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# RESEARCH BRIEF

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## Long-Term Economic, Financial, and Industrial Trends in the United States and China

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**T**he Trump administration has prioritized economic policy—particularly trade with China. This emphasis is appropriate, given the extraordinary relative gains China has made in recent decades and the gigantic bilateral trade imbalance it has with the United States. Trade binds the two nations together. To some extent the imbalance reflects their complementarity, but it has also introduced unhealthy asymmetric financial dependencies. More fundamentally, it has enabled a steady transfer of knowledge that has allowed China to substantially close the technology gap with the United States. Despite remaining much poorer overall, China is mobilizing its vast savings towards strategic projects. In some areas, it is now a near-peer rival. Advanced manufacturing is becoming a new theatre of superpower competition.

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## INTRODUCTION

The power of the United States derives in large part from its economic output, which sustains US technological leadership, its centrality in global political and financial affairs, and its military spending. China is the only nation with the ambition and potential capability to match the United States, which China sees as a “high-complexity” economic competitor with a diverse range of outputs and a high degree of specialization. China itself has progressed impressively in both directions, yet Beijing still views the United States as controlling those key economic sectors that magnify political and military advantages. To achieve Beijing’s developmental goals, its firms must supplant American firms.

A century ago, the “Second Industrial Revolution” was at the vanguard of great power warfare, notably between Britain and Germany. Later, the United States faced a huge but inefficient Soviet Union and a smaller but highly advanced Japan in the information age (the “Third Industrial Revolution”).

Classical components of “comprehensive national power” (like steel production) as measured today would indicate that China has already overtaken the United States. But technological superiority, which the United States still retains, is the *sine qua non* of the modern superpower. For the United States, is China a challenge akin to the Soviet Union or Japan—or a more potent combination of the two?

## ECONOMIC TRENDS

China overtook the United States in 2014 by one measure, PPP-adjusted gross domestic product (GDP), and surpassed it even earlier in trade.<sup>1</sup> China’s economy is remarkable not just for its output (almost \$20 trillion today in PPP terms) but for its savings rates, among the highest ever recorded (48 percent of GDP compared with 18 percent for the United States). Beijing is deploying these savings to urbanize and educate its rapidly aging population. Now producing 7 million university and polytechnic graduates annually, compared to less than 1 million in 2000, China will quickly surpass the United States in the absolute numbers of such workers.

By some measures, Chinese labor productivity is at only 15 percent of US levels. Agriculture still accounts for 40 percent of Chinese employment, the US level in 1890. The services sector accounts for only 43 percent of GDP versus 80 percent today in the United States. Whereas Japan deploys \$300,000 of capital per urban worker and the United States more than \$200,000, China deploys roughly \$40,000, the 1930s US level.

At 46 percent of GDP (versus 17 percent in the United States), China is investing faster, by 12–20 percent of GDP, than it can absorb.<sup>2</sup> The incremental capital output ratio, a measure of investment return, has deteriorated sharply from around 4 towards 6 (closer to the US level of 8). Aggregate debt is rising four times faster than GDP. China is reaching the \$16,000 GDP per-capita threshold where

growth often is endangered: the “middle-income trap.”

In the long run, most economic growth must derive from total factor productivity (TFP), a measure of efficiency growth.<sup>3</sup> American GDP growth has slowed to a 2 percent trend, as TFP gains fade. China should grow faster for a long time simply through capital deepening and catchup. But TFP growth in China has decelerated also. The International Monetary Fund (IMF) estimates that it fell from 4 percent to 2 percent in the last decade, and others think it even went negative.<sup>4</sup> This would imply that malinvestment in some parts of the economy is totally negating productivity gains elsewhere. The IMF models a “Korea 1990s-convergence pattern,” with China growing at 7 percent until 2030. An alternative scenario using 6 percent would still make China the world’s largest economy, at about 40 percent of the per-capita output of the United States. However, both scenarios assume Chinese TFP growth well above recent performance.<sup>5</sup>

## TRADE, FINANCE AND INVESTMENT: DEPENDENCE AND RIVALRY

The China-US trade relationship is the world’s most consequential. China is the world’s largest merchandise exporter, with a 16 percent total share; the United States is virtually China’s mirror image as the top importer, also with 16 percent. These imbalances are reflected in their bilateral account, with the US trade defi-

1 Purchasing power parity (PPP) is an adjustment that controls for different costs of living and price levels across countries and currencies. See <http://www.investopedia.com/updates/purchasing-power-parity-ppp/>.

2 Il Houg Lee, Murtaza Syed and Liu Xueyan, “Is China Over-investing and Does It Matter?” IMF Working Paper WP/12/277, November 2012.

3 YiLi Chien, “What Drives Long-Run Economic Growth?” St. Louis Federal Reserve, June 1, 2015.

4 Harry Wu, “China’s Growth and Productivity Performance Debate Revisited,” Conference Board Economics Program Working Paper #14-10, January 2014.

5 Malhar Nabar and Papa M’B N’Diaye, “Enhancing China’s Medium-Term Growth Prospects: The Path to a High-Income Economy,” IMF Working Paper, October 2013.

cit roughly equal to China's surplus. Two-thirds of the US monthly deficit of \$45 billion today is with China.

That considered, the trade relationship has been surprisingly cordial. US-Japan trade relations, pitted over sensitive items like automobiles and semiconductors, were once quite acrimonious by contrast. But US-China trade relations are becoming testier over a range of sensitive trade concerns, including industrial subsidies and dumping, China's "market economy status" within the WTO, government procurement, and localization rules. Asia faced the prospect of competing but overlapping plurilateral trading blocs—the US-sponsored Trans-Pacific Partnership (TPP) and China's Regional Comprehensive Economic Partnership (RCEP). The incoming US administration looks likely to drop TPP and adopt a more self-interested trade stance, particularly with respect to China. This will be a major challenge considering the complexity and specialization of global supply chains and China's integral role in them.

Historically a recipient of capital flows, China is now becoming a large capital exporter. Beijing wants to manage its national funds more actively and to diversify the nation's exposures. The One Belt One Road (OBOR) initiative is a manifestation of this objective. Meanwhile, foreign companies are becoming less enthusiastic about investing in China just as it "goes out." It remains highly restrictive, especially in services. China's cumulative overseas foreign direct investment (FDI) is about \$700 billion since 2005; this could double by 2020.<sup>6</sup> US overseas FDI today is at

least \$5 trillion.<sup>7</sup> On the other hand, China is the world's most successful FDI destination. Foreigners have invested \$3 trillion in China and Hong Kong, roughly equal to foreign investments in the United States. China's investments face rising political scrutiny, especially in the United States. Considering the massive trade flows, their mutual lack of direct investment is striking.

This paradox deepens considering that Beijing has accumulated well over \$1 trillion in US government debt. In doing so, it has "sterilized" its trade surplus, kept its exchange rate competitive, and become the world's factory. The United States has been a willing accomplice in this enterprise, enjoying cheap imports even while complaining of Chinese mercantilism. This has cemented US centrality in international finance. The US overall net foreign financial position is a net liability at around \$6 trillion.<sup>8</sup> Chinese claims are much smaller, and its net asset position is about \$3 trillion, much of which is in US treasury bonds. Thus the pair has a daunting bilateral financial interdependence. Beijing could punish Washington by selling these holdings, which it occasionally threatens to do, but this would harm both nations. China is uncomfortably reliant on the full faith and credit of the United States. Meanwhile some warn of an eventual "Suez crisis"—American capitulation to its rival creditor state.<sup>9</sup> The United States enjoys its "exorbitant privilege" as a reserve currency issuer only for as long as no other state can supplant it as the global debtor of choice.

China's desire to offset asymmetric US influence in the world commer-

cial system extends to other realms. The two have clashed over accounting, transparency, legal jurisdiction, fraud investigations, banking security, merger and acquisition approvals, anti-trust cases, credit rating agencies, and even management consultants. Beijing is creating new institutions of its own, such as the New Development Bank and the Asian Infrastructure Investment Bank (AIIB)—ostensibly a "multipolar" network complementing the established Washington organizations. A darker view is that "rather than taking responsibility within the existing system, China seems to be creating a rival one."<sup>10</sup> China's OBOR initiative into Eurasia and Africa can be understood as a deliberate continental turn away from the contested western Pacific and towards alternative partners, including Europe. Just as America's worldwide commercial interests grew post-World War II via multinational companies, China could employ its own distinctive strategies to expand. It is already the lead trading partner of more nations (124) than is the United States (76).

The two countries have very different institutional architectures for the ownership and mobilization of capital. China's model of state capitalism is undoubtedly effective at capturing its vast national savings. Whether it can deploy them efficiently is debatable. The Federal Reserve estimates US total net national wealth at \$80 trillion, with the private sector worth \$86 trillion (foreign claims and the government sector deduct from US wealth). The equivalent calculation for China, derived differently, has 2013 net assets at \$55 trillion, i.e., US capital stock per person

6 Jamil Anderlini, "China Foresees Outbound Investment of \$1.25tn in a Decade," *Financial Times*, November 9, 2014.

7 Bureau of Economic Analysis, "US Direct Investment Abroad: Balance of Payments and Direct Investment Position Data," 2015.

8 Data from TIC (US Treasury), Bank for International Settlements, and Financial Accounts of the United States Z.1 statement issued by the Federal Reserve.

9 Arvind Subramaniam, "The Inevitable Superpower," *Foreign Affairs*, October 2011.

10 "The 70-Year Itch," *Economist*, July 3, 2014.

is about five times higher.<sup>11</sup> A survey of household wealth by Credit Suisse puts American personal net worth at \$86 trillion (matching the Federal Reserve's figure) but China's at \$23 trillion, less than half of its national total.

The implication is that in China the state directly owns a majority of national wealth, including all non-urban land and most natural resources. Its state-owned enterprises (SOEs) monopolize key sectors and account for more than half of all industry assets. Crucially, the state dominates finance and thus the allocation of capital. Yet China's SOEs badly underperform the private sector, generating only half their asset returns. SOEs are inefficient investors because they can access cheap funding, and they have piled on leverage accordingly. China has experienced a \$10 trillion jump in corporate credit since 2009. Although its aggregate debt/GDP ratio is comparable to the United States, at about 250 percent, this is high for China's development level, suggesting difficulty in generating returns. More tellingly, \$40 trillion of US national net worth is derived from equity in privately owned businesses. The market equity value of listed US corporations is \$24 trillion, versus \$10 trillion for China.

## THE UNITED STATES, CHINA, AND THE FOURTH INDUSTRIAL REVOLUTION

This financial rivalry sets the stage for the industrial contest between the two nations and the great debate over whether China's interven-

tionist industrial policies can achieve "frontier" productivity levels, and whether its political system can build globally competitive economic institutions. This will determine China's success in reform, innovation, and advanced manufacturing, its top priority. Leadership of the next industrial era—the Fourth Industrial Revolution—is at stake.

The United States has the world's most advanced large economy, meaning it has extracted more TFP gains from its labor and capital. While the United States leads in services, it has ceded a substantial share of global manufacturing exports to China. The Apple iPhone—"designed in California and assembled in China"—is often invoked as an example of this. Most of Apple's activities are services, even if embodied in manufactured products. The services economy is a highly unequal one. Advanced manufacturing (including software code writing) is a higher-paying, mass job creator. Not only is it necessary to address the trade deficit, but "if America cedes leadership in advanced industries, the best innovation, labor, and investment go elsewhere."<sup>12</sup> Presidential economic advisor Gene Sperling noted in 2012 that manufacturing accounts for three-quarters of US research and development (R&D) and 90 percent of patents.<sup>13</sup> The United States spends 2.8 percent of GDP on R&D, high among its OECD peers, but China is already at 2 percent and catching up fast.

At the front line of the industrial competition is the multinational firm. Large American corporations sell as much outside the United States

as they do domestically. Operating complex, disintegrated supply chains worldwide, they live in a more open world than their Chinese counterparts, who "invite more advanced foreign companies into China, learn from them, and then try to replace them."<sup>14</sup>

Chinese bureaucrats will emulate certain aspects of Western models and adapt others. These regulators control the world's largest consumer market and manage outsiders' access skillfully. Whereas US concepts of supply chain connectivity are virtual, Beijing's emphasizes physical transnational infrastructure, such as OBOR. A very few Chinese companies are now truly multinational and more will surely follow, yet because they are subject to the oversight of the Chinese Communist Party, China's private and "mixed ownership" firms might become obstructed by resistance to its SOEs overseas.

China's transformation into a modern, urbanized economy has followed the path of other developmental states, but with unprecedented scale, speed, and intensity. It has a gigantic manufacturing base. Across a range of capital goods, Chinese firms hold a 5–35 percent sustainable cost advantage.<sup>15</sup> Scale and latecomer status explain some of this advantage. Additionally, government support to industry, including direct subsidies and indirect subsidies to capital, energy, land, and technology, make Chinese firms especially competitive.

But as noted, cheap funding has encouraged Chinese firms to invest excessively. The resultant overcapacity, across sectors from cement, steel, base metals, glass, ships, chemi-

11 Li Yang, "National Balance Sheet of China," CASS; data from CLSA. See also "Unveiling the Balance Sheet of the Chinese State," C/JN, July 27, 2015, <http://economy.caijing.com.cn/20150727/3934030.shtml>.

12 Mark Muro, Brookings Institution, quoted in "Not Quite What It Seems," *Economist*, February 26, 2015.

13 "Remarks by Gene Sperling Before the Conference on the Renaissance of American Manufacturing," March 27, 2012, [https://www.whitehouse.gov/sites/default/files/administration-official/sperling\\_-\\_renaissance\\_of\\_american\\_manufacturing\\_-\\_03\\_27\\_12.pdf](https://www.whitehouse.gov/sites/default/files/administration-official/sperling_-_renaissance_of_american_manufacturing_-_03_27_12.pdf).

14 Pankaj Ghemawat and Thomas Hout, "Can China's Companies Conquer the World? The Overlooked Importance of Corporate Power," *Foreign Affairs*, March/April 2016.

15 S&P Capital IQ, Haver and Bernstein analysis, November 2015.

cal fiber, to tires and paper, spills out globally. Utilization rates of some Chinese sectors are below 60 percent, and margins and returns are eroding. Rather than forcing the closure of uncompetitive firms, the emphasis is on bulking up national champions. These big SOEs and their private peers, sometimes seeking new markets for their excess capacity, are venturing overseas. Beijing is a resolute advocate of export financing. More problematic for China's competitors is its broader suite of direct export subsidies, which are applied and withdrawn selectively to encourage upgrading of China's trade from commodity products to higher-value ones.

Beijing has thus declared innovation to be "the primary driving force for development."<sup>16</sup> R&D spending is mandated to be 2.5 percent of GDP by 2020, and by 2030 China might outspend the United States and European Union combined.<sup>17</sup> Beijing appears to target a "key lab" structure with high-level interdisciplinary programs aimed at national economic and security priorities such as pollution, stem cell therapy, and brain science. There is frustration, expressed at the highest levels of government, that innovation remains relatively shallow—only 5 percent of R&D spending is on basic science—and transmission of the state's basic "R" to enterprise-level commercial "D" is less effective than in the United States.<sup>18</sup>

In many respects China is already a direct high-tech peer to the United States. China overtook the United States in manufacturing output in 2011, and it ranks a close second in advanced manufacturing share (27 percent versus 29 percent).<sup>19</sup> In cer-

tain electronics categories like handsets and PCs it has a near monopoly. However, Beijing is dissatisfied. It is often remarked that China's import bill for chips is bigger than for oil (although most chips are re-exported). Chinese companies are only now entering the ranks of the world's twenty largest semiconductor firms by revenue.

This goes to the heart of the institutional contest: Can Chinese companies become as good as American ones? The US-listed corporate sector, the world's most valuable by far, derives 41 percent of profits from advanced techno-industrial sectors; the corresponding Chinese figure is 17 percent.<sup>20</sup> China's leaders have placed advanced manufacturing at the centerpiece of development policy. It is their self-identified road map for surpassing US industrial power. Unveiled in 2015, the Made in China 2025 plan targets innovation, upgrading, import substitution, and global leadership across ten sectors. China's is not the only such program. Comparable vehicles include the National Network for Manufacturing Innovation in the United States and Germany's Industrie 4.0, but Made in China 2025 is perhaps the most ambitious and well-funded.

It is beyond the scope of this brief to assess the achievements to date of Made in China 2025, but it could roughly be described as a glass both "half full and half empty." Looking across the targeted ten sectors, China has already achieved global leadership or dominance in three (railways, shipbuilding, and power equipment) and it is undoubtedly a promising challenger in four others (new IT net-

works, new energy vehicles, automation, and new materials). In each of these sectors it is possible to identify Chinese enterprises that are globally relevant, competitive and enjoy clear policy support. It is harder to make the case that Chinese firms will soon match their US counterparts in aerospace, agricultural science, and life sciences, because those domestic ecosystems are relatively much less developed.

## CONCLUSION

Andrew Erickson, an American analyst of the PLA Navy, observes that "no other great power today enjoys China's ability to dedicate such vast amounts of capital and personnel so dynamically to such a wide range of new programs."<sup>21</sup> The same statement could be made across many Chinese strategic industries. Made in China 2025 represents a credible, systematic, comprehensive plan to displace Western multinationals at home and in overseas markets. Mixed-ownership national champions, aiming to combine state largesse with private initiative, might become more prevalent. Concessional Chinese financing will allow poorer nations to purchase otherwise unaffordable programs such as bullet trains and nuclear reactors. OBOR and AIIB will enhance Beijing's influence. The challenge this presents to the "Washington consensus," while still cautiously framed, is unmistakable.

Returning to the question posed in the introduction, is the United States facing a new version of Japan, or of the USSR? China's growth model is becoming extravagantly inefficient,

16 Kathleen McLaughlin, "Science Is a Major Plank in China's Spending Plan," *Science*, March 7, 2016.

17 "Schrodinger's Panda," *Economist*, June 4, 2016; Hu Angang, State Council DRC.

18 David Cyranowski, "What China's Latest Five-Year Plan Means for Science," *Nature*, March 18, 2016.

19 "Turning Point: Chinese Science in Transition," *Nature*, November 2015.

20 National Science Foundation, "Science and Engineering Indicators 2016."

21 The sectors are: aerospace and defense, autos, biotech, chemicals, communications, electrical, electronic and energy equipment, industrial, Internet, IT, life sciences, machinery, pharmaceuticals, semiconductors, software, and technology hardware.

and debt is rising alarmingly. There is a real risk of “Japanification”—a spiraling accumulation of domestic indebtedness incurred by ceaseless investment stimulus and mounting welfare costs as the population ages rapidly. Thoughtful Chinese understand that the country’s demographic “window of opportunity” is closing at middle income levels. Yet this may merely slow the momentum of China’s power accumulation.

Indeed, the United States bears a greater burden: to manage the nar-

rowing power gap. If China’s success continues, the United States could become marginalized like Japan, its leadership of industries surrendered one after another. Or it could become like Russia, a shrunken, overmilitarized ex-superpower eclipsed by a richer, more dynamic, and innovative one. To a large extent, the outcome will be outside of US control, for China’s main hurdles are mainly domestic in nature. But the same is also true of the United States. Given the commanding lead the United States

already enjoys, its industrial decline is largely a matter of policy choice.

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