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The Right Way to Protect America's Innovation Advantage
Getting Smart About the Chinese Threat
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As the U.S.-Chinese trade war rages on, a broader conflict is brewing between the two countries over which will secure the upper hand in technological innovation. In a speech at the Hudson Institute earlier this month, U.S. Vice President Mike Pence suggested that Beijing is combining unfair trade practices with aggressive influence campaigns, the systematic theft of foreign intellectual property, and heavy-handed support for domestic industries, all with the aim of developing a long-term technological and strategic advantage. Pence's speech signaled that the [endgame](#) [1] to the Trump administration's China strategy is not a trade deal but rather the decoupling of the U.S. technology sector from its Chinese equivalent in order to preserve the United States' technological edge.

The Trump administration is right to be concerned, but it is preparing for the wrong kind of technological competition with China. Despite loose talk of a new "tech cold war," the United States and China are far more integrated than the administration appreciates. As the two leading tech economies, they make up an innovation ecosystem that requires cooperation when it comes to research, supply chains, talent, and investment in the latest technologies. Any attempt to separate the two technology sectors by force would prove counterproductive at best and devastating at worst. This simultaneously competitive and interdependent relationship warrants a completely different strategy—one that exploits the benefits of collaboration while strengthening the United States' ability to compete.

INVENTING THE FUTURE IN CHINA

The accelerating pace of technological progress is driving Washington's fear. Potentially transformative technologies, such as the next generation of telecommunications networks (known as 5G), artificial intelligence, and quantum computing, are just around the corner. U.S. officials, therefore, see China's efforts to take the technological lead as an existential threat to U.S. national security and economic competitiveness. Chinese companies, such as Huawei, that rose to be global powerhouses by stealing intellectual property and maintaining close relationships with the state are gaining influence. They are helping set international standards for 5G mobile networks, for example. The [recent arrest](#) [2] by the United States of a Chinese intelligence officer for stealing trade secrets from U.S. aviation companies suggests that industrial espionage is still a major risk. For months, the Trump administration has been considering different ways to decouple the U.S. and Chinese tech sectors: restricting visas for Chinese STEM students, banning Chinese telecommunications equipment companies from U.S. 5G networks, expanding export controls on U.S. tech firms, and increasing official scrutiny of Chinese investments and joint U.S.-Chinese research. The White House has reportedly even [considered](#) [3] a complete ban on student visas for Chinese nationals to combat espionage.

That approach might have made sense during the Cold War, but a lot has changed since the last time the United States faced a strategic competition in science and technology. When U.S. President John F. Kennedy announced the space race with the Soviet Union, the line between U.S. and Soviet technological development was as clear as the political border between the two countries. For the most part, scientists and engineers working in public research institutions or private labs funded by the U.S. Department of Defense drove innovation. Today, government scientists have been replaced by international corporations and diffuse global networks of entrepreneurs, researchers, and venture capitalists.

This shift has changed the way states compete in technology. For one thing, commercial breakthroughs spread faster than before. In 2017, for example, the U.S. company Waymo built the first "level 4" autonomous driving program—one level below fully autonomous driving. Less than a year later, the Chinese Internet giant Baidu announced that it was producing an entire level 4 autonomous bus fleet.

Innovation also no longer flows just from the United States to China. Networks of start-ups and venture capital funds are now spread between the two countries. In 2018, Chinese start-ups for the first time raised more venture capital than U.S. start-ups did. Chinese entrepreneurs have put that money to good use: three of the world's five most valuable start-ups are now in China. As the tech writer Clay Shirky argues in *Little Rice*, his account of the meteoric rise of Chinese electronics giant Xiaomi, many of those Chinese start-ups innovate in new, unconventional ways. Xiaomi, for instance, pioneered a model of rapidly iterating products based on customer feedback that has caught on with other consumer electronics companies.

Cooperation between the United States and China is now crucial in a range of areas. Take 5G. Even as the Trump administration considers banning Chinese telecommunications companies from the U.S. network, U.S. and Chinese companies are quietly working together to develop and test the equipment that will make 5G deployment possible. It's unclear if either country could roll out 5G anytime soon without the help of the other. As some experts have [pointed out](#) [4], Trump's tariffs are already slowing down the deployment of 5G in the United States. This phenomenon goes beyond 5G. Nearly every emerging technology that Washington and Beijing consider strategically important relies on cooperation between the United States and China.

In AI, China has already become a powerhouse. Buoyed by an abundance of data from China's 751 million Internet users, Chinese start-ups excel in several areas, including computer vision, speech recognition, and machine translation. In July, few heads turned in Silicon Valley when the U.S. semiconductor company Xilinx bought DeePhi, a Beijing-based start-up that is widely reputed to be one of the best in the embedded neural-network game—the underlying system architecture that powers AI on existing hardware—not just in China but around the world. In Washington, policymakers concerned about Chinese acquisitions of U.S. companies hardly registered the reverse dynamic of a U.S. company acquiring a promising Chinese start-up. But the phenomenon is hardly unusual: Google, Intel, NVIDIA, and other U.S. companies have all acquired or invested in some of China's most promising AI ventures in recent years. Over time, the unique contours of the Chinese web, where digital apps are more seamlessly integrated into offline life, combined with the abundance of Chinese talent, will give China an even bigger lead in these applications of AI. If U.S. companies are to have any chance of keeping up, they will need access to Chinese research, talent, and expertise.

Even in the many areas where U.S. companies continue to lead, they still rely on China. That's because innovation among the top American companies is fueled by access to the Chinese market. To handle that market's vast size, firms have to develop and apply new approaches, which can in turn be applied to other markets. The world's leading semiconductor manufacturers, including Qualcomm, Broadcom, and Intel, make substantial profits in China. They then plow a major portion of those profits back into R & D in order to stay competitive. Limiting the ability of these companies to sell to China also damages their ability to innovate.

The same is true for the companies that supply materials and equipment to semiconductor manufacturers. U.S. giants such as Applied Materials are able to keep innovating by cooperating closely with Chinese companies. "The substantial linkages between cutting-edge U.S. innovation in the ICT [information and communications technology] sector and a [Chinese] trifecta of R & D, the large market generating sustainable revenue, and China-based efficient manufacturing supply chain access are hugely underappreciated in Washington," Paul Triolo, chief of global technology policy at the Eurasia Group, told us.

GETTING SMART ABOUT DEFENSE

None of this is to suggest that Washington shouldn't counter Chinese industrial policies and its theft of intellectual property. A good defense, however, will require precision. The United States will have to identify where barriers are needed without severing the ties that are vital to U.S. competitiveness.

Where the United States is vulnerable, policymakers are right to erect defenses. U.S. President Donald Trump recently signed a law, known as the Foreign Investment Risk Review Modernization Act (FIRRMA), that will allow the interagency Committee on Foreign Investment in the United States (CFIUS) to scrutinize investments by Chinese state-backed funds in fledgling U.S. technology companies. That's a good thing, since such investments could undermine the U.S. advantage in emerging technology. The Chinese government has doubled down on "military-civilian fusion," or the attempt to harness advances in commercial technology for military use: for this reason among others, the U.S. government is right to appropriately screen investments from Chinese companies in promising technologies.

But defensive tools such as CFIUS work only if used as a scalpel; otherwise, they can do more harm than good. Not all Chinese companies and researchers are fronts for the military or intelligence services. Nor are all emerging technologies equally important to U.S. national security. As the finance and tech researcher Martin Chorzempa [writes](#) ^[5], FIRRMA's broad criteria could mean even Netflix, which uses algorithms to recommend movies, would fall under the new definition of advanced technology governed by export controls. Recent Treasury Department regulations governing CFIUS may restrict Chinese investment in "critical technology," which so far has no clear definition.

In practice, vetting all Chinese firms investing in the U.S. technology sector is virtually impossible. Any attempt to do so would have to resort to crude tools, which would be either too restrictive, stifling investment, or too loose, letting bad actors through. So how wide a net should policymakers cast? For starters, they will need to decide which technologies are most important to U.S. national security. And they will need to work out where China is furthest behind and thus is most likely to steal technology to catch up. They will need to disentangle legitimate commercial aspirations as China modernizes from subsidies and forced technology transfers that create distortions in global supply chains. Once they answer those questions, policymakers should adopt what former U.S. Defense Secretary Robert Gates once termed a "[small yard, high fence](#)" ^[6] approach: be selective in choosing technologies that need protecting, but be aggressive in safeguarding them.

When it comes to vetting Chinese investors and research partners, U.S. policymakers will have to accurately spot the characteristics that suggest a Chinese institution is beholden to the Chinese Communist Party. That means looking below the surface. As Matt Sheehan, a fellow at the Paulson Institute's think tank, [writes](#), honorific titles granted by government entities are a "[dime a dozen](#)" ^[7] in China. In order to survive, companies must go through many bureaucratic procedures, such as setting up a CCP office, attending CCP meetings, and joining government associations. But doing those things does not necessarily mean that they are carrying out military R & D or acting at the behest of the Politburo.

U.S. policymakers should focus instead on who owns a company's stock, how the company is governed, and whether it has sizable contracts with the Chinese military or defense industry. Companies that count state-owned enterprises or state-backed venture capital funds among their key investors should set off alarm bells. Similarly, companies with executives close to the state, through either prior employers or personal connections, warrant further scrutiny. Policymakers should also remember that China is not a monolith. They need to assess companies and research institutes within the context of China's bureaucracy in order to understand their interests and motivations. This is not as difficult as it seems. The right kinds of questions, in combination with corporate due diligence and intelligence collection, can distinguish the good actors from the bad. U.S. companies and investors that operate in China make these types of calls all the time; Washington should get used to doing so, too.

In some areas the United States will have to block Chinese technology companies and investors. But a broad decoupling from China is not the right response to Beijing's policies. Fencing off the U.S. technology sector from one-sixth of the world's population will only cede ground to Chinese competitors, drive up costs for U.S. consumers, and reduce the competitiveness of leading U.S. technology

companies, all while isolating the United States from the places where innovation is happening. Luckily, technological competition is not a zero-sum game. Combining the world's talent and information spurs innovation in ways that benefit everyone, from AI systems that can diagnose diseases and discover new drugs to self-driving cars that can save lives on the roads. If the United States adopts a smarter approach to the Chinese technology sector, it will be able to preserve U.S. national security while still working with China where it counts.

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Links

[1] <https://www.theatlantic.com/international/archive/2018/10/trump-china-trade/572122/>

[2] <https://www.justice.gov/opa/pr/chinese-intelligence-officer-charged-economic-espionage-involving-theft-trade-secrets-leading>

[3] <https://www.ft.com/content/fc413158-c5f1-11e8-82bf-ab93d0a9b321>

[4] <https://www.politico.eu/article/5g-telecommunications-infrastructure-china-us-eu-qualcomm-nokia-ericsson-huawei/>

[5] <https://piie.com/blogs/trade-investment-policy-watch/confronting-china-through-cfius-reform-improved-still>

[6] <https://www.bloomberg.com/view/articles/2018-07-03/how-the-u-s-should-defend-its-high-tech-from-china>

[7] <https://macropolo.org/chinese-vc-silicon-valley-threaten-us-tech-advantage/>