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Technological Decoupling: Can US Lose the Pre-Eminence Race to China?

Simon Lacey



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Table of Abbreviations

AT&T	American Telephone & Telegraph
BIS	Bureau of Industry and Security of the United States Department of Commerce
CIFIUS	Committee on Foreign Investment in the United States
DoC	United States Department of Commerce
DJI	Da-Jiang Innovations (a Chinese commercial drone manufacturer)
EU	European Union
FCC	United States Federal Communications Commission
GATT	General Agreement on Tariffs and Trade
ICT	Information and Communications Technology
JCCT	Joint Commission on Commerce and Trade (US-China)
MLP	The National Medium- and Long-Term Plan for the Development of Science and Technology (2006-2020) (China)
OECD	Organization for Economic Cooperation and Development
R&D	Research and Development
SED	Strategic Economic Dialogue
SOEs	State-owned enterprises
US	United States of America
USITC	United States International Trade Commission
USSR	Union of Soviet Socialist Republics
USTR	United States Trade Representative
WTO	World Trade Organization
ZTE	Zhong Xing Telecommunication Equipment (China)

Technological Decoupling: Can US Lose the Pre-Eminence Race to China?

Simon Lacey

1. Abstract

Various efforts by US lawmakers and the executive during the Trump administration to move toward technological decoupling with China betray a deep-rooted and pathological misunderstanding of how the global technology industry works. They also risk backfiring on five counts.

First, it is too little too late. If the United States was serious about policing what it refers to as China's "innovation mercantilism," it should have taken steps in this direction almost 15 years ago when China first got serious about increasing "indigenous innovation." Second, efforts to contain China by cutting off its companies' access to western technologies and markets are bound to be counterproductive. Chinese firms are sure to gain access sooner or later to these technologies and thereby succeed in their global ambitions anyway.

Third, a policy of uncompromising confrontation only strengthens hawkish elements in China and further undercuts China's case to embrace deeper market opening

and structural reforms. Fourth, technological decoupling undermines the US's relative position and its technology companies' ability to maintain pre-eminence across a range of advanced technologies. Fifth and finally, US efforts to contain China for the sole purpose of retaining unchallenged hegemony essentially cedes the moral high ground to the Chinese leadership and undermines the US's position globally as the so-called "city upon a hill."

Instead, the new Biden administration should use the US's still formidable market power and geopolitical influence to both gently coerce and actively incentivize China into shouldering more responsibilities with its newfound economic power. Indeed, the carnage that the Trump administration has wreaked on the US-China relationship and the many trade and investment restrictions imposed on Chinese firms and imports provide a great starting point for the Biden administration to negotiate with China. They should focus on a more balanced and reciprocal relationship of mutual market openness and competitive opportunities for each nation's firms and their respective domestic markets.

2. A brief history of technological decoupling

Technological decoupling formed a substantial plank of the Trump administration's policy of confronting China. It was a new appreciation of China less as a partner or even competitor but a potential adversary.¹ Despite many of its flaws and its very tenuous relationship with economic reality, the policy of technological decoupling seems to have attracted a large and enthusiastic following, including among several countries with close military and geopolitical ties to the United States.

The idea that China, and before it the Soviet Union, should be kept a healthy distance from the crown jewels of US technological developments is nothing new. The whole system of export controls that evolved after World War II was predicated on the perceived need to limit unfriendly nations' access to advanced technologies deployed for civilian and military uses.²

In the world that emerged following the abrupt and unexpected end of the Cold War, US administrations from President George H. W. Bush to Donald Trump have invoked powers under Federal Law to prevent US

1. Any doubts about this were essentially laid to rest by Trump's 2017 *National Security Strategy of the United States*, which names China some 33 times, see White House (2017).

2. See for example Cain (2005).



companies from selling strategically sensitive technologies to Chinese buyers.³

But the scale and scope of efforts to delink the Chinese and US technology sectors have today arguably gone further than anything since the US sought to contain the Soviet Union. It certainly poses more complex challenges given just how integrated and mutually dependent US and Chinese markets and industries have become after more than three decades of concerted economic integration.⁴

Technological decoupling has been taking place across multiple fronts and by way of various legislative and regulatory tools, with a few examples serving to illustrate the different approaches taken. One of the first instances was in early January 2018, when continuing opposition from the Committee on Foreign Investment in the United States (CFIUS) led to Ant Financial (an Alibaba affiliate) withdrawing its application to acquire iconic US payments company MoneyGram International.⁵

In the same month, AT&T, followed shortly by Verizon, announced they would be backing out of their respective agreements with Huawei to sell the Chinese technology company's smartphones due to pressure from the US

3. Jackson (2020).

4. See for example Baldwin (2019).

5. Balbones (2018).



government.⁶ Shortly after this blow, the Federal Communications Commission (FCC) proposed a new rule that would exclude rural broadband providers from accessing Universal Services Fund subsidies to buy equipment from Chinese vendors Huawei and ZTE.⁷

In May 2019, Huawei was placed on the Department of Commerce's (DoC) entity list, meaning that US companies could only sell goods and services to Huawei subject to a special exemption, with a "presumption of denial" accompanying any such applications.⁸ In May 2020, the restrictions imposed on doing business with Huawei were ramped up considerably when the Department of Commerce ruled that Huawei was off-limits for any US intellectual property used in the manufacture of advanced semiconductors. This decision shut the door to Huawei for some of its biggest suppliers of these vital components.⁹

The screws were tightened even further in the final days of the Trump administration. Several US companies that had hitherto been supplying to Huawei under waiver authority from the Bureau of Industry and Security (BIS)

6. See Castillo (2018) and Liao (2018).

7. Welch (2018).

8. See Davis and Wei (2020) at p. 25 ff. for interesting background and context on how this decision came about.

9. See Shepardson, Freifeld and Alper (2020).



were told these waivers would henceforth be canceled, and they would need to stop supplying the company.¹⁰

This was part of a concerted effort to halt the ascension of Huawei to the ranks of the world's most valuable companies. Before it was first placed on the DoC entity list, Huawei was on the cusp of becoming the number one seller of smartphones worldwide. It was already the top vendor globally of 4G communications network equipment – a position it was sure to consolidate in the 5G era, given its recognized technological lead over all rivals at the time.

Other Chinese companies, likewise, global leaders in their respective product categories suffered similar targeted measures by US legislators and executive branch agencies. In 2018, Hytera, Hikvision, and Dahua, all three world-leading companies in surveillance technologies, were singled out in the John S. McCain National Defense Authorization Act, effectively banning their use by federal government agencies and their contractors, a move which became law in 2020.¹¹ In January 2020, the Department of the Interior grounded its entire fleet of drones, almost all of which were made by Shenzhen-based DJI, the world's largest and most technologically-advanced maker of civilian drones.¹²

10. See Freifeld and Alper (2021).

11. Baksh (2020)

12. Chappel (2020).



In early 2020, as the US presidential election season was getting into full swing, Secretary of State Mike Pompeo announced the Clean Networks Initiative, which sought to purge any Chinese hardware or software from the communications networks and online ecosystems of the US and its allies. This effort was intended to span the entire breadth of digital communications functionality from networks, servers, and apps.¹³

Finally, 2020 also saw a series of measures by a Trump administration admittedly fighting for its political life that sought to move essential parts of the US microelectronics supply chain either back to America or at least out of China. The underlying assumption was that anything manufactured in China represents a heightened risk of being compromised.¹⁴

At the time of writing, in the opening days of a new US presidential administration, it remains to be seen whether President Biden will retain elements of this broad-based effort to decouple the US and Chinese technology sectors or choose to let them be forgotten. As the rest of this paper argues, most of these measures should ideally be discarded to the dustbin of history for one or more of the reasons articulated below.

13. Fidler (2020).

14. BBC (2020).

3. Too little - too late

Recent efforts to decouple the US and China technologically are an extension of the Trump administration's tariff war in 2018. It followed a Section 301 report by USTR on China's forced technology transfer practices, IP theft, and industrial espionage. They are conceived as a robust response to a perceived series of injustices, but efforts to induce technological decoupling will be self-defeating, as this paper will lay out. As this section argues, as a policy response to China's technological rise, they are too little too late.

Since the earliest days of Communist rule in China, the need to catch up and surpass (*ganchao* / 赶超)¹⁵ the West's technological leadership has been an embedded feature of Chinese economic development thinking. Even before 1949, scientific and technical modernization figured high on the list of priorities of national revitalization initiatives such as the New Culture Movement (the 1910s) and its successor, the May Fourth Movement (1919). The 1956-67 "Two Weapons, and One Satellite" program, Mao's ultimately disastrous Great Leap Forward (1958-62), and the Four Modernizations originally proposed by Zhou Enlai (1963) and later taken

15. According to Julian Gerwartz, it was actually Soviet Premier Nikita Khrushchev who originally articulated his goal to "catch up and surpass the United States" and that Mao latched on to this idea placing it "at the heart of CCP ambitions"; see Gerwartz (2019).



up by Deng Xiaoping (1977) were all precursors to later initiatives such as the 863 Program (launched under Deng Xiaoping in 1986), and which culminated in the *Longsoon* (originally named *Godson*) series of computer processing units (CPUs), the *Tienhe* supercomputer and the *Shenzhou* spacecraft program.

The Reform and Opening period initiated under Deng (1979) specifically envisaged China's technological backwardness by inviting foreign firms to set up operations in China. It compelled them to enter into joint venture arrangements that would inevitably lead to the transfer of technological know-how to China – something that participating firms knew and accepted as the “price of admission” to the Chinese market.

An important landmark in China's technological ambitions came in 2006 when Premier Wen Jiabao unveiled the “The National Medium- and Long-Term Plan for the Development of Science and Technology (2006-2020),” which came to be known as the MLP or “Indigenous Innovation” policy.¹⁶ As one commentator noted: “The MLP describes itself as the ‘grand blueprint of science and technology development’ to bring about the ‘great renaissance of the Chinese nation.’”¹⁷ It took some

16. Erik Baark has pointed out that the original Chinese term for indigenous innovation (*Zìzhǔ chuàngxīn*/自主创新) “actually implies innovations that are under sovereign control by China, rather than “native innovation,” as suggested by the English translation”; see Baark (2018) at p. 2.

17. McGregor (2010) at p. 4.”



time for Western policymakers to appreciate the impact indigenous innovation policies in China had on their own firms' interests.

By 2010, a limited degree of pushback has begun to take shape, particularly from the United States Trade Representative (USTR), which analyzed and condemned the program in some detail in its 2010 Trade Barriers Estimate Report and its 2010 Annual Report to Congress on China's WTO Compliance.¹⁸ A US International Trade Commission (USITC) investigation the following year found that in some industries, China's indigenous innovation policies appeared to "to have eroded the competitive positions of the US and other foreign firms in China while creating new barriers to foreign direct investment (FDI) and exports."¹⁹ Likewise, in the context of China's 2010 WTO Trade Policy Review, its indigenous innovation policies came in for heavy criticism from both the United States and the European Union.²⁰

In May 2010, in the context of the US-China Strategic Economic Dialogue (SED) and in December 2010, under the auspices of the US-China Joint Commission on Commerce and Trade (JCCT), indigenous innovation

18. USTR had made passing mention of the scheme in previous years' reports but 2010 seems to have been when the shoe finally dropped (so to speak).

19. USITC (2011), at p. xiii.

20. See: Trade Policy Review People's Republic of China Minutes of Meeting 31 May and 2 June 2010 [WT/TPR/M/230] at p. 19 (para. 121) and p. 27 (para. 181).



policies were a significant focus of the discussions²¹ with China committing to eliminating indigenous innovation product catalogs (for government procurement purposes). This practice reportedly continued at the provincial government level. It continued to be a matter of concern to the US and other foreign businesses in China, while remaining a source of friction between China and its largest trading partners.²²

In 2015, China, now under the firm leadership of Xi Jinping, announced another extensive program to catapult the country into the ranks of the most technologically-advanced and innovative nations. The program was named China Manufacturing 2025. Unlike the indigenous innovation policies, which didn't immediately produce a response from Western policymakers, the backlash against China Manufacturing 2025 was sharp and pronounced. In China, the US Chamber of Commerce claimed that it threatened to “leverage the power of the state to alter competitive dynamics in global markets in industries core to economic competitiveness” with the risk of “precipitating market inefficiencies and sparking overcapacity, globally.”²³

The EU expressed its grave misgivings in similar terms.²⁴ Citing a June 2018 report from the White House Office of

21. Morrison (2011) at p. 31.

22. As reported in Baark (2018) at p. 5.

23. US Chamber of Commerce (2017).

24. European Union Chamber of Commerce in China (2017).



Trade and Manufacturing Policy, one commentator observed that “the US criticism of China Manufacturing 2025 provided a launching pad for the US-China trade war in 2018.” The focus was on state-sponsored IP theft, regulatory gambits to force technology transfer from foreign companies, economic coercion through export restraints on critical raw materials, information harvesting, and state-backed, and technology-seeking Chinese investment.”²⁵

As indigenous innovation policies and the subsequent China Manufacturing 2025 scheme were rolled out, the major source of complaints by affected US and European businesses in China was and continues to be the degradation of their market positions in China. This was in addition to the potential for emerging Chinese competitors to challenge them in global markets. Although some foreign businesses recognize that part of their worries stems from the emergence of increasingly savvy domestic competitors, there is also a strong feeling among Western policymakers that the playing field in China and on third-country markets, where Western firms compete against Chinese firms, is becoming increasingly and unfairly tilted in favor of Chinese actors.

This alleged unfairness stems from a variety of market interventions by the Chinese government. One of these is

25. Baark (2018) loc. cit. at p. 9.



favoring domestic suppliers in government procurement contracts. Another such intervention is making investment permits or business licenses for foreign firms in specific sectors contingent on cooperation with a domestic firm and making approval subject to the foreign firm's technology transfer commitments. Failing to prosecute instances of intellectual property theft by Chinese firms has been another alleged intervention. There have also been reports related to state-sanctioned and supported industrial espionage by Chinese hackers targeting Western trade secrets.²⁶ Another alleged unfair intervention by the Chinese authorities is the payment of significant and potentially trade-distorting subsidies to domestic firms and the generous provision of credit finance for domestic exporting firms, thereby allowing them to capture greater market share than would otherwise be the case under more competitively neutral conditions.

Much of the evidence presented by organizations and interests monitoring Chinese industrial and trade policies conclusively point to a systematic approach to China's technological supremacy across advanced manufacturing and other technologies. This should not come as a surprise since Chinese leaders have consistently and very publicly stated this goal for several decades. What is less obvious is whether these measures effectively run afoul of laws or international treaty commitments, as many have alleged.

26. Kadhim Shubber, September 16, 2020, US prosecutors allege widespread China-based hacking plot, <https://www.ft.com/content/21dc6549-3f44-4f61-bb5f-291527832a5c>



This can realistically only be tested in the context of adequate global dispute settlement such as that offered by the World Trade Organization.

For example, China has made no internationally binding commitments in government procurement. Many technology transfer commitments are legal obligations that companies have knowingly and willingly entered into as part of the perceived *quid-pro-quo* for gaining access to the huge and vastly profitable Chinese market. Efforts by Chinese firms (state-owned or otherwise) to acquire companies in the West because of their technologies are not only legal but common corporate practice. In case of a clear legal violation, such as intellectual property theft and industrial espionage, litigation options would be more effective in policing unwanted behavior and less extreme than a call to full-scale technological decoupling.

When evidence of these practices first arose, say after implementing the 2006 MLP, a forceful and concerted response using diplomatic, legal, and economic tools should have been employed. They should have combined inducements and incentives to dissuade China from its more predatory and discriminatory practices. Such an approach would also have reassured China that its firms would not suddenly be cut off from fundamental and essential Western technologies.

Instead, the US, first under the second Bush administration and then the Obama administration, chose the toothless



and ultimately ineffective bilateral high-level political dialogue route. At the time, it proved to be too little. Now that Chinese companies are poised to become leaders across technological fields, and China is an economy with massive resources at its disposal, it is too late to employ economic coercion to deprive China and Chinese firms of these technologies.

The US government, in the USTR's 2017 Report to Congress on China's WTO Compliance, seemed to admit as much when it stated "despite this constant high-level engagement over the years, these dialogues failed to generate anything more than incremental market access improvements or the repeal or modification of problematic Chinese measures that should never have been issued in the first place."²⁷

China is now the world's largest trading nation and its second-largest economy. Several of its companies are industry leaders across important economic and technology sectors. Hence, any leverage the US and the West more broadly have to compel China to behave one way rather than another is so diluted as to be both potentially ineffective as well as self-defeating, since any such moves are more likely to damage the economic interests of Western firms rather than lead to any change in China's behavior.

27. USTR (2017), at p. 3.

Indeed, China's sheer market size means that its companies can compete without relying on access to export markets. Nicolas Lardy, a recognized scholar on the Chinese economy, has pointed out that "China doesn't need to rely on international trade to the extent its east Asian neighbors did. Its domestic market is big enough to gain all the economies of scale through domestic sales."²⁸

The only way to influence China today is to convince it to undertake reforms in its self-interest. To a certain extent, these reforms are already happening. China's leaders recognize the need to open up the domestic market to more competition from foreign firms. They also understand the importance of protecting intellectual property rights since Chinese companies are now starting to become global leaders in developing proprietary intellectual property.

4. A 'solution' that forestalls without preventing the inevitable

Another fundamental weakness inherent to any efforts to decouple China from the West technologically is that it is more than likely to fail, particularly if its main objective is to stymie the technological evolution of Chinese firms. Erecting arbitrary and artificial barriers to technology transfer and disseminating scientific breakthroughs has a

28. Quoted in Hancock (2019).



long and well-documented history of failure, particularly in the face of persistent and determined attempts to obtain and adopt new technologies.

The relatively recent history of nuclear non-proliferation efforts and many decades of futile attempts to stop the diffusion of military technologies from the West to the former Soviet Union are other cases in point. They prove that technology, because it relies on science, innovation, and thus knowledge, is a force that cannot indefinitely be bottled up behind arbitrarily erected borders.²⁹

As discussed earlier, from the earliest days of Chinese Communist rule, Party leaders have reaffirmed their commitment to ensuring China operates at the very forefront of the technological frontier. This demonstrates that China's determination to become a technological superpower cannot reasonably be questioned. Given the country's size, breadth, and depth of its resources, its ability to fulfill this goal are nearly certain. That China and its firms will achieve or even surpass the Western firms' technological sophistication is more a question of "when" and not "if." However, this will likely not be true across all technologies and industries.³⁰

29. Cain (2005); On how China overcome myriad obstacles to obtain an atomic bomb see Feigenbaum (2003).

30. Pilsbury (2014).



The complexity of today's technological innovations means that firms and countries can steal a technical lead over competitors in the short run. Since the knowledge and skills gap between the United States and China is relatively small, such leads typically don't last beyond a few years. Although that may be enough for the innovating firm to recoup the initial investment costs, there is ultimately no stopping the spread of the underlying knowledge inherent to technological advancement. There have been very few exceptions to this trend, the most oft-mentioned being avionics systems. However, industry experts agree that given the resources China is directing at mastering these technologies, it is only a question of time before they market a fully Chinese-made commercial jet airplane.³¹

This has been played out in sector after sector over the last several decades, from wind and solar power to high-speed rail, to consumer electronics. Apple moved the assembly of its high-end smartphones, tablets, and laptops to China. In doing so, it seeded an indigenous ecosystem that was able, over time, to create competing products that eventually went on to dethrone Apple from its position as the global leader by market share.³²

In one of the most contested sectors at the time of writing, semiconductors, US efforts to block access to its technology for a small but significant number of Chinese

31. Zhou (2020).

32. Grimes and Sun (2016).

firms have spurned the inevitable response. The Chinese government has redoubled its efforts to become self-sufficient in this sector, thereby depriving US companies of a lucrative market and ensuring they will have to compete on global markets with Chinese-made products and do so sooner than they had originally anticipated.³³

5. More red meat for the hawks

The confrontational approach taken by the United States toward China during the Trump administration produced a series of responses. This was evident in the case of the tariff war as well as similarly confrontational moves by Congress, in addition to the acts of several regulatory agencies intended to cut off market access for a number of Chinese technology companies. Such an approach gave more reactionary and hawkish forces the upper hand in domestic and foreign policymaking, both within China and the US.³⁴

When it became clear that the Trump administration intended to hobble China's most successful international technology company Huawei, and when these efforts were expanded beyond the United States to other important markets, this confirmed the most alarmist warnings of Chinese hardliners. They realized that the US was on a

33. Hodiak and Harold (2020).

34. Wang (2019).

worldwide campaign to contain China and stifle its technological advancement.³⁵

This realization immediately put American policy in direct conflict with the openly stated goals of the Chinese leadership. It also revived sentiments (harbored over many decades by the Chinese people) of the unjust subjugation of Chinese sovereign interests by Western powers historically as manifested most memorably in the Century of Humiliation (*Bǎinián guóchǐ*/百年国耻).³⁶

In Beijing, reformers and those advocating a more accommodating approach toward Washington were sidelined and castigated for being unpatriotic. Chinese state media began showing re-runs of films dramatizing the Korean war events, which is known in China as “The War to Resist America and Aid Korea.”³⁷

Likewise, in the West, the heightening of tensions between the US and China and the increasingly shrill rhetoric emanating from both sides resulted in the sidelining of more moderate voices. This led to a tangible bifurcation in public debates between those dubbed “China hawks” and “panda huggers,” with the latter term intended to be a slur so that anyone advocating for a

35. Fidler (2020).

36. Harper (2019).

37. Davis and Wei (2020).



nuanced approach to China is simultaneously suspected of being a traitor or a sell-out.³⁸

This very binary approach to US-China relations (“US good/China bad” or vice-versa) favors military solutions instead of diplomatic ones since they paint the other side as an enemy in a way that risks becoming a self-fulfilling prophecy. Nobody wants a war between the US and China, two nuclear powers. Military experts tend to eschew talk of direct armed conflict and instead discuss phenomena such as low-intensity or “grey zone” conflict between China and its Western adversaries.³⁹

Of course, the West has had to recalibrate a few of its preconceived ideas about the outcome of its extensive engagement with China. In the years leading up to and including the Clinton administration, these overtures were expected to lead to a more politically pluralistic and economically open China, ultimately culminating in democracy, human rights, and a market economy.⁴⁰ Although that may still transpire one day, a more prosperous China has also become a more authoritarian one. This statement needs to be taken in relative context since China was arguably much more authoritarian and infinitely more repressive under Generalissimo Chiang

38. Adachi (2020).

39. Morris et al (2019) and Mazarr (2015).

40. Mann (2007).



Kai-shek and Chairman Mao Zedong than today under Xi Jinping. Today, the Chinese people enjoy unprecedented economic freedom and rising living standards that are the developing world's envy.

The more assertive and confrontational approach toward China adopted recently by the United States, and others (Australia, the United Kingdom) has forced China to become more assertive. It has sucked the air out of any debate internally about the need to reform and liberalize the economy even though the Chinese leadership recognizes it. The current environment makes it harder for China's leaders to facilitate Western corporate interests and investors in China or grant any concession to Western demands.

6. Cutting US tech companies off at the knees

Calls for technological decoupling also fly in the face of the realities of the global technology industry. Value chains have emerged over the last three decades that were, until very recently, mostly agnostic as to international borders or lines on a map. The push and pull factors that tended to have the greatest sway over location decisions were things like the abundance, cost and relative skill of labor, proximity to regional markets, tax rates, and fiscal incentives, land prices, and logistics costs. Another factor is an upstream and downstream suppliers' ecosystem that



would allow for network effects and the emergence of clusters in R&D, manufacturing, or both.

Today's innovation dynamic relies on a network of feedback loops between different corporate teams, including design, manufacturing, and sales, with significant sales because they often talk to customers directly. Being acutely aware of your customer's needs and incorporating these needs into the design and manufacture of products is increasingly becoming part of the product development cycle at successful technology companies. There are many examples of this, from Apple developing a dual sim-card phone for its China market to Huawei manufacturing 5G antennas that weigh less than 50kg for its German network customers.

Calls for decoupling risk undermining this process in a way that would stymie innovation and would be damaging for all players. For instance, US technology companies are banking on selling into China, the world's largest consumer market and one of the few remaining engines of growth following the economic devastation wreaked by Covid-19.

As a 2019 Fitch research note articulates, Apple generates 20 percent of its global sales revenues in China and uses China as a hub for assembling the vast majority of its consumer electronics devices. It could be severely impacted by any further deterioration in tensions between



the US and China, making it even more vulnerable than Huawei, which has minimal sales in the US, no manufacturing there (just some R&D), but which otherwise is heavily reliant on US-supplied components.

Also, in artificial intelligence (AI), American heavyweights such as Google ⁴¹ and Amazon ⁴² are staking their future on collaboration with Chinese researchers and centers, given the massive pools of data that have facilitated the rise of Chinese capabilities in this technology. Kai-Fu Lee notes in his seminal work on the rivalry between China and the US in the AI space: “AI algorithms need three things: big data, computing power and the work of strong – but not necessarily elite – AI algorithm engineers.” ⁴³ China is already the biggest player in the global datasphere, which comprises all data captured, created, or replicated online. ⁴⁴

China also leads the world in the sheer number of supercomputers, with Statista noting that “[as] of June 2020, 226 of the world’s 500 most powerful supercomputers were located in China.” ⁴⁵ China is slightly behind the US in terms of the quality and quality

41. Google announced it would open its Google AI China Center in December 2017.

42. Amazon Web Services’ (AWS) opened its Shanghai Artificial Intelligence Lab in mid-2018.

43. Lee (2018), p. 14.

44. Radu (2019), citing data from IDC and Seagate.

45. Alsop (2020).



of AI talent it has at its disposal, but this gap is closing rapidly in light of the government’s 2017 New Generation Artificial Intelligence Development Plan.⁴⁶ Any effort to systematically decouple the Chinese and US technology sectors would inevitably extend to joint or cross-border research initiatives. This would leave US tech companies at a disadvantage to their Chinese counterparts in this core future general-use technology which is at the heart of the data economy, and which could arguably determine technological supremacy in the not-too-distant future.

Another area in which further decoupling could have disastrous consequences is rare earth minerals. These comprise essential inputs for the hardware powering both the digital economy and the green tech revolution. China currently has a virtual monopoly on mining these elements, with the US importing 80 percent of its needs for this product category from China. Although alternative sources have slowly started to be identified and developed, the world’s dependence on China will persist for years to come, if not decades.⁴⁷ This is not simply an issue that affects consumer electronics companies like Apple but goes right to the heart of America’s still overwhelming dominance as a military power. A number of these rare earth minerals are vital inputs “in almost every major weapon system, from fifth-generation fighters to

46. O’Meara (2019).

47. Bhutada (2021).

precision-guided munitions” and thus critical to the US defense-industrial base.⁴⁸

Those who passionately advocate in favor of technological decoupling with China have blinded themselves to the reality that US and Western technology companies need China as much as Chinese ambitions to achieve technological parity with the West rely on access to Western markets and know-how by Chinese firms.

7. Ceding the moral high ground

From the earliest days of European settlement, America has always liked to see itself as a “city on a hill.”⁴⁹ Although the sheen has admittedly come off over the last few decades, following the 2008 global financial crisis and the chaos and dysfunction characterizing Trump’s presidency, Americans and the American political elite arguably remain convinced of their exceptionalism. The belief is still firmly held in America that its own political and economic model serves as a valuable template to be emulated and copied by less advanced and prosperous nations.

America prides itself on its open and free economic system even if it was historically highly protectionist and only

48. Green (2019).

49. See Van Engen (2020) for a discussion on how this phrase emerged and has come to shape America’s understanding of itself as exceptional.



adopted free trade on a very selective basis – and that only after it achieved global economic hegemony after World War II.⁵⁰ America was the chief architect of the post-war international order, championing an institutional architecture that included the United Nations, the International Monetary Fund, the World Bank, and the General Agreement on Tariffs and Trade (GATT). It leveraged its overarching influence in these institutions to promote democracy, human rights, and market capitalism. The United States also took it upon itself to resist what it saw as the tyrannies of imperialism, colonialism, and communism while spearheading the physical, economic, and political reconstruction of Western Europe.

The American market's relative openness to manufactured goods allowed export-driven economic development models to succeed, freeing billions from poverty in Japan, South Korea, Taiwan, Singapore, and more recently, China and Vietnam. And when trade barriers were erected on a contingency basis to block overly competitive import-competing exports from some of these producers, the relative openness of the US market to foreign investment allowed the establishment of wholly foreign-owned

50. Hamilton's economic policies called for high and discriminatory trade barriers that were the bedrock of US trade policy for almost two centuries and even while the US championed the adoption of the General Agreement on Tariffs and Trade is sought and obtained important carve-outs and exemptions from trade liberalization commitments for its agricultural sector; On Hamilton's trade policies, see Chang (2002), on America's selective approach to trade liberalization in the GATT, see Josling, Tangermann and Warley (1996).



companies and factories behind the walls of contingency protection to manufacture and sell to buyers in the United States and abroad.

America has long been able to look back with pride at its overwhelmingly positive contribution to development. It has played a dominant role in the global economic order's functioning and the massive prosperity gains enjoyed by vast swathes of humanity, even if many of the world's people have still not reaped their fair share of these gains.

However, the success with which China has benefited from the openness of the US and other Western markets, as well as its sheer size in terms of geography, population and resources, has led to its rise as a potential rival to the US in terms of economic importance and technological achievement. And this has shaken American confidence to the point where many see constraining China's rise as the US's top geopolitical priority today. This has happened not because China has embraced America's values but rather precisely because it seems to offer a competing version of political and economic governance. A policy of containing China or preventing its rise effectively hands the moral high ground to China, which can then quite rightly claim that it is being wrongfully restrained from achieving and fulfilling its destiny.



Many in American policy and intellectual circles recognize that efforts to contain China or prevent its rise solely to maintain American hegemony are not only self-defeating but quite simply unworthy of the high standards to which America holds itself. Instead, they advocate a policy of rising to the challenge and finding within itself the determination and capability to compete with China.⁵¹ America quite rightly still believes in its strengths and abilities, and knows – after having both split the atom and landed a man on the moon – that there is little – perhaps nothing – the country cannot achieve once it harnesses all of its energies and puts its collective mind to it. America needs to engage and compete with China from its intrinsic position of strength, and it is to this theme that the last section of this paper now turns.

8. An approach that might work

The year 2020 proved a particularly difficult time for US-China relations. Several causes can be attributed to this, the first being the pandemic that first manifested itself at scale in Wuhan and became a global scourge that (because of a confluence of predominantly domestic factors) inflicted the worst losses in the United States. Trump's decision to put aggression against China at the very center of his re-election campaign lay at the heart of a constant ratcheting up of tensions between Washington and

51. Feigenbaum (2020).



Beijing. It even extended past Trump's electorate defeat into an effort – led by Secretary of State Mike Pompeo – to bind the incoming Biden administration into a pattern of continued hostile confrontation with Beijing.⁵²

Instead of choosing to rise above the rhetoric, Beijing waded into the fray, often reciprocating in equal measure against US actions, together with its diplomats abroad and foreign ministry officials at home actively courting controversy by what has come to be branded as wolf-warrior diplomacy.⁵³ It should be clear to most rational observers that the policy of continued confrontation and increasing hostility must end and be replaced with an approach that is more constructive and less disruptive.

Because the United States is still the world's biggest economy, the preeminent military power, and continues to see itself as the embodiment of global leadership, the first step to calm tensions and move toward a sense of normality in bilateral relations must come from the United States. This is not to deny that there are serious disagreements between the two but rather to acknowledge these disagreements and express a willingness to resolve them on terms that may not be ideally desirable to both nations but are at least minimally acceptable to each. Claiming that reaching out to China

52. Alemany (2020) and Lee (2021).

53. Tian and McWilliams (2020) and Sharma (2020).



with anything but a clenched fist, as many in the US have done and continue to do, merely betrays their underlying sense of insecurity. If America aspires to remain a leader, then it can afford to be magnanimous and take the first step towards reconciliation.

One important element of any engagement with China must be to treat it as an equal and to accord it the dignity and respect that it, as a sovereign state, is surely due. The heights China has scaled as a nation both economically and technologically are awe-inspiring and showcases the intelligence, resilience, and hard work of its people, and its leaders' technical competence and steadfastness. Recognizing this does not diminish the United States, but rather shows how, by acting as China's most important trade and investment partner in the years since Reform and Opening, the US has been a key factor and enabler as China pulled itself up by its own bootstraps.

China is now in a position to surpass the United States both on the economic and technology fronts. The nature of this competition is predominantly economic and not military, at least for now. This should be a wake-up call for the US to shake itself out of its complacency and re-examine the key facets that characterized and enabled its historical legacy of success. This way, it can better understand and act on what it needs to do to restore what made it extraordinary but which it has lost or allowed to wither. These would arguably include massive



government-led investment in public infrastructure and basic research,⁵⁴ what was once the largest middle class in history,⁵⁵ democratic institutions not riven by partisan intractability or so thoroughly captured by special interests and the financial influence they wield.⁵⁶ Also, a commitment to broadly accessible and affordable education and skills training both in the education sector and firms themselves is needed to address the de-skilling that has accompanied the hollowing out of American manufacturing, another trend that must be reversed, since making things really matters.⁵⁷

In industrial espionage, the particular grievances that the US has expressed toward China can surely be resolved through mutual agreement backed by strong enforcement mechanisms, i.e., incentives for compliance and disincentives for non-compliance. Other elements of China's economic system that have attracted criticism, such as the preponderance of state-owned enterprises (SOEs), the use of subsidies, and discrimination against foreign companies, can all be addressed either at the WTO in the case of discrimination or market-distorting subsidies or under future trade rules still to be negotiated in the case of SOEs.

54. Mazzucato (2015).

55. Samuel (2013).

56. Lessing (2011)

57. Uschitelle (2017).



The larger point is that for the overwhelming majority of grievances the United States has against China in the economic realm – the most important realm of their strategic rivalry – negotiated outcomes are possible. They could result in agreements that both sides would have an incentive to uphold, provided suitable and workable enforcement mechanisms are crafted.

Because many of the grievances that the US has expressed against China in the economic realm are shared by many of China’s trading partners, and because China is such an important and centrally integrated actor in the global trading system, the best forum for negotiating a mutually acceptable resolution to these grievances is a multilateral one, namely the World Trade Organization.⁵⁸ China’s incentive to engage in these negotiations rests in its desire to avoid aggrieved trading partners teaming up against it in initiatives by so-called “like-minded” coalitions. China also wishes to continue benefitting from the open access and freedom of action its exports and firms have enjoyed on so many markets worldwide, which will also provide an incentive for it to engage constructively in resolving thorny trade issues and their resulting tensions.

Constructive, respectful, but firm engagement with China that seeks to induce rather than coerce is much more

⁵⁸ Mavroidis and Sapir (2021).



likely to bear fruit than the confrontational, hostile, and belittling approach that was the Trump administration's hallmark, with calls for decoupling forming an integral part of this ultimately self-defeating approach.

Instead of threatening to cut off China from access to key technologies and scientific breakthroughs, what is needed is a much more effective strategy to support China in achieving its development goals. Chinese leaders instinctively understand the *quid-pro-quo* language, and it is the one they originally crafted to lure Western companies to China in the earliest days of China's market reforms, namely access to the huge Chinese market in exchange for access to modern technology. Indeed, the fact that this underlying trade-off is still at the heart of tensions between the US and China shows that the more things change, the more they stay the same. China is today too big, too intricately integrated into global markets, and too strong in many areas of advanced technology to simply cut off, even if a limited degree of what Paul Hanson refers to as “de-integration” in a narrow set of core military technologies is both inevitable and even prudent.⁵⁹

The carnage that the Trump administration wreaked on the US-China relationship and the many trade and investment restrictions it imposed on Chinese imports and firms over

59. Paulson (2020) and Goldman (2020).



four years actually provide a great starting point for the Biden administration to start negotiating with China in order to achieve a more balanced and reciprocal relationship of mutual market openness and competitive opportunities for each nation's firms on each country's respective domestic markets.

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