



Hearing of the Senate Committee on the Judiciary

Subcommittee on Crime and Terrorism

On “Dangerous Partners: Big Tech and Beijing”

**Limits are Overdue
in the US-China Technology Relationship**

Derek Scissors
Resident Scholar, American Enterprise Institute

March 4, 2020

China is slowly stagnating economically, due to aging and debt. For those who disagree, it is still true that China will remain partly reliant on foreign technology. Beijing is committed to state monopolies in strategic sectors, thus suppressing competition and innovation. China also needs foreign capital and has opened its financial sector to some extent as a draw.¹

The basic choice for the US is weighing money earned by American technology companies against the harms of supporting the Chinese Communist Party. The US should enforce the rule of law, implement the export control guidelines already passed by Congress, and couple any technology restrictions with capital restrictions. The first step in effective action is documenting the multiple dimensions of the US-China technology relationship.

Technology Relationship Facts

To protect American technology wisely, policy-makers need to understand the nature of the US-China technology relationship. Person to person exchanges are an important element and some American scientists misrepresent their ties to China,² muddying that picture. A complementary gap: there does not appear to be unclassified information on numbers of Chinese nationals working here specifically on technology projects. Those numbers, broken down by sectors and over time, are necessary to ascertain Chinese priorities and US vulnerability.

Services trade can partially represent person to person exchanges. The second-largest component of US services export to China, after travel, is use of American intellectual property (IP), which rose 12 percent to \$8.5 billion in 2018 for the mainland plus a 50-percent jump for Hong Kong to \$4.7 billion.³ Very little of this was exports to foreign affiliates of US parents – it's all going to locals. But the numbers include IP with no advanced technology. Information services exports in particular were less than \$1 billion to the mainland and smaller for Hong Kong.

Goods exports are more precisely defined. American semiconductor and related equipment exports to China climbed 22 percent to a record \$9.8 billion in 2019,⁴ despite a 12-percent decline in total exports to China. Chip exports to Hong Kong fell 11 percent but added another \$4.7 billion. The combined total is also a record. In the past, rising American semiconductor exports were simply part of rising overall exports, but last year chips stood out.

American direct investment in China can also carry with it advanced technology. Through the first three quarters of 2019, direct investment in mainland China fell 15 percent from the first three quarters of 2018, to \$4.6 billion.⁵ Direct investment in Hong Kong fell 37 percent to \$3.9 billion. At the end of 2018, cumulative American investment in computers and electronic

¹ KPMG, "Accelerated Opening Up of China's Financial Sector," July 2019,

<https://assets.kpmg/content/dam/kpmg/cn/pdf/en/2019/07/accelerated-opening-up-of-china-s-financial-sector.pdf>.

² Ellen Barry and Gina Kolata, "China's Lavish Funds Lured U.S. Scientists. What Did It Get in Return?," *The New York Times*, February 6, 2020, <https://www.nytimes.com/2020/02/06/us/chinas-lavish-funds-lured-us-scientists-what-did-it-get-in-return.html>.

³ US Department of Commerce Bureau of Economic Analysis, "U.S. International Services Tables," October 15, 2019, <https://apps.bea.gov/scb/2019/10-october/pdf/1019-international-services-tables.pdf>.

⁴ International Trade Administration, "TradeStats Express," <http://tse.export.gov/tse/TSEHome.aspx>.

⁵ US Department of Commerce Bureau of Economic Analysis, "U.S. Direct Investment Abroad: Balance of Payments and Direct Investment Position Data," December 19, 2019, <https://www.bea.gov/international/di/usdbal>.

products in China stood at \$10.7 billion and had outpaced overall spending. Investment in Hong Kong computers and electronic products was steady at \$2.5 billion at the end of 2018.

American portfolio (securities) investment can help fund Chinese technology programs. In November 2019, the cumulative position stood at \$209 billion, 95 percent in corporate stocks.⁶ This was a 20-percent increase over the position in November 2018. The figures for Hong Kong are a 5-percent gain to \$171 billion, almost all stocks.

Chinese portfolio investment in the US can be an attempt to acquire technology indirectly, by becoming financially influential in targeted American firms. That spending stood at \$1.54 trillion at the end of June 2019, down 4 percent from June 2018.⁷ The large majority, though, was held in Treasury bonds. Holdings of American equities were \$190 billion, down 12 percent.

Chinese direct investment can also be an effort to acquire technology. The Bureau of Economic Analysis (BEA) reports combined Chinese and Hong Kong direct investment at \$2.7 billion in the first three quarters of 2019, 50 percent more than the same period of 2018.⁸ BEA claims net investment in computer and electronic products was negligible through 2018. The American Enterprise Institute's China Global Investment Tracker is not limited to advanced technology and has the stock of technology investment at better than \$20 billion through 2019. However, there has been very little fresh investment since 2016 and even some of that is being rolled back.⁹

A last category is less conventional than trade and investment but vital in US-China relations: earnings of US affiliates in China. Data are only complete through 2017, prior to the bilateral trade conflict. American majority-owned affiliates in China reported sales of \$376 billion in 2017, \$86 billion of this in computers and electronic products.¹⁰ Minority-owned affiliates had almost no sales in computers and electronic products. Majority-owned affiliates in computers and electronic products reported \$3.6 billion in 2017 capital expenditure in China.

China's Motives

US technology firms' willingness to comply with even abusive Chinese policies may be best explained just by those 2017 sales in striking distance of \$100 billion. And it can be much starker for individual firms. Lists of companies most dependent on the Chinese market are dominated by

⁶ US Department of the Treasury, "Foreign Long-Term Securities Held by U.S. Residents in November 2019," <https://ticdata.treasury.gov/Publish/slt1f.txt>.

⁷ US Department of the Treasury, "Foreign Portfolio Holdings of U.S. Securities as of June 30, 2019," <https://ticdata.treasury.gov/Publish/shlptab1.html>.

⁸ US Department of Commerce Bureau of Economic Analysis, "Foreign Direct Investment in the U.S.: Balance of Payments and Direct Investment Position Data," December 19, 2019, <https://www.bea.gov/international/difdibal>.

⁹ Derek Scissors, "China Global Investment Tracker," American Enterprise Institute, January 2020, <https://www.aei.org/china-global-investment-tracker/> and Bloomberg News, "China Takes Charge of HNA, Paving Way for Faster Asset Sales," Bloomberg, March 1, 2020, <https://www.bloomberg.com/news/articles/2020-03-01/china-takes-charge-of-hna-paving-way-for-hastened-asset-sales>.

¹⁰ US Department of Commerce Bureau of Economic Analysis, "Activities of U.S. Affiliates of Foreign Multinational Enterprises (MNEs)," November 15, 2019, <https://www.bea.gov/data/intl-trade-investment/activities-us-affiliates-foreign-mnes>.

technology, featuring Qualcomm, Micron, Texas Instruments, Advanced Micro Devices and

Technology Relationship Snapshot

Indicator	Main result	Year
Royalties for US IP in China	+12% to \$8.5 billion	2018
US semiconductor and related exports to China	+22% to \$9.8 billion	2019
US investment in computers and electronics in China	\$10.7 billion (cumulative)	Thru 2018
US holdings of Chinese securities	+20 % to \$209 billion	Thru November 2019
Chinese holdings of US stocks	-12% to \$190 billion	Thru June 2019
Chinese direct investment in US technology, all types	\$21.8 billion (cumulative)	Thru 2019
US majority affiliate sales of electronics products in China	\$86 billion	2017

Sources: see footnotes 3-10.

others receiving 30 percent or more of annual revenue from China in one form or another. The forecast is for more: while Beijing massages all its economic statistics, technology consistently outperforms other sectors. One tailored measurement says technology revenue exceeded \$1 trillion in 2019, growing far faster than official GDP.¹¹

In contrast, the motivation for China to engage American firms is multi-dimensional. Acquiring advanced technology is obvious but understates the situation. The Chinese economy is slowing, it has run up enormous debt, and its population is aging. In 2010, official GDP growth was said to be 10.6 percent, in 2019 it was 6.1 percent and most likely slower. While many observers cannot imagine Chinese GDP growth below 2 percent within a decade, that is a simple trend.

It's also a sophisticated trend. The World Bank says gross fixed capital formation – investment that actually contributes to GDP – stood at \$5.7 trillion in 2018. Yet China reported its benchmark measure of investment at \$9.4 trillion.¹² Not all of that difference is outright wasted,

¹¹ Yun Li, “Wall Street Thinks These Stocks are Most Vulnerable in a Full-Blown Trade War,” CNBC, May 6, 2019, <https://www.cnbc.com/2019/05/06/here-are-the-companies-wall-street-is-worried-most-about-if-a-full-blown-trade-war-breaks-out.html> and Xinhua, “China's Software, IT Service Sector Expands Robustly in 2019,” February 10, 2020, http://www.xinhuanet.com/english/2020-02/10/c_138769569.htm.

¹² The World Bank, “Gross Fixed Capital Formation (% of GDP) – China,” <https://data.worldbank.org/indicator/NE.GDI.FTOT.ZS?locations=CN> and Xinhua, “China's FAI Maintains Stable

but a fair chunk is. This is confirmed by the Bank of International Settlements, which has outstanding credit as a share of GDP rising more than 100 percentage points from the start of the global financial crisis to the third quarter of 2019. The equivalent American rise is 20 points (despite a recent surge in the US federal deficit).¹³ China is borrowing more, to grow slower.

Its demographics are also deteriorating. Median age is estimated at over 38 for 2020, headed to 47 by 2045.¹⁴ The latter is approximately Japan's median now. US median age is very similar to China's today but will be a full five years younger in 2045. The Communist Party is well aware of debt and aging and frequently cites innovation as the key to avoid stagnation. But the Party is intolerant of competition, reserving perhaps two dozen sectors to state monopoly. Firms which do not have to compete have much less reason to innovate and in fact state-owned enterprises are less innovative.¹⁵ In those sectors, China will continue to rely on foreign technology.

This reliance is not Beijing's only motive, though. Much attention has been paid to China's edge in "big data" – population size is said to bolster firms who can gather information on consumer behavior. While this is true with regard to competition within China, distortions in the home market make Chinese data considerably less valuable to competition overseas. This is one motive for firms such as Alibaba to gather foreign data through the Belt and Road and an additional motive for China to solicit American firms that hold large quantities of consumer data.

A third motive is financial. American technology firms make money in China, and China makes money from American firms' technology. It's difficult to measure all the ways in which foreign technology is lucrative but China's \$1-trillion home market is suggestive. Especially valuable is foreign exchange, which funds the Belt and Road and possible acquisitions of more foreign technology. In some years, the single biggest contributor to Beijing's foreign reserves has been telecom equipment exports to the US, which passed \$80 billion annually before falling back in 2019.¹⁶ The Party's ideal is to use the proceeds to fund China's own technology development.

Policy responses

The US government should act only rarely when the aim is profitability – that is a matter for the private sector. Many complaints by American technology companies about China concern barriers to profitability and it is not a core government responsibility to help already prospering firms do still better. Government intervention in this case is primarily about when to sacrifice

Growth in 2018," January 21, 2019, http://www.xinhuanet.com/english/2019-01/21/c_137762281.htm.

¹³ Bank for International Settlements, "Credit to the Non-Financial Sector," March 1, 2020, <https://www.bis.org/statistics/totcredit.htm>.

¹⁴ United Nations Population Division, "World Population Prospects 2019," <https://population.un.org/wpp/DataQuery/>.

¹⁵ Derek Scissors, "Making the New Normal Meaningful," American Enterprise Institute, March 2015, <https://www.aei.org/wp-content/uploads/2015/02/Making-the-new-normal-meaningful.pdf> and Caleb Foote, "Fact of the Week: Former Chinese State-Owned Enterprises Produce More Patents than Current SOEs but Still Lag Private Firms," Innovation Files, January 28, 2019, <https://itif.org/publications/2019/01/28/fact-week-former-chinese-state-owned-enterprises-produce-more-patents>.

¹⁶ Kaixi Huang, Hongyuan Wu, and Han Wei, "In Depth: ChemChina Wins Syngenta — Now Comes the Hard Part," *Caixin*, June 30, 2017, <https://www.caixinglobal.com/2017-06-30/chemchina-wins-syngenta-now-comes-the-hard-part-101108059.html> and International Trade Administration, "TradeStats Express," <http://tse.export.gov/tse/TSEHome.aspx>, *op. cit.*

profitability for the sake of broader national interests, There are multiple issues that require setting aside some private sector goals.

1) The rule of law is often skipped over or assumed, but should not be when China is involved. Huawei is now under federal indictment for both racketeering and theft of trade secrets, yet the administration continues to hand out temporary general licenses for the sake of American firms gaining from Huawei business. Chinese firms have for years ignored disclosure requirements for listing on US stock exchanges, yet calls for delisting are resisted on the basis of wildly exaggerating the cost.¹⁷ If our existing laws and regulations are not enforced properly, creating new policies is mere posturing.

2) The Department of Commerce's Entity List effectively encourages offshoring by restricting only US-based exports. Commerce's proposed (in December) implementation of a May 2019 executive order on supply chain security is vague¹⁸ and could be altered at any time, both of these features increasing uncertainty for little reason evident to date. Congress passed new export control guidelines in summer 2018 on a bipartisan basis. In the 20 months since, draft regulations have been issued for one technology. The most important step in changing the US-China technology relationship is implementing Congressionally-mandated changes to export controls.

3) While capital flows are not typically seen as vital for national security, capital is a partial substitute for technology. Whatever the level of technological restriction – from minimal to sweeping -- capital restriction must reinforce it. It would be self-defeating for the US to block transfer of a technology yet permit unrestricted investment in China's efforts to develop it locally. Because China can raise money from other rich countries, the US must pressure friends and allies not to provide capital to firms or programs chasing restricted technology. This will require a clear and consistent American rationale, and possibly a clear and consistent threat.¹⁹

4) The Committee on Foreign Investment in the United States (CFIUS) has been the first line of defense for advanced technology. However, the low volume of recent Chinese investment means CFIUS should focus at present on identifying patterns in small transactions. Mitigation may not be required but these cases help identify China's tactics and priorities, improving policy-making.

¹⁷ US Department of Justice Office of Public Affairs, "Chinese Telecommunications Conglomerate Huawei and Subsidiaries Charged in Racketeering Conspiracy and Conspiracy to Steal Trade Secrets," February 13, 2020, <https://www.justice.gov/opa/pr/chinese-telecommunications-conglomerate-huawei-and-subsidiaries-charged-racketeering> and Jay Clayton et. al., "Statement on Continued Dialogue with Audit Firm Representatives on Audit Quality in China and Other Emerging Markets; Coronavirus — Reporting Considerations and Potential Relief," US Security and Exchange Commission, February 19, 2020, <https://www.sec.gov/news/public-statement/statement-audit-quality-china-2020-02-19>. It should be noted that the cost to US investors of delisting a firm is a very small fraction of its market capitalization.

¹⁸ "Securing the Information and Communications Technology and Services Supply Chain," *Federal Register*, November 27, 2019, <https://www.federalregister.gov/documents/2019/11/27/2019-25554/securing-the-information-and-communications-technology-and-services-supply-chain>

¹⁹ Derek Scissors, "China's Quest for Capital: Motivations, Methods, and Implications," testimony before the US China Economic and Security Review Commission, January 23, 2020, <https://www.uscc.gov/sites/default/files/Panel%20III%20Scissors%20Written%20Testimony.pdf> and Derek Scissors, "In Need of Direction: The Case for Moving Supply Chains out of China," *War on the Rocks*, November 18, 2019, <https://warontherocks.com/2019/11/in-need-of-direction-the-case-for-moving-supply-chains-out-of-china/>.

A particular recommendation: approval of initial investment should not create presumption of approval for additional investment, to guard against the tactic of a first, innocent foot in the door.

In any action along these lines, the US should deemphasize individual Chinese companies. For the economic reasons outlined above, as well as socio-political reasons, the Communist Party works hard to dictate technology development. The goal is to benefit Chinese technology firms only as part of benefiting the Party. It's the Party that orders large-scale programs and subsidies at home and acquisitions and theft overseas. It's the Party that coerces. The US should not focus on a few Chinese enterprises but instead think in terms of whole supply chains and industries.