - IPO cancelled - Ongoing regulatory reform
April 2021	Alibaba (eCommerce)	Antitrust violations	<ul style="list-style-type: none"> - 2.8 billion USD fine - Ongoing antitrust campaign
July 2021	Didi Chuxing (Ridesharing)	Data security	<ul style="list-style-type: none"> - Suspension of downloads - Regulatory crackdown; massive losses
July 2021	New Oriental (Private education)	<ul style="list-style-type: none"> - Reduce social burdens - Social equity 	<ul style="list-style-type: none"> - Abolish for-profit status - Limit weekend classes and foreign teachers and material
July 2021	Meituan (Food delivery)	Social equity	Guidelines for gig workers
August 2021	Tencent (eCommerce, gaming)	Social morality	Gaming targeted; outcomes uncertain

Source: Naughton (2023).

Fourth, government procurement and subsidies are being increasingly used to wield influence over private firms. Governmental five-year plans have been a staple of China from its founding and are not conceptually different from strategic economic guidance issued by the US government. The difference is mainly in the implementation of such industrial plans, as the Chinese government can be more hands-on than its Western counterparts. Industrial policy remains a controversial topic; US analysts have often pointed toward “Made in China 2025” as an indication that the Chinese government may somehow be planning itself into technological advantage over the US in strategic industries (Naughton 2021).

I am generally skeptical of this view, as history has repeatedly taught us that no one, let alone bureaucrats, can predict technological revolutions. Academic research has repeatedly shown that industrial policy subsidies are likely to be exploited by entrepreneurs but often fail to yield results. For example, Chen et al. (2021; 2017) showed that when the Chinese government, to encourage innovation, gave tax incentives to firms whose R&D investment exceeded a designated threshold, many firms simply relabeled administrative expenditures as R&D in order to qualify. Branstetter, Li, and Ren (2022) found little evidence that the Chinese government has consistently picked winners when allocating subsidies; on the contrary, they found that firms' ex ante productivity correlated negatively with subsidy receipt.

These findings suggest that China's increasingly prescriptive industrial policies may have had limited success in promoting productivity; their more likely role has been to increase government influence over private firms. My personal view—shared by academics who have studied Japanese economic history—is that industrial policy may be effective when a country is trying to catch up, but it is unlikely to be effective when a country aims to lead the frontier.¹⁷

Finally, my own research (Fang et al. 2022) shows that President Xi Jinping's anti-corruption campaign may have also contributed to the resurgence of Chinese SOEs. Doing business with privately owned enterprises (POEs) has become stigmatized because POEs are more likely to be involved in bribery. Government officials, even and especially those who are still "clean," have strong incentives to avoid dealing with POEs in order to preserve their reputations and avoid investigation.

3.d. Recent Developments

Indeed, the Chinese economy has slowed down, with an anemic post-pandemic rebound. Domestic consumption following the lifting of the zero-COVID policy appeared in the service sector only; investment growth, particularly private investment, was also weak. The Chinese National Bureau of Statistics (NBS) reported strong year-to-year growth (8.9 percent) for the month of April 2023, but for May it reported 7.5 percent and 4.5 percent year-to-year declines for exports and imports respectively (National Bureau of Statistics of China 2023; Cheng and Tan 2023). The weakening private sector prompted the new government to reaffirm its support for private business (Baptista and Tian 2023). Confidence, a major driver of any long-term investment, is presently lacking. The official NBS Manufacturing Purchasing Manager Index (PMI)—analysts' most relied-upon measure of business confidence—unexpectedly fell to a five-month low of 48.8 in May of 2023 from 49.2 in April,

¹⁷ See Callon 1995.

missing market estimates of 49.4.¹⁸ The latest PMI measure also pointed to the second straight month of contraction—when PMI drops below 50—in factory activity, amid weak domestic and global demand. The Chinese government’s recent tendency to rapidly engineer policy U-turns hurts confidence and makes it more difficult for businesses to attract foreign investment.¹⁹ In general, there is a sense that the CCP and the Chinese state have too much power over businesses and individuals to be able to credibly commit to staying “hands off” in the affairs of Chinese firms, whether state-owned or private. This perception is becoming a key barrier to the international-market expansion of Chinese firms like TikTok and Huawei.

The tension between national security and economic growth will ultimately shape China’s domestic political economic environment. Recent reports of China’s crackdown on overseas consulting firms—and the restriction of overseas research scholars’ access to Chinese datasets (including commonly used Wind data on stocks and other business information)—suggest that this tension will continue in the foreseeable future. It is implausible to think that the Chinese government is unaware of the wider implications of the aforementioned foreign-investment measures.²⁰

4. External Relationship with the US-Led West

4.a. How Did the US-China Relationship Go from Warm to Cold to Freezing?

Most analysts were puzzled by the drastic swings toward state intervention described in section 3. Some suggest that China has a long-run strategy to supplant the US as a superpower (e.g., Doshi 2021). I disagree; evidence suggests that the CCP was still very much committed to market-deepening reforms as of November 2013. But it is evident that the government’s market interventions are casting longer shadows over the economy. I believe that these swings are driven by regime stability concerns and are, in part, responses to changes in the geopolitical environment, particularly China’s worsening relationship with the US-led West since 2011. Anti-China rhetoric and actions in the form of trade, investment, and export restrictions accentuated the perceived external threat to the CCP. When real or perceived external threats from the West loom, CCP leadership try to “get the house in order,” suppress any perceived internal threats, and take even more extreme action to maintain their own power. In this section, I describe how a benign relationship with the US-led

18 See Trading Economics, s.v. “China NBS Manufacturing PMI,” May 2023, <https://tradingeconomics.com/china/business-confidence>.

19 See “China’s Deepening Selloff Shows Investors Are Losing Confidence,” Bloomberg News, April 25, 2023, <https://www.bloomberg.com/news/articles/2023-04-25/china-s-deepening-selloff-shows-investors-are-losing-confidence?sref=nhO5Kxq6#xj4y7vzkg>.

20 See, e.g., Weiss 2023a and 2023b.

West was responsible for the array of audacious market-oriented reforms and decentralization described in section 3.1, and how, as that relationship became more tense, the domestic political economic pendulum swung in the other direction.

From 1979 to 2008, the US and China were engaged and friendly. Occasional flare-ups (e.g., the sanctions that followed the 1989 student protests; and the May 1999 Belgrade embassy bombing incident) were dealt with diplomatically and did little damage to the long-term warm bilateral relationship. Today, however, the US-China relationship is at its lowest point in the last 40 years. The decline might have originated with the Global Financial Crisis, after which China called for reforms to increase the representation of emerging economies in international financial institutions and proposed alternatives to the US dollar as the primary global reserve currency. These efforts were perceived by the US as a challenge to the existing global order. After President Obama announced his “pivot to Asia” in 2011, President Xi advocated a more assertive foreign policy stance than Deng’s “hide your shine and bide your time” policy. In late 2013, China began planning to establish an Asian Infrastructure Investment Bank (AIIB) as an alternative platform; the Obama administration declined an invitation to the US to join as a founding member.

The political stress that roiled the 2016 presidential election in part reflected the US electorate’s skepticism of globalization. China watched the 2016 US election in horror and tried its best to calibrate its own response to US political developments, including President Trump’s escalating trade wars. COVID-19 then disrupted global markets in 2020, and President Biden has continued the Trump administration’s (demonstrably incoherent) China policy. Russia’s invasion of Ukraine further heightened tensions. After the 2023 balloon incident and the cancellation of Secretary of State Anthony Blinken’s planned visit to China, it was reported that the US and China did not talk for months. Jessica Weiss has warned that the “American approach could lock both countries into an escalatory spiral”—and tensions between the United States and China determine China’s relationship with the world more broadly (Weiss 2023b).

4.b. Intertwining of Economic Relationships and National Security

The US-China economic relationship is now intertwined with national security concerns. The days of the “flat world,” as articulated in Thomas L. Friedman’s 2005 bestseller, are long gone, and the world is round again. In 2023, Treasury Secretary Janet Yellen said:

Our economic approach to China has three principal objectives. *First, we will secure our national security interests and those of our allies and partners, and we will protect human rights.* We will clearly communicate to the PRC [People’s Republic of China] our concerns about its behavior. And we will

not hesitate to defend our vital interests. Even as our targeted actions may have economic impacts, they are motivated solely by our concerns about our security and values. Our goal is not to use these tools to gain competitive economic advantage.

Second, we seek a healthy economic relationship with China: one that fosters growth and innovation in both countries. A growing China that plays by international rules is good for the United States and the world. Both countries can benefit from healthy competition in the economic sphere. But healthy economic competition—where both sides benefit—is only sustainable if that competition is fair. We will continue to partner with our allies to respond to China’s unfair economic practices. And we will continue to make critical investments at home—while engaging with the world to advance our vision for an open, fair, and rules-based global economic order.

Third, we seek cooperation on the urgent global challenges of our day. Since last year’s meeting between Presidents Biden and Xi, both countries have agreed to enhance communication around the macroeconomy and cooperation on issues like climate and debt distress. But more needs to be done. We call on China to follow through on its promise to work with us on these issues—not as a favor to us, but out of our joint duty and obligation to the world. Tackling these issues together will also advance the national interests of both of our countries. (Yellen 2023, emphasis added)

Notice that national security interests are listed as the first principle in US economic engagement with China. Economic relationship and national security are now closely tied together—a tie that marks a significant departure from prior eras, in which countries could choose the US as their national-security ally while remaining close to China economically. The Trump administration initiated its trade war in 2018, citing the bilateral trade imbalance and accusations of intellectual property theft, but it quickly became clear that these policy aggressions were motivated by more than economic issues and that national security concerns on the US side were a much bigger factor than initially articulated publicly.

Figure 4 shows that China’s overall trade was almost balanced around 2018, despite the country’s large bilateral trade surplus with the US. In her speech, Secretary Yellen noted that “when necessary, we [the US] will take *narrowly targeted* [italics added] actions”; such actions may include export controls, restrictions on Chinese military entities’ access to tech, or other sanctions to address cybersecurity threats and China’s military-civil fusion. However, the reality is that national security concerns impact China much more broadly than simply by limiting Chinese military

access to advanced technologies; security concerns also significantly shape both countries' approaches to supply-chain security for food, energy, essential medical supplies, and rare earth minerals vital to the production of advanced technology and infrastructure. The US has pushed to move global supply chains out of China to the US or allied countries, though the impact of these changes is not yet clearly reflected in Chinese export statistics—as total bilateral trade between the US and China reached a historic high of \$690.59 billion in 2022, up from \$536.6 billion in 2012. Sadly, national security concerns are making both China and the US more inward-looking and protectionist.

Politicians in both parties try to one-up each other to stoke public fears and score political points. The urgent global challenges of the day—such as climate change, preventing the next global pandemic, or promoting development in the global South—are relegated to the back burner. Unfortunately, both countries are assuming the worst of each other.

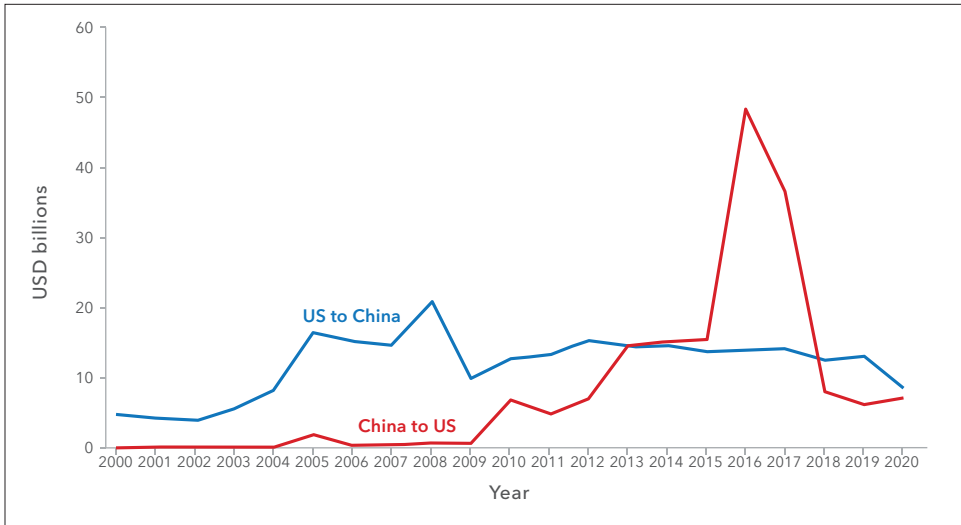
4.c. US Export Control and Investment Restrictions

Technological supremacy is the key to the US-China rivalry. At present, the US is the clear global technology leader; to protect its lead, the United States regulates the export of goods, technologies, and services that are considered sensitive or have potential military applications.

Several recent developments in this area are notable. In October 2022, the Bureau of Industry and Security (BIS) issued interim final rules significantly enhancing US export controls of advanced integrated circuit (IC) technology, related manufacturing products, and supercomputers whose destination or ultimate end use is China. The rules set new, stricter licensing requirements for a broad swath of items destined for China, and they greatly limit previously available license exceptions. That same month, the BIS issued another new rule with potentially even further-reaching implications: it restricts “US persons” from certain activities supporting the development or production of specified ICs in China.

The US government has also implemented restrictive review by the Committee on Foreign Investment in the United States (CFIUS) for any inbound investment from abroad to determine the effect of such transactions on US national security. The 2018 passage of the Foreign Investment Risk Review Modernization Act expanded CFIUS's jurisdiction and enhanced its authority. New US Treasury Department regulations target critical and emerging technologies and certain transactions involving Chinese investors.

Figure 7. Annual Value of Foreign Direct Investment Transactions between the US and China, 2000-2020



Source: Hanemann et al. (2021).

Figure 7, from Rhodium Group, shows a rapid rise in outbound foreign direct investment (FDI) from China to the United States, peaking at around 50 billion USD in 2016 before collapsing to less than 4 billion dollars in 2019 and 2020 (Hanemann et al. 2021). The total bilateral FDI between the US and China fell to \$15.9 billion in 2020 amid pandemic-related disruptions and rising tensions in the US-China relationship. This point marked the lowest level for two-way flows since 2009.

In addition to existing CFIUS restrictions, the US government has recently moved toward developing a new “reverse CFIUS” process to give it the authority to screen and monitor outbound investment from the United States to “countries of concern”—most notably China—in order to review the flow of US capital that would directly support the use of critical technologies by China’s military or civil sector.²¹ The European Union may follow suit. A March 2023 joint statement from President Biden and European Commission president Ursula von der Leyen indicates that both parties “have a common interest in preventing our companies’ capital, expertise, and knowledge from fueling technological advances that will enhance the military and intelligence capabilities of our strategic rivals, including through outbound investment” (Benson and Putnam 2023).

21 See President Biden’s August 9, 2023 Executive Order on Addressing United States Investment in Certain National Security Technologies and Products in Countries of Concern: <https://www.whitehouse.gov/briefing-room/presidential-actions/2023/08/09/executive-order-on-addressing-united-states-investments-in-certain-national-security-technologies-and-products-in-countries-of-concern/>

China is now on the defensive, facing the barrage of US-led technological embargos. One of China's national champions, Huawei, had to give up its once-dominant cell phone production because of chip embargos imposed by the US. China is forced to be self-reliant or to turn to other countries, though the US has pressured its allies not to provide China with advanced technology. Such restrictions are complicated by the fact that China controls critical mineral production and production capacity for key goods such as electric vehicle batteries (Chang and Bradsher 2023). But the areas in which China can claim to be a leader are few.

4.d. The Future of RMB

Some may argue the relationship between the US (the incumbent power) and China (the rising power) was destined to deteriorate at some point, and some suspect that the immediate genesis of that deterioration may have been the global financial crisis and China's proposition of alternatives to the US dollar as the primary global reserve currency. Has the Chinese RMB made any progress toward becoming a reserve currency? Not much. According to the International Monetary Fund, only 2.8 percent of foreign reserves of all reporting countries were in RMB as of late 2022, a substantial increase from about 1 percent in 2016 but still far behind USD, EUR, JPY, and GBP levels. Even though the share of total foreign reserves in USD dropped from 65 percent to about 60 percent between 2016 and 2022, the USD is still the dominant reserve currency (Wei and Yue 2023).

Odds that the RMB will replace the USD as the dominant reserve currency are low. One of the biggest obstacles to such replacement is the RMB's lack of full convertibility into other currencies. The Chinese government stalled capital account convertibility reform, considering it advantageous to maintain some capital controls; these controls restrict the free flow of RMB in and out of the country. Another major obstacle is the limited depth and liquidity of RMB-denominated financial markets—a limitation that makes it difficult for investors to trade and hedge RMB-denominated assets. Third, the perception of political risk is also an important limiting factor, as the Chinese government's control over the economy and financial markets can make some investors and businesses perceive RMB as a risky currency to hold or use in international transactions. Finally, the relative newness of the RMB as an international currency means that some investors and businesses may not yet trust how the People's Bank of China (PBOC) manages its monetary policy.

China is aware that any major reserve currency requires full convertibility, and thus that the RMB, if it is to achieve such status, will require better tools and auxiliary institutions to deal with flighty capital and financial market volatility.

The RMB has had more success in becoming an international settlement currency. Many countries, including some of China's largest trading partners, have started to settle their trade transactions in RMB, and global financial institutions are increasingly offering RMB-denominated products and services. Cross-border trade settlement in RMB has expanded substantially from a minuscule level in 2009 to nearly 8 trillion RMB in 2021, accounting for about 20 percent of China's total external trade. China also established bilateral currency-swap agreements with 40 central banks or monetary authorities between 2009 and 2022, notionally totaling about 3 trillion RMB.

I believe that at best, the RMB will be a reserve currency in a subset of countries, if the global economy continues breaking into separate blocs. If, for some reason, the RMB does become a major international reserve currency, this development will likely not be due to China's own internationalization effort but rather to US abuse of the dollar's "exorbitant privilege"—as by over-sanctioning countries off the SWIFT system or setting its monetary policy at the expense of other economies.

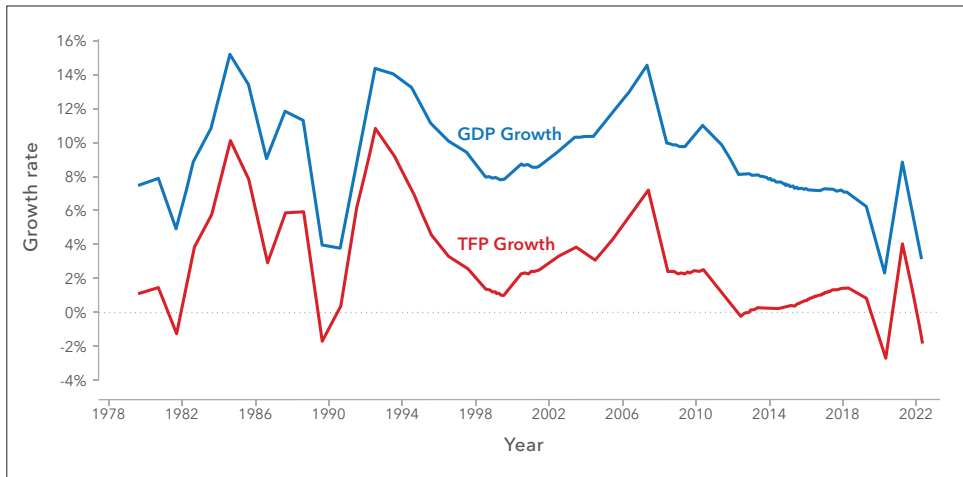
5. Traditional Economic Factors

I have maintained that China's internal political economy and its relationship with the US-led West will be key to shaping the arc of the Chinese economy over the next 10 to 15 years. This is not to say that traditional economic factors are not important or that China does not face challenges in these areas—but if these were the nation's only challenges, China would be able to overcome them.²²

5.a. Total Factor Productivity Growth

Total factor productivity (TFP) growth was the Chinese economy's main engine until 2007. Xiaodong Zhu calculated that, between 1990 and 2007, China's TFP grew at an average rate of 4.5 percent per year. This fast TFP growth contributed to GDP growth both directly and indirectly, by allowing capital to accumulate faster for the same rates of investment. His simulation results show clearly that TFP growth, not increases in investment rate or employment, was the main driver of China's GDP growth from 1990 to 2007.

²² For a book-length discussion of these challenges, see Dollar, Huang, and Yao 2020.

Figure 8. GDP and TFP Growth in China, 1978–2022

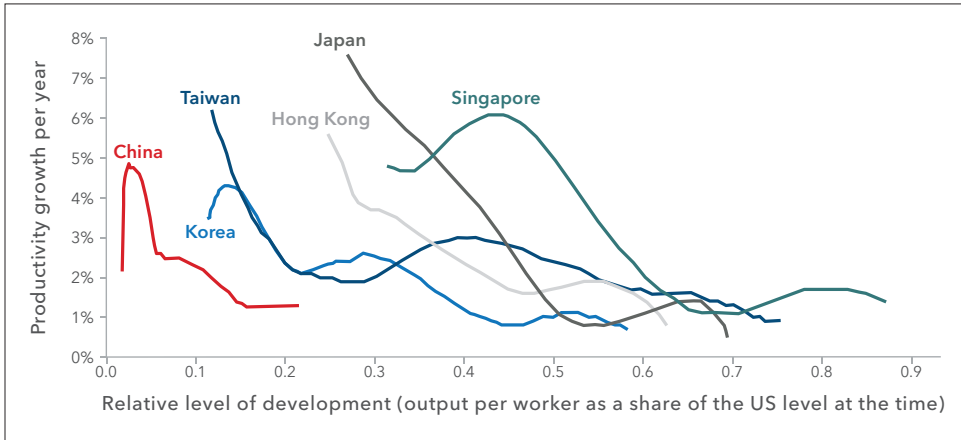
Source: Zhu (2023).

As shown in figure 8, which plots China's GDP and TFP growth rates between 1978 and 2022, episodes of accelerating GDP growth were invariably associated with rising TFP growth, and periods of growth slowdown are also periods of declining TFP growth. During the fast growth period of 1978–2007, China's TFP growth rate averaged more than 4 percent a year. In the last 15 years of growth slowdown, however, the TFP growth rate averaged only 1 percent (Zhu 2023).

Figure 8 also shows that the periods with the fastest TFP growth coincide with the rapid growth of town and village enterprises in the mid-1980s, the SOE reform in mid-1990s, and the explosion of Chinese foreign trade and inbound FDI following China's WTO entry in 2001. Since 2013, China's TFP growth rate has slowed significantly.

This finding is consistent with the view that the Chinese economic miracle is not a productivity miracle. Figure 9, from Rajah and Leng (2022), compares China's productivity performance to that of the East Asian miracle economies when each was at a comparable level of development relative to the United States. The figure reveals that, at comparable levels of development, Chinese productivity growth appears to have underperformed by a wide margin. China is not really a "miracle" economy when it comes to productivity. Instead, China's historically strong productivity performance appears more to reflect its low starting point, the deep inefficiencies plaguing its centrally planned economy, and the large catch-up dividends unleashed over the ensuing decades by gradual market-oriented reforms.

Figure 9. Evolutions of TFP Growth Rates for Selective Economies as a Function of Their Relative Per Capita GDP to the US



Source: Rajah and Leng (2022).

What sources may have contributed to China's rapid TFP growth before 2007, and what has caused its slowdown? Zhu (2023) and others have found that domestic reforms reducing barriers to internal trade and internal migration have had a significant positive impact on productivity growth. Bottom-up institutional change and market-based technological diffusion and innovation (aided by international trade), both spurred by economic reform and decentralization, were the driving forces behind China's impressive pre-2007 productivity growth—and they were spurred by economic reform and decentralization. Surprisingly, despite years of banking and financial market reforms, capital reallocation has had little or even negative impact on China's productivity growth. The contribution to the growth of export expansion per se following China's accession to the WTO has also been limited.

After 2007, probably due to the long shadow cast by the 4 trillion RMB stimulus and the Chinese government's slow shift away from the bottom-up approach (with a greater emphasis on top-level policy design and mobilization of national resources), China's TFP growth stalled at just about 1 percent per annum (Bai, Hsieh, and Song 2016).²³ The shift to centralization has resulted in fewer policy reforms and institutional changes initiated from below; various top-down industrial policies aimed at boosting China's technological capabilities have not achieved the desired results. Some authors also find that internal trade costs increased slightly after 2007 (Hao et al. 2020).

²³ See also Huang, Pagano, and Panizza (forthcoming).

What possible sources might restart the engine of TFP growth? First and foremost would be reforms to improve the efficiency of resource allocation or reallocation. Zhu and others find that capital reallocation contribution to China's TFP growth has been minor until now. Chinese banks tend to favor SOEs, which are less efficient than private firms and have very low return on investment (see below); small and medium enterprises (SMEs) face serious credit constraints. Deepening the reform of capital markets and exploiting big-data financial technology to reduce borrowing costs for SMEs without collateral will enhance the efficiency of capital allocation and increase economic dynamism (see, e.g., Frost et al. 2019).

A second potential source of TFP growth is to lower barriers to labor and capital mobility across regions. The main barriers to labor mobility are the *hukou* system and the lack of market reforms for rural land, which also lower productivity (see Ngai, Pissarides, and Wang 2017; 2018). There is also growing evidence in China of local protectionism. Facing strong incentives to get promoted, local government officials often limit capital investment from their own region to others' (see Fang, Li, and Wu 2022). Cross-regional investment could lead to technological diffusion across regions and become an important source of overall TFP growth. Figure 5 shows large development heterogeneity across Chinese provinces. Revitalizing the northeastern provinces (Liaoning, Jilin, and Heilongjiang), formerly China's industrial heartland, could spur productivity growth.

Indigenous innovation will have to play a more important role, as the prospect of technological decoupling with the US-led West becomes more likely. Since 2007, China has favored a whole-nation, top-down approach to innovation. This approach has not been effective. Reforming the innovation and entrepreneurship ecosystem to encourage bottom-up innovation is key to the vitality of the Chinese economy.

Since 2007, China has favored a whole-nation, top-down approach to innovation. This approach has not been effective.

5.b. Declining Labor Force and Aging Population

China's aging population results from increasing life expectancy and declining fertility rates. The two forces pose different challenges, have different policy implications, and call for different policy responses.

Between 1970 and 2020, life expectancy at birth increased by 21.1 years—and, happily, most of that increase is in *healthy* life expectancy. At the same time, total fertility in China has declined: between 2019 and 2022 alone, the birth rate per 1000 people dropped from 10.41 to 6.77, and the number of women of childbearing age

(ages 15–49) fell by more than four million. National fertility survey data suggest that women still childless in 2017 intend to have fewer children (1.60, as compared to a population-wide figure of 1.76), indicating room for a further decline. Moreover, according to official statistics, in 2022 China's total population declined by 850,000 for the first time since the Great Chinese Famine of 1958–1961. Correspondingly, China's workforce peaked in 2014–2015 with about 801 million workers and has been declining ever since. In 2021, the workforce declined to 780 million. The decline in workforce is expected to continue over the next 10 to 15 years, barring reforms to the retirement age or, less likely, large-scale immigration. This forecast has caused significant concern among Chinese analysts.

For three reasons, I believe that workforce decline is unlikely to be a major drag on Chinese economic growth, particularly per capita GDP growth.²⁴ First, there is an important distinction between *quantity* and *quality* of labor force. The current generation of retirees, born in the 1950s and 1960s, tends to have low levels of human capital and thus to have been among the least productive workers, while younger cohorts are much better educated. Thus, lower-skilled retirees are being replaced by relatively fewer but much better-skilled young workers. The quality of labor partially offsets the decline in numbers, enabling Chinese economic growth to remain strong.²⁵

Second, China has a lower retirement age, either 50 or 55 for women and 60 for men, than any other OECD country. If strong opposition to raising the retirement age can be overcome, a well-designed reform of the pension system, together with job redesigns and a transition to a more service-oriented economy, can facilitate bringing near-retirees back to the workforce.

Third, we are on the cusp of a fourth Industrial Revolution due to automation and artificial intelligence. The impact of aging can be partially solved by the adoption of a range of labor-replacing technologies, including robotics and AI (see Acemoglu and Restrepo 2017). Indeed, China is the country with the largest number of industrial robots already, though the robot density in China is still lower than that in Korea and Japan.

The other implication of rising life expectancy and declining fertility is the fiscal pressure on China's pay-as-you-go pension system. This concern is more serious. Without policy responses, the rising elderly population will create challenges to funding health care, pensions, and long-term care, especially as China transitions

24 Indeed, recent official news that Chinese youth (ages 16–24) unemployment hit 20.8 percent in May 2023—a historic high—suggests that the size of the labor force per se is unlikely the binding factor for China's economic growth. See Cheng 2023.

25 This claim is consistent with cross-country evidence presented in Acemoglu and Restrepo 2017.

from its traditional family-based care system. The question is, who will pay for the retirement of the Chinese elderly? Here it is important to differentiate the urban and rural elderly. Urban households have accumulated a lot of wealth over the last 40 years, with housing now accounting for more than 70 percent of Chinese household wealth. This housing wealth needs to be tapped to pay for the elderly's health care, long-term care, and other needs. Introducing reverse-mortgage products that account for the specific concerns of Chinese households is an idea worth exploring for urban elderly.²⁶

Few if any pro-natal policies have proven to be effective in raising fertility, and 80 percent of Chinese women say their main reason for not wanting to have more children is the expense of raising them. This news is actually good, as it suggests that higher fertility rates may be achievable if the cost of raising children declines to a more reasonable level.

I would also urge the Chinese government to invest resources in rural education to improve the human capital of millions of rural children (see Rozelle and Hell 2022). The quantity-quality tradeoff previously mentioned should be leveraged in any strategy to soften the negative impact of declining fertility.

5.c. Investment-Driven vs. Consumption-Driven Growth

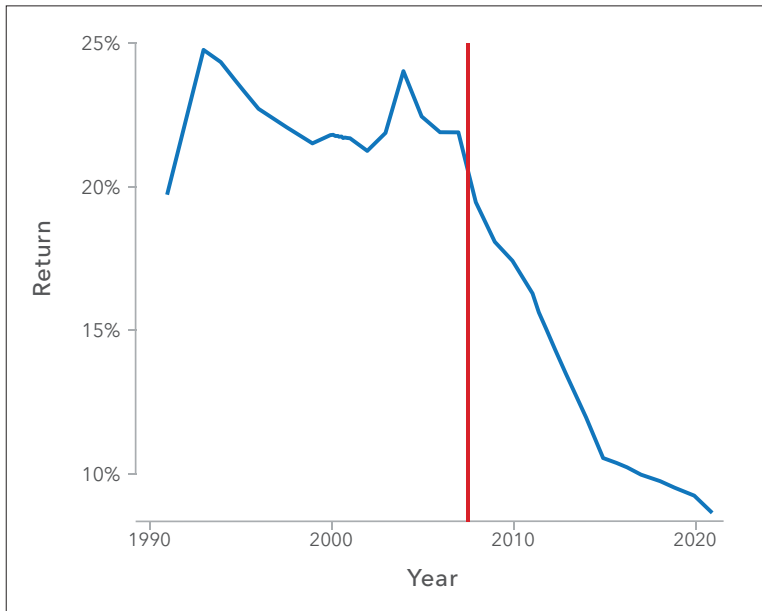
There is intense debate within China about whether the future of Chinese economic growth should be driven by consumption or investment. This is not the right way to frame the debate. Economic growth ultimately comes from TFP and factor input growth. Some investments contribute to TFP growth, while others contribute to capital growth. Consumption, however, makes growth sustainable, since what is produced must be consumed, invested, or exported.

My view is that current debt-financed investment, which has been targeted at infrastructure and housing, will not continue to drive future economic growth. However, I agree with Justin Lin that investment focusing on innovation, new production capacity, and human capital—including health—must be part of future sources of growth for the Chinese economy. At the same time, domestic consumption as a share of GDP must increase, as it is no longer plausible to expect Chinese export growth to make up for weak domestic consumption.²⁷

My view is that current debt-financed investment, which has been targeted at infrastructure and housing, will not continue to drive future economic growth.

²⁶ For a reverse-mortgage product design with “Chinese characteristics,” see Fang, Hanewald, Bateman, and Wu 2020.

²⁷ For a discussion of risk in the Chinese real estate sector, see Xiong 2023.

Figure 10. Annual Return to Capital (%), 1990-2021

Source: Song (2023).

Figure 10, from Michael Song (2023), plots the annual return to capital estimated for the period 1990 to 2021. It shows rapid decline since 2008, when the 4 trillion RMB stimulus was implemented. Low returns to capital are signs of wasteful investment. The return to capital was stable and consistently above 20 percent before 2008, despite high investment rates; however, after 2008, the return to capital dropped by half and got lower over time. The main culprit, Song points out, is that the local governments became drivers of investment after 2008. Before 2008, Chinese local governments were not allowed to borrow; but the 4 trillion RMB stimulus allowed local governments to borrow via local government financing vehicles. Local governments became creative at engineering financial products that allowed them to binge-borrow and invest, crowding out private-sector investment. After 2008, aggregate financing for the real economy over GDP rose from about 100 percent to about 300 percent. However, the rise of the debt ratio was mostly driven by the government bond/GDP ratio, which increased from 34 percent in 2017 to 50 percent in 2022, while the corporate bond/GDP ratio remained roughly constant.

Why is private investment weak? I think the key is confidence about the future. Government investment can be directed, while private investment must be induced by positive expected returns.

The investment boom was necessary to absorb the weak external demand for Chinese goods following the global financial crisis (see figure 5). Exports as a share of GDP steadily declined after China's share of global exports reached 15 percent in 2006. Given the current populist anti-globalization backlash in developed countries and growing protectionism against Chinese exports in major markets, export-led growth is not sustainable. As a matter of accounting, that leaves investment and consumption to pick up the slack to balance supply and demand. There is no conflict between investment and consumption; they can complement each other if investment increases productivity, which can raise wages and consumption.

China's consumption as a percentage of GDP has grown rapidly since 2010, when its household consumption was just 34 percent of the GDP. Despite now having the second-largest retail market in the world behind the US, China's domestic consumption is still weak. In 2019, China's consumption as a share of GDP was 55 percent in 2019, with household consumption less than 40 percent of GDP. China's household consumption ratio in 201, at 34 percent, was among the lowest in the world, compared with 68 percent in the United States, 60 percent in India, 49 percent in South Korea, and the OECD average of 60 percent (see Wang 2023: 149, fig. 8.3).

Increasing household consumption is necessary for the future of Chinese economic growth. China can do a lot to boost domestic consumption, including (1) increasing the labor-income share in the primary distribution of national product, and (2) redistributing income through tax and transfer schemes. China's income tax and social transfer systems are overall regressive and have no wealth tax; this state of affairs helped push China's Gini coefficient even higher than the US's (see Jain-Chandra et al. 2018). To achieve the stated goal of "common prosperity," China should provide large income transfers to low-income households and strengthen the social safety net, especially for rural households; doing so will lower household savings rates and boost domestic consumption.²⁸

Real estate and infrastructure investment have been a major source of Chinese economic growth over the last two decades. Real estate clearly will no longer be a key engine. Candidates to take its place include renewable energy, green building and infrastructure retrofitting, electric vehicles, and pollution remediation, given China's ambitious national goal of achieving carbon neutrality by 2060. Health care and elder care will have to grow rapidly to care for an increasingly silver population. Finally, food security has a new meaning in the face of climate change, and I expect that climate-adaptable agriculture, including new seeds that can adapt to new soil and climate, will have huge growth potential.

²⁸ See Huang 2023 for a different perspective on common prosperity.

6. Conclusion

In this brief, I have stipulated that China's greatest economic challenges come not in the form of traditional factors—such as a slowdown of TFP growth and a shrinking labor force—but, rather, in the form of domestic political economy challenges and the external geopolitical environment, specifically its relationship with the US-led West.

Where China and its economy go from here will largely be determined by rising geopolitical tension, especially worsening US–China relations. This tension will negatively impact China's access to the international market for exports, to technology and advanced intermediate inputs, and to foreign investment. The US is pressuring its allies to decouple from China. The direct impacts on the Chinese economy of these adverse actions will be compounded by heightened uncertainty about the prospects of future Chinese economic growth, which are likely to weaken confidence and business investment in general. These tensions are also causing enormous damage to the US economy, but they are unlikely to ease anytime soon.

Is a limited decoupling between the US and China inevitable? The Biden administration's 2023 ban on the sale of American technology, including 4G chips, to Huawei effectively forced China to prepare for a complete technological decoupling from the US (Sevastopulo and Hille 2023). China does not have a choice in the matter. Whether the decoupling will also include other areas of trade or finance is not clear, and much depends on whether the US adjusts its China policy in the coming years. But it would be naïve to underestimate China's resolve to chart its own course of development in the face of a hostile external environment.

Technology embargos, trade tariffs, and investment restrictions will slow down China's growth, but the greater risk of damage from geopolitical tension is, in my view, the impact it might have on the course of China's domestic political economy and economic policy. Will China stay the course and undertake further market-deepening reforms to improve the allocative efficiency of its economy, open to the world, and improve the lives of Chinese citizens? Or will it become more inward-looking, more nationalistic, and more centralized as a response to external threats? Will China continue to demonstrate its pragmatism, as it did in the 1970s and after 1989 as it navigated much tougher external and internal environments? Finally, will its system be robust enough to correct for errors and adjust course if necessary? No one knows the answers yet.

There are openings for China and the US to repair their damaged relationship. Plenty of global challenges call for China, the US, and the rest of the world to work together, whether to combat climate change, end the Russia-Ukraine War, or prevent the next global pandemic. But I am pessimistic that these openings will be exploited in the near future.

Where the Chinese economy is headed has enormous implications for US businesses, investors, and policymakers. China is already the world's second-largest retail market with a consumption/GDP share of just over 50 percent; even a 2 or 3 percent economic growth rate would account for 15 to 20 percent of global growth. Investors will want to have Chinese firms in their portfolios to benefit from this higher growth. American policymakers will need to collaborate and coordinate with their Chinese counterparts when the next financial crisis hits. The geopolitical tension between the US and China puts all these possibilities at risk.

I hesitate to estimate China's growth rate over the next 10 to 15 years. If—and it's a big “if”—China focuses on its internal market-deepening reforms, thereby increasing its TFP growth rate to 4 percent annually, then the Chinese economy as a whole could grow by 6 percent annually. This would be the best-case scenario. If China instead stops its market-oriented reform in favor of centralized decision-making, top-down planned resource allocation, and marginalizing private businesses, then TFP and economic growth could grind to zero. China, the US, and the world would all suffer as a result.

Again, in between the best- and worst-case scenarios, much depends on whether the US and China can adjust their bilateral relationship. One needs to be realistic instead of engaging in wishful thinking. But we can hope. Jessica Weiss (2023), whom I quoted earlier, said it best:

There is no doubt that China—whatever its trajectory—poses a huge and complex policy challenge for America. But exaggerating fears of an “existential struggle” increases the likelihood of conflict, crowds out efforts to tackle shared challenges like climate change, and creates a with-us-or-against-us framing that could alienate the United States from allies and much of the world. Worse, reflexively maneuvering to outcompete or thwart China only validates hard-liners in Beijing who believe that America is implacably hostile and that the only response lies in undermining the United States. By continuing on that road, the world's two most powerful countries may end up turning each other into the enemies that they fear.

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