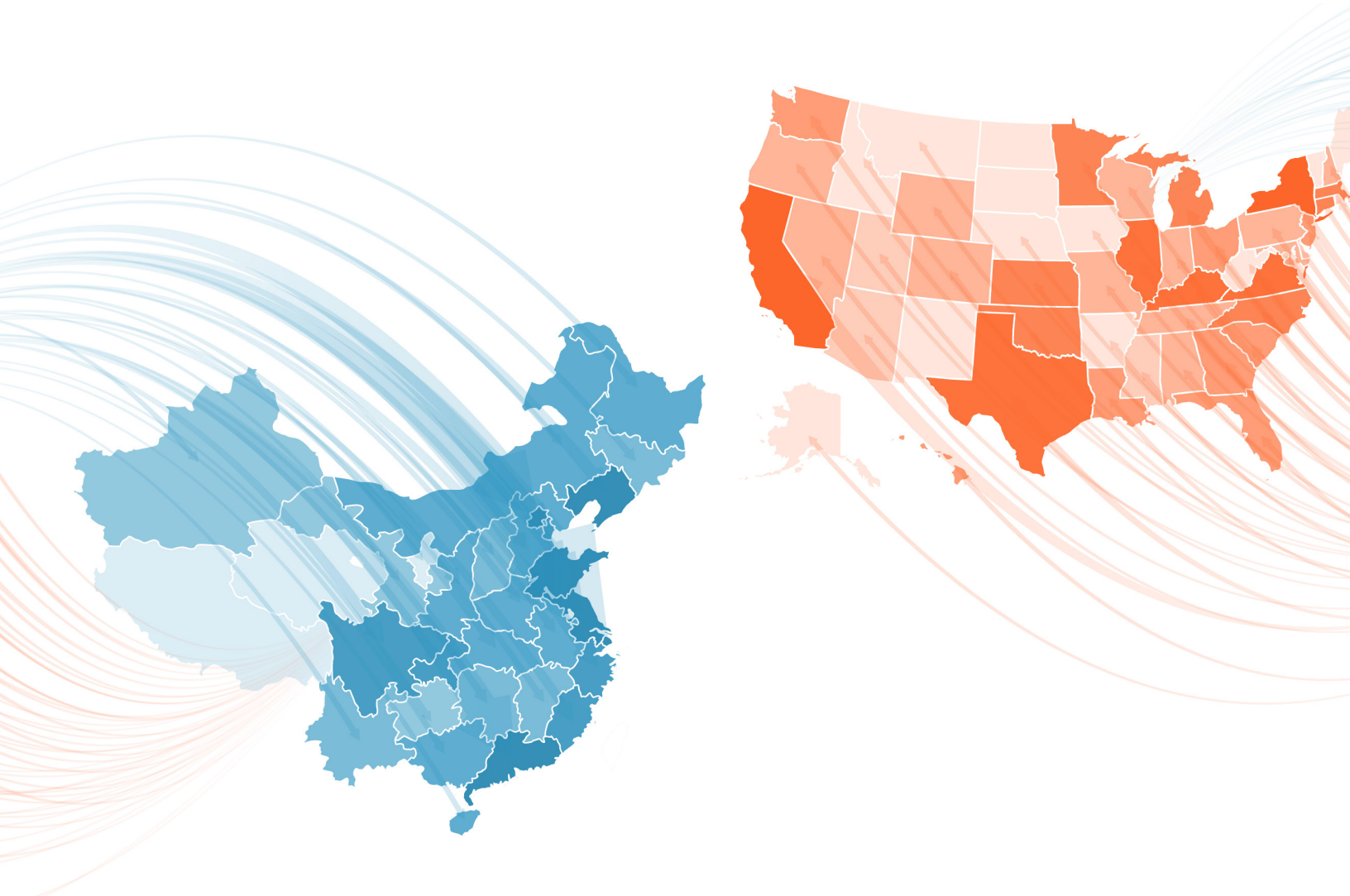


Two-Way Street: 2019 Update

US-China Investment Trends

Thilo Hanemann, Daniel H. Rosen, Cassie Gao and Adam Lysenko



With a Foreword by Stephen A. Orlins

A Report by the US-China Investment Project



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More background on the US-China Investment Project and interactive visuals are available at:
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ABOUT THIS REPORT

This report represents the 2019 issue of the annual update of the US-China Investment Project, a multi-year research initiative to provide greater transparency on investment flows between China and the United States.

ABOUT THE AUTHORS

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ABOUT THE US-CHINA INVESTMENT PROJECT

The US-China Investment Project is a multi-year research initiative to provide greater transparency on investment flows between China and the United States.

LEAD ORGANIZATIONS

Rhodium Group

Rhodium Group (RHG) is an independent research firm dedicated to using policy experience, quantitative tools and on-the-ground research to analyze disruptive global trends. Our work supports leadership and other professionals in the financial, corporate, non-profit and government sectors. RHG analysis is used in commercial and investment management, strategic planning and policy analysis. Rhodium Group is headquartered in New York City, with offices in California, Hong Kong, and Paris. RHG's cross-border investment practice analyzes the rise of China and other emerging markets as trans-national investors. RHG senior staff publish frequently on the growth and impact of Chinese outbound investment in the United States, Europe, and other economies.



National Committee on US-China Relations

The National Committee on United States-China Relations is an American nonprofit, nonpartisan educational organization that encourages understanding and cooperation between the United States and Greater China in the belief that constructive Sino-American relations serve the interests of both countries and the global community. Since 1966, the National Committee has conducted programs on politics and security, governance and civil society, economics and finance, education, and trans-national issues such as energy and environment. It carries out its mission via conferences and forums, public education programs, professional exchanges, and collaborative projects. The National Committee's membership of more than 800 Americans and 100 corporations and professional firms represent many viewpoints, but share the belief that productive US-China relations require public education, face-to-face contact, and the forthright exchange of ideas



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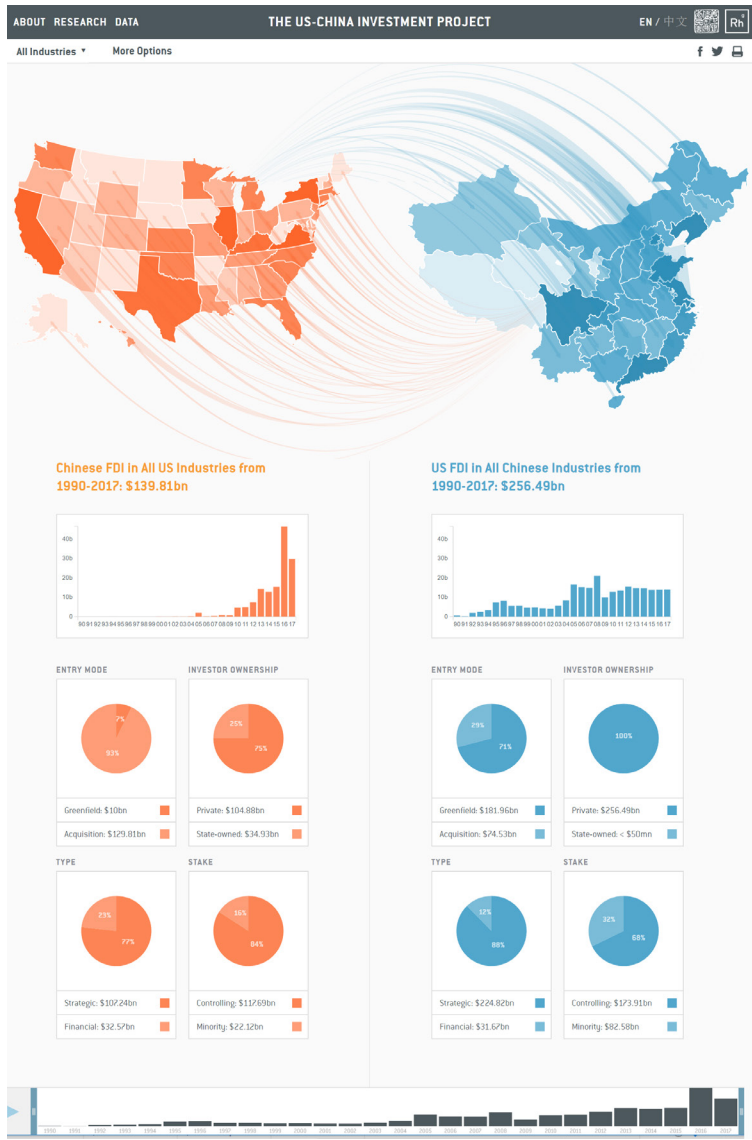
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An interactive web application with updated data through the end of 2018 is available at: www.us-china-investment.org

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FOREWORD

At a time of heightened tensions between our two nations, the National Committee on U.S.-China Relations is pleased to again partner with Rhodium Group to produce the fourth annual Two-Way Street report. By quantifying the investment from the US into China and vice versa, we believe this report can help policymakers in both countries gain vital insights and better assess national policies in a clear-eyed manner.

Investment done right creates enormous benefits: It creates jobs in local communities, increases choice for consumers, and creates productive business relationships that strengthen people-to-people connections. It lays the basis for greater communication and understanding between the citizens of our two nations. When our countries adds regulations that unnecessarily impede investment, however, these positive forces are diminished significantly, even reversed.

In 2018, the data reveals that U.S. investment in China held relatively stable, declining only slightly. Going forward, it will be the implementing regulations of China's new foreign investment law that will largely determine the extent to which US businesses increase their investment or firms not previously in China come to invest. Recent Chinese government approvals of US investments in the financial services sector suggest the "opening" in "reform and opening" may be poised to take off.

When it comes to Chinese FDI in the US, China's capital controls coupled with a less welcoming environment in the US for Chinese investment, resulted in a precipitous drop; when major divestitures are taken into account, there was a net decrease in the total stock of Chinese investment in the United States. As we look ahead, we recognize the need to redraw the lines around what is and is not allowable investment, as the government identifies legitimate national security concerns. Even with these additional restrictions, however, there remains tremendous opportunity in untapped areas for investment growth. We offer this report to those engaged in the policy debate to make sure that the resulting system will not turn away sound investment, or add unnecessary impediments to national prosperity.

It should be noted that portfolio investment provides a new bright spot in the two-way investment relationship; the high volume of flows in 2018 sends a clear signal that the commercial appetite for cross-border investment between our countries remains strong. This report looks at one aspect, venture capital flows, a topic the US-China Investment Project will return to in the months ahead.

As president of the National Committee on U.S.-China Relations, I am delighted to collaborate with Rhodium Group on a project designed to lead to more enlightened policies. When properly managed, the bilateral investment relationship is truly mutually beneficial, providing needed ballast to the Sino-American relationship in both good and challenging times.

I hope that you find this year's Two-Way Street both informative and thought-provoking.

Stephen A. Orlins

President, National Committee on U.S.-China Relations

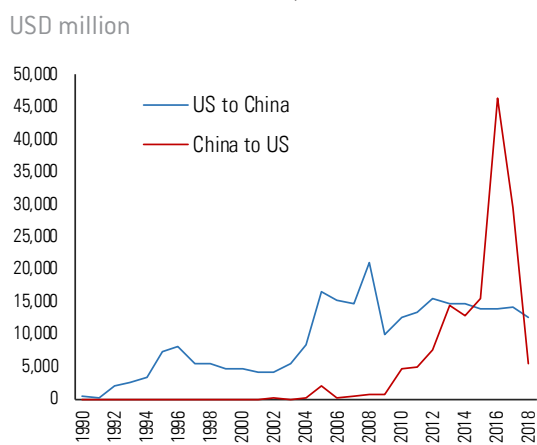
EXECUTIVE SUMMARY

The US-China Investment Project clarifies trends and patterns in two-way investment flows between the world's two largest economies. This report updates the picture with full year 2018 data and describes the outlook as we move through 2019. The key findings are:

(1) Two-way foreign direct investment (FDI) flows dropped nearly 60% year-over-year in 2018.

- \$18 billion of completed two-way FDI between China and the United States (US) in 2018 represented a 60% decline compared to 2017 and a 70% decline compared to the record \$60 billion seen in 2016
- The bulk of this drop was attributable to over 80% decline in Chinese FDI in the US to just \$5 billion from \$29 billion in 2017 and \$46 billion in 2016. Accounting for asset divestitures, net 2018 Chinese FDI in the US was -\$8 billion. Meanwhile, American FDI in China dropped only slightly to \$13 billion in 2018 from \$14 billion in 2017.
- The FDI balance shifted back towards US investors in 2018. After briefly being surpassed by their Chinese counterparts in 2016 and 2017, US firms once again invested more in China last

Figure ES-1: Annual Value of FDI Transactions between the US and China, 1990-2018*



Source: Rhodium Group. *See Appendix for data description.

year than Chinese firms did in the US. Cumulative US FDI in China (at historical cost) still exceeds cumulative Chinese FDI in the US by a factor of two (\$269 billion vs. \$145 billion). Accounting for asset divestitures, exchange rate changes and asset appreciation would further widen this gap.

2) Regulatory interventions and the deteriorating political relationship were the main culprits behind the sharp decline in two-way FDI.

- Beijing's outbound direct investment controls and its crackdown on highly leveraged private investors continued to weigh on Chinese FDI in the US. A deliberate tightening of liquidity in China's financial system further exacerbated headwinds, forcing firms to clean up their balance sheets instead of investing abroad.
- Chinese investors also encountered stepped-up investment screening by the Committee on Foreign Investment in the United States (CFIUS) and uncertainty over the broader US-China political relationship. We estimate that Chinese investors abandoned deals worth more than \$2.5 billion in the US in 2018 due to unresolved CFIUS concerns.
- Growing US government concerns about technology leakage also weighed on US direct investment to China, especially in the technology space. And while there are signs that US investors intend to take advantage of widening Chinese market access (for example in autos and financial services), these policies came too late to meaningfully boost 2018 numbers.

(3) Shifting regulatory attitudes and political realities are transforming the industry and investor mixes for two-way FDI.

- Chinese outbound FDI decreased dramatically in some sectors like real estate and hospitality that were blacklisted by Beijing and even

turned negative accounting for divestitures. Meanwhile, stepped-up US national security reviews weighed on activity in other sectors including information and communications technology (ICT) and infrastructure. Less impacted by these policy pressures, health and biotech became the top sector for Chinese FDI in the US in 2018.

- China's domestic crackdown on leveraged outbound investors has dramatically changed the landscape of activity in the US. Several companies that led the Chinese FDI boom in the US since 2014 – including HNA, Anbang and Wanda – have not just stopped new investments but were forced to divest most of their previously acquired assets.
- The chilling impact of politics on US FDI in China was mostly visible in the ICT space where new investment declined significantly last year. In contrast, US investment in China saw growth in consumer-related sectors such as food and entertainment. Real estate assets (which are less security sensitive and more attractive to financial investors) also drew growing US investor interest. Looking forward, we expect strong growth in sectors with lowered equity ownership restrictions including automotive and financial services.

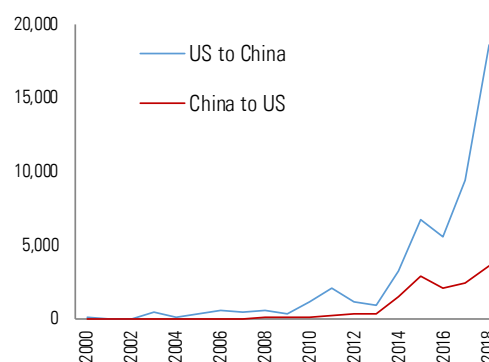
(4) Non-FDI investment flows such as venture capital (VC) have become increasingly important drivers of US-China capital flows and were more resilient than FDI in 2018.

- Direct investment flows have historically dominated US-China deal making but other flows have become increasingly important in recent years. Venture capital investment in technology and other start-up companies is one such conduit. At an estimated \$22 billion, two-way VC flows surpassed bilateral FDI for the first time in 2018.

- US venture investment in China has a long track record dating back more than two decades. In 2018, US-owned venture companies invested a record \$19 billion in Chinese start-up companies - roughly double the previous record of \$9.4 billion in 2017 and five times flows in the other direction.
- Barely existent five years ago, Chinese VC investment in the US has soared since 2014 and continued to flourish in 2018, even while FDI investment slowed sharply. Chinese-owned VC funds participated in more than 270 unique US funding rounds in 2018, contributing an estimated \$3.6 billion. Chinese venture investment in the US has drawn considerable attention, but it plays a much smaller role in the US venture capital ecosystem than US venture capital investment plays in China's.

Figure ES-2: Annual Pro-Rata Value of Venture Capital Transactions between the US and China, 1990-2018*

USD million



Source: Rhodium Group based on Bloomberg, Pitchbook and other databases. *Pro-rata value determined as US proportional share of each funding round's value based on the number of participating investors. 2018 data are preliminary only. See Appendix for data description..

(5) Venture capital patterns show that investors have strong appetite to gain exposure to sectors that are restricted or scrutinized for direct investment

- Chinese VC in the US remained virtually untouched by investment screeners before November 2018. This allowed investment activity to continue in semiconductors and other areas that recorded sharp drops in direct investment in recent years due to stepped-up investment security reviews.
- In China, American investors continued to utilize minority VC investments in 2018 to gain exposure to sectors that are off limits to full blown foreign takeovers or have powerful informal market entry barriers, for example digital payments, internet startups and other digital content.

[6] The political outlook remains fragile, and new policies could further depress commercial appetite for greater FDI and portfolio flows.

- Recent Chinese policy steps including the revised Foreign Investment Law and a narrower FDI negative list are positive for foreign investors, but implementation remains uncertain, and these steps do not represent a grand solution to the outstanding investment frictions and fairness concerns. China is also facing macro-economic pressures that make it unlikely Beijing will loosen outbound capital controls anytime soon. These controls also remain a major hurdle for foreign firms and portfolio investors (especially those with fiduciary duties).
- In the US, stakeholders are still awaiting the final implementing regulations for new laws (The Foreign Investment Risk Review Modernization Act (FIRRMA) and the Export Control Reform Act (ECRA)) that could significantly broaden US regulatory oversight over emerging technologies. These regulations could impact FDI and VC flows alike, and expanded export control rules and greater scrutiny on supply chain risks for government suppliers could also become significant hurdles for American investment and sourcing in China.

[7] A “trade deal” could boost sentiment for two-way investment, but strategic distrust and national security concerns will remain.

- While details surrounding the current US-China negotiations remain vague, reports suggest a deal could include a broad elimination of restrictions on US direct investment in China.
- Any new clarity on implementation of new investment policies (FIRRMA and ECRA on the US side and the Foreign Investment Law and FDI negative list in China) that accompanies or follows a deal would also create transparency and help restore predictability for investors.
- However, even with moderate FIRRMA and ECRA rules and a reasonable “trade war” outcome (neither of which is assured), US-China economic tension is here to stay. Hawks successfully bolstered their case against overly permissive US policy in 2018, and many changes will not be undone.
- Leaders must manage this reality and find ways to address novel security concerns without too much protection, which would threaten long-term innovative capacity and prosperity.

[8] The rise of more restrictive investment policies in the US-China context has implications for other nations, and the global economy would benefit from a multilateral approach to re-configure investment policy.

- Aggressive US unilateralism and defensive policies towards China are polarizing other members of the Organisation for Economic Co-operation and Development (OECD). Some are aligning with US views on Chinese capital flows and general openness. For example, a new European Union (EU) investment screening framework has taken shape since late 2018 that is more concordant with US principles. However, other OECD nations are pushing back, for example by

other OECD nations are pushing back, for example by committing to allow Chinese companies to continue supplying equipment to their 5G infrastructure.

- This polarizing approach risks a balkanizing of investment policy across the OECD and has distracted leaders from the essential convergence of their priorities. Numerous important outstanding policy questions can be more effectively resolved

with cooperation. These policy questions include where to draw the line between legitimate investment security concerns and disguised protectionism; to what extent reciprocity in cross border investment is necessary and should be pursued; and whether and how to use existing institutions such as the World Trade Organization (WTO) and the OECD to address current and future challenges.

INTRODUCTION

Greater two-way capital flows have been a hallmark of deepening US-China economic ties over the last decade. Annual direct investment between China and the United States (US) expanded two-fold from \$22 billion in 2008 to a record \$46 billion in 2016, propelled to new heights by Chinese firms' rapidly growing appetites for US assets. Other types of capital flows have also grown rapidly since 2014, including venture capital financing of early-stage technology firms.

However, policy environment changes and a more volatile political relationship since 2016 have profoundly impacted two-way flows. Chinese direct investment in the US dropped to \$29 billion in 2017 and to just \$5 billion in 2018. And while American direct investment in China avoided a similar drop, flows remained stagnant at around \$13-14 billion per year. Venture capital and other private equity activity has continued to expand in the past three years but is increasingly in the crosshairs of regulators.

The future of US-China investment relations is uncertain at this juncture. In the United States, national security concerns and protectionist sentiment have become pervasive. In the last 18 months lawmakers have passed expanded foreign investment screening and export control legislation; the Trump administration has further tightened restrictions on Chinese *information and communications technology* (ICT) equipment providers; the Justice Department has stepped up intellectual property rights (IPR) and trade secrets theft cases against Chinese companies and individuals; and the US has embarked on a trade tariff war with China.

Developments in China have likewise pressured two-way flows. In response to macroeconomic pressures in 2017, Beijing has for now abandoned plans to liberalize its capital account and maintains tight regulatory oversight of outbound flows. A campaign

to reduce leverage in China's financial system has diminished available financing for overseas investment. China also delayed critical reforms related to market access, technology, industrial policy, subsidies and other areas, which has dampened foreign investment appetite.

Policy outcomes in 2019 and 2020 will determine the trajectory of US-China bilateral investment for the next generation. As of this writing, the US and China were engaged in negotiations to resolve certain trade disputes and related frictions in the bilateral relationship. While this process could lead to a de-escalation of tensions and a better outlook for two-way investment, the ultimate terms and longevity of any negotiated "deal" remain uncertain. Moreover, any deal is unlikely to address all the relevant policy questions weighing on the bilateral relationship.

Independent of these negotiations, both nations are making critical policy decisions that will have profound impacts on bilateral investment. For example, US government agencies are deciding how to implement the expanded investment screening powers granted under the Foreign Investment Risk Review Modernization Act (FIRRMA) as well as related legislation covering export controls. In China, the implementation and enforcement of a sweeping new Foreign Investment Law giving foreign firms pre-establishment rights in most sectors and prohibiting forced intellectual property (IP) transfer will be critical for the future trajectory of foreign investment in the country.

With the charged atmosphere surrounding US-China relations in both nations, there is risk of the US or China inflicting unnecessary policy self-harm in the name of strategic expediency. As policymakers address important questions of investment openness and broader economic linkages, access to objective and fact-based information remains as

critical as ever to measure the likely impacts of new policies.

The US-China Investment Project fulfills this need by providing clear and objective data on US-China investment flows through the traditional direct investment lens as well as through new types of capital flows that reflect the growing complexities of US-China investment dynamics. While direct investment flows have dominated China's global capital footprint to date, non-direct investment flows including venture capital and other private equity investments are likely to account for a larger share of two-way flows in the future, especially if Beijing follows through on wider capital account liberalization.

This report summarizes the most important trends in US-China two-way investment in 2018. The first part of the report reviews US-China trends in direct investment. The second part analyzes trends in bilateral venture capital investment, which is a type of portfolio investment that has grown markedly in recent years. The report concludes with a summary of key findings for businesses and policymakers.

An interactive data visualization with detailed industry profiles and additional research is available on our project website (www.us-china-investment.org).

1 DIRECT INVESTMENT

Foreign direct investment (FDI) has traditionally been the most important type of capital driving US-China economic integration. Direct investment transactions entail significant long-term influence or control over invested entities and are typically classified as any investments resulting in at least 10% ownership of a company's voting shares. This contrasts with portfolio investment, which entails shorter-term, financially-motivated transactions that generally result in smaller ownership stakes (usually less than 10% of voting rights) and no meaningful control.

Long-standing methodological challenges complicate the task of assessing direct investment flows between China and the United States. Most government statistics measure financial flows based on Balance of Payments (BOP) principles, which are greatly distorted by complex global financing structures, tax optimization, intra-company transfers and other factors. There is also a significant time lag in most official statistics. Available official data from the Chinese and US governments show very different and incoherent trajectories for US-China FDI flows, illustrating these problems.

This section presents an analysis of US FDI trends in China from 1990 to 2018 based on an alternative Rhodium Group dataset that identifies, values and aggregates individual FDI transactions. Covered direct investment transactions include the establishment of subsidiaries, factories, research and development (R&D) centers and offices (greenfield investments), the expansion of existing facilities, and the acquisition of existing companies (mergers and acquisitions, or M&A). This bottom-up dataset is not comparable to BOP data but offers a valuable and real-time perspective on two-way flows without some of the distortions in official statistics. A detailed explanation of the database and underlying methodologies is available in the appendix.

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1.1 US DIRECT INVESTMENT IN CHINA

China was largely closed to US direct investment from World War II to 1979, and only began to open up again in the 1980s. Investment flows were modest at first (less than \$1 billion per year) but grew to several billion dollars per year in the 1990s and early 2000s. Following China's accession to the World Trade Organization (WTO) in 2001, US FDI in China jumped again to over \$20 billion by 2008 before dropping during the global financial crisis in 2009. Since then, annual US direct investment in China has rebounded to between \$13 billion and \$16 billion per year.

In 2018, US firms invested \$13 billion in China, slightly down from \$14 billion in 2017 (Figure 1). The cumulative value of US FDI transactions in China (at historical value) was \$269 billion at the end of 2018.

ENTRY MODE

US firms have traditionally entered the Chinese market through greenfield investments, opting to set up new business operations from scratch instead of purchasing existing firms or assets. In line with this historical preference, US greenfield investments in China have accounted for two thirds of total US direct investment in China over the past decade. Greenfield investment continued to be the dominant mode in 2018 at 63% of total US FDI in China. However, new greenfield investment also saw a decrease in absolute terms to the lowest level in four years at \$8 billion.

Most greenfield investment was attributable to multiyear projects announced in previous years, accounting for about \$5 billion of the 2018 investment

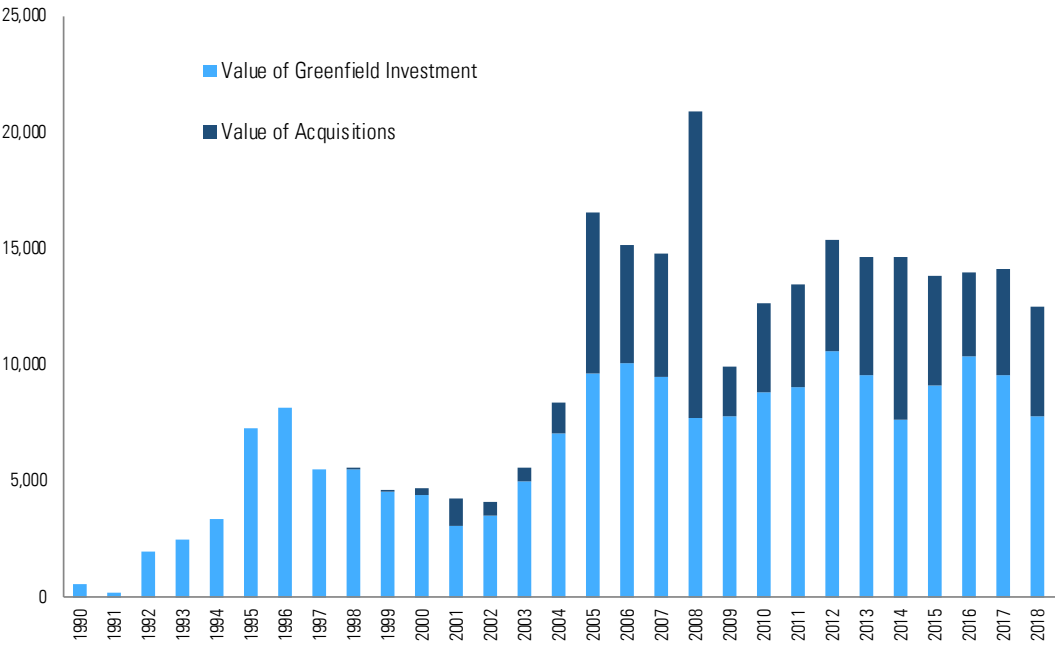
total, a slight drop compared to \$6 billion in 2017. Major ongoing projects include Global Foundries' Chengdu semiconductor fab, Apple's data centers in Sichuan and Inner Mongolia, and Universal Studio's Beijing theme park.

Investment attributable to newly announced projects fell from \$3.4 billion in 2017 to \$3 billion in 2018. Despite this modest dip, the greenfield investment outlook remains strong thanks to major new projects including Tesla's \$5 billion Gigafactory in Shanghai and Exxon Mobil's proposed \$10 billion chemical complex in Guangdong.

M&A activity reached the highest level in four years at \$4.7 billion (37% of total investment), up from \$4.5 billion in 2017. The biggest transactions were Coca Cola's acquisition of Costa (estimated at nearly \$1 billion), Walgreen's acquisition of a 40% stake in Sinopharm Guoda Drugstores (\$416 million), WeWork's acquisition of Chinese competitor Naked Hub (\$400 million) and LaSalle's acquisition of a Shanghai tower for \$380 million. A revival of US investment in Chinese real estate (especially financial investors in distressed assets) was another notable trend pushing up the M&A figure – six out of the top ten M&A transactions during the year targeted real estate assets.

Figure 1: Value of US FDI Transactions in China, 1990-2018

USD million



Source: Rhodium Group.

INDUSTRY TRENDS

The industry mix of US FDI in China has shifted over the past three decades along with the maturation of China's economy. Whereas the earliest direct investments focused on labor-intensive manufacturing, interest in the 2000s and early 2010s shifted towards Chinese consumer-oriented sectors like food and autos. Over the past five years, American investors have also increasingly targeted high-tech and advanced services sectors.

In many ways, 2018 was business as usual. For example, top sectors for US direct investment once again included food, entertainment and automotive as US investor interest in Chinese consumer-related sectors remained high. But a few developments are notable, including a sizeable year-over-year drop in ICT investment and a significant jump in completed real estate transactions.

Key 2018 industry trends include:

[1] Investment in consumer sectors remained robust: Consumer-related sectors like *agriculture and food* (Coca-Cola's acquisition of Costa coffee, which plans to double their total number of stores in China in the next three years) and *entertainment, media and education* (Universal Studio's \$6.5 billion Beijing Park, which began construction in 2018) continued to attract significant interest.

[2] Bargain hunting drove a spike in real estate investment: US FDI in the Chinese *real estate and hospitality* sector jumped to over \$3 billion in 2018 from around \$1.2 billion the year before. Key deals included Blackstone's acquisition of Vivocity Mall and Lasalle's acquisition of Shanghai International Plaza. Warburg Pincus also formed a \$1 billion joint venture with Hande Group to pursue "special situations investments" in distressed Chinese real estate projects.

[3] ICT investments dropped by a third: Although *information and communications technology* (ICT) still ranked second in 2018, completed investment fell from over \$3 billion in each of the past four years to only \$2.6 billion this year. And most of this total stemmed from ongoing multi-year investments

announced in previous years like GlobalFoundries' semiconductor fab. Newly announced ICT investments fell dramatically: the only major new project was Apple's second China data center located in Inner Mongolia. This slowdown may partially reflect uncertainty about the future of US-China technology collaboration.

[4] US investors took advantage of equity cap liberalizations: *Automotive and transportation equipment* was the fourth-largest sector for total investment in 2018 driven by Tesla's \$5 billion Gigafactory. Tesla started prep work on the new facility in 2018 and expects completion in 3Q 2019. The project is wholly-owned by Tesla and was announced after Beijing relaxed the equity ownership cap for foreign investors in new energy vehicle manufacturing.

Certain *financial and business services* segments likewise saw changes in equity caps for foreign investors in 2018, but there were no major US investments before the end of the year. However, JPMorgan applied for permission to set up a 51% owned securities joint venture in 2018 and received approval to move forward in 1Q 2019. Morgan Stanley also applied for permission to acquire controlling stakes in its joint venture with Huaxin Securities in 2018, but this is still pending approval as of writing.

[5] Basic Materials saw significant newly announced investments: Although not reflected in the completed investment figures for 2018, several sizeable *chemicals, metals, and basic materials* projects were announced during the year. These included Exxon Mobil's proposed chemical complex in Guangdong (worth up to \$10 billion) and Air Products' \$650 million investment in a new facility supplying syngas to an mono-ethylene glycol project in Hohhot. Projected demand growth and lower restrictions on foreign ownership have also attracted other foreign investors to the chemical industry, for example a \$10 billion dollar investment by Germany's BASF in a wholly-owned facility in Guangdong.

Full industry snapshots for all 14 sectors, updated with 2018 developments, are available on the US-China Investment Project website (www.us-china-investment.org).

Table 1: US Direct Investment in China by Industry*, 2016-2018

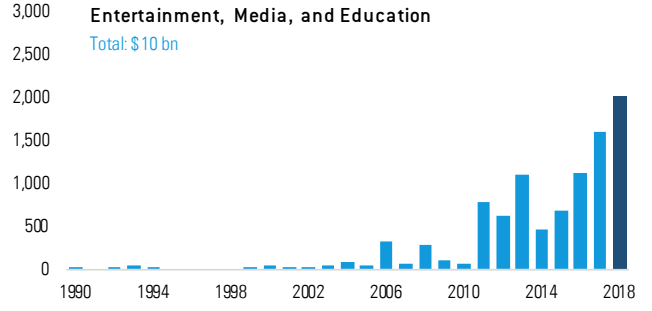
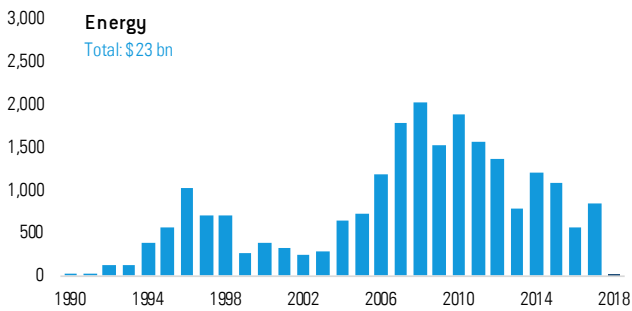
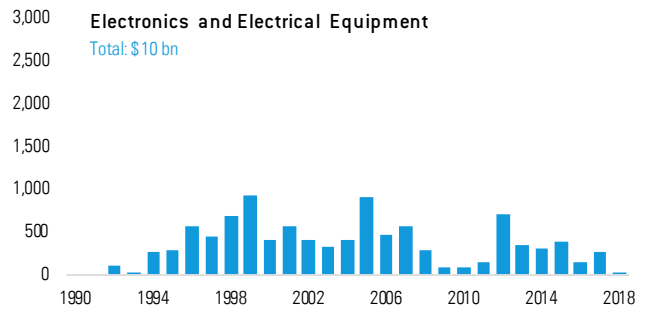
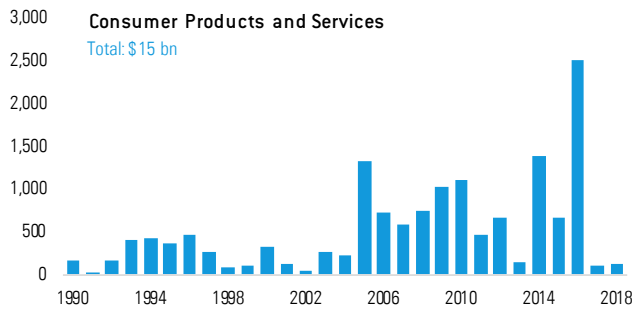
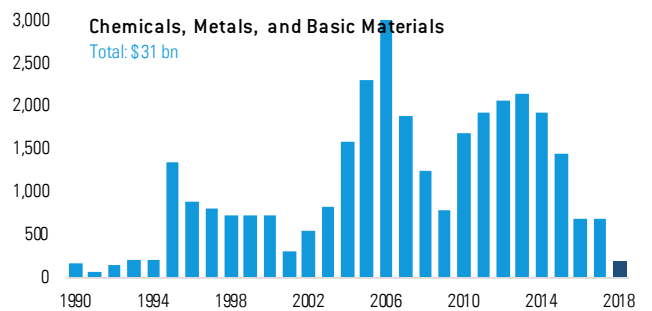
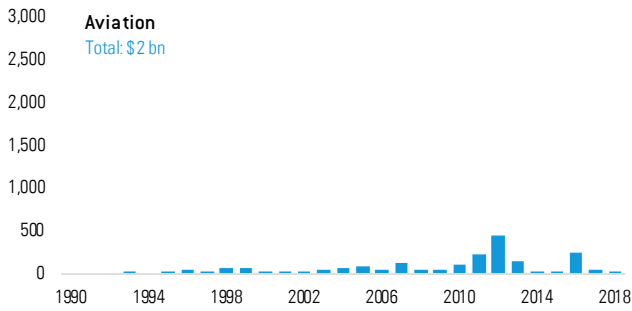
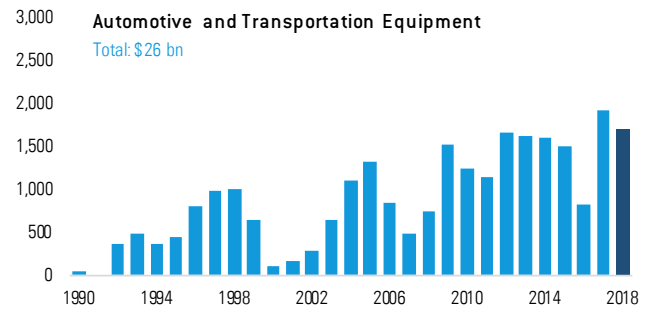
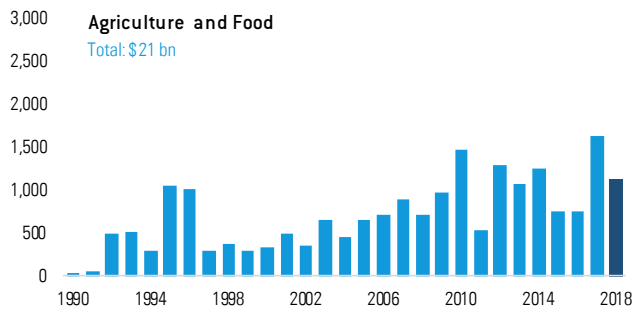
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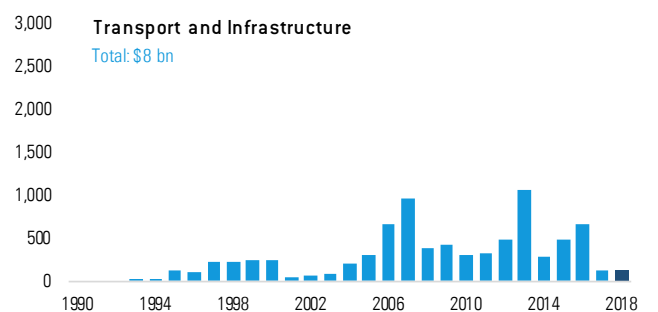
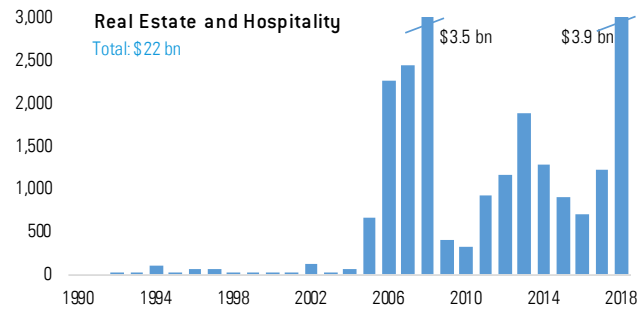
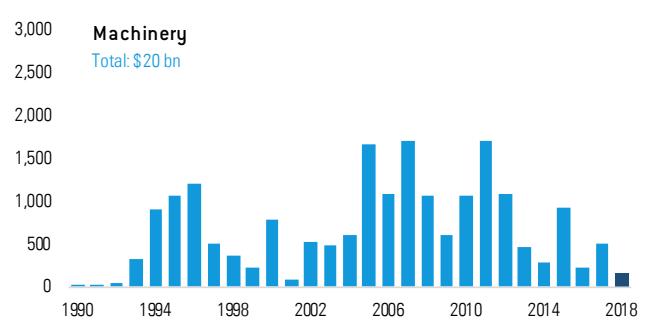
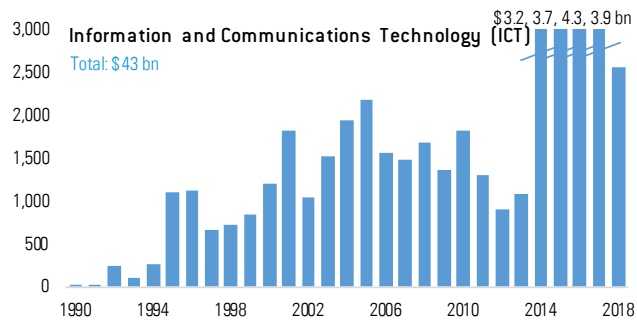
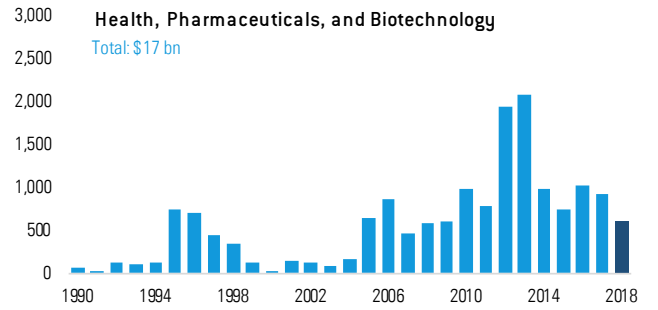
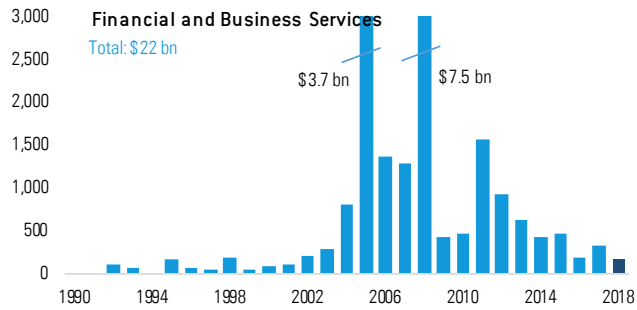
	2016	2017	2018
Agriculture and Food	0.8	1.6	1.1
Automotive	0.8	1.9	1.7
Aviation	0.3	0.1	<0.1
Basic Materials, Metals and Minerals	0.7	0.7	0.2
Consumer Products and Services	2.5	0.1	0.1
Electronics and Electrical Equipment	0.1	0.3	<0.1
Energy	0.6	0.9	<0.1
Entertainment, Media and Education	1.1	1.6	2.0
Financial and Business Services	0.2	0.3	0.2
Health, Pharmaceuticals and Biotechnology	1.0	0.9	0.6
Information and Communications Technology	4.3	3.9	2.6
Machinery	0.2	0.5	0.2
Real Estate and Hospitality	0.7	1.2	3.9
Transport, Construction, and Infrastructure	0.7	0.1	0.1

Source: Rhodium Group. * Values are shaded on a scale from lowest to highest annual industry investment value from 2016-2018..

Figure 2: US FDI Transactions in China by Industry, 1990-2018

USD million





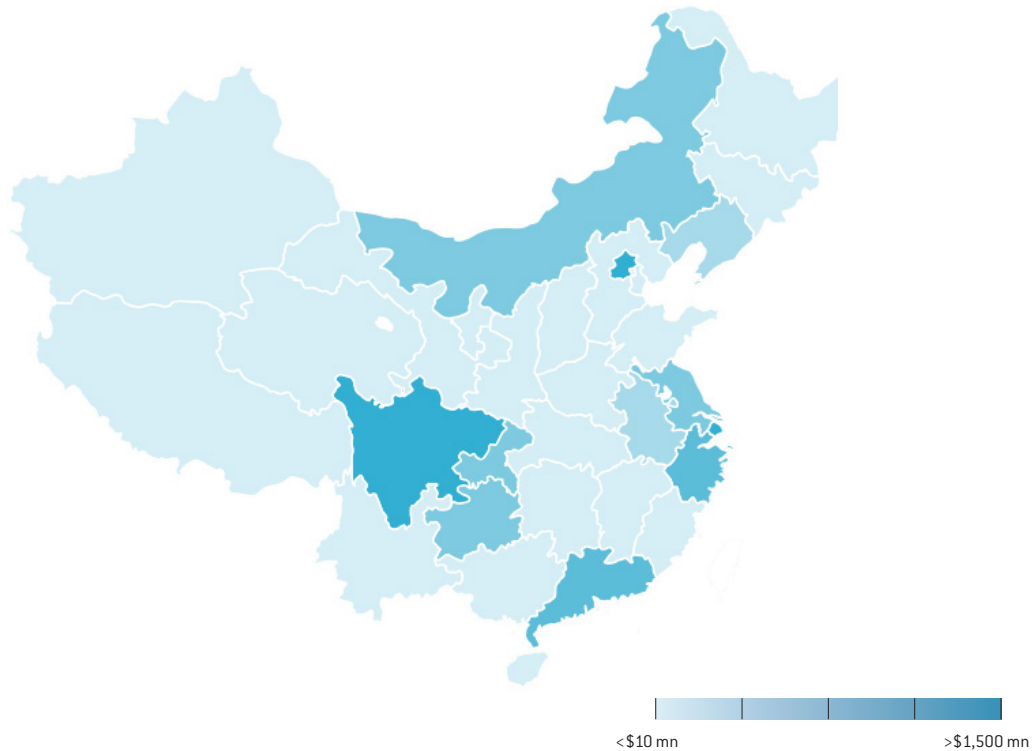
Source: Rhodium Group.

GEOGRAPHY

American firms have historically located most of their direct investments in China's more populated coastal regions. In the early years of US FDI in China this activity focused in areas designated as free trade zones and manufacturing hubs for foreign-invested enterprises in provinces like Guangdong and Shandong. After China's WTO accession in 2001, US companies expanded rapidly into higher-income coastal cities like Beijing and Shanghai and moved into second-tier cities in Zhejiang, Sichuan and other provinces. Only in recent years have American firms shifted some of their interest to China's northern rust belt (e.g. Liaoning) and western inland cities like Chongqing.

In terms of the geographic breakdown, 2018 trends in US direct investment in China mirrored those from recent years. Large cities near China's east coast remained the top targets. Shanghai received the most investment of any Chinese region with a boost from a number of real estate transactions and Tesla's Gigafactory. Beijing was among the top investment recipients as well as the headquarters location for many companies and the site for the new Universal Studios Beijing theme park. Sichuan continued to log significant ongoing investment from the construction of GlobalFoundries' semiconductor plant. Coastal provinces Zhejiang, Guangdong, and Jiangsu also attracted strong interest.

Figure 3: Geographic Distribution of 2018 US FDI Transactions in China



Source: Rhodium Group.

INVESTOR CHARACTERISTICS

The US investor mix in China has evolved significantly over the past thirty years. The trading and light manufacturing firms that led the initial wave into China prior to the 1990s have been largely supplanted today by a diverse set of US companies ranging from large multinational corporations to small- and medium-sized firms as well as financial investors. And many of these modern investors in China view the country as a promising end market, not just a provider of inexpensive labor.

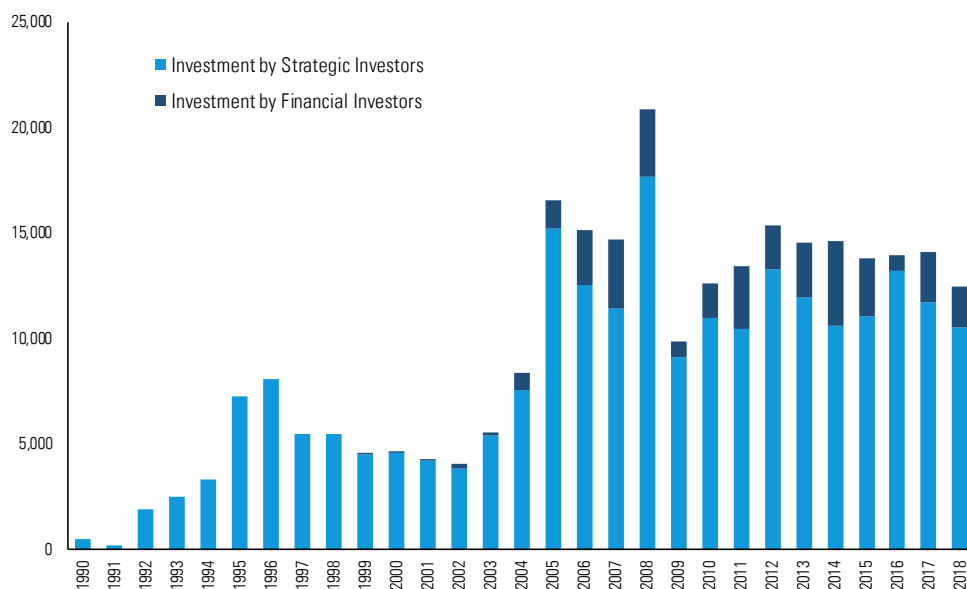
At the end of 2018, our database included more than 7,100 investment transactions in China involving more than 1,400 individual US companies. Of these 1,440 firms, more than 450 had invested more than \$50 million each in the Chinese market. More than 330 firms had investments in excess of \$100 million, and 71 had investments exceeding \$1 billion.

While the bulk of US direct investment in China has been strategic (companies investing in their primary areas of business for long-term strategic business motives), financial investors (those investing purely for financial returns) have also become active players since the mid-2000s. In 2018, the share of total US FDI in China attributable to financially-motivated direct investment was 15%, driven by revived financial investor interest in China's real estate market. This was slightly down from 17% recorded in 2017 but up from 6% in 2016.

Direct investments resulting in controlling stakes (more than 50% ownership) increased to 64% by total investment value, up from 48% in 2017. Major wholly-owned deals like Tesla's \$5 billion Shanghai Gigafactory and Exxon Mobil's proposed \$10 billion Guangdong plant should further boost this ratio going forward. US financial services firms including

Figure 4: US FDI in China by Company Type, 1990-2018

USD million



Source: Rhodium Group.

JPMorgan and Morgan Stanley are also in the process of setting up majority-owned securities joint ventures in China following the removal of majority-ownership restrictions in 2018.

Top US investors hailed mostly from the same states as they have historically in 2018: California (Tesla, GlobalFoundries, Universal Studios) and New York (Blackstone, WeWork) were the top US sources of FDI in China last year. Investors from Georgia (Coca Cola) and Illinois (Walgreens, LaSalle Investment Management) also made significant investments.

OUTLOOK

Based on the pending deal pipeline, the near-term outlook for US FDI in China is positive compared to previous years. Ongoing multiyear greenfield investments should provide a solid floor in 2019 and beyond. A couple of major transactions including Exxon Mobil's potential Guangdong chemical complex and Tesla's Gigafactory provide additional upside potential in 2019. On the M&A side, several large pending real estate acquisitions from the beginning of 2019 bolster the outlook.

The full extent of future opportunities for US investors in China going forward will largely depend on the

extent China follows through on recent commitments to liberalize investment market access. Initial promising signs including China loosening foreign equity caps for electric vehicle manufacturing and securities firms suggest Chinese policymakers are sincere about further opening, but the heavy lifting of implementing a sweeping new unified Foreign Investment Law passed in March 2019 still remains to be done. While the law explicitly guarantees fair treatment for foreign firms including through prohibiting intellectual property theft and forced technology transfers, strong follow-up implementation measures will be needed to change the de facto situation on the ground and assuage companies' long-held concerns about "reciprocity" and discriminatory treatment.

Policy changes in the US also represent a potential downside risk to future US investment in China. The growing strategic rivalry between the two nations has made "China exposure" a potential liability for US firms, especially amidst heightened sensitivity to the transfer of sensitive technology. These concerns are already impacting commercial and supply relationships between US and Chinese companies, and any broader security-driven US-China technology decoupling will be a significant drag on future US FDI in China.

1.2 CHINESE DIRECT INVESTMENT IN THE US

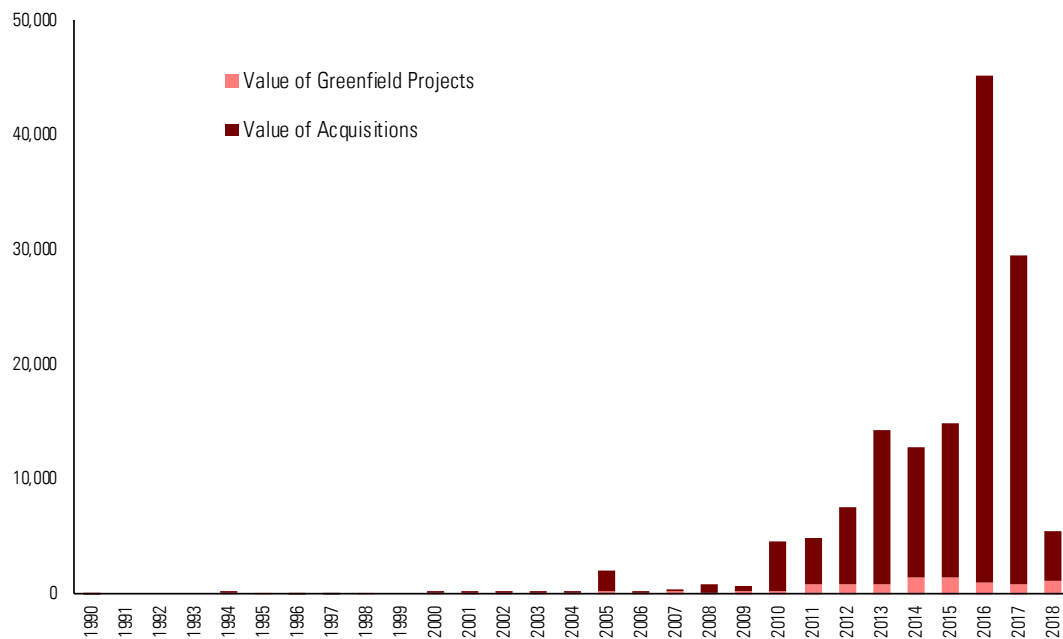
Chinese direct investment in the US before 2010 was modest, totaling well below \$1 billion per year. The only exception was 2005 when Lenovo's \$1.75 billion acquisition of IBM's personal computer division – the first major Chinese acquisition in the United States in the modern era – pushed flows above the billion dollar mark.

Annual direct investment accelerated quickly thereafter, reaching nearly \$5 billion in 2010 and \$14 billion in 2013 on the back of Shuanghui's acquisition of Smithfield Foods. Chinese FDI in the US jumped again in 2016 to more than \$46 billion thanks to several multi-billion dollar acquisitions and then moderated back to \$29 billion in 2017.

In 2018, Chinese direct investment in the US took another plunge, dropping to just \$5 billion (Figure 5). This is not just a mere correction following the 2015/2016 boom but a fall to the lowest level since 2011. While annual investment dropped precipitously, the number of annual transactions held up better, declining from just over 300 in 2017 to 260 in 2018.

Figure 5: Chinese FDI Transactions in the US, 1990-2018

USD million



Source: Rhodium Group.

ENTRY MODE

In contrast to US direct investment in China, Chinese FDI in the US has traditionally been dominated by M&A transactions. Acquisitions have accounted for over 90% of cumulative direct investment by value since 1990, reflecting the value of M&A for quickly gaining access to existing business models, supplier relationships and technologies in the United States.

In 2018, billion-dollar M&A deals were completely absent, which reduced the share of acquisitions in total Chinese FDI to just 80%, much lower than the historical average. The largest completed transactions were Shandong Weigao's \$850 million acquisition of Argon Medical Devices; Primavera Capital Group's estimated \$800 million acquisition of Nobel Learning Communities; Shanghai Hongxiao Technology's \$300 million investment in Mivip Healthcare; and Harbin Pharmaceutical Group's \$300 million acquisition of General Nutrition Centers (GNC).

Greenfield investment remained more stable in 2018 at a comparatively lower level of around \$1 billion.

Major newly announced projects included Zhangzhou Sanlida's recycling plant in South Carolina and General Electric (GE) Appliances' Texas distribution center expansion. Several multi-year manufacturing projects also continued construction in 2018 including Triangle Tyre's North Carolina plant, Jushi Group's fiberglass plant in South Carolina and a Chicago rail-car plant operated by China Railway Rolling Stock Corporation (CRRRC).

Despite a slight uptick in greenfield transaction count in 2018, greenfield investment still accounted for less than 20% of total Chinese FDI in the US. While greater tariffs and other trade frictions have historically incentivized tariff-jumping greenfield FDI, so far no major Chinese greenfield boom in the United States has materialized as a result of current trade tensions – there have only been a few deals localizing the manufacture of traded goods in recent months including a handful of pulp paper mills established by Nine Dragons Paper and a mattress production facility planned by Jiangsu-based Healthcare Co.

BOX 1: CHINESE ASSET DIVESTITURES IN THE US

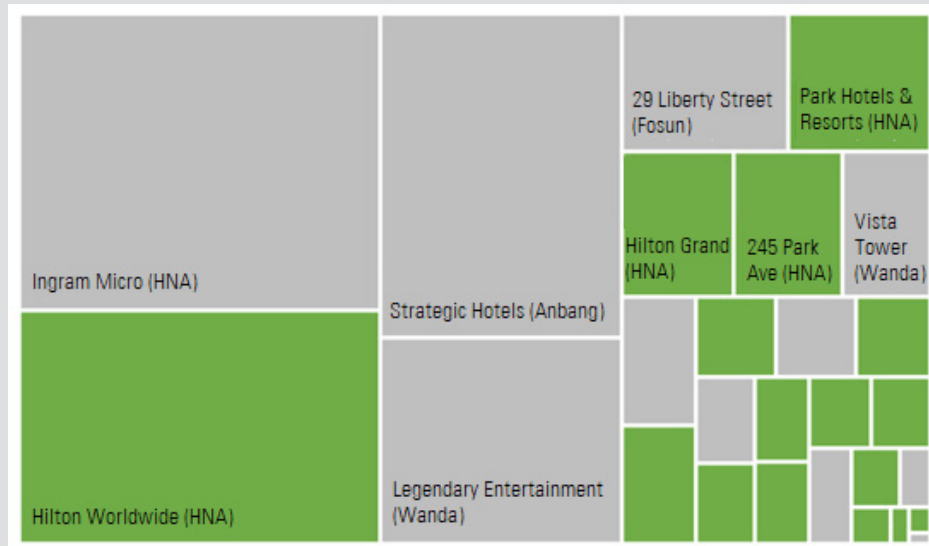
Our FDI transactions dataset counts the gross value of foreign direct investments at historical cost and does not account for subsequent asset divestitures. Historically, major asset divestitures have not been common among Chinese firms in the US, but in 2017 and 2018 investors started to sell off previously acquired assets at a significant scale.

This trend was mostly driven by Chinese efforts to slow down the debt-fueled expansion of highly leveraged and potentially systematically important firms. Some of the most prominent investors that drove the 2015-2016 Chinese outbound investment boom were forced to unwind their global holdings to clean up their books and reduce debt levels.

In total, Chinese firms completed \$13 billion worth of divestitures in 2018, and there were another \$20 billion in pending asset sales at the end of the year (Figure B-1). Three companies – HNA, Anbang and Wanda – account for the majority of these completed and pending asset sales. Counting these divestitures, Chinese net FDI inflows to the US were negative to the tune of \$8 billion in 2018.

Figure B-1: Reported and Completed Chinese Divestitures in the US, 2018

Each cluster represents one transaction; green = completed divestitures; gray = pending divestitures



Source: Rhodium Group.

INDUSTRY TRENDS

Chinese FDI in the US has historically seen greater industry concentration than flows in the other direction. *Real estate and hospitality*, *ICT* and *energy* were the biggest draws for Chinese investors in the United States, together accounting for roughly half of all Chinese FDI from 1990 to 2018. Due to the large weight of M&A, Chinese direct investment in the US has also been more volatile compared to US FDI in China (which was dominated by multi-year greenfield projects smoothing the annual totals).

2018 saw some major shifts in the industry mix of Chinese direct investment in the United States compared to previous years, corresponding to policy changes. Heightened scrutiny by the Committee on Foreign Investment in the United States (CFIUS) that began in 2016 and 2017 continued to dissuade new Chinese direct investments in sectors with national security sensitivities, including *ICT*. Beijing's tighter outbound controls continued to weigh on other industries, for example *real estate and hospitality*. Meanwhile, direct investment in sectors not prioritized by regulators on either side – such as *health*, *pharmaceuticals and biotech* - continued to flourish.

Key 2018 industry trends include:

(1) Heightened US security concerns and bilateral tensions continued to weigh on certain sectors:

Potentially sensitive sectors saw a significant drop in completed direct investment in 2018 as increased US regulatory scrutiny under CFIUS and bilateral tensions continued to dissuade major new investments. For example, we only recorded several smaller *ICT* purchases and greenfield establishments in 2018. The biggest acquisition was Beijing Kunlun's \$152 million purchase of the remaining shares of dating app Grindr (which was later investigated by CFIUS with the result of the US government asking Kunlun to divest those assets due to security reasons). Direct investment in transport and infrastructure assets likewise nearly disappeared in 2018.

(2) Direct investment was also minimal in sectors impacted by Beijing's tighter outbound controls:

Chinese FDI in sectors receiving additional Chinese regulatory scrutiny – especially *real estate and hospitality* – also saw little completed direct investment in 2018. Aside from long-term developments announced in previous years, there was not a single *real estate and hospitality* investment above \$100 million during the year. Real estate was also the area most impacted by asset sales, accounting for \$9 billion out of the \$13 billion of completed divestitures in 2018.

(3) Health and biotech became the top sector in 2018:

Although we also recorded a year-over-year drop, the *health, pharmaceuticals and biotech* sector received the most Chinese FDI in 2018, accounting for 27% of the annual total. The biggest transactions were in medical devices, pharmaceuticals and nutrition. Top deals included Shandong Weigao's \$850 million acquisition of Argon Medical Devices, Shanghai Hongxiao Technology's \$300 million investment in Mivip Healthcare and Harbin Pharmaceutical Group's \$300 million acquisition of GNC.

(4) Chinese investment in education-related assets continued to flourish:

Primavera Capital Group's acquisition of Nobel Learning Communities helped push direct investment in the *entertainment, media and education* sector to nearly \$1 billion in 2018, second only to health and biotech. However, as segments discouraged by Chinese outbound investment regulators, entertainment and media contributed little to this total.

(5) Chinese firms remained active investors across the US automotive supply chain:

Ningbo Jifeng's acquisition of Toledo Molding & Die and Shanghai Daimay's purchase of Motus Integrated Technologies headlined Chinese activity in the *automotive and transportation equipment* sector in 2018, which accounted for 12% of the total. There were also several ongoing greenfield manufacturing projects in the transportation equipment sector involving CRRC (railcars), BeijingWest Industries (brakes and suspension) and Volvo (consumer automobiles).

Full industry snapshots for all 14 sectors, updated with 2018 developments, are available on the project website (www.us-china-investment.org).

Table 2: China Direct Investment in the US by Industry*, 2016-2018

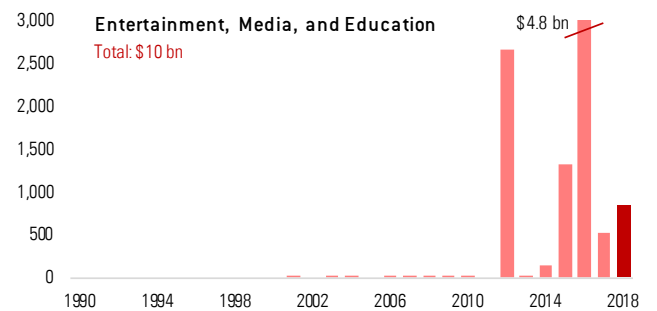
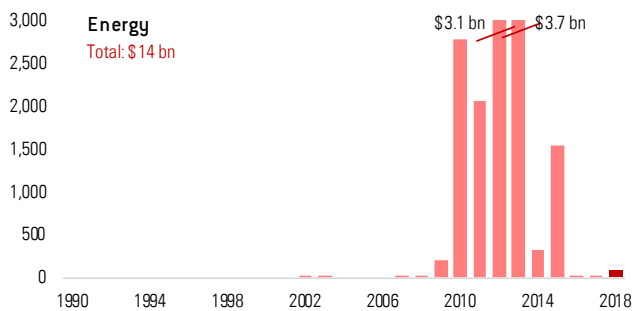
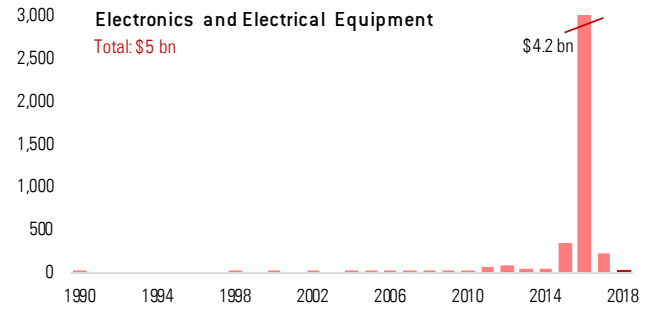
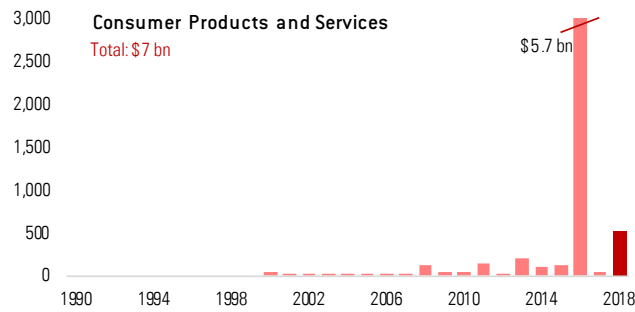
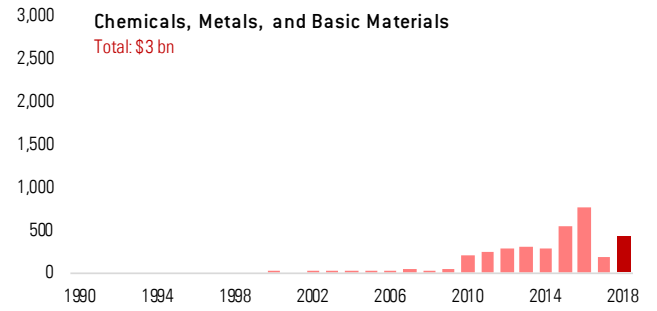
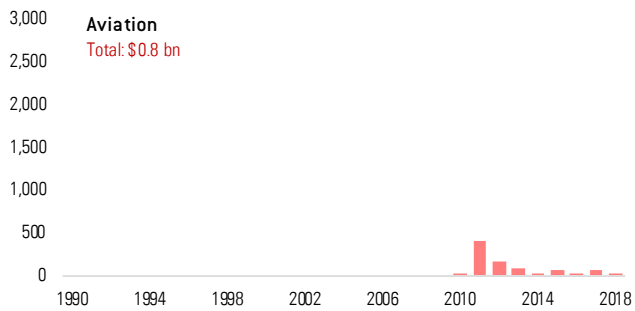
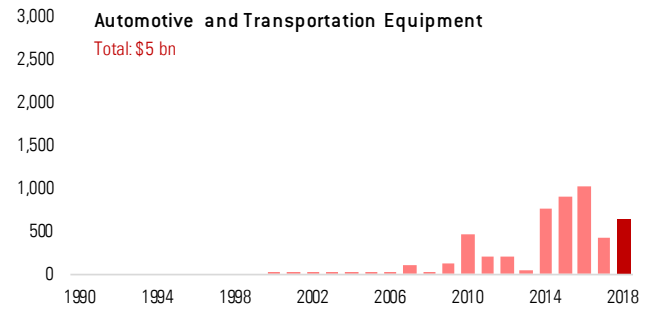
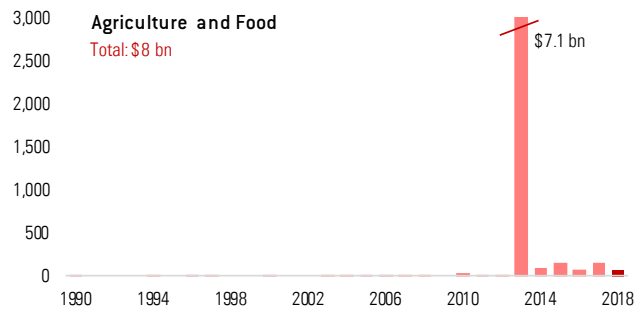
USD billion

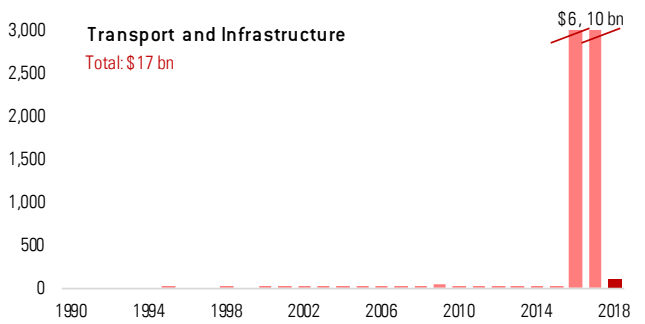
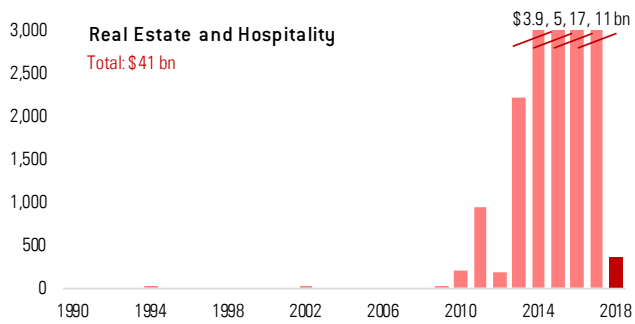
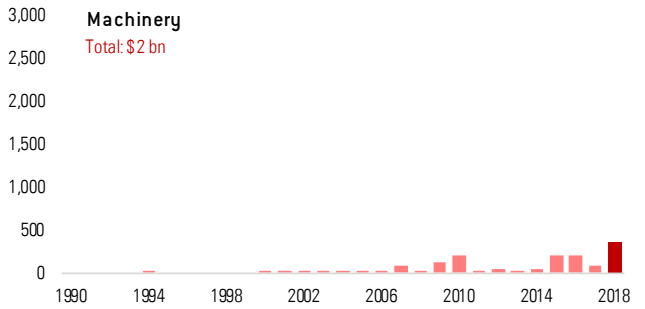
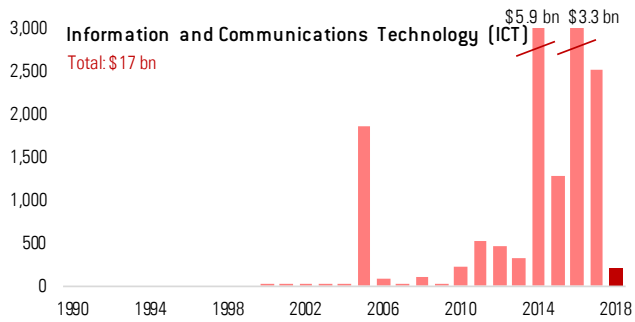
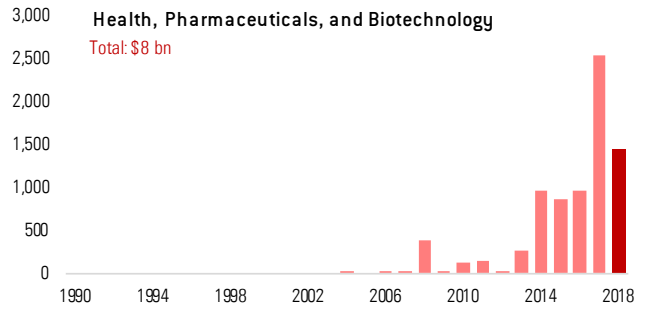
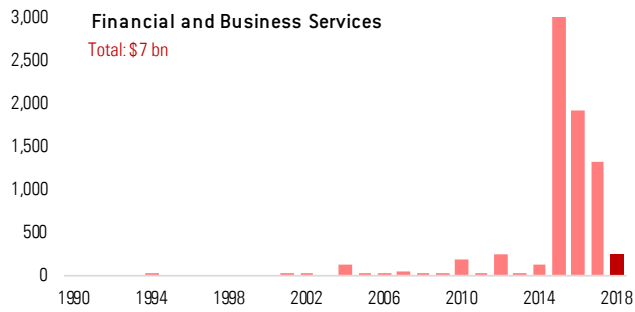
	2016	2017	2018
Agriculture and Food	0.1	0.2	0.1
Automotive	1.0	0.6	0.6
Aviation	<0.1	0.1	<0.1
Basic Materials, Metals and Minerals	0.8	0.2	0.4
Consumer Products and Services	5.7	0.1	0.5
Electronics and Electrical Equipment	4.2	0.2	<0.1
Energy	<0.1	<0.1	0.1
Entertainment, Media and Education	4.8	0.5	0.8
Financial and Business Services	1.9	1.3	0.2
Health, Pharmaceuticals and Biotechnology	1.0	2.5	1.4
Information and Communications Technology	3.3	2.7	0.2
Machinery	0.2	0.1	0.4
Real Estate and Hospitality	17.3	11.0	0.4
Transport, Construction, and Infrastructure	6.0	10.4	0.1

Source: Rhodium Group. *Values are shaded on a scale from lowest to highest annual industry investment value from 2016-2018..

Figure 6: Chinese FDI Transactions in the US by Industry, 1990-2018

USD million





Source: Rhodium Group.

INVESTOR CHARACTERISTICS

The first Chinese direct investments in the US were driven by government-owned and -affiliated companies (defined in our dataset as firms with at least 20% government ownership). By the end of 2010, state-owned enterprises (SOEs) accounted for more than 70% of cumulative Chinese FDI in the US due to large investments in the extractive sector. However, the 2010s saw a major shift towards private Chinese investors, which drove the big surge in Chinese direct investment. By the end of 2018, the SOE share of cumulative investment had fallen to just 25%.

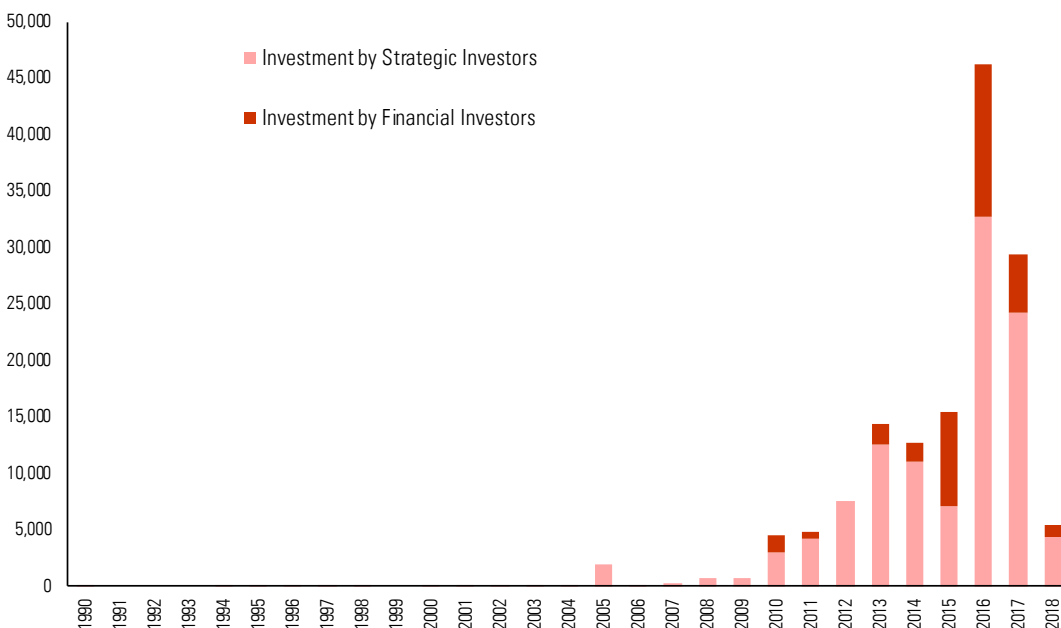
In 2018, private firms continued to drive overall Chinese FDI in the US, accounting for \$4.4 billion (82% of the total). Given the increasing sensitivity of US regulators to investments by Chinese SOEs, particularly in sensitive technologies, the state-owned sector is unlikely to emerge as major driver of investment in the near future.

In terms of investment motives, strategic FDI (companies investing in their primary areas of business for long-term strategic business motives) accounted for more than 80% of total investment in 2018 (\$4.4 billion). The share of financial investors (those investing purely for financial returns) diminished significantly under the burden of increased Chinese outbound investment regulatory scrutiny over financially-motivated FDI.

The large-scale divestitures from recent years have also radically changed the landscape of individual Chinese investors in the US. Within a span of just a few years, three companies – HNA, Anbang and Wanda - had risen to become the top Chinese investors in the United States, accounting for 43% of total investment in 2016. But just two years later, these firms have not only halted new investments but also sold off or are in the process of selling the majority of their US assets .

Figure 8: Chinese FDI in the US by Company Type, 1990-2018

USD million



Source: Rhodium Group.

In terms of geographic origin, Beijing (Primavera Capital, Beijing Kunlun Technology) was the top source province in 2018. Zhejiang (Ningbo Jifeng Auto Parts, Wolong Electric) was second followed by Shandong (Shandong Weigao) and Shanghai (Shanghai Hongxiao Technology, Shanghai Daimay). Heilongjiang ranked highly for the first time in 2018 as home to GNC purchaser Harbin Pharmaceutical Group.

OUTLOOK

The existing deal pipeline in the US remains depressed compared to previous years but points to the modest beginnings of a recovery from very low 2018 levels. 1Q 2019 already saw \$2.3 billion in completed Chinese FDI transactions in the US, up 40% from 4Q 2018. It also saw the return of billion-dollar acquisitions with Shanghai RAAS' agreement to acquire Grifols' US diagnostics business in March.

These data points and the resilience of non-FDI flows (see Section 2) suggest that Chinese firms' commercial appetites for investing abroad remain strong. Given Chinese outbound investment stock is still low at just 15% of GDP, there remains ample opportunity for growth in non-sensitive areas. However, policy hurdles in both the US and China remain significant headwinds to increased Chinese investment in the US in 2019 and beyond. The magnitude of any recovery in Chinese direct investment to the US will depend on the evolution of these policies as well as the broader direction of US-China relations.

China's tightening of regulatory controls has been the primary driver of the collapse in outbound investment since 2016, and this restrictive stance is unlikely to change in 2019. Policy documents and leadership rhetoric continue to stress the importance of curbing "irrational outflows", and liberalization momentum has clearly shifted to inbound investment policy.

In addition to outbound investment barriers in China, Chinese investors also face a difficult environment in the US. Investors have to navigate the broader uncertainty of US-China political relations as well as an evolving regulatory environment impacting both acquisitions and greenfield FDI. National security concerns have led to the passage of the FIRRMA legislation in August 2018, giving CFIUS jurisdiction to review non-controlling foreign interests in critical infrastructure, critical technologies and sensitive personal data for the first time. A FIRRMA pilot program covering 27 specific sensitive industries was started in October 2018, but many portions of the law are still awaiting final definitions and implementing regulations and there is still considerable uncertainty around final scope.

US lawmakers have also revised export controls through the Export Control Reform Act (ECRA). Expanded export controls could have far-reaching implications for research labs and other IP-generating investments, but investors are still waiting for implementation rules to be finalized. Regardless of ultimate outcome, it will take some time for Chinese firms to get confident that they can continue to access the US market without running afoul of these new regulations.

2 VENTURE CAPITAL

Direct investment has been the most visible channel of US-China investment flows over most of the past three decades, but various types of shorter-term portfolio investments have also been in the mix. For a long time, these shorter-term flows were dominated by Chinese purchases of US government securities, but in recent years other portfolio investment has grown rapidly due to gradual Chinese policy liberalization steps as well as the maturation of China's financial industry.

One of these non-FDI investment channels that has received plenty of public attention recently is venture capital (VC). A subset of private equity, VC refers to early-stage, generally minority equity investment in nascent enterprises with growth potential. VC investments typically occur in successive funding rounds with each round often comprised of multiple investors. The earliest seed rounds include target companies that may lack revenues and still be refining business models, while successive rounds follow the venture-backed company through product and business model optimization, expanding market reach, rapid scaling and maturation stages.

Venture-backed startups often operate in cutting-edge industries with novel new technologies. As venture investors generally execute close oversight and exert strong influence over portfolio companies through appointed directors and other means, rising Chinese venture interest in high-tech US startups was one of the key drivers behind passage of the Foreign Investment Risk Review Modernization Act (FIRRMA), which expands the US investment screening regime to allow the Committee on Foreign Investment in the United States (CFIUS) to review foreign investment stakes below the traditional 10% stake threshold.

This section presents a high-level summary of historical US-China venture capital investment flows from 2000 to 2018. It is based on a proprietary dataset curated from company filings and disclosures, private and government business registration databases, commercial data providers, media reports and

other sources. It tracks the cross-border investment activities of corporations and their dedicated venture subsidiaries, the general partners of professional venture funds and angel investors.

Assigning nationality to VC and other portfolio investment flows is tricky given increasingly mobile international investors, the heavy use of tax havens and other obfuscating structures. To remain consistent with the FDI dataset methodology, we assign VC investor nationality on an ultimate ownership basis. This is determined by the domicile of the ultimate corporate owner for corporate venture organizations; by domicile of the ultimate corporate owner or nationality and home country of the ultimate shareholder for general partners; and by nationality and home country for angel investors.

Similarly, in line with our direct investment methodology, we do not count the full value of each investment round with Chinese participants, but estimate the pro-rata share of total fundraising round values attributable to the Chinese investor(s). More details on the dataset and methodology can be found in the appendix.

2.1 US VENTURE CAPITAL IN CHINA

Venture capital has a much shorter history in China than it does in the United States. The first modern government-backed domestic Chinese venture funds were not established until the 1980s, and before the 2000s China lacked the institutions and financial development needed to foster a thriving private venture capital ecosystem. Critical developments in the 2000s and 2010s – like legalizing the limited partnership structure commonly used by venture capital investors in 2006 – finally provided the ingredients necessary to allow China's domestic venture capital market to take off.

As the global pioneers of venture capital, US venture

investors have been active in the Chinese VC ecosystem for most of its comparatively short history, with the first US venture firms entering the Chinese market by the early 2000s. Experienced US venture investors have since played key roles in the development of China’s modern technology sector, participating in funding rounds for at least one third of all Chinese venture-backed startups through the end of 2018. Most of China’s most important technology firms today including Alibaba, Tencent, Baidu and others received early stage financing from US venture investors.

As China’s economy has modernized and its technology sector has grown and matured, US venture investment in China has expanded rapidly in scale, surpassing the value of US foreign direct investment in China for the first time in 2018. Frothiness in Chinese venture markets since late last year points to some uncertainty in the short-term, but as China’s venture market continues to mature – total global VC dollars invested in China surpassed VC dollars invested in the United States for the first time in 2Q2018 – US venture investment in China may continue rivaling US direct investment in scope and importance.

INVESTOR TYPOLOGY

US venture capital investors in China include

professional venture funds run by US general partners; US corporations or their venture subsidiaries making investments on behalf of their parent firms; banks and other financial institutions; individual angel investors; and others. Unlike their Chinese counterparts investing in the United States, US venture investors in China are composed exclusively of non-government owned entities.

The mix of US venture investors in China is heavily dominated by professional venture funds. In 2018, these organizations accounted for upwards of 90% of all Chinese venture fundraising rounds with US participation. As these professional venture funds rely on institutional, high-net-worth and other investors for capital, they are principally motivated by financial returns. Strategically-motivated US corporate VC investors are the second-most common investor type: these entities took part in just over 10% of Chinese fundraisings with US participants in 2018. Other US venture investors including banks, other financial institutions and angel investors have generally played a marginal role.

Table 3 maps the most common types of US venture investors in China. While most entities in our dataset are located in the United States, some are also subsidiaries of US-headquartered entities located in China or to a limited extent in other domiciles like Hong Kong, Taiwan and Europe.

Table 3: Typology of US Venture Capital Investors in China

Private Entities	Example
Venture Capital Fund General Partners	Sequoia Capital China – a Beijing-based subsidiary of storied US-based venture capital firm Sequoia Capital
Corporations	Alphabet Inc. – an American multinational conglomerate created through a corporate restructuring of Google in 2015
Corporate Venture Arms	UMC Capital – a venture subsidiary of United Microelectronics Corporation with locations in Taiwan, China and the United States
Banks and Financial Institutions	JPMorgan Chase – a New York-based investment bank
Angel Investors	Peter Kellner – prominent angel investor; founder of Richmond Global Ventures and co-founder of Endeavor

Source: Rhodium Group.

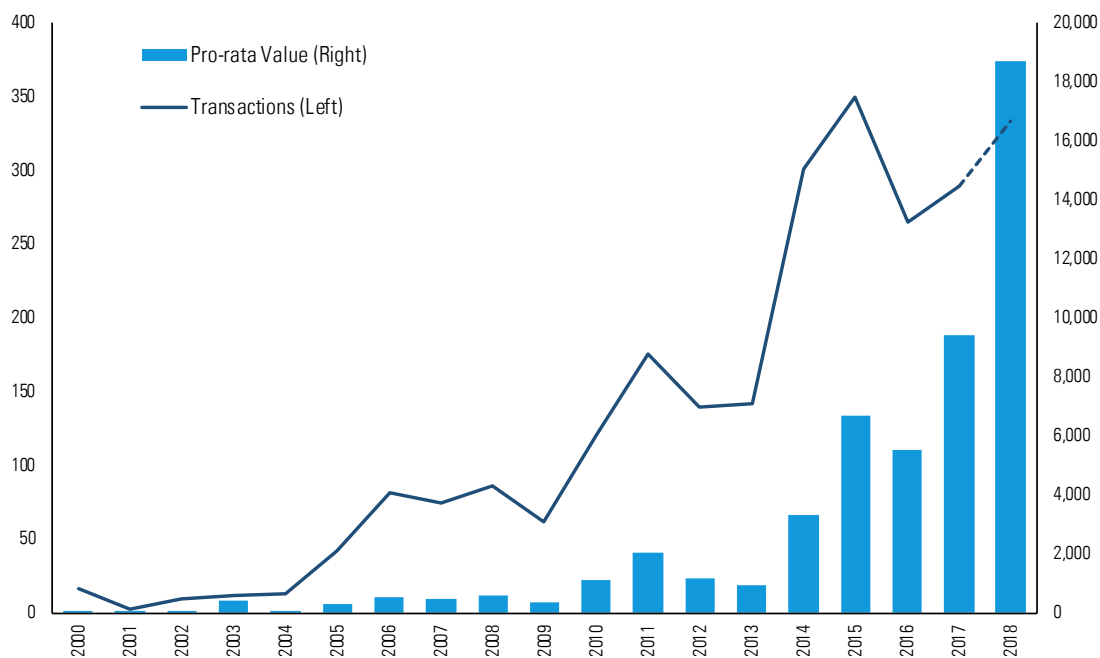
HISTORICAL DATA TRENDS

Our dataset captures more than 2,500 unique Chinese venture funding rounds with participation from at least one US investor from 2000 to 2018 (Figure 9). These US venture investors contributed an estimated \$52 billion to Chinese startups over the period while participating in fundraising rounds worth a combined \$132 billion.

Activity has shown strong growth in recent years measured both by number of transactions and by total estimated investment value. The sharp acceleration in US venture capital investment in China since 2010 has coincided with rapid growth of the broader Chinese venture capital ecosystem.

Figure 9. Annual US Venture Capital Investment in China, 2000 to 2018*

Number of transactions (left); value in USD millions (right)



Source: Rhodium Group based on Bloomberg, Pitchbook and other databases. *Includes China-headquartered venture capital fundraising transactions involving at least one investor ultimately owned by a US entity. Pro-rata value determined as US proportional share of each funding round's value based on the number of participating investors. 2018 data are preliminary only.

In 2018, US-owned venture investors participated in more than 330 unique Chinese venture funding rounds, investing a record estimated \$19 billion (roughly double the previous record of \$9.4 billion in 2017).

This elevated total was driven by US participation in massive venture fundraising rounds for Chinese technology firms Ant Financial (\$14 billion Series C round), Pinduoduo (\$3 Billion Series C round), Toutiao owner Bytedance (\$3 Billion Series D round) and others. Notably, this slew of sizeable 2018 VC transactions pushed estimated total annual

US venture investment in China above annual total direct investment for the first time.

Consistent with the last few years, the most important sector for US venture investment in China in 2018 was *financial and business services* with more than 100 unique funding rounds (Figure 10). Nearly three quarters of these transactions involved business services firms like interactive advertising platform and user management SaaS provider Duiba, supply chain risk management platform provider Jiatui and image recognition and semantic analysis technology firm ImageDT. *Consumer products and*

services; entertainment, media and education; and healthcare, pharmaceuticals and biotechnology were the next most important Chinese sectors for US venture investment, each drawing around 50 unique investments in 2018.

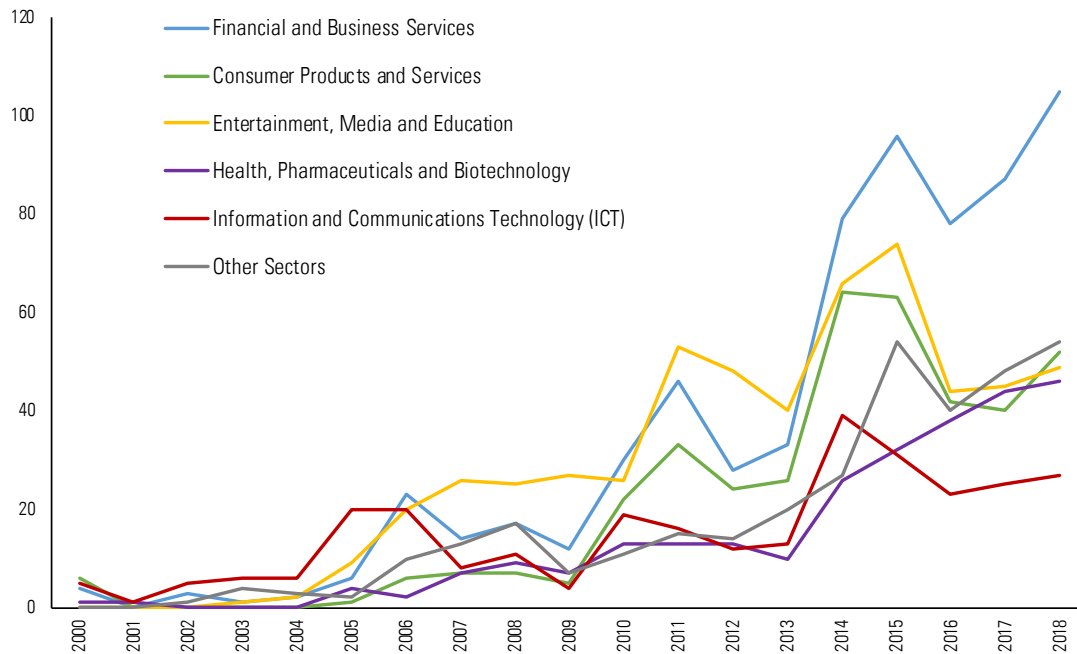
Information and communications technology (ICT) was also a notable sector by number of venture capital transactions in 2018. And ICT would have ranked even higher counting all software-related investments bucketed elsewhere – we code industries based on the use and purpose of a firm’s technology instead of the technology’s medium, so many

transactions in sectors like financial and business services and consumer products and services also involved target companies producing software or mobile apps.

By investment value, the participation of at least nine US investors in Ant Financial’s massive \$14 billion capital raise in June pushed financial and business services to the top by total investment in 2018. Entertainment, media and education (Bytedance, Kuaishou) was next, followed by consumer products and services (Pinduoduo).

Figure 10: Annual US Venture Capital Investment in China by Target Sector*

Number of transactions



Source: Rhodium Group based on Bloomberg, Pitchbook and other databases. *Includes China-headquartered venture capital fundraising transactions involving at least one investor ultimately owned by a US entity. 2018 data are preliminary only..

Table 4: US Venture Capital Investment in China by Industry*, 2016-2018

USD billion

	2018	2017	2016
Agriculture and Food	0.1	0.1	0.9
Automotive	2.5	3.9	1.4
Aviation	<0.1	<0.1	<0.1
Basic Materials, Metals and Minerals	<0.1	<0.1	<0.1
Consumer Products and Services	1.0	1.8	2.8
Electronics and Electrical Equipment	<0.1	0.1	0.4
Energy	<0.1	<0.1	<0.1
Entertainment, Media and Education	0.6	1.3	3.5
Financial and Business Services	0.9	0.9	8.5
Health, Pharmaceuticals and Biotechnology	0.2	0.4	0.8
Information and Communications Technology	0.1	0.1	0.2
Machinery	<0.1	<0.1	0.1
Real Estate and Hospitality	<0.1	<0.1	<0.1
Transport, Construction, and Infrastructure	0.1	0.9	0.1

Source: Rhodium Group. * Values are shaded on a scale from lowest to highest annual industry investment value from 2016-2018..

OUTLOOK

Current conditions point towards a slowdown in technology fundraising activity in China in 2019, continuing weakness that began in 2018. China's technology sector came under pressure in the second half of 2018 due to a broad economic deceleration and tighter financial conditions, which led to a significant slowing of venture fundraising late in the year. Consistent with this overall trend, US VC players' largest Chinese venture investments in 2018 all took place in the first half of 2018. We estimate that the first quarter of 2019 saw less than \$1 billion of new US venture investment in China.

While preliminary macroeconomic data suggest Chinese growth broadly stabilized in 1Q2019, China still faces numerous internal and external uncertainties stemming from trade, debt, business cycle, the threat of US-China technology decoupling and other channels. This fragile situation makes it unlikely that US venture investment in China will approach the record levels seen in 2018 in the near-term.

2.2 CHINESE VENTURE CAPITAL IN THE US

Chinese venture investment abroad was limited until the late 2000s by the same structural issues hampering the development of China's domestic venture capital ecosystem. A lack of experienced homegrown Chinese venture capital investors as well as capital controls and other impediments to overseas investment further suppressed activity. However, since the late 2000s Chinese venture investment abroad has increased by orders of magnitude (from a very low base).

The United States has been the principal recipient of these growing Chinese venture investment flows – around two-thirds of all Chinese foreign venture transactions since 2000 have involved American-headquartered companies. This distribution is consistent with the United States' outsized role in the global venture capital system: North America accounted for more than 50% of all global venture transactions each year through 2014 and has remained the most popular target each year since.

Despite this significant US focus, Chinese venture investors have so far remained small players in the broader US venture capital ecosystem. Chinese VC investors participated in venture funding rounds for only about 2% of US companies that received venture backing from 2000 to 2018. US venture capital firms have been demonstrably more important to the development of China's modern technology sector than Chinese venture investors have been to the development of modern technology firms in the United States.

INVESTOR TYPOLOGY

Chinese venture capital investors in the US include the same kinds of entities that make up the body of US venture investors in China including professional venture funds, corporate venture investors, financial institutions, angel investors and others. But Chinese

venture investors are driven by a more complex set of commercial and financial as well as government policy, reflecting the stronger government role in the Chinese economy and innovation system. In addition to private firms, the Chinese venture investor landscape also includes entities like state-owned firms and sovereign wealth funds that have no analogue among US venture investors in China.

The mix of Chinese venture investors in the US is dominated by professional venture funds, but not to the same extent as US venture investors in China. In 2018, professional Chinese venture funds took part in about two-thirds of all US venture fundraising rounds with Chinese participation, while strategically-motivated Chinese corporate VC investors participated in nearly 40% of these fundraisings (there is some overlap between these two groups' investments). This is a considerably higher rate than their US corporate counterparts, showing the greater role of corporate venture players in outbound Chinese venture investment. Other entities are comparatively marginal players.

Table 5 maps the most common types of Chinese venture investors in the United States within both the state-owned and private investor buckets. While most entities in our dataset are located in China, some are also subsidiaries of China-headquartered entities located in the US or to a limited extent in other domiciles like Hong Kong, Singapore and Canada.

Private Chinese venture investors have historically accounted for most activity in the United States while state-owned venture investors have played a more limited role. From 2000 to 2018, 89% of US venture funding rounds with Chinese participation included exclusively private investors. State-owned players accounted for only 11% of US venture funding rounds with Chinese participants over the same period.

Table 5: Typology of Chinese Venture Capital Investors in the US

State-Owned Entities	Example
State-Owned Enterprises	Kaistar Lighting – a provincial state-owned enterprise based in Xiamen
Venture Arms of State-Owned Enterprises	SAIC Capital - A Michigan-based subsidiary of Shanghai Automobile Industry Corporation
Non-Corporate State-Owned Entities	China Investment Corporation - China's sovereign wealth fund
Venture Arms of Non-Corporate State-Owned Entities	Tsing Capital - A Beijing-based venture arm of Tsinghua Holdings, which is owned by Tsinghua University
Government Investment Funds	Sino IC Capital - The investment manager of China's \$22 billion National Integrated Circuit Industry Development Fund

Private Entities	Example
Venture Capital Fund General Partners	Zhenfund - a seed stage focused venture fund founded in 2011 by Bob Xu and Victor Wang
Corporations	Tencent Holdings - A Chinese multinational conglomerate specializing in Internet-related services and products
Corporate Venture Arms	6 Dimensions Capital (formerly Wuxi Healthcare Ventures) - the Cambridge-based venture subsidiary of biopharma firm Wuxi AppTec
Angel Investors	Huateng Ma - the co-founder and chief executive officer of Tencent Holdings

Source: Rhodium Group. .

HISTORICAL DATA TRENDS

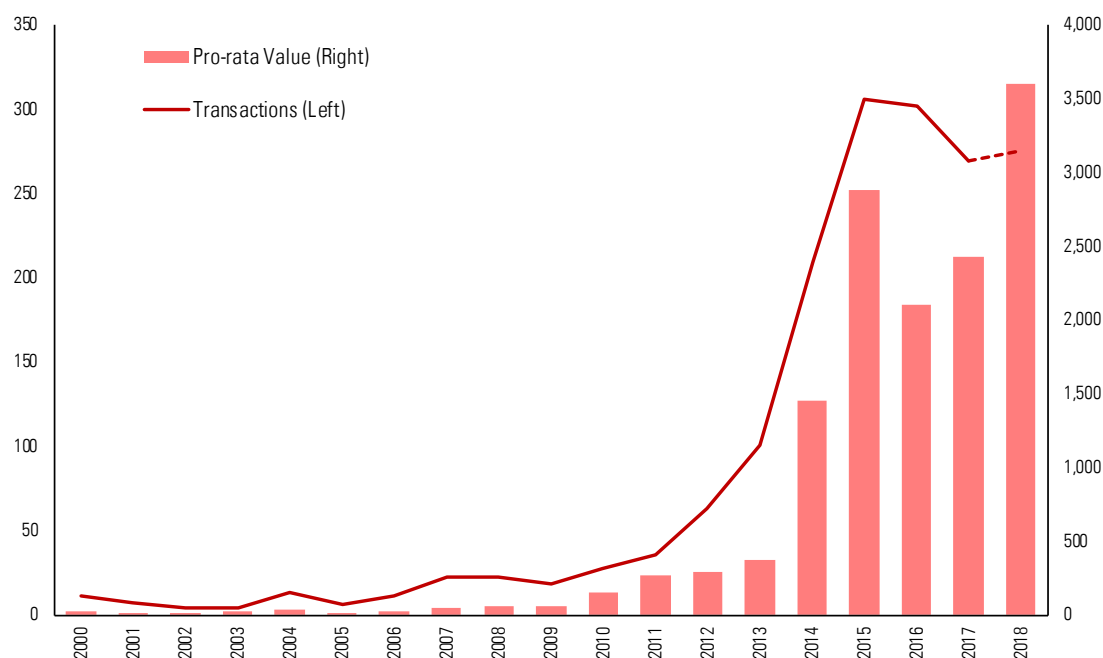
Our dataset captures more than 1,700 unique US VC funding rounds with participation from at least one Chinese investor from 2000 to 2018 (Figure 11). Together these Chinese entities invested an estimated \$14 billion in US startups through the end of 2018 as part of funding rounds worth a combined \$55 billion. Most of this activity focused in just the last few years – 80% of total funding rounds with Chinese participation occurred from 2014 to 2018. Activity by funding round count peaked in 2015 and has fallen modestly since, driven mostly by a decrease in smaller, early-stage investments. However, total investment has remained high.

Even while Chinese FDI in the US slowed sharply in 2018, VC investment continued to flourish. Chinese-owned VC funds participated in more than 270 unique US funding rounds in 2018, contributing a record \$3.6 billion. This outpaced the previous single-year record of \$2.8 billion set in 2015 (even though 2015 saw more transactions). In line with broader US venture capital trends, Chinese VC investors gravitated towards larger, later-stage investments in 2018 compared to previous years.

This 2018 resilience came despite policy headwinds. FIRRMA's implementation began in pilot form on

Figure 11. Annual Chinese Venture Capital Investment in the United States, 2000 to 2018*

Number of transactions (left); value in USD millions (right)



Source: Rhodium Group based on Bloomberg, Pitchbook and other databases. *Includes US-headquartered venture capital fundraising transactions involving at least one investor ultimately owned by a mainland Chinese entity. Pro-rata value determined as Chinese proportional share of each funding round's value based on the number of participating investors. 2018 data are preliminary only.

November 10th, and Chinese VC investors taking stakes in US firms that develop or use “critical technologies” applied in any of 27 designated industries must now (with some exceptions) file mandatory CFIUS declarations. Many other provisions of the law, which is scheduled to take full effect by March 2020, have yet to be defined and implemented.

Our venture data show that in aggregate, FIRRMA's impact on Chinese venture investors in the US has so far been modest. But there have also been notable shifts within investor mix and targeted industries and technologies since FIRRMA's passage. Investment by state-owned venture investors has fallen dramatically since mid-2018, and Chinese VC players have generally avoided US targets that would require CFIUS notification under the FIRRMA pilot program.

As far as sector breakdown, *ICT* was the top target for Chinese venture capital in the US by number of venture capital transactions early in the Chinese VC boom (Figure 12). And while *health-care, pharmaceuticals and biotechnology* and

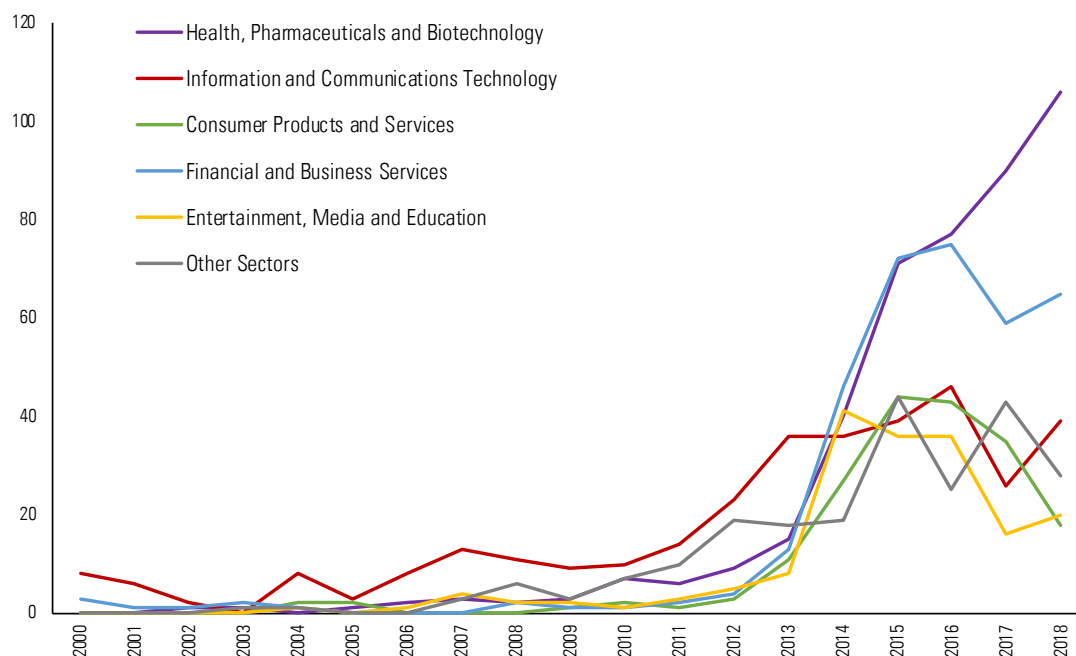
financial and business services sectors have surpassed *ICT* as top recipients in recent years, much of the activity in non-*ICT* sectors continues to feature target firms developing software- and app-based services.

Health and biotech and *financial and business services* continued to dominate in 2018, with the top-ranking *health and biotech* sector pulling in more than 100 unique Chinese venture investments. Outside of these sectors and *ICT*, the other most notable targets in 2018 included *consumer products and services* as well as *entertainment, media and education*.

The same sectors also ranked highly by estimated capital invested, with *health and biotech* the top target (Table 6). *Electronics and electrical equipment* also ranked highly by invested capital due to a large fundraising round involving battery-maker Farasis Energy.

Figure 12: Annual Chinese Venture Capital Investment in the US by Target Sector*

Number of transactions



Source: Rhodium Group based on Bloomberg, Pitchbook and other databases. *Includes US-headquartered venture capital fundraising transactions involving at least one investor ultimately owned by a mainland Chinese entity. 2018 data are preliminary only.

Table 6: Chinese Venture Capital Investment in the US by Industry*, 2016-2018

USD billion

	2018	2017	2016
Agriculture and Food	<0.1	0.1	<0.1
Automotive	0.1	0.4	0.2
Aviation	0.1	<0.1	<0.1
Basic Materials, Metals and Minerals	<0.1	<0.1	<0.1
Consumer Products and Services	0.3	0.2	0.2
Electronics and Electrical Equipment	0.1	<0.1	0.8
Energy	<0.1	0.1	<0.1
Entertainment, Media and Education	0.1	0.2	0.2
Financial and Business Services	0.5	0.2	0.4
Health, Pharmaceuticals and Biotechnology	0.5	1.0	1.5
Information and Communications Technology	0.4	0.2	0.3
Machinery	<0.1	<0.1	<0.1
Real Estate and Hospitality	<0.1	<0.1	<0.1
Transport, Construction, and Infrastructure	<0.1	<0.1	0.1

Source: Rhodium Group. * Values are shaded on a scale from lowest to highest annual industry investment value from 2016-2018..

OUTLOOK

Data from 2018 and the first quarter of 2019 show that Chinese venture players are still finding investment opportunities in the United States despite the regulatory burdens introduced since FIRRMA's passage. However, there is tremendous uncertainty for the remainder of 2019.

The FIRRMA implementation process is still in its infancy – many additional draft regulations and key definitions are expected in the coming months before the final statutory deadline for full implementation in March 2020. Due to the short track record, Chinese investors also lack clarity on how CFIUS will apply its expanded jurisdiction over foreign venture investors, and a slew of aggressive CFIUS enforcements in the venture capital space could yet have a chilling effect on future investment.

Chinese outbound venture capital investment in 2019 could also be impacted by domestic Chinese conditions. Along with a slowdown in Chinese venture capital fundraising in the second half of 2018, concerns about the health of China's technology sector and broader economy have reportedly led to downsizing at many Chinese tech firms and a more cautious sentiment among Chinese technology investors, which may impact their appetite for overseas investments.

3. CONCLUSIONS

The data and analysis presented in this report support several forward-looking conclusions relevant to business and policymaking:

First, **2018 proved that the five-decade trend of closer engagement in US-China relations was not inexorable, and patterns propelled by powerful commercial logic can be stalled or reversed by policy.** At the beginning of 2018, most observers expected a rocky year which would test but not tear the fibers of the US-China relationship. By year's end, confidence in that expectation had been dashed, and far less amical alternative futures were being widely considered.

Second, **a more defensive US posture and the uncertain outlook for the bilateral relationship clearly impacted US-China investment flows in 2018, much more so than trade.** The central tenet of US China policy in place for decades – engagement – has been declared antiquated by the Trump Administration, but the full substance of the “strategic competition” successor policy has yet to be clarified. Many in the United States (and most Chinese officials) hoped to mitigate the bellicosity of this new US turn, but our data show that while trade protection has been more bark than bite (US imports from China have risen throughout the Trump years), the hawkish mood has deeply impacted US-China investment dynamics. Expanded CFIUS activity and uncertainty of market access have been major factors in the slide of Chinese FDI in the US, and concerns about technology leakage through outbound investment and other worries have dragged on US FDI in China across numerous sectors.

Third, **major shifts in investment dynamics have come even before the full implementation of new laws, and forthcoming implementing regulations for investment screening and export controls could yet create additional headwinds for Chinese investment in the US (especially Chinese venture capital and other minority investment).** If forthcoming implementing regulations for FIRRMA and ECRA take an expansive stance on emerging and foundational technologies, two-way

technology investment could be severely impacted. Informal pressures on US firms to reconsider their supply chain exposures to China are also acute. Two-way investment data will be the canary in the coal mine for how these developments ultimately impact US-China economic relations.

Fourth, **the tension that has built up in the US-China relationship has helped spur Beijing to accelerate long-delayed investment market access reforms.** These moves, which may provide opportunities for US firms in financial, automotive and other sectors, are not just tactical responses to foreign pressures (although these pressures have played a part), but the continuation of a long (if bumpy) pattern of gradual investment opening. China now needs to display strong follow-through in these commitments to dispel cynicism and to ensure that other regulations - such as data transfer and cyber rules or implementation of anti-monopoly rules – do not offset these positive steps.

Fifth, **2018 could mark the nadir in US-China investment flows if both sides agree on a comprehensive and robust economic agreement that takes risk out of the current equation.** While details surrounding current US-China negotiations remain vague, reports suggest a deal could include significant elimination of restrictions on US investment in China. Removal of trade barriers could also spur a boom in trade-facilitating direct investments in many areas such as commodity handling facilities for LNG liquefaction and crude terminals or rail links for coal and soybean movement in the US. Another important ingredient for stabilization of US-China investment flows will be more clarity on implementation of new investment policies (FIRRMA and ECRA on the US side and the Foreign Investment Law and FDI negative list in China), which would create needed transparency and help restore predictability for investors.

Sixth, **irrespective of any deal, national security concerns and US-China strategic distrust are rooted in structural trends that will persist for a prolonged period, and leadership must manage this reality to minimize loss of long-term prosperity.**

Longstanding misgivings about Chinese participation in critical infrastructure and technology value chains that were playing out behind closed doors burst into public view in 2018 and gathered popular support. But while hawks bolstered the case against overly permissive policy, the risks to America's innovation ecosystem from too much protection deserve more consideration. The stepped-up US investment screening regime may curtail not just inflows from China but also investments from like-minded allies. A new export control regime based on expansive and blurry technology categories could pose a real danger to the attractiveness of the US as global research and technology hub and thus its long-term competitiveness. And visa restrictions for foreign students and scientists could close the door to much needed foreign talent in those fields.

Finally, **more restrictive investment policies in the US-China context have implications for policy in other economies. While US leadership may have been necessary to catalyze discussion about**

addressing China-related concerns, we ultimately will need multilateral solutions.

Other OECD economies are taking different views on Chinese capital flows and general openness in response to defensive US policies. Some nations are aligning with American thinking, and some are not. This situation risks balkanizing a community of interest that needs cohesion. The aggressive unilateralism of Washington has distracted leaders from the essential convergence of their priorities. Rather than squander this mutuality, advanced economies should jointly focus on the new seminal questions which will define their futures: where do market economies draw the line between legitimate security exceptions to investment openness and disguised protectionism; in which ways do our interests require reciprocity in cross border investment; and how should we use existing platforms such as the WTO and the OECD to debate these question or turn to new ones?

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APPENDIX: DATASET AND METHODOLOGY

Direct Investment

Foreign Direct Investment (FDI) is a specific category of cross-border capital flows within the System of National Accounts, which is an internationally agreed upon standard set of principles for measuring economic activity used by the International Monetary Fund (IMF), the Organisation for Economic Co-operation and Development (OECD) and other international organizations. By definition, FDI refers to cross-border capital flows that entail significant influence over the management of an invested entity and a long-term investment relationship. The common threshold for a direct investment is 10% of equity or voting shares. The other four categories of cross-border investment flows are portfolio investment, derivatives, other investments and reserves.

Most countries maintain official statistics on both FDI flows (the value of cross-border investments made during a specific period) and stocks (the total value of aggregate direct investment at a given time adjusted for valuation changes and exchange rate movements). Several international organizations also compile FDI data, including the IMF, United Nations Conference on Trade and Development (UNCTAD) and the OECD.

Traditional FDI data are known to be subject to a number of distortions, which makes them problematic to use for policy analysis. FDI data are not only released with a significant time lag, they may also be distorted by companies' usage of holding companies, offshore vehicles and other complex accounting structures to take advantage of favorable tax policies. The extent of "round-tripping" and "trans-shipping" investments through a third location makes it increasingly difficult to track flows accurately. Those practices and complicated deal structures with "indirect" holdings also make it difficult for statistical agencies to correctly separate FDI from portfolio investment stakes.

This situation has encouraged economists and other analysts to find ways of working around existing

gaps and distortions. One way of doing so is to compile alternative datasets that are based on tracking FDI transactions for specific countries or industries. The US-China Investment Project utilizes proprietary datasets compiled by Rhodium Group based on such a transactional approach. The dataset includes FDI transactions that lead to significant ownership of assets of a long-term nature by US companies in Mainland China and vice versa.

Specifically, the FDI dataset captures three types of transactions: (1) acquisitions of existing assets that results in at least 10% ownership stakes; (2) greenfield projects with at least 10% ownership stake (newly built facilities such as factories, warehouses, offices and R&D centers); (3) the expansion of existing FDI operations. The general threshold for transactions to be included in the two-way databases is \$1 million. The US-China Investment Project's data on direct investment only counts completed acquisitions and greenfield projects and expansions that have broken ground. Announced, rumored or pending transactions are not included. Portfolio stakes of 10% or less, reverse merger transactions, flows related to Chinese firms listing their assets in US securities markets, cooperation agreements and procurement contracts are not recorded. Investment value is based on the gross transaction value recorded at historical prices. The dataset does not account for divestitures or convert asset values to market prices.

Venture Capital

The venture capital data presented in this report come from a second proprietary Rhodium dataset on venture capital investments made by Chinese nationals, corporations and other entities in US-headquartered startups, and vice versa by US nationals, corporations and other entities in Mainland China-headquartered startups.

This dataset covers equity investments from the angel and seed stages through all later-stage,

pre-initial public offering (IPO) funding rounds. It includes direct transactions involving mainland Chinese and US investors as well as investments through mainland Chinese and US-owned subsidiary firms domiciled elsewhere. Where partnership structures are used as investment vehicles, investments are counted based on the ownership of the general partner, which is the entity with the decision-making authority over fund capital deployment.

Venture capital investments are recorded at the closing date of the relevant investment or fundraising round, with each fundraising round comprising a single transaction having potentially multiple investors. Where only total fundraising round values are publicly disclosed and individual investment sizes are unknown, investment total is estimated by assigning a pro-rata share of the total fundraising round value to all Chinese/US participants based on the total number of known fundraising round investors. Transactions with unknown investment totals are included in the dataset at zero value.

The dataset does not include venture investments made by entities domiciled in mainland China and the US that are ultimately non-Chinese, non-US owned. It does also not include investments in firms headquartered in other countries that have operations in the US/China.

While venture investments in exceptional cases result in stakes of more than 10 percent in a target company and may therefore qualify as direct investments, to avoid double counting all venture capital investments are confined to this data set regardless of stake size.

Data Access

The US-China Investment Project database is constantly updated, even for previous time periods. More details on the data methodology, research reports and an interactive data visualization are available on the US-China Investment Project website (www.us-china-investment.org).

WWW.US-CHINA-INVESTMENT.ORG