# U.S.-China Economic and Security Review Commission

Economics and Trade Bulletin

**April 4, 2017**

## Highlights of This Month's Edition

- **Bilateral trade:** In February, U.S. deficit with China reached $23 billion, down 26.6 percent month-on-month and 18.3 percent year-on-year.
- **Bilateral policy issues:** The United States is poised to maintain China's status as a nonmarket economy; at Beijing's request, WTO establishes panel to review the EU's treatment of China as a nonmarket economy; Chinese outbound investment reached record levels in 2016, but an unprecedented number of Chinese investment transactions were canceled as Chinese authorities adopt measures to control capital outflows; additional measures to restrict outbound FDI will likely lead to an investment decline in 2017; China expands foothold in the U.S. rail market with a new $137.5 million contract to build train cars for Philadelphia's transit system.
- **Policy trends in China's economy:** Work reports from China's National People's Congress stress the centrality of the CCP in policymaking, with President Xi at the helm; priority given to clamping down on financial instability; China is planning to establish a trading link connecting bond markets in China and Hong Kong.
- **Sector focus – Artificial Intelligence:** China is aggressively closing gap with the United States for global leadership in artificial intelligence.

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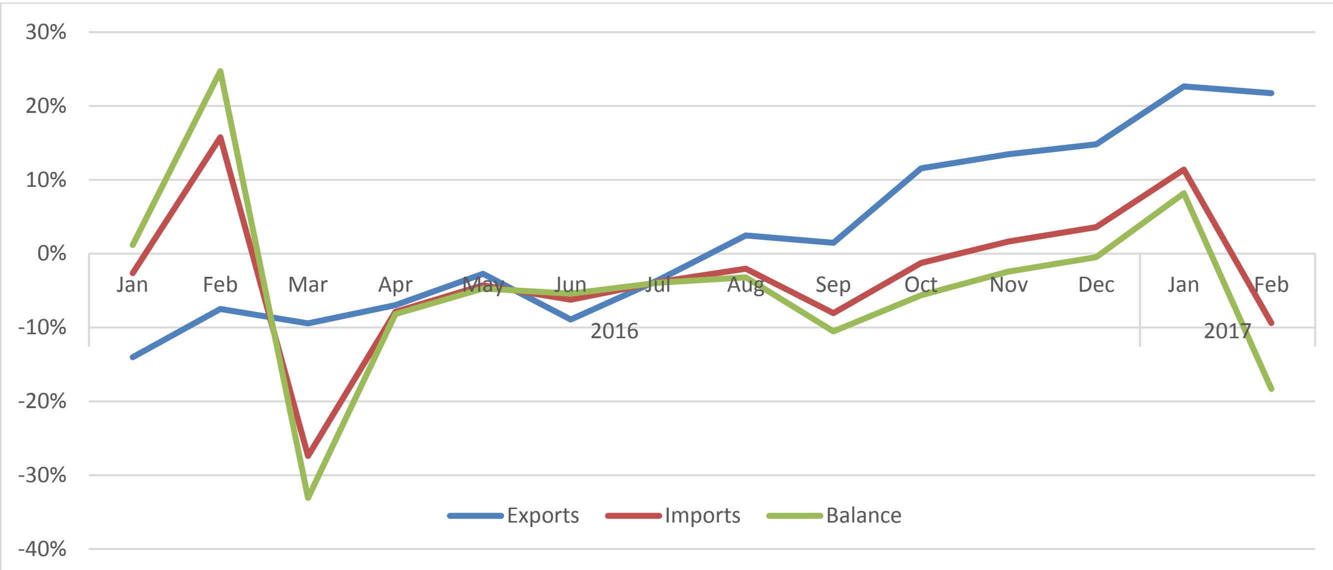
# Bilateral Trade

In February 2017, U.S. exports to China were $9.8 billion and imports $32.8 billion, down 2.7 percent and 20.8 percent, respectively, from January 2017. The net result is a 26.6 percent drop in the U.S. monthly deficit, from $31.3 billion in January to around $23 billion in February 2017; year-on-year, the deficit declined 18.3 percent. While U.S.-China trade in January and February tends to be very seasonal, affected by Christmas and Lunar New Year spending, year-on-year, U.S. export performance continues its upward trend, growing 21.7 percent over February 2016 (see Figure 1).

**Figure 1: Year-on-Year Change in U.S. Trade with China**




*Source:* U.S. Census Bureau. *http://www.census.gov/foreign-trade/balance/c5700.html*.

# Bilateral Policy Issues

## U.S. Department of Commerce Expected to Maintain China's Status as a Nonmarket Economy

The U.S. government has begun its review of China's market economy status (MES), and is expected to conclude that China remains a nonmarket economy (NME).[1] The decision about China's MES is being considered as part of an antidumping (AD) and countervailing duty (CVD) investigation into Chinese aluminum foil exports.[*] [2] The United States last reviewed China's status in 2006, and appears poised to maintain China's NME, with the U.S. Department of Commerce releasing a statement on March 29, 2017, warning that China's "unfair trade practices and operation as a nonmarket economy will have serious consequences."[3]

Since December 11, 2016, when section 15(a)(ii) of China's World Trade Organization (WTO) Accession Protocol expired, the Chinese government has argued it is entitled to automatic conferral of MES by all WTO members, including the United States and EU.[†] [4] In China's 2001 WTO accession protocol, Beijing agreed to provisions allowing its trade partners to automatically treat it as an NME for the purposes of AD enforcement for 15 years.[5] Despite Beijing's insistence that it should be granted MES automatically after December 11, 2016, however, U.S.

[*] The U.S. Aluminum Association Trade Enforcement Working Group has accused Chinese aluminum foil producers of using improper subsidies and selling at unfair prices, triggering the investigation. U.S. International Trade Administration, *Commerce Initiates Antidumping Duty and Countervailing Duty Investigations of Imports of Aluminum Foil from the People's Republic of China*, March 28, 2017. *http://enforcement.trade.gov/download/factsheets/factsheet-prc-aluminum-foil-ad-cvd-initiation-032817.pdf*.

[†] For more on China's MES, see U.S.-China Economic and Security Review Commission, Chapter 1, Section 2, "State-Owned Enterprises, Overcapacity, and China's Market Economy Status," in *2016 Annual Report to Congress*, November 2016, 114–119.

representatives told Chinese officials during a meeting in July 2016 that the expiration of the accession provision would not require automatic conferral of China's MES.[6] Instead, the Department of Commerce would review China's status as an NME to determine whether it met the requirements of a market economy.[7] Under the U.S. AD law in the Tariff Act of 1930, the Department of Commerce is the sole U.S. government agency responsible for determining whether a country is a market economy, and whether MES will apply to the whole country or on a sector-by-sector basis.[*]

The decision to maintain China's NME status in trade cases would ensure Chinese exports remain eligible for higher U.S. tariffs.[8] The WTO allows for the "normal value"—or the appropriate price in the market of the exporting country—of NME exports to be determined using data from a surrogate country.[9] Because Chinese domestic prices and costs are often suppressed by government subsidies, the United States relies on third country data to demonstrate that China is artificially reducing the price of exports with government subsidies, a practice known as "dumping."[10] These measures are essential for protecting U.S. companies that would otherwise be harmed by China's anticompetitive activities.[11] For instance, the United States launched 57 AD and CVD investigations against China in 2016, 86 percent of the total number of cases it brought in the year.[12]

## WTO Establishes Panel to Review EU's Treatment of China as a Nonmarket Economy

On April 3, 2017, the WTO Dispute Settlement Body established a panel to review China's claim that the EU is violating its WTO commitments by treating China as an NME.[13] The EU had blocked China's first request to establish a panel on March 21, but could not block a second request in accordance with WTO rules.[14] China chose to protest the EU's decision to maintain China's status as an NME, but not the United States'—an indicator China may be pursuing a "divide and conquer" strategy because it believes it has a better case against the EU.[15] It likely will take two to three years for the case to be resolved as it makes its way through the WTO's complicated dispute settlement process.[16]

Unlike the United States, which applies a six-step test for determining whether a country or sector qualifies as a market economy, current EU law names specific countries—including China—as NMEs.[17] Legislation is currently under consideration in the EU to remove the NME country list and allow industry groups to make NME arguments against foreign countries on a sector-by-sector basis. The EU has expressed frustration that China would bring its WTO case while the law, which may result in the measures China opposes being withdrawn, is being considered.[18] In a statement during a WTO meeting on March 21, 2017, the EU said China's case "is unnecessary and ultimately incapable of being fruitful," while also calling it an attack on the "ongoing internal legislative process of the European Union."[19]

The panel's ruling on China's MES claims against the EU could have significant implications for the United States and global economic growth, potentially reducing U.S. exports to the EU due to an influx of Chinese goods.[†] [20] A 2015 report by the Economic Policy Institute, a U.S. think tank, found the decision to unilaterally grant MES to China would increase EU imports of manufactured commodities by between $80 billion and $160 billion or more.[21] In addition, the ruling would eliminate 1.7 million to 3.5 million EU jobs, as well as additional jobs in both upstream and downstream supplier industries around the world.[22] This import growth would also increase EU trade deficits and reduce EU gross domestic product (GDP) by 1 to 2 percent in the first three to five years after MES was granted.[23]

The potential economic fallout of the EU granting China MES worries U.S. policymakers, with unnamed U.S. officials from the U.S. Trade Representative's office and the Department of Commerce warning their EU

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[*] The Department of Commerce uses a six-step test to determine whether a country qualifies as a market economy. The test considers the extent to which the currency of the foreign country is convertible into the currency of other countries, the extent to which wage rates in the foreign country are determined by free bargaining between labor and management, the extent to which joint ventures or other investments by firms of other foreign countries are permitted in the foreign country, the extent of government ownership or control of the means of production, the extent of government control over the allocation of resources and over the price and output decisions of enterprises, and such other factors the administering authority considers appropriate. Tariff Act of 1930, Pub. L. No. 103–465, 1930, codified at 19 U.S.C. § 1677(18).

[†] To date, no studies have examined the potential U.S. job losses or economic impact on the United States if the EU grants China MES.

counterparts in December 2015 that granting China MES would amount to "unilaterally disarming" Europe's trade defenses against China.[24] Six months later, a bipartisan group of 18 U.S. senators sent a letter to EU Trade Commissioner Cecilia Malmström urging the EU to rule against granting China MES. The letter stated that granting China MES would "thwart global efforts to secure China's compliance with its international trade obligations," and "could have a destabilizing impact in certain global sectors, including the steel industry."[25]

## Chinese Investments in the United States Reach All-Time High in 2016, but Downturn Expected in 2017

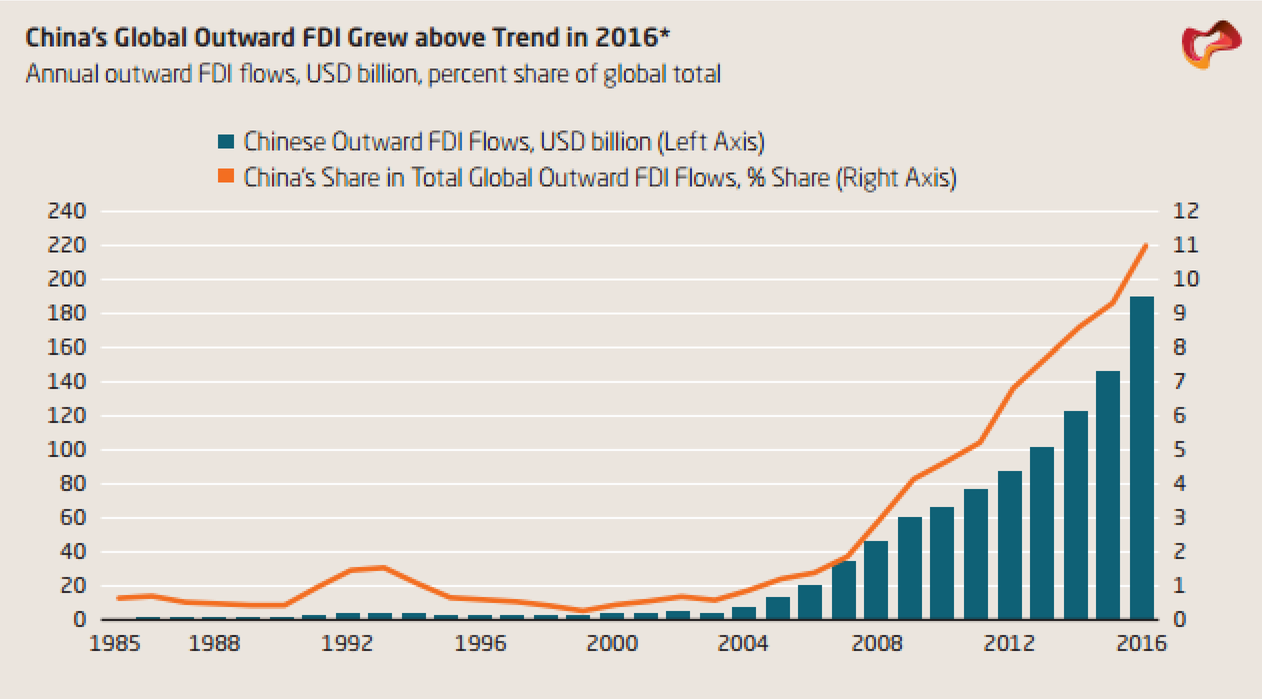
Chinese outbound investment reached record levels in 2016, totaling nearly $200 billion worldwide, a 40 percent increase year-on-year, according to data from Rhodium Group (see Figure 2).[26] Europe and North America together accounted for $94 billion of Chinese investment in 2016, a 130 percent increase from the year before.[27] Chinese investment in the United States tripled in 2016 year-on-year, rising to $45.6 billion,[*] and grew 77 percent year-on-year in Europe for 2016, totaling $37 billion.[28] Analysis by Thompson Reuters shows the rise in foreign direct investment (FDI) to the United States made it the leading destination for Chinese investment, exceeding Chinese investment in Hong Kong by roughly $20 billion since 2015.[29] Hong Kong has traditionally been the largest recipient of Chinese FDI, accounting for 61 percent of Chinese FDI in 2015 ($90 billion out of $146 billion), according to official Chinese statistics.[30] While the overall number of Chinese investment deals in the United States declined, as shown in Figure 3 (there were 142 Chinese investment transactions in the United States in 2016 versus 169 in 2015) the average value of these deals increased dramatically from $90 million in 2015 to $320 million in 2016 (Figure 4).[31]

This increase in higher-value Chinese FDI transactions may have been facilitated by looser Chinese regulations. In October 2014, China's Ministry of Commerce suspended an approval process for outbound investment transactions in excess of $100 million.[32] The approval process was replaced with a simple notification requirement, significantly reducing the time necessary to complete large foreign investment transactions, which could take months under the old system.[33] As seen in Table 1, multibillion dollar deals drove Chinese investment in both North America and Europe, with the average deal value more than doubling in each region and the largest single transaction—Tencent's acquisition of Finnish video game maker Supercell for $7.4 billion—almost equal to the total value of all Chinese investment transactions in the United States in 2012 ($7.6 billion).[34] In the United States, the real estate and hospitality sector[†] accounted for the largest share of Chinese investment in 2016 (37 percent), followed by the transportation and infrastructure sector (13 percent) and consumer products and services (12 percent).[35]

[*] For more on China's investment in the United States, see Thilo Hanemann and Daniel Rosen, "Chinese Investment in the United States Recent Trends and the Policy Agenda," *Rhodium Group* (Prepared for the U.S.-China Economic Security Review Commission), December 2016. *http://origin.www.uscc.gov/sites/default/files/Research/Chinese_Investment_in_the_United_States_Rhodium.pdf.*

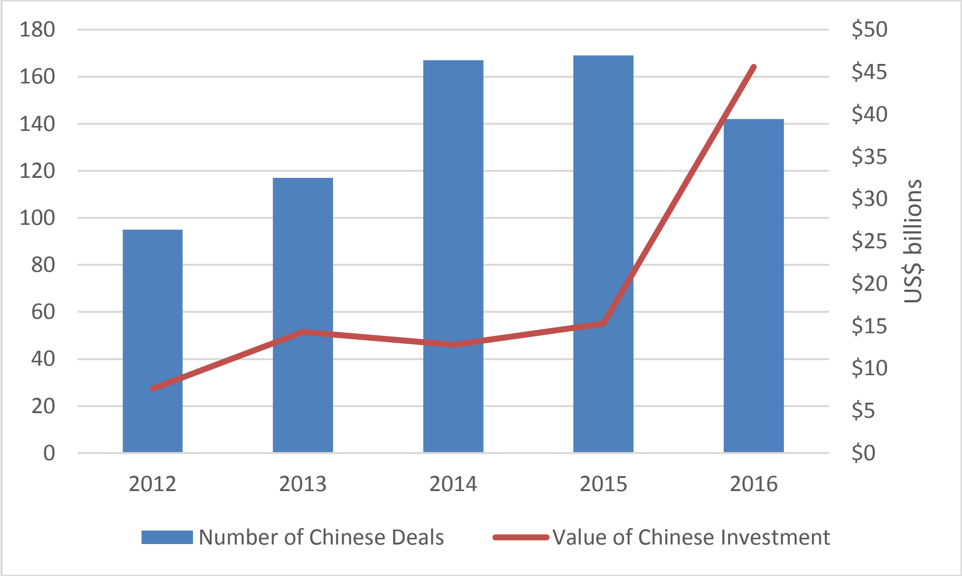
[†] For more on China's investment in the U.S. hospitality sector, see Matt Snyder, "Chinese Tourism and Hospitality Investment in the United States," *U.S. China-Economic Security Review Commission*, July 25, 2016. *https://www.uscc.gov/sites/default/files/Research/Staff%20Report_Chinese%20Tourism%20and%20Hospitality%20Investment072516.pdf*.

**Figure 2: Chinese Global Outbound FDI, 1985–2016**



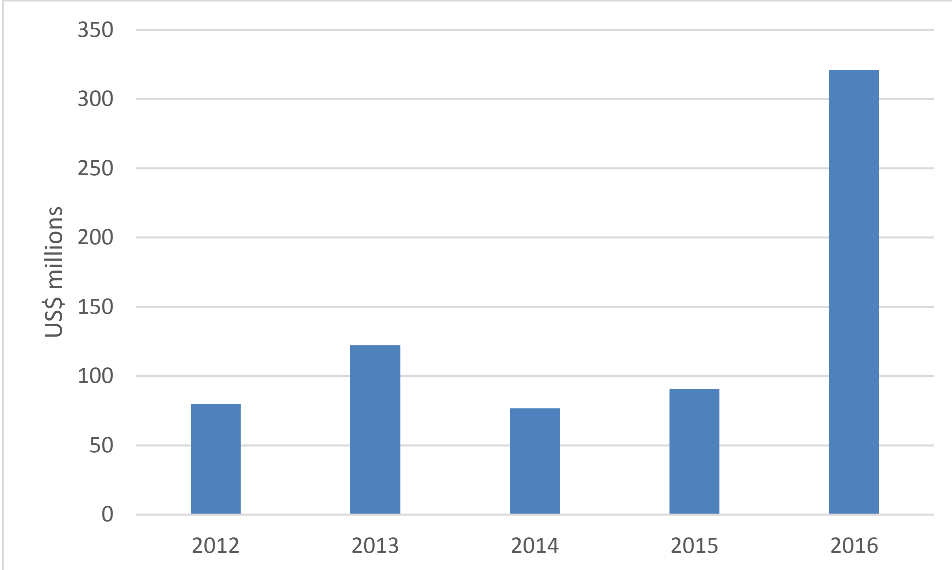

*Source:* Thilo Hanemann, "Record Flows and Growing Imbalances, Chinese Investment in Europe in 2016," *Rhodium Group*, January 2017. *http://rhg.com/wp-content/uploads/2017/01/RHG_Merics_COFDI_EU_2016.pdf.*

**Figure 3: Chinese Investment in the United States, 2012–2016**




*Source:* Rhodium Group, "China Investment Monitor." *http://rhg.com/interactive/china-investment-monitor.*

**Figure 4: Average Value of Chinese Investment Transaction in the United States, 2012–2016**




*Source:* Thilo Hanemann, "Record Deal Making in 2016 Pushes Cumulative Chinese FDI in the US above $100 Billion," *Rhodium Group*, December 30, 2016. *http://rhg.com/notes/record-deal-making-in-2016-pushes-cumulative-chinese-fdi-in-the-us-above-100-billion*.

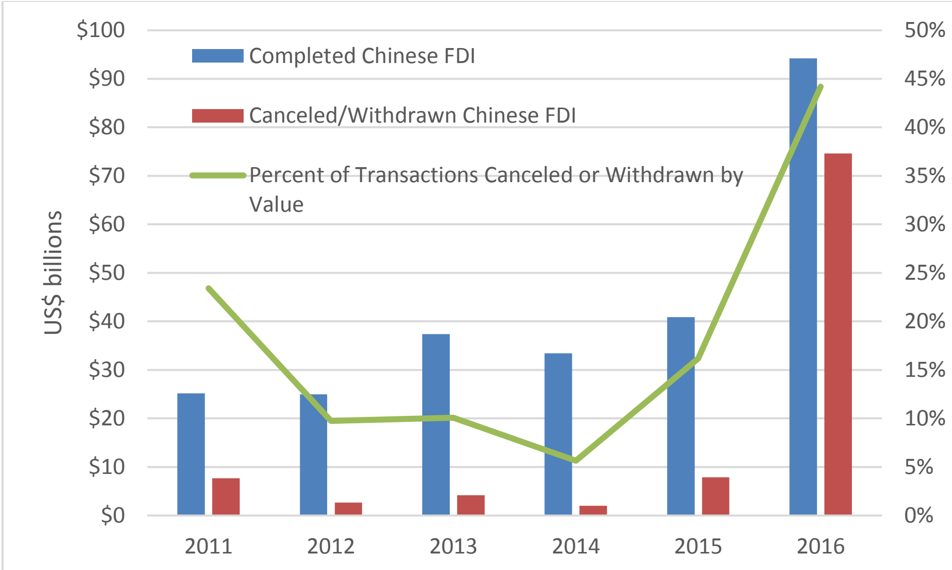
**Table 1: Top Chinese FDI Transactions in North America and Europe, 2016**

| NORTH AMERICA | | | EUROPE | | |
|---|---|---|---|---|---|
| Investor | Target | Value | Investor | Target | Value |
| HNA | Ingram Micro | $6B | Consortium led by Tencent | Supercell | $7.4B |
| Haier | GE Appliances | $5.6B | Midea | KUKA | $4.7B |
| Anbang | Strategic Hotels portfolio | $5.5B | Chinese Consortium | Global Switch | $3B |
| Apex Technology | Lexmark | $3.6B | HNA | Swissport International | $2.8B |
| Wanda | Legendary Entertainment | $3.5B | HNA | Avolon | $2.5B |

*Source:* Baker McKenzie, "Rising Influence, Assessing China's Record FDI Surge in North America and Europe," March 2017. *http://www.bakermckenzie.com/-/media/files/insight/publications/2017/03/chinafdi/chinafdi_2017.pdf?la=en.*

Although 2016 was a banner year for outbound Chinese investment, a record number of Chinese FDI transactions were canceled or withdrawn. As shown in Figure 5, $74.6 billion worth of Chinese investment deals were cancelled in North America and Europe, nearly ten times the value of transactions terminated in 2015.[36] Moreover, not only were more Chinese FDI transactions cancelled in 2016, but a greater share of Chinese FDI was aborted as well. Excluding transactions still in the pipeline, 44 percent of all Chinese FDI transactions were cancelled in North America and Europe in 2016 by value, more than double the share in 2015.[37]

**Figure 5: Chinese FDI and Cancelled or Withdrawn Chinese FDI in North America and Europe, 2011–2016**



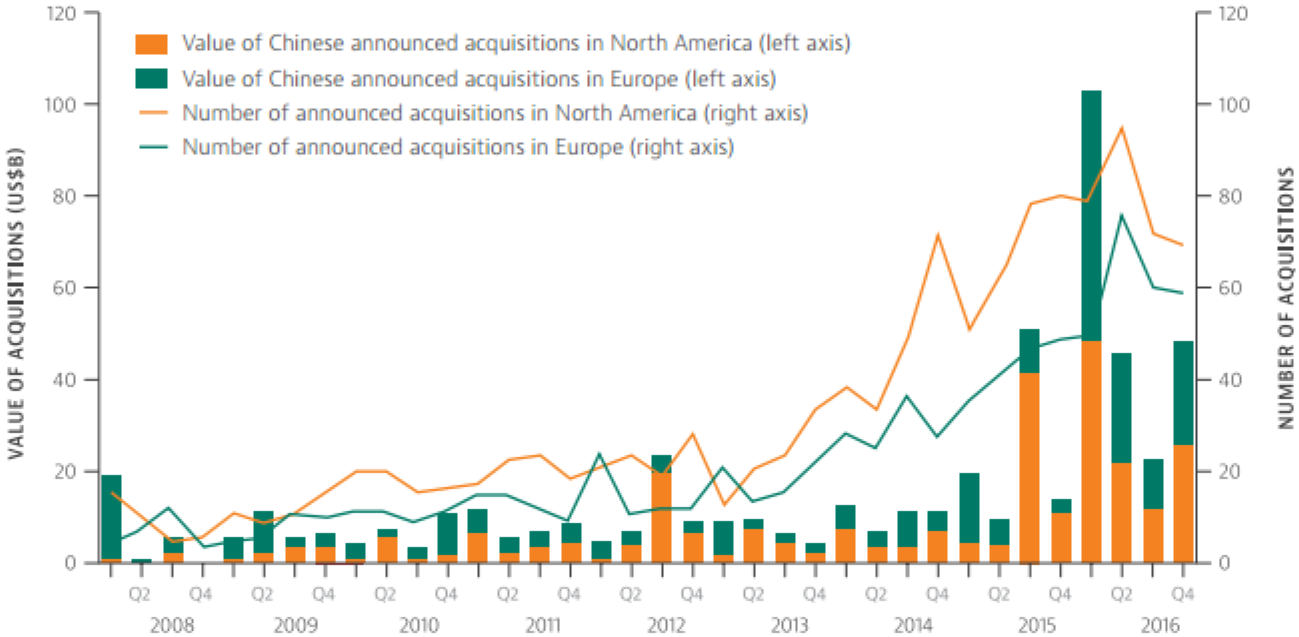

*Source:* Baker McKenzie, "Rising Influence, Assessing China's Record FDI Surge in North America and Europe," March 2017. *http://www.bakermckenzie.com/-/media/files/insight/publications/2017/03/chinafdi/chinafdi_2017.pdf?la=en.*

Several factors likely contributed to the rise in withdrawn Chinese FDI transactions. Thomas Giles, chair of Baker McKenzie's EMEA-China group, stated that the high value of these deals makes them more prone to cancellation, noting, "Deals of that size and complexity are always more challenging from a regulatory perspective regardless of the nationality of the buyer."[38] Additionally, Chinese authorities, concerned over significant capital outflows—which reached more than $400 billion last year*—introduced several measures to control the flow of money out of the country, which complicated foreign investment deals.[39] For example, in early 2016 the State Administration of Foreign Exchange (SAFE), China's foreign exchange regulator, reportedly directed Chinese banks to reduce foreign exchange transactions and summoned Chinese bankers to its offices when large sums of Chinese renminbi (RMB) were converted into foreign currencies for international transactions.[40] These restrictions may have slowed Chinese foreign investment. As seen in Figure 6, Chinese acquisitions declined significantly in the second quarter of 2016 after these new rules took effect.[41]

Chinese restrictions on foreign currency transactions have recently tightened. In January 2017, Chinese authorities reportedly introduced new rules for Chinese banks, preventing them from exchanging RMB into foreign currency unless they convert an equal or greater amount of foreign currency into RMB.[42] As Chinese companies must typically obtain foreign currency to make foreign investments, these rules would effectively prevent a Chinese firm from conducting an FDI transaction unless a Chinese bank receives an equal or greater inflow of foreign currency from other clients.

* Chinese statistics suggest that capital outflows totaled $416 billion in 2016. The Institute of International Finance estimated in 2017 that China's total capital outflows in 2016 amounted to $725 billion. State Administration of Foreign Exchange via CEIC; Sujata Rao, "China Net 2016 Outflows at Record $725 Billion: IIF," Reuters, February 2, 2017. *http://mobile.reuters.com/article/idUSKBN15H1FL.*

**Figure 6: Announced Chinese Acquisitions in North America and Europe, 2008–2016**




*Source:* Baker McKenzie, "Rising Influence, Assessing China's Record FDI Surge in North America and Europe," March 2017. *http://www.bakermckenzie.com/-/media/files/insight/publications/2017/03/chinafdi/chinafdi_2017.pdf?la=en*.

While on balance, foreign investment contributed relatively little to China's capital outflows—despite the record $200 billion in gross outflows associated with Chinese investment, net FDI contributed only $46.6 billion to capital outflows in 2016, roughly 11 percent of the total—Chinese authorities have recently taken several additional steps to control the pace of foreign acquisitions.[43] In January 2017, China's state-owned enterprise (SOE) management body, the State-Owned Assets Supervision and Administration Commission (SASAC), issued a list detailing categories of foreign investment that were off limits to Chinese SOEs and another list identifying foreign investment that requires "special regulation" from the central government.[44] Additionally, SAFE has reportedly stalled several Chinese outbound investment transactions by requiring other Chinese agencies to reevaluate them repeatedly.[45] This tactic allows SAFE to prevent Chinese foreign acquisitions from going forward without formally rejecting them. Instead, Chinese firms are subject to multiple rounds of evaluation and information requests.[46] Reportedly, even deals that have been approved by Chinese authorities have been subject to these delaying maneuvers.[47] In a statement that forecasts further control over outbound foreign investment, China's Minister of Commerce Zhong Shan stated at the National People's Congress (NPC) in March that the government plans to intensify supervision of certain companies' investment overseas.[48] Minister Zhong, who was appointed to his position in February 2017 and has a longstanding relationship with Chinese President and General Secretary of the Chinese Communist Party (CCP) Xi Jinping, said this supervision was necessary to deter "blind and irrational investment," and noted that "some enterprises have already paid the price" regarding their foreign acquisitions.[49]

These new restrictions already appear to be limiting Chinese foreign investment. In the first three months of 2017, announced Chinese foreign acquisitions totaled $23.8 billion, their lowest level since 2014.[50] Additionally, deals such as Dalian Wanda's $1 billion bid for Dick Clark Productions or Chinese copper firm Anhui Xinke New Materials' offer for the U.S. film producer Voltage Pictures reportedly fell apart as the Chinese firms either could not move money out of the country or were discouraged from purchasing assets outside of their traditional business sectors.[51] Chinese firms that have assets outside China have had more success in making acquisitions overseas—for example, Chinese airline and hospitality conglomerate HNA acquired a $445 million stake in investment firm Old Mutual's U.S. asset management division in March 2017 and is believed to be pursuing deals to acquire *Forbes* magazine, a Swiss airport retailer, and a $2.2 billion commercial property in New York.[52]

China's new restrictions on outbound investment will likely apply to a large backlog of foreign investments from 2016. In the United States, $21 billion worth of Chinese investment was awaiting approval or financing at the end of 2016.[53] In the EU, several deals remain on hold from 2016, including ChemChina's $43 billion bid for European agrichemical firm Syngenta; U.S. and EU regulators are reviewing the proposed acquisition.[54] If approved, the Syngenta deal would exceed the record volume of all Chinese investment transactions in Europe in 2016.[55]

### China Expands Foothold in U.S. Rail Market

On March 23, CRRC MA, a subsidiary of Chinese state-owned rail manufacturer China Railway Rolling Stock Corporation (CRRC), was awarded a $137.5 million contract to build train cars for the Southeastern Pennsylvania Transit Authority (SEPTA), Philadelphia's transit authority.[56] In recent years, CRRC has set its sights on becoming a major player in the U.S. rail market. The Philadelphia deal is the latest in a series of contracts CRRC has won in the United States since 2014, when the company was awarded its first deal in the U.S. rail market, a $567 million contract to supply metro cars for Boston's subway system.* According to SEPTA, CRRC's proposal was the "best value and most advantageous for the Authority" and the contract was awarded based on pricing and technical rating.[57] CRRC is expected to deliver the first SEPTA cars in 2019.[58]

Earlier in March, CRRC Sifang North America, another CRRC subsidiary, broke ground on a new manufacturing plant in Chicago after winning a $1.3 billion contract to produce up to 846 subway cars for the Chicago Transit Authority last year. Chicago officials say the project has brought rail car manufacturing back to Chicago after a 30-year absence.[59] CRRC Sifang will invest $100 million to build the manufacturing facility, which will employ around 170 factory and warehouse workers.[60] In addition, the company will spend $7 million on workforce training.[61] According to a CRRC Sifang representative, the plant will be used for assembling major rail car components, including brakes, heating and cooling systems, car body shells, and propulsion systems.[62] In order to meet U.S. domestic content requirements, 60 percent of the components will be sourced from U.S. suppliers.[63]

With its rail projects in the United States, CRRC has met—and in some cases exceeded—U.S. domestic content rules requiring foreign companies that win contracts for taxpayer-funded transportation projects to source a minimum percentage of components domestically and establish U.S. production facilities.[64] However, U.S. legislators have raised concerns that CRRC's use of subsidized financing from the Chinese government has allowed it to underbid other competitors for public contracts.[65] With ample access to state financing, CRRC has been able to offer low prices to win deals in the United States. For example, at $567 million, CRRC MA's price proposal for the Boston subway deal was significantly lower than its competition—Hyundai Rotem came closest with a bid of $720.6 million, while Bombardier's bid of $1.08 billion was almost twice that of CRRC MA's.[66]

China's recent entry into the U.S. rail market reflects a broader trend of Chinese companies—facing a saturated market and rising costs at home—pursuing manufacturing opportunities in the United States, often resulting in gains in manufacturing jobs.[67] Chinese investment in the United States tripled to $45.6 billion in 2016 from a year earlier, according to data from Rhodium Group.[68] This included $1.4 billion spent on 34 greenfield projects.[69]

## Policy Trends in China's Economy

### The National People's Congress: Asserting Authority and Minimizing Risk

On March 5, 2017, China convened the fifth session of the 12th NPC. The NPC is an annual legislative session during which China's premier issues a government work report that lists accomplishments from the previous year and sets tentative goals for the upcoming year.[70] Other government organs, like the National Development and Reform Commission (NDRC) and the Ministry of Finance, release reports with a similar structure and purpose. While the NPC itself is widely viewed as a rubber stamp legislature for policies predetermined by the CCP, the content of reports can provide important indicators of the near-term political and economic priorities of China's senior leadership.[71] In 2017, the main priorities appear to be increased party control and consolidation as well as comprehensive financial stability. Indeed, the Xi Administration has already begun implementing policies in pursuit of these goals to prepare for the 19th Party Congress in the fall of 2017. The NPC will appoint officials to the CCP's

* For more on China's recent entry into the U.S. rail market, see Michelle Ker, "China's High-Speed Rail Diplomacy," *U.S.-China Economic and Security Review Commission*, February 21, 2017. *https://www.uscc.gov/sites/default/files/Research/China%27s%20High%20Speed%20Rail%20Diplomacy.pdf*.

most important leadership bodies: the Central Committee, the Politburo, and the Politburo Standing Committee (PBSC).[72] The reshuffle of the PBSC will be particularly consequential. The PBSC is the primary locus of power within the CCP, and five of its seven members are due to retire in 2017.[73] The selection process involves intense political maneuvering, so a midyear economic shock could call into question President Xi's ability to lead, and undercut his base of support within the CCP.[74]

## Increased Party Control and Consolidation

Most annual government work reports since the start of the "reform and opening" period in 1979 have been dominated by discussion of economic reform and performance.[75] Premier Li Keqiang's 2017 address marked a departure in its unusual emphasis on CCP control under President Xi.[76] Premier Li mentioned the CCP 30 times during his 100-minute speech, more than any work report since Deng Xiaoping came to power in 1979.[77] Premier Li, and by proxy President Xi, is sending a clear message that the CCP, rather than the State Council or other government organs, is in firm control of economic and political decision making, and that President Xi himself is in control of the CCP.[78] The primary implication is that economic reforms will be implemented in a way that supports President Xi and the leadership of the CCP.

In October of 2016, the Central Committee of the CCP voted President Xi as China's "core leader," elevating him to the symbolic rank previously held by Mao Zedong and Deng Xiaoping.[*] [79] The premier's work report sought to cement President Xi's status, mentioning the general secretary and his core standing a total of 19 times.[80] In comparison, the last core leader, Jiang Zemin, was mentioned only four times in the NPC's 1994 report.[81] The 2016 review of the work report further developed the narrative of broad social consolidation under President Xi's effective guidance, stating, "We owe all the achievements made over the past year to the sound leadership of the Central Committee with Comrade Xi Jinping at its core and the concerted efforts of the Party, the military, and the people of all our nation's ethnic groups."[82]

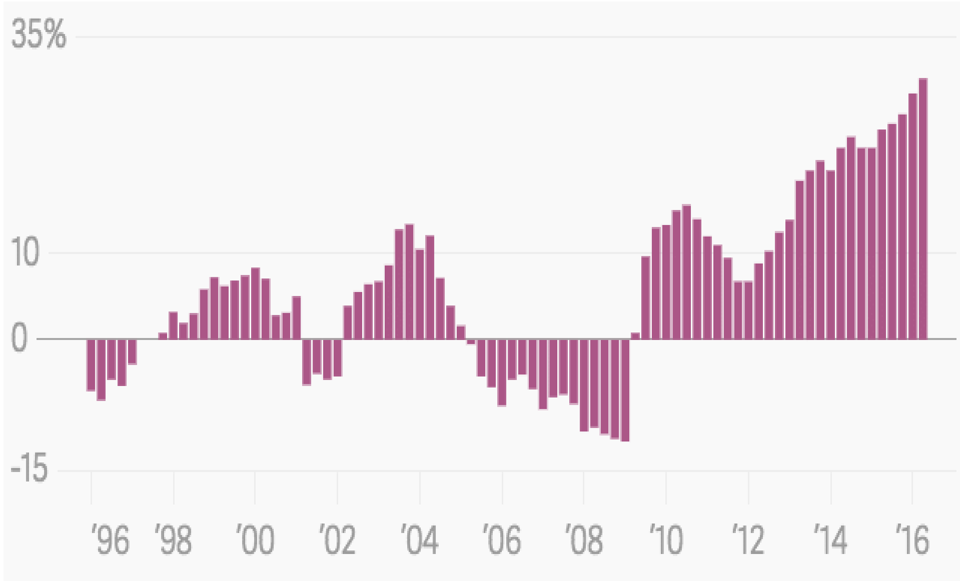
## Concerns over Credit Growth

The Chinese leadership's fixation on political stability has fueled a parallel drive for economic stability. Premier Li's report confirms that "stability is of overriding importance. We should ensure stable growth, maintain employment, and prevent risks. To ensure overall economic and social stability we must not allow the red line to be crossed concerning financial security."[83] China's economy has experienced a rapid accumulation of debt by local governments and SOEs since 2008. The Bank for International Settlements estimated China's credit gap—a measurement of short-term versus long-term credit creation[†]—at 30 percent in March 2016 (see Figure 7).[84] This is three times higher than what the bank deems as a "cause for concern."[85]

[*] The "core" title has been held by every CCP leader except Hu Jintao. For more information on President Xi's elevation, see U.S.-China Economic and Security Review Commission, "Economics and Trade Bulletin," November 4, 2016. *https://www.uscc.gov/sites/default/files/trade_bulletins/November%202016%20Trade%20Bulletin.pdf*.

[†] Credit gap is a measurement of the amount of credit created in a country as a proportion of GDP, compared to the long-run trend of that country. Bank for International Settlements, "Credit-to-GDP Gaps," March 6, 2017. *http://www.bis.org/statistics/c_gaps.htm*.

**Figure 7: China's Credit to GDP Gap, 1996–2016**




*Source:* Bank for International Settlements, "Credit to GDP Gaps." *https://www.bis.org/statistics/c_gaps.htm*.

Real estate has been at the center of new financing. The real estate sector, including developers and homebuyers, accounted for 70 percent of new credit creation in August 2016, up from 24 percent in January.[86] First-tier cities saw price increases close to about 25 percent in 2016, while a 100-city index showed an average increase of 14 percent.[87] Construction and real estate made up a fifth of real GDP growth in the first half of 2016, and the sharp slowdown in these sectors has prompted the investment bank UBS to lower its prediction of China's headline GDP growth from 6.7 percent to 6 percent over the next two years.[88] Previously, slower growth in combination with rapid credit creation, weak financial regulations, and a stronger U.S. dollar have contributed to three major recent shocks. In 2015 and 2016, China experienced a stock market collapse,[*] a $1 trillion drawdown in dollar reserves,[†] and a massive bond market selloff.[‡] [89] Another financial crisis could weaken President Xi and his faction's ability to control the leadership reshuffle in the 19th Party Congress in November.

## Financial Reforms

To prevent such a crisis, China's regulators and central planners have adopted measures to clamp down on the sources of loose credit and certain investment channels. The NDRC, China's central economic planner, outlined broad initiatives in its NPC report on economic development, stating, "We stepped up reviews to verify the authenticity of outbound investment projects and worked to ensure the sound and orderly development of overall outbound investment. We employed market-oriented, law-based measures to guard against and defuse bond default risks. Policies tailored to local conditions were implemented to regulate the real estate market on a per-category basis."[90] More than 20 city governments passed restrictions on house purchases and increased the minimum down payment required for a mortgage starting in mid-2016.[91] Other restrictions forbid buyers from purchasing additional homes, limit the amount that can be borrowed on down payments, and prevent newly divorced individuals from

[*] For more information on the stock market collapse, see U.S.-China Economic and Security Review Commission, "Economics and Trade Bulletin," July 7, 2016. *http://origin.www.uscc.gov/sites/default/files/trade_bulletins/July%202015%20Bulletin.pdf*.

[†] For more information on China's foreign currency outflows, see U.S.-China Economic and Security Review Commission, "Economics and Trade Bulletin," January 9, 2017. *https://www.uscc.gov/sites/default/files/trade_bulletins/Jan%202017%20TB_1.9.17_FINAL.pdf*.

[‡] In mid-December 2016, the U.S. Federal Reserve raised interest rates and projected subsequent rises in 2017. Bond holders panicked and began to sell. The interest rate on one-year Chinese government bonds rose to 3.11 percent on December 20 from 2.35 percent two weeks earlier. China's securities regulator forced a temporarily shutdown in bond trading, and the central bank injected $22 billion into the market in order to calm the selloff. *Wall Street Journal*, "China's Bond Warning," December 20, 2016. *https://www.wsj.com/articles/chinas-bond-warning-1482278331*. Sara Hsu, "China Needs to Fix its Shady Bond Market," *Forbes*, *https://www.forbes.com/sites/sarahsu/2017/01/09/china-needs-to-fix-its-shady-bond-market/#1cc0d09265d5*.

taking advantage of preferential first-time home buyer policies.* [92] As authorities enacted restrictions on real estate development and purchases, in December 2016 prices in many of China's major cities fell for the first time in two years.†

China's central bank, its foreign exchange regulator, and China UnionPay (China's primary state-backed credit card issuer) implemented an array of restrictions to stem the tide of Chinese funds being invested or spent overseas.[93] Regulators required stricter investment review, banned foreign acquisitions of over $10 billion, restricted investment-linked insurance products, and asked domestic funds to postpone issuing additional foreign investment products.[94] These restrictions were successful. China's Ministry of Commerce published figures showing that outbound investment decreased by about 36 percent year-on-year in January 2017 to $7.7 billion.[95] This followed a 40 percent year-on-year drop in December 2016.[96]

The Chinese leadership is also very concerned with the rapid creation of risky wealth management products (WMPs), which are packaged and sold by banks in tandem with nonbank financial institutions like trusts and brokerages.[97] Banks create these products to skirt capital reserve requirements, and bank depositors are attracted to their rates because they are significantly higher than the government-mandated ceiling placed on ordinary deposits.[98] WMPs usually consist of bonds and off-balance-sheet lending by banks. The funds raised for WMPs are invested in a variety of small-medium enterprises, real estate companies, and local government financing vehicles.‡ [99] These products involve three main risks: The first is that because state-owned banks package and sell these WMPs, investors assume they are protected from default, but about 75 percent of bank WMPs do not come with legal guarantees.[100] This misconception may cause clients to invest with irrational confidence. The second is that many WMPs' investment profiles include assets with maturities over a year, while about 60 percent of WMPs mature in less than three months.[101] The third and most serious risk is that these losses could spread widely through the banking system. Banks often invest in WMPs packaged by other banks. As the stock of these products grows, so do the risks. WMP offerings increased 30 percent year-on-year to $3.8 trillion in 2016.[102] In the event of a credit crunch, the maturity mismatch between assets and liabilities and growing interdependence between banks could result in large losses for both banks and investors.

At the 2017 NPC, the Ministry of Finance took steps to assess the risks of local government debt, which comprises a large portion of assets backing WMPs. In a report on central and local budget reform, the ministry stated, "We carried out risk assessments and provided early warnings on local-government debt risks and reported the results to the relevant authorities and local governments. We built up our policy reserve for responding to risks and emergencies."[103] More importantly, China's central bank, the Banking Regulatory Commission, and the Securities Regulatory Commission are working together for the first time in drafting regulations to control opaque investment

* As cities increase the down payment requirements for second home purchases, couples have been getting divorced so that one can buy an extra home at the lower required down payment ratio. For example, in March 2017 Beijing increased the down payment requirement to 80 percent for second home purchases. First time buyers, however, still only had to pay 35 percent of a home's price upfront. Zheng Yanpeng and Eva Li, "China Mortgage Rules Tightened to Curb People Divorcing to Qualify to Buy Second Homes," *South China Morning Post*, March 24, 2017. *http://www.scmp.com/news/china/economy/article/2081785/china-mortgage-rules-tightened-curb-people-divorcing-qualify-buy*.

† Prices of newly built residential properties dropped between 0.1 and 0.4 percent, month-on-month, in December 2016 from the previous month in 12 out of 15 major cities, according to data released by China's National Bureau of Statistics. Yuan Yang and Tom Mitchell, "Property Risks Loom over China's Economy," *Financial Times*, October 19, 2016. *https://www.ft.com/content/563494ae-95aa-11e6-a80e-bcd69f323a8b*; Yuan Yang, "China's Housing Boom Ends as Prices Fall in Top Cities," *Financial Times*, January 18, 2017. *https://www.ft.com/content/0ae22064-dd5a-11e6-9d7c-be108f1c1dce*.

‡ Local government financing vehicles (LGFVs) were the recipients of about $435 billion out of China's $580 billion economic stimulus in 2009. However, this stimulus was funded mainly by bank loans. Many of these LGFVs became heavily indebted and had low cash flow, and because of loan to deposit ratios, banks could not directly create new loans to keep LGFVs afloat. They were thus forced to rely on off-balance-sheet WMPs. Estimating the proportion of local government or SOE debt in total WMPs is challenging due to the opaque nature of China's nonbank financial sector. Douglas Elliott, Arthur Kroeber, and Yu Qiao, "Shadow Banking in China: A Primer," *Brookings Institution*, March 2015. *https://www.brookings.edu/wp-content/uploads/2016/06/shadow_banking_china_elliott_kroeber_yu.pdf*; Zheng Li and Nathaniel Taplin, "Exclusive: Chinese Regulator Asks Banks to Cut Wealth Management Yields – Sources," Reuters, January 12, 2016. *http://www.reuters.com/article/us-china-debt-wmp-exclusive-idUSKCN0UQ0H220160112*; Viral Acharya, Jun Qian, and Zhishu Yang, "In the Shadow of Banks: Wealth Management Products and Issuing Banks' Risk in China," February 10, 2017, 2. *http://es.saif.sjtu.edu.cn/attachments/workingPaper/2017/02/85c63937-cea6-4f66-bdbd-1482aa75b67b.pdf*.

channels.[*] [104] Draft regulations require asset management companies that assist in creating WMPs to retain 10 percent of their fees as a buffer to default of underlying assets.[105] The regulations also forbid these companies from investing in nonstandard credit assets[†] and other WMPs. Finally, the restrictions cap asset to liability ratios at 140 percent for public funds and 200 percent for private funds.[106]

In another sign the government seeks to pivot from stimulus to controlling financial risk, China's central bank raised rates on several monetary policy tools.[107] Hikes of medium- and short-term rates[‡] were meant to calm speculation in the bond market, rather than restrict lending to businesses and consumers.[108] Bonds are becoming a more prominent source of funding for nonbank lenders like trusts and brokerages that rely on this market to finance WMPs.[109] Further, the last available financial data show that as of the second half of 2015, WMPs were increasingly backed by bonds and money market instruments issued by local governments and related infrastructure companies.[§] [110] Authorities are trying to temper the appetite of banks and other financial entities for these kinds of questionable assets.[111] In the short term these efforts have succeeded. The yield on ten-year Chinese government bonds rose to 3.5 percent in early February 2017, the highest level in 18 months.[112] Higher yields indicate decreased demand for these securities, and higher borrowing costs will dampen speculative investment in risky assets like local government debt and real estate.[113]

## China Signals Further Bond Market Opening

On March 15, Premier Li announced China is planning to establish a trading link connecting bond markets in China and Hong Kong later this year, providing international investors with another channel to purchase bonds in China's onshore bond market.[114] The program would allow foreign investors to trade onshore bonds from their accounts in Hong Kong.[115] Details on the bond connect program are still fuzzy, but market observers expect it will allow access for both foreign institutional and retail investors.[116] Currently, only foreign institutional investors can invest in China's onshore bond market.[117]

China is the world's third-largest bond market, at $9.3 trillion in debt outstanding at the end of 2016.[118] The country has been steadily opening up its onshore bond market to attract greater capital inflows.[119] Earlier in February, China announced it would allow foreign institutional investors in its onshore bond market to use foreign exchange derivatives (e.g., forward contracts, options, and swaps) to hedge currency risk.[120] The move addresses a significant concern for foreign investors worried about foreign exchange risks associated with their investments in the Chinese bond market.[121]

In light of these efforts, two major global index providers have added Chinese onshore bonds to their bond market indices. On March 1, Bloomberg Barclays launched two new hybrid fixed income indexes that include Chinese onshore bonds,[**] becoming the first major global index provider to include Chinese bonds in its global offerings.[122] On March 7, Citigroup announced it would include Chinese government bonds in three of its fixed-income indexes.[123] However, both providers have not yet included Chinese onshore bonds to their most influential

[*] Previous regulations were piecemeal and sporadically enforced, and they only addressed specific activities of banks, insurance providers, or brokerages. Financial entities were thus able to avoid regulations by utilizing the gaps in this approach. For more detail, see Chuin-Wei Yap and Chao Deng, "China Regulators Issue New Draft Rules to Curb Shadow Banking," *Wall Street Journal*, November 23, 2016. *https://www.wsj.com/articles/china-regulators-issue-new-draft-rules-to-curb-shadow-banking-1479904905*.

[†] Nonstandard credit assets are nontradeable securities, such as loans, which are considered riskier because they cannot be as easily sold off. Sumeet Chatterjee, "China's Insurance Ownership Proposals Seen Blocking Riskier Use of Premiums," Reuters, January 4, 2017. *http://www.cnbc.com/2017/01/04/reuters-america-chinas-insurance-ownership-proposals-seen-blocking-riskier-use-of-premiums.html*.

[‡] China's central bank raise rates on open market operations, which supply short-term loans to commercial banks. It later raised rates of the Short-Term Lending Facility, which provides six-month and one-year funds. Gabriel Wildau, "China Credit Flood Set to Persist despite PBoC Rate Rises," *Financial Times*, February 8, 2017. *https://www.ft.com/content/94a0749c-edc0-11e6-930f-061b01e23655*.

[§] Bonds are becoming increasingly important financing vehicle across the board. The investment bank UBS estimated that money market rates influenced close to 40 percent of total credit in early 2017, compared to 20 percent in 2012. Gabriel Wildau, "China Credit Flood Set to Persist despite PBoC Rate Rises," *Financial Times*, February 8, 2017. *https://www.ft.com/content/94a0749c-edc0-11e6-930f-061b01e23655*.

[**] The two hybrid fixed income indexes—Global Aggregate + China Index and the Emerging Market Local Currency Government + China Index—provide investors the option of including Chinese bonds in their portfolios but do not require them to do so. James Kynge, "Surge of Foreign Buying Builds Case for China Bond Index Inclusion," *Financial Times*, March 17, 2017. *https://www.ft.com/content/65250ac8-0a5f-11e7-97d1-5e720a26771b*.

government bond indices; inclusion would compel significant buying of Chinese bonds because these indices are tracked by trillions in funds.[*] [124]

To date, foreign interest in China's onshore bond market remains very limited. At the end of 2016, foreign investors held Chinese bonds worth $126 billion (RMB 870 billion)—just 1.4 percent of China's onshore bond market.[125] A survey conducted by Deutsche Bank last year found foreign investors remain concerned about Chinese government restrictions on capital mobility and the lack of tools available for hedging risk.[126]

# Sector Focus: United States and China Compete for Artificial Intelligence Leadership

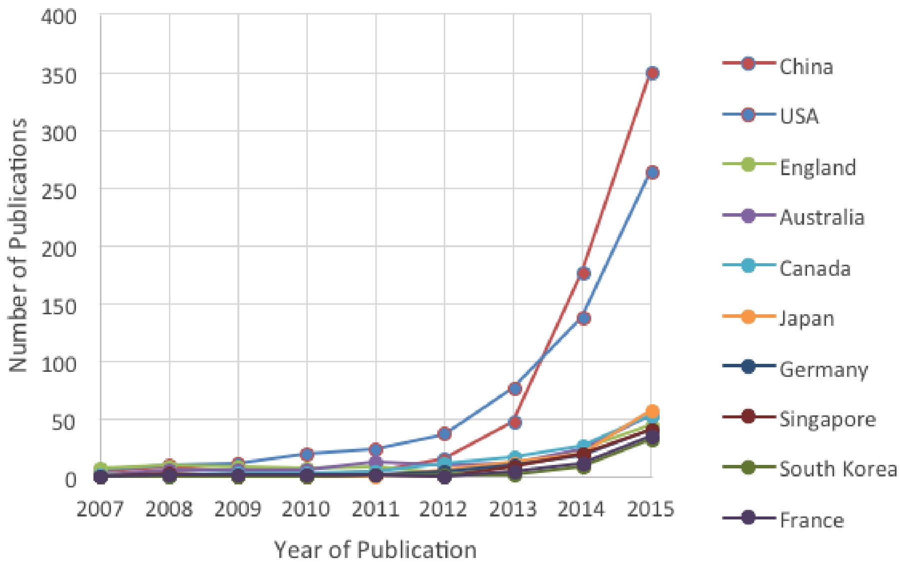
Artificial intelligence (AI)—where the programs in a machine can teach themselves and eventually mimic how the human brain thinks—supports and enables nearly every sector of the modern economy.[127] Rex Wu, an equity analyst for Jefferies Hong Kong, explained, "The tech world is shifting from a 'mobile' to an 'artificial intelligence' era, driven by deep learning, big data, and graphics processing units (GPUs), all of which accelerate the ability to compute."[128] Advancements in this field are quickly revolutionizing advertising, translation, and finance, and are key to rolling out self-driving cars.[129] Due to the enormous potential commercial and military applications of AI, corporations and governments are fiercely competing to gain a technological edge. While the United States remains at the forefront of AI developments, China is rapidly gaining ground. Kai-Fu Lee, a former Microsoft and Google executive and currently chief executive at the venture capital firm Sinovation Ventures, noted that "China is poised to be a leader in AI because of its great reserve in AI talent, excellent engineering education and massive market for AI adoption."[130]

Chinese research in AI has grown exponentially, unseating the early leader, the United States. Chinese researchers have surpassed the United States in both the number of papers published and number of publications[†] cited on deep learning, a type of AI (see Figures 8 and 9).[131] The number of Chinese publications on deep learning has increased rapidly since 2012 from roughly 50 in 2013 to 350 in 2015, overtaking the United States in 2014.[132] Chinese researchers also surpassed the United States in the number of publications cited at least once, with more than 80 in 2015 compared with the United States at around 70.[133] While China's achievements are impressive, Dr. Lee noted that the most advanced research is still being done in the United States, with Chinese researchers dominating mid-level developments.[134]

[*] For example, Citigroup's World Government Bond Index has a market value of $19.9 trillion at the end of February 2017. James Kynge, "Surge of Foreign Buying Builds Case for China Bond Index Inclusion," *Financial Times*, March 17, 2017. *https://www.ft.com/content/65250ac8-0a5f-11e7-97d1-5e720a26771b*.

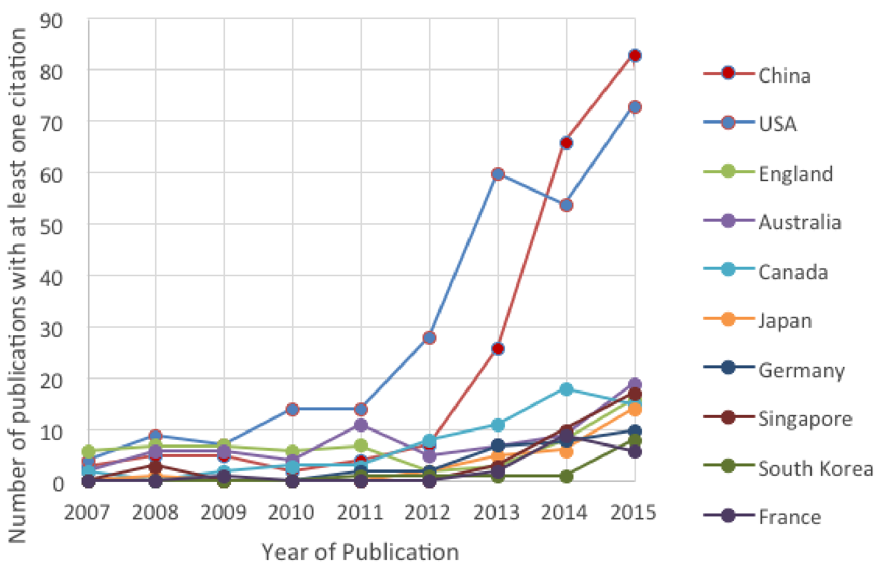
[†] This measure is based on a review of publications for "deep learning" or "deep neural net" cited at least once on Web for Science Core Collection. National Science and Technology Council, Networking and Information Technology Research and Development Subcommittee, *The National Artificial Intelligence Research and Development Strategic Plan*, October 2016, 13. *https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/national_ai_rd_strategic_plan.pdf*.

**Figure 8: Number of Publications Referring to Deep Learning by Country, 2007–2015**




*Note:* Data based on a Web for Science Core Collection search of publications for "deep learning" or "deep neural net."
*Source:* National Science and Technology Council, Networking and Information Technology Research and Development Subcommittee, *The National Artificial Intelligence Research and Development Strategic Plan*, October 2016, 13. *https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/national_ai_rd_strategic_plan.pdf*.

**Figure 9: Number of Cited Publications Referring to Deep Learning by Country, 2007–2015**




*Note:* Data based on a Web for Science Core Collection search of publications for "deep learning" or "deep neural net" cited at least once.
*Source:* National Science and Technology Council, Networking and Information Technology Research and Development Subcommittee, *The National Artificial Intelligence Research and Development Strategic Plan*, October 2016, 13. *https://obamawhitehouse.archives.gov/sites/default/files/whitehouse_files/microsites/ostp/NSTC/national_ai_rd_strategic_plan.pdf*.

Aiming to make China the global leader in advanced AI research, the Chinese government has prioritized AI over the last year within its national industrial plans and high-level speeches.[*] [135] In January 2016, unmanned systems were included as one of the Science and Technology Innovation 2030 megaprojects. In March 2016, the 13th Five-

[*] For an in-depth analysis of China's support of artificial intelligence, see Jonathan Ray et al., "China's Industry and Military Robotics Development" (prepared for the U.S.-China Economic and Security Review Commission), *Defense Group, Inc.*, October 25, 2016. *http://origin.www.uscc.gov/sites/default/files/Research/DGI_China%27s%20Industrial%20and%20Military%20Robotics%20Development.pdf*.

Year Plan (2016–2020),* China's development blueprint for the next five years, raised central-level backing for AI and laid out the objective to "facilitate commercial application of artificial intelligence technologies in all sectors."[136] At the March 2017 NPC, Premier Li further elevated this sector by including AI for the first time in his list of emerging industries targeted for research and development and commercialization.[137] Minister of Science and Technology Wan Gang noted that a national AI development plan and corresponding fund are being finalized and will be released soon.[138]

In support of these objectives, the NDRC—China's industrial policy-making agency—approved plans in February 2017 to fund the development of a virtual national AI engineering lab for an undisclosed amount.[139] Led by Baidu, the lab will specialize in deep learning, computer vision and sensing, computer listening, biometric identification, new forms of human-computer interaction, standardized services, and deep learning intellectual property rights.[140] Through a partnership with Tsinghua University, Beihang University, and the Chinese Academy of Sciences, the lab seeks to "boost China's overall competence in artificial intelligence."[141]

Chinese firms such as Baidu, Alibaba, and Tencent—with significant support from the Chinese government—are becoming the global leaders in AI. Baidu has been at the forefront, with Robin Li, the firm's chief executive officer, making "AI [Baidu's] strategic focus over the next 10 years."[142] Over the past two and a half years, Baidu has allocated most of its $2.9 billion (RMB 20 billion) research and development spending to AI.[143] In October 2016, Baidu launched a $200 million fund focused on AI, augmented reality, and deep learning.[144] This strong support led to Baidu's cutting-edge breakthroughs in English and Mandarin speech recognition in December 2015 and the development of a synthetic speech system in early March 2017.[145] Baidu claims its synthetic speech system, DeepVoice, converts text into an almost human-quality voice more than 400 times faster than Google's DeepMind, the world's previous leader.[146] These achievements place Baidu in direct competition with leading U.S. AI firms such as Google, Microsoft, IBM, and Facebook.[147]

Baidu and other Chinese AI firms have achieved these breakthroughs in part by leveraging a talented U.S. workforce and cutting-edge research in AI by:

- *Establishing Research Institutes in the United States:* In 2013, Baidu opened its deep learning lab, the Silicon Valley Artificial Intelligence Laboratory, in Cupertino, California, to access the talented engineers and scientists based in the Silicon Valley.[148] In March 2017, Baidu announced it would open a second research facility in Silicon Valley, roughly doubling its workforce from 200 to 350.[149]
- *Attracting U.S.-Based Talent:* Chinese firms have sought to attract the best talent in AI with a focus on Chinese engineers from U.S. universities.[150] In 2014, Baidu hired world-renowned AI expert Andrew Ng,† lead of Google's deep learning and former Stanford University professor, and Ya-qin Zhang, then head of Microsoft Corporation's Asian research and development operations. In January 2017, Baidu hired Lu Qin, former Microsoft executive vice president, as its chief operating officer.[151] Baidu has also sought to lure its U.S.-based AI experts back to China, offering 15 percent more in compensation; however, Baidu recently opened a second AI lab in Silicon Valley, suggesting experts prefer staying in California.[152]
- *Investing in U.S. Start-ups and AI-Related Firms:* According to the venture capital database CB Insights, 35 different Chinese investors have invested in U.S. AI start-ups.[153] Chinese firms are also investing in sensor technology necessary for the real-world application of AI. In August 2016, Ford and Baidu announced they will invest $75 million each in the U.S. sensor technology firm Velodyne Lidar to enhance their self-driving car sensory technology.[154] That same month, U.S. graphics processor unit manufacturer Nvidia and Baidu announced a new partnership to develop a comprehensive autonomous driving platform.[155]
- *Forming Commercial and Academic Partnerships:* In September 2015, Dell and the Chinese Academy of Sciences jointly established the Artificial Intelligence and Advanced Computing Joint Lab to develop cognitive

* For a comprehensive overview of the 13th Five-Year Plan and its targets, see Katherine Koleski, "The 13th Five-Year Plan," *U.S.-China Economic and Security Review Commission*, February 14, 2017. *https://www.uscc.gov/sites/default/files/Research/The%2013th%20Five-Year%20Plan.pdf*.

† Mr. Ng, who led Baidu's artificial intelligence strategy and development, left Baidu in March 2017. It is not clear what prompted his departure. Paul Mozur, "A.I. Expert at Baidu, Andrew Ng, Resigns from Chinese Search Giant," *New York Times*, March 22, 2017. *https://www.nytimes.com/2017/03/22/business/baidu-artificial-intelligence-andrew-ng.html*.

systems and deep learning technologies.[156] In October 2016, Huawei and University of California, Berkeley announced a strategic partnership focused on basic research in AI, with Huawei providing $1 million in funding.[157]

While Chinese firms' robust engagement with the U.S. AI community is creating jobs, funding emerging start-ups, and contributing to new research discoveries, China's status as a military and economic competitor has raised U.S. concerns.[158] In January, the U.S. Council of Advisors on Science and Technology warned that China's policies are "distorting markets in ways that undermine innovation, subtract from U.S. market share and put U.S. national security at risk."[159] The market for AI-based systems is expected to grow to around $153 billion by 2020 with $83 billion in robotics and $70 billion for AI-based analytics, according to projections from Bank of America Merrill Lynch.[160] The country leading in AI research and applications will gain a military technological edge and accrue the highest profits in this fast-growing market.

Both the U.S. and Chinese militaries have identified AI as essential to developing more effective unmanned weapons systems (e.g., drones), smart weapons, and other capabilities.[161] "China's rise as a major power in AI could thus become a critical force multiplier for the PLA's future capabilities," noted Elsa Kania, an analyst at the Long Term Strategy Group.[162] Maintaining the U.S. military's edge is becoming increasingly difficult. Ms. Kania found that AI's dual commercial and military application and the private sector's role in driving cutting-edge research make controlling the transfer and spread of military-related breakthroughs from the United States to its competitors difficult.[163]

In addition, China's "Made in China 2025" initiative laid out targets for China to supplant U.S. AI firms with its own. For example, the *Made in China 2025 Key Area Technology Roadmap* aims to increase the domestic market share of Chinese branded autonomous industrial software to over 50 percent by 2025 and Chinese branded driver-assisted, partially autonomous vehicles to exceed 40 percent by 2025.[164] Reaching these localization targets would gradually close China's growing market to U.S. and other foreign firms, a major loss of future market and job opportunities.[165]

The Chinese government is also providing robust financing for Chinese firms to build domestic capacity and acquire and invest in overseas firms, mixing commercial and strategic interests.[166] The U.S. Chamber of Commerce criticized this approach, stating the Made in China 2025 initiative "aims to leverage the power of the state to alter competitive dynamics in global markets in industries core to economic competitiveness," thus "skewing the decision-making process for companies that must decide where products are made and innovation takes place."[167] A report by the European Chamber of Commerce expressed similar alarm.[168]

The United States still maintains a lead in AI developments, but this lead is rapidly shrinking.[169] Google's AlphaGo program made history in March 2016 by being the first AI program to win the complex board game, Go, against the world's best player, Lee Sedol.[170] This game was long considered the holy grail of AI due to its near-infinite number of possible plays.[171] AlphaGo extended its lead in January 2017 with more than 60 wins.[172] Shortly after AlphaGo's initial victory, Tencent started creating its own AI Go program, FineArt. This program just won the 10th Computer Go UEC Cup championship, competing against 30 of the world's best AI Go programs such as Facebook's Darkforest.[173] AlphaGo did not compete in this championship.[174] Competition between U.S. and Chinese firms is only set to increase as the Chinese government is throwing its support behind its commercial and military AI researchers.

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