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Staff Research Report



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U.S. Financial Exposure to China

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Table of Contents

Executive Summary.....	3
Direct Financial Exposure	3
Limited Banking Sector Exposure.....	3
Direct Exposure from Equity Holdings	6
Bond Market Exposure.....	7
U.S. Holdings of Chinese Debt Securities.....	7
China’s Holdings of U.S. Debt Securities	7
Indirect Financial Exposure.....	10
China’s Rising Influence on Asian Financial Markets	10
Sentiment Spillovers: China’s 2015 and 2016 Stock Market Meltdowns	11
Impacts from Chinese Growth Shocks	12
Conclusions	13

Executive Summary

Before China's stock market meltdown in 2015 and 2016, few observers saw the country as a source of risk for U.S. and global financial markets. However, as China's economic growth slows and risks rise in the country's financial sector, questions have been raised about whether U.S. financial exposure* to China could pose dangers to the U.S. economy.

Overall, the U.S. financial sector has limited direct exposure to China because China maintains a relatively closed capital account. Beijing has taken limited steps to gradually open its financial sector to foreign investors, but U.S. investors have displayed little interest in a deeper engagement with China's financial markets:

- U.S. banks have low direct exposure to China's banking sector. In the fourth quarter of 2016, U.S. banks' assets in China reached \$78.7 billion, or 2.7 percent of total U.S. foreign claims.¹
- U.S. investors have limited direct exposure to China's domestic stock markets. At the end of 2016, U.S. investors held \$103.6 billion in Chinese stocks, 1.5 percent of their international equity portfolio, and just 0.4 percent of their total equity holdings.²
- U.S. direct financial exposure is greatest through China's holdings of U.S. government securities. China held \$1.058 trillion in U.S. Treasuries at the end of 2016, or 7 percent of publicly held U.S. debt, placing it behind Japan as the second-largest foreign holder of U.S. Treasuries.³ Recent moves by the Chinese government to cut its holdings of U.S. Treasuries have had a limited impact on the U.S. economy.
- U.S. investment in China's onshore bond market is negligible; as of December 2016, U.S. residents held just \$1.9 billion in Chinese bonds, 0.1 percent of their total foreign bond holdings.⁴

Economic and financial developments in China can affect U.S. financial markets more substantially through indirect channels:

- Asian financial markets, which have close linkages to U.S. financial markets, are increasingly driven by economic and financial developments in China.
- China's stock market developments can affect U.S. equities through sentiment spillovers, as was evident in the global reaction to China's stock market crashes in 2015 and 2016.
- More broadly, the impact of China's slowing growth and economic reforms on trade, commodities demand, and investor confidence affects global financial markets, which in turn influence U.S. financial markets.

Direct Financial Exposure

China's direct financial linkages with the United States have been growing but remain very modest when compared to bilateral trade linkages. Beijing has taken limited steps to gradually open its financial sector to foreign investors; however, since the reforms are happening as Chinese policymakers impose tighter restrictions on foreign currency conversions and outbound capital flows,[†] U.S. investors have displayed little interest in a deeper engagement with China's financial markets. Still, as China becomes more integrated with global financial markets, spillover effects from direct financial linkages will likely become stronger.

Limited Banking Sector Exposure

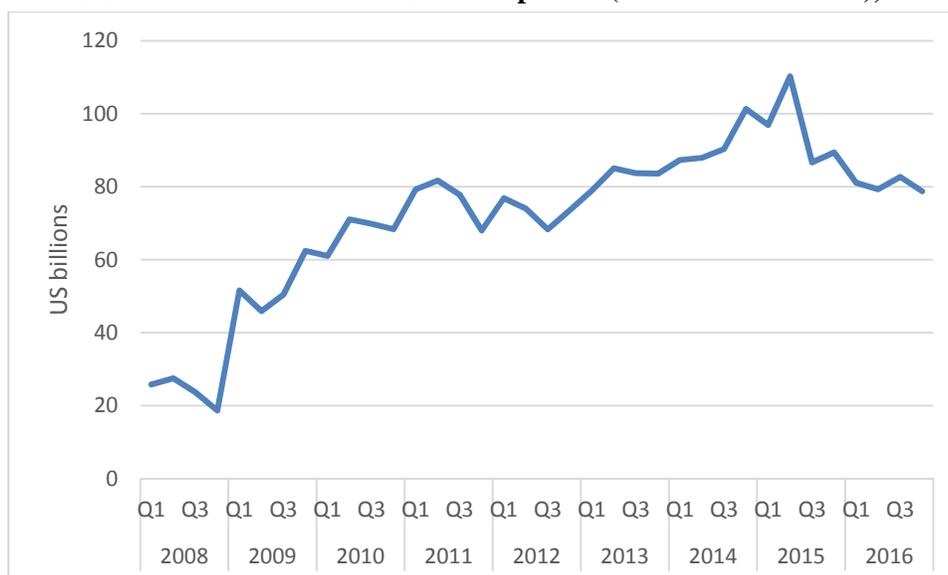
Taken as a whole, U.S. banks have low direct exposure to China's banking sector. According to data from the Bank for International Settlements (BIS), U.S. banks' exposure to China reached \$78.7 billion in the fourth quarter of

* Financial exposure can be defined as the amount an investor can lose from the risks associated with an investment. Exposure can be broken down by financial assets (e.g., bank deposits, stocks, and bonds) and generally is expressed as a percentage of total portfolio holdings.

[†] For more on recent Chinese government measures to stem capital outflows, see U.S.-China Economic and Security Review Commission, *Economics and Trade Bulletin*, February 7, 2017, 13–14.
https://www.uscc.gov/sites/default/files/trade_bulletins/February%202017%20Trade%20Bulletin.pdf.

2016, or 2.7 percent of total U.S. foreign claims.⁵ Since 2008, U.S. banks have steadily increased their claims on Chinese counterparties, though U.S. claims have fallen slightly since 2015 (see Figure 1).⁶

Figure 1: U.S. Banks’ Consolidated China Exposure (Ultimate Risk Basis), 2008–2016



Source: Bank for International Settlements.

U.S. banks with holdings in China are chiefly large banks, with the four biggest U.S. commercial banks—JPMorgan Chase, Wells Fargo, Bank of America, and Citigroup—topping the list (see Figure 2).⁷

Figure 2: Exposure of the Four Largest U.S. Banks to China, Fourth Quarter of 2016

Bank	Exposure to China (US\$ billions)	Consolidated Assets (US\$ billions)	China's Share
JPMorgan Chase	17.1	2,118.5	0.8%
Wells Fargo	2.7	1,740.8	0.2%
Bank of America	10.9	1,659.8	0.7%
Citigroup	17.2	1,356.4	1.3%
TOTAL	47.9	6,875.5	0.7%

Note: Exposure includes lending and deposits, securities, and other investments. Rankings of the four largest banks are based on the U.S. Federal Reserve's ranking of U.S.-chartered commercial banks by consolidated assets as of September 30, 2016.

Source: Various.⁸

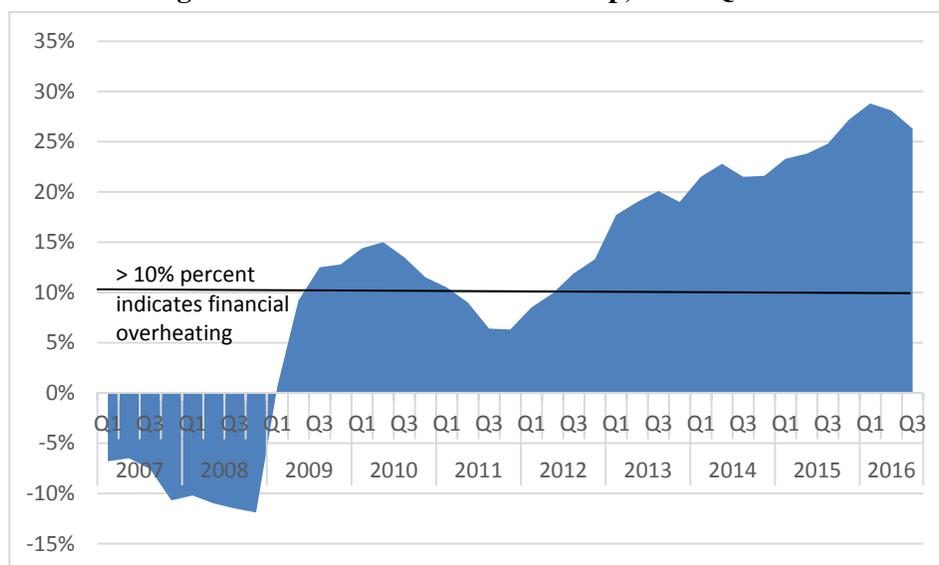
In recent years, several major U.S. banks have scaled back their China holdings in response to a slowing Chinese economy and concerns about the asset quality of Chinese banks.⁹ Citigroup, which has the highest China exposure among U.S. banks, held \$17.2 billion in assets tied to China in the fourth quarter of 2016, a 25 percent year-on-year drop.¹⁰ In February 2016, Citigroup announced the sale of its 20 percent equity stake in China Guangfa Bank to China Life Insurance Company for about \$3 billion.¹¹ In 2013, Bank of America exited its stake in China Construction Bank.¹² Ratings agencies forecast that earnings growth for Chinese banks will remain under pressure in 2017 because of Chinese authorities' stance on pursuing corporate deleveraging amid slower growth.¹³

In the event of a banking crisis in China, U.S. banks would not suffer significant credit losses. In the fourth quarter of 2016, the U.S. banking sector had assets totaling \$14.2 trillion, of which China's share of total U.S. banking assets is just a tiny fraction—\$78.7 billion, or 0.6 percent.¹⁴ In addition, the exposure of U.S. banks to Chinese banks appears manageable in part because of the capital buffers U.S. banks have built up in the aftermath of the global financial crisis.¹⁵

Nonetheless, the risk of a banking crisis in China is increasing.¹⁶ Following the global financial crisis, debt has played an outsized role in shoring up China's lagging economy. According to data from BIS, China's total debt reached a record \$27.8 trillion, or 256 percent of gross domestic product (GDP), in the third quarter of 2016, up from 148 percent of GDP at the end of 2007.¹⁷ The amount of new lending surged in 2015 and 2016 as the government leaned on stimulus to drive growth, but the efficiency of these credit infusions has deteriorated. Global ratings agency Fitch estimates that each new renminbi (RMB) of credit generates only RMB 0.3 of economic growth, compared with RMB 0.8 before the global financial crisis.¹⁸

According to BIS data, China's credit-to-GDP gap was 26.3 percent in the third quarter of 2016, after rising to a record 28.8 percent in the first quarter of 2016 (see Figure 3).¹⁹ Readings above 10 percent signal excessive credit growth and elevated risk of a banking crisis. Based on an analysis of a large cross-section of countries over the past three decades, BIS considers the credit-to-GDP gap a robust early warning indicator for banking crises.²⁰ For example, Thailand's credit-to-GDP gap in 1995 and 1996, just before the 1997 Asian financial crisis, averaged 26.3 percent.²¹ In the United States, the credit-to-GDP gap reached a high of 12.4 percent a few months before the global financial crisis began.²²

Figure 3: China's Credit-to-GDP Gap, 2007–Q3 2016



Source: Bank for International Settlements, "Credit-to-GDP Gaps," March 6, 2017. http://www.bis.org/statistics/c_gaps.htm?m=6%7C347.

With rapid credit expansion, nonperforming loans (NPLs) are also growing, raising the credit risk for China's commercial banks. Official data show the growth in NPLs held by China's commercial banks has moderated to 1.74 percent of total lending at the end of 2016, or \$220 billion (RMB 1.51 trillion).²³ However, alternative estimates of Chinese NPL levels are much higher. For example, Fitch estimates China's NPL rates could be as high as 15–21 percent.²⁴ Fitch noted that official figures understate the problem because Chinese banks are moving NPLs off their balance sheets through wealth management products and reclassifying NPLs as interbank credit.²⁵ In its April 2016 *Global Financial Stability Report*, the International Monetary Fund (IMF) cautioned that 15.5 percent—or \$1.3 trillion—of total commercial lending to the corporate sector is "potentially at risk."²⁶ Despite these concerning indicators, however, many analysts believe the Chinese government can contain banking sector risks due to the country's tight capital controls, high savings rates, and state control over most of the banking sector.²⁷

* BIS defines the credit-to-GDP gap as the difference between the credit-to-GDP ratio and its long-run trend. Bank for International Settlements, "Credit-to-GDP Gaps," December 11, 2016. http://www.bis.org/statistics/c_gaps.htm.

† The IMF considers loans to be "potentially at risk" when borrowers have an interest coverage ratio less than one. James Daniel, Jose Garrido, and Marina Moretti, "Debt-Equity Conversions and NPL Securitization in China—Some Initial Considerations," *International Monetary Fund*, August 2016, 2. <https://www.imf.org/external/pubs/ft/tmm/2016/tmm1605.pdf>.

Direct Exposure from Equity Holdings

U.S. investors have limited direct exposure to China's domestic equity markets. China's onshore equity market*—the world's second largest—remains largely closed off to foreign investors, although Beijing recently has taken steps to widen access. Foreign investors can access China's equity markets through two main channels: the Qualified Foreign Institutional Investor (QFII) program and stock trading links connecting Shanghai and Shenzhen with Hong Kong.²⁸ QFII, which has been in operation for over a decade, is relatively small, requires a lengthy approval process, and has tight restrictions on repatriating funds.²⁹ The Shanghai-Hong Kong Stock Connect, launched in 2014, and the Shenzhen-Hong Kong Stock Connect, launched in 2016, provide foreign investors access to an estimated 80 percent of China's market capitalization through Hong Kong.³⁰ At the end of 2016, U.S. investors held \$103.6 billion in Chinese stocks—1.5 percent of their international equity portfolio (3.1 percent with the addition of Hong Kong stocks), or just 0.4 percent of their total equity holdings.[†]

Chinese capital controls also limit Chinese investors' ability to purchase U.S. equities. Chinese investors can access foreign stocks through the two stock exchange links with Hong Kong and the Qualified Domestic Institutional Investor (QDII) scheme, a program that allows Chinese fund managers to invest in overseas stocks and bonds.³¹ Chinese investors own a very small share of U.S. stocks: as of mid-2015, Chinese investors held \$330 billion in U.S. equity, 5 percent of total foreign holdings of U.S. equity, or just over 1 percent of total U.S. equities.³² Recent experience suggests a steep decline in Chinese holdings of U.S. equities has a relatively minor impact on the U.S. stock market. Between July 2015 and March 2016, Chinese holdings of U.S. stocks fell by \$126 billion to \$201 billion, a 38 percent decline.[‡] However, stock buybacks by U.S. companies more than offset that amount in just the first quarter of 2016.³⁴

U.S. investors have additional exposure to Chinese companies through the companies' presence on U.S. stock exchanges. As of April 2017, 123 Chinese companies were listed on the NASDAQ and New York Stock Exchange.³⁵ In addition, the recent sale of the Chicago Stock Exchange to Chinese investment group Chongqing Casin Enterprise Group may provide additional listing opportunities for Chinese companies.[§]

Chinese companies looking to go public in the United States have relied on a complex business structure known as a variable interest entity (VIE) to circumvent Chinese government restrictions on foreign investment in sensitive and strategic sectors.³⁶ Under a basic VIE structure, foreign investors and their Chinese partners form an offshore entity to control a foreign-owned or -invested entity in China through a series of contractual agreements.^{**} Over half of U.S.-listed Chinese companies use the VIE structure, including some of China's largest Internet companies—Alibaba, Baidu, and Weibo.³⁷

* At the end of 2016, China's stock market capitalization reached \$7.3 trillion. World Federation of Exchanges, "Equity – 1.1 – Domestic Market Capitalization (USD Millions)," January 2017. <https://www.world-exchanges.org/home/index.php/statistics/monthly-reports>.

† U.S. investors' total equity holdings were calculated by taking U.S. market capitalization (\$27.4 trillion at the end of 2016) less the value of foreign holdings of U.S. stocks (\$6.6 trillion) plus U.S. holdings of foreign equity (\$7 trillion). World Federation of Exchanges, "Equity – 1.1 – Domestic Market Capitalization (USD Millions)," January 2017. <https://www.world-exchanges.org/home/index.php/statistics/monthly-reports>; U.S. Department of the Treasury, *Table 2D: U.S. Long-Term Securities Held by Foreign Residents*. <http://ticdata.treasury.gov/Publish/slt2d.txt>; U.S. Department of the Treasury, *Table 1F: Foreign Long-Term Securities at Current Market Value by U.S. Residents*. <http://ticdata.treasury.gov/Publish/slt1f.txt>; U.S. Department of the Treasury, *Table 2.F: Foreign Long-Term Securities Held by U.S. Residents*. <http://ticdata.treasury.gov/Publish/slt2f.txt>.

‡ Analysts believe the selloff came from an official source. Although U.S. Treasury Department data do not break down private and official holdings, China's State Administration of Foreign Exchange data on international investments show that private Chinese ownership of foreign stocks remained stable in 2015. China's sales of its U.S. equity holdings would allow it to raise dollars and smooth out RMB depreciation amid financial volatility at home. Andrea Wong and Oliver Renick, "China Dumping More Than Treasuries as U.S. Stocks Join Fire Sale," Bloomberg, June 15, 2016. <https://www.bloomberg.com/news/articles/2016-06-15/china-dumping-more-than-treasuries-as-u-s-stocks-join-fire-sale>.

§ The sale was approved by the Committee on Foreign Investment in the United States in December 2016 and is currently under review by the U.S. Securities and Exchange Commission. The Chicago exchange is a minor player in the U.S. stock market, handling about 0.5 percent of U.S. stock transactions. Diane Bartz, "Lawmakers Ask SEC to Bar Sale of Chicago Stock Exchange to Chinese Investors," Reuters, December 22, 2016. <http://www.reuters.com/article/us-chicagostockexchange-m-a-chongqing-idUSKBN14B2FE>.

** This offshore entity controls the Chinese company (which maintains the domestic operating license) through service agreements. Foreign investors receive contractual revenue but do not share ownership of the domestic licensed company. Fred Greguras and Fiona Xu, "The China VIE Structure Is Vulnerable—So Why Is It Still Used?" *Royse Law Blog*, November 18, 2016. <http://royselawblog.com/the-china-vie-structure-is-vulnerable-so-why-is-it-still-used/>.

U.S. legal experts argue VIEs pose considerable risks for U.S. investors.³⁸ Most significantly, Chinese courts are unlikely to uphold underlying contractual agreements due to the legal ambiguity of VIEs.* In recent years, Chinese courts and arbitration rulings have invalidated several VIE agreements and similar contracts.³⁹ In addition to contract enforcement challenges, in recent years there have been a number of fraud schemes perpetrated by China-based issuers of U.S. securities.⁴⁰

Bond Market Exposure

U.S. Holdings of Chinese Debt Securities

China has widened access to its onshore bond market,[†] the third largest in the world at \$9.3 trillion at the end of 2016.⁴¹ Notably, in February 2016 Chinese regulators expanded access to China's domestic bond market to foreign medium- and long-term investors, including commercial banks, insurance companies, securities companies, and investment funds.⁴² Previously, foreign access to China's domestic bond market was limited to the QFII and Renminbi Qualified Foreign Institutional Investor (RQFII) programs, which are restricted by license approvals and quota limits.⁴³ In February 2017, China announced it would allow foreign investors in its onshore bond market to use foreign exchange derivatives (e.g., forward contracts, swaps, and options) to hedge currency risk.⁴⁴ Premier Li Keqiang announced in March China is planning to establish a trading platform connecting bond markets in China and Hong Kong later this year, providing foreign investors with another channel to purchase onshore bonds.⁴⁵

But foreign appetite for onshore Chinese bonds has so far been tepid, and foreign ownership has declined over the last two years. In 2016, foreign investors owned 1.3 percent of China's onshore bond market, down from 1.87 percent in 2014.⁴⁶ U.S. investment is negligible: according to data from the U.S. Department of the Treasury, U.S. residents held just \$1.9 billion in Chinese bonds in December 2016—0.1 percent of total foreign bond holdings—and investments are concentrated in government and quasi-government bonds.⁴⁷

A major impediment to foreign investment has been worries about capital mobility amid efforts by the Chinese government to curb capital outflows.⁴⁸ Another sticking point has been concerns about the reliability of credit ratings from domestic ratings agencies, which are often markedly rosier than ratings made by international agencies for the same Chinese issuer in the offshore bond market.⁴⁹ For example, 2016 data from Credit Suisse showed that domestic ratings agencies gave 96 percent of Chinese bond issuers AA- or higher ratings, while international ratings agencies gave just 2.2 percent of the same sample AA- or higher ratings.⁵⁰ The rising number of defaults in China's corporate bond market also has dampened foreign interest in the country's domestic bond market.⁵¹ In 2016, China's bond market saw 55 corporate bond defaults, more than double the number of defaults in 2015.⁵² Historically, bond defaults in China have been rare, with the government typically stepping in to bail out troubled bond issuers.⁵³

China's Holdings of U.S. Debt Securities

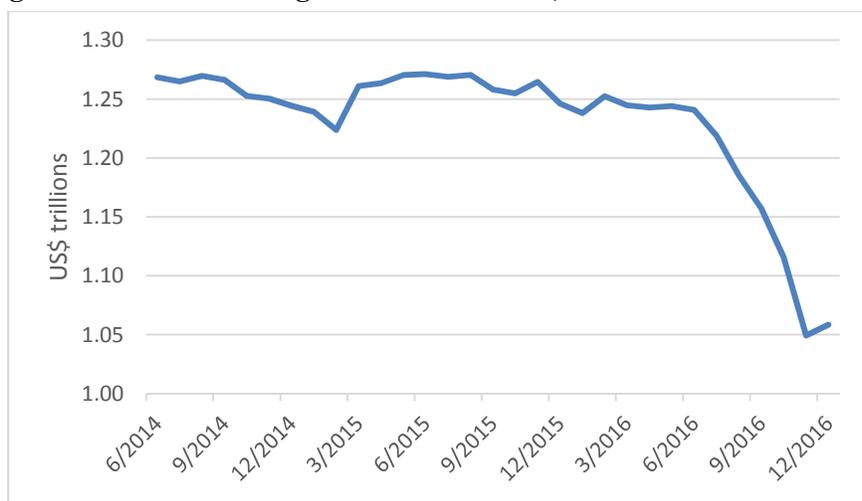
The United States' greatest direct financial exposure to China is through China's holdings of U.S. government securities. China has the largest foreign exchange reserves in the world.⁵⁴ Although China does not disclose the composition of its foreign exchange reserves, economists estimate roughly two-thirds of the country's foreign exchange holdings are held in dollar-denominated financial assets.⁵⁵ China maintains significant holdings of U.S. financial assets largely to manage the exchange rate of the RMB.⁵⁶

* While some Chinese government agencies have stated that VIEs are illegal in China, in practice the Chinese government has allowed them to exist. Nonetheless, most U.S.-listed Chinese companies that use the VIE structure note in their initial public offering prospectus that "there are substantial uncertainties regarding the interpretation and application of current and future PRC [People's Republic of China] laws and regulations" with regard to VIEs. Fred Greguras and Fiona Xu, "The China VIE Structure Is Vulnerable—So Why Is It Still Used?" *Royse Law Blog*, November 18, 2016. <http://royselawblog.com/the-china-vie-structure-is-vulnerable-so-why-is-it-still-used/>; Kevin Rosier, "The Risks of China's Internet Companies on U.S. Stock Exchanges," *U.S.-China Economic and Security Review Commission*, September 12, 2014, 10.

† China's bond market is divided into offshore and onshore segments. Offshore bonds are RMB-denominated bonds issued and settled outside mainland China, and China's offshore bond market is freely accessible to foreign investors. Onshore bonds are RMB-denominated bonds issued and settled within mainland China and are accessible to Chinese investors and licensed foreign investors. FTSE Russell, "The FTSE China Onshore Bond Index Series," May 2016, 1. http://institutionalinvestor.com/images/416/FTSE_china_onshore_bond_index_series_final_2.pdf.

U.S. Treasury securities make up the largest category of China’s holdings of U.S. securities, which also include agency* and corporate bonds.† 57 Since June 2014, Chinese foreign exchange reserves have been steadily declining, driven by the sale of U.S. Treasuries. The decline in China’s foreign exchange holdings—which dipped below \$3 trillion for the first time in six years in January 2017—comes as Beijing attempts to curb persistent capital outflows by intervening in foreign exchange markets to shore up the RMB. 58 In 2016, China cut its holdings of U.S. Treasuries by a record \$188 billion (see Figure 4); China held \$1.058 trillion in U.S. Treasuries at the end of 2016, or 7 percent of publicly held U.S. debt, placing it behind Japan as the second-largest foreign holder of U.S. Treasuries.‡ 59 Chinese holdings of U.S. agency and corporate bonds are much smaller, at \$184 billion in agency bonds (2 percent of total outstanding agency bonds) and \$15.7 billion in corporate bonds (0.2 percent of total outstanding corporate bonds) at the end of 2016. 60

Figure 4: China’s Holdings of U.S. Treasuries, June 2014–December 2016



Source: U.S. Department of the Treasury, *Major Foreign Holders of Treasury Securities*, February 15, 2017. <http://ticdata.treasury.gov/Publish/mfh.txt>.

Some U.S. policymakers and analysts have expressed concerns about China’s large holdings of U.S. Treasury securities.§ They argue that a large selloff of U.S. securities could significantly influence Treasury yields.** A 2012 study from economists at the Federal Reserve Board estimated a \$100 billion decrease in foreign official purchases

* Agency bonds are bonds issued or guaranteed by U.S. federal government corporations such as the Government National Mortgage Association and the Tennessee Valley Authority, and bonds issued by federally chartered private companies such as the Federal National Mortgage Association (Fannie Mae) and the Federal Home Loan Mortgage Corporation (Freddie Mac). U.S. Department of the Treasury, *Fixed Income: Agency Securities*, December 2010. <https://www.treasury.gov/resource-center/faqs/Markets/Pages/fixedfederal.aspx>.

† In December 2016, U.S. Treasuries comprised 73 percent of China’s holdings of U.S. long-term securities, while U.S. agency bonds made up 13 percent, U.S. corporate and other bonds 1 percent, and U.S. corporate stocks 13 percent. U.S. Department of the Treasury, *Table 1D: U.S. Long-Term Securities Held by Foreign Residents in December 2016*. <http://ticdata.treasury.gov/Publish/slt1d.txt>.

‡ Treasury data do not account for U.S. securities held in overseas custodial accounts, which means China’s actual holdings could be higher than reported. Many analysts believe China keeps some of its Treasury holdings in overseas custodial accounts to mask the true size of the country’s holdings, and that Belgium is a major hub for these accounts. U.S. Department of the Treasury, *Major Foreign Holders of Treasury Securities*, February 15, 2017. <http://ticdata.treasury.gov/Publish/mfh.txt>; Brad Setser, “A Bit More on Chinese, Belgian, and Saudi Custodial Holdings,” *Follow the Money* (Council on Foreign Relations), June 20, 2016. <http://blogs.cfr.org/setser/2016/06/20/a-bit-more-on-chinese-belgian-and-saudi-custodial-holdings>; Min Zeng, “In China’s Shadow, Treasury Tug-of-War Lifts Irish Holdings over Belgium,” *Wall Street Journal*, February 18, 2016. <http://blogs.wsj.com/moneybeat/2016/02/18/in-chinas-shadow-treasury-tug-of-war-lifts-irish-holdings-over-belgium>.

§ A number of studies have examined the implications of China’s holdings of U.S. debt securities on the U.S. economy. They include: Christopher J. Neely, “Chinese Foreign Exchange Reserves, Policy Choices and the U.S. Economy,” *Federal Reserve Bank of St. Louis Working Paper Series*, January 2017. <https://research.stlouisfed.org/wp/2017/2017-001.pdf>; Wayne M. Morrison and Marc Labonte, “China’s Holdings of U.S. Securities: Implications for the U.S. Economy,” *Congressional Research Service*, August 19, 2013. <https://fas.org/sgp/crs/row/RL34314.pdf>.

** The Treasury yield is the return on investment on the U.S. government’s debt obligations, or the interest rate the U.S. government pays to borrow money. When demand for U.S. Treasuries decreases, Treasury yields increase, and vice versa. <http://www.investopedia.com/terms/t/treasury-yield.asp>.

of U.S. Treasuries in a given month increases the five-year Treasury yield by 40–60 basis points (bps) in the short run and by 20 bps in the long run.⁶¹ Given the size of U.S. public debt, even a small increase in Treasury rates could lead to a significant increase in borrowing costs.⁶² However, other analysts claim macroeconomic factors—such as economic growth prospects and long-term inflation expectations—are more significant drivers of U.S. bond yields.⁶³

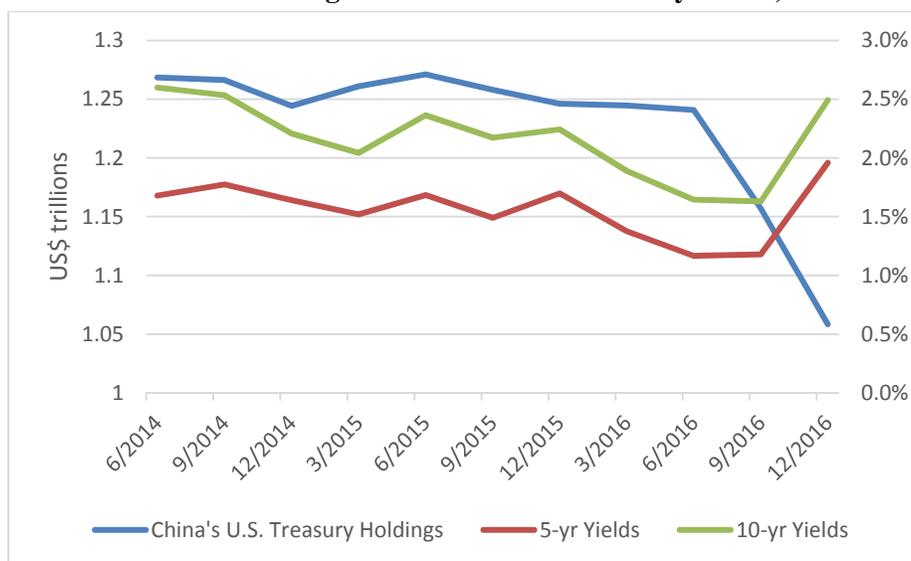
A 2013 Congressional Research Service report argued that the effects on the U.S. economy from a large reduction in China’s holdings of U.S. securities would depend on whether the reduction was sudden or gradual:

*A potentially serious short-term problem would emerge if China decided to suddenly reduce their liquid U.S. financial assets significantly.... The initial effect could be a sudden and large depreciation in the value of the dollar... and a sudden and large increase in U.S. interest rates... The dollar depreciation by itself would not cause a recession since it would ultimately lead to a trade surplus (or smaller deficit), which expands aggregate demand.... However, a sudden increase in interest rates could swamp the trade effects and cause (or worsen) a recession. Large increases in interest rates could cause problems for the U.S. economy, as these increases reduce the market value of debt securities, causing the prices on the stock market to fall, undermining efficient financial intermediation, and jeopardizing the solvency of various debtors and creditors. Resources may not be able to shift quickly enough from interest-sensitive sectors to export sectors to make this transition fluid.*⁶⁴

Then Federal Reserve System Chairman Ben Bernanke wrote in a 2007 letter to Senator Richard Shelby that China’s accumulation of U.S. Treasuries was not problematic for the U.S. economy. He stated that “because foreign holdings of U.S. Treasury securities represent only a small part of total U.S. credit market debt outstanding, U.S. credit markets should be able to absorb without any great difficulty any shift of foreign allocations.”⁶⁵

Recent data do not demonstrate a strong correlation between reductions in China’s holdings of U.S. Treasury securities and Treasury yields. From June 2014 to December 2016, China’s holdings of U.S. Treasury securities fell \$210 billion.⁶⁶ This coincided with an 11 bps fall in ten-year Treasury yields (instead of an expected increase in Treasury yields), while five-year Treasury yields rose 28 bps (see Figure 5).⁶⁷ The lack of correlation for ten-year Treasuries “may be due in part to the fact that as China was selling U.S. treasuries, other officials and private investors were buying more, blunting the potential impact of the lower demand from China on [Treasury] yields.”⁶⁸

Figure 5: China’s U.S. Treasuries Holdings Correlation with Treasury Yields, June 2014–December 2016



Source: U.S. Department of the Treasury, *Major Foreign Holders of Treasury Securities*, February 15, 2017. <http://ticdata.treasury.gov/Publish/mfh.txt>; U.S. Department of the Treasury, *Daily Treasury Yield Curve Rates*. <https://www.treasury.gov/resource-center/data-chart-center/interest-rates/Pages/TextView.aspx?data=yield>.

Analysts believe that while Beijing may continue to lighten its holdings of U.S. Treasuries, a massive selloff is unlikely. They argue the People's Bank of China (PBOC), China's central bank, will want to maintain sufficiently ample foreign exchange reserves as a buffer for maintaining currency stability.⁶⁹ Using a methodology developed by the IMF, Bloomberg Intelligence economists Fielding Chen and Tom Orlik estimate China needs to hold at least \$2.9 trillion in reserves should its capital control measures prove ineffective.⁷⁰ An additional disincentive is that a major selloff of U.S. Treasuries would have negative valuation effects on the rest of China's dollar-denominated assets.⁷¹

Indirect Financial Exposure

Economic and financial developments in China can indirectly affect U.S. financial markets. First, Asian financial markets, which have close linkages to U.S. financial markets, are increasingly driven by economic and financial developments in China. Second, China's stock market developments can affect U.S. equities through sentiment spillovers. This was evident in the reaction of global markets and U.S. equities to volatility in China's stock market in 2015 and 2016. More broadly, the impact of China's slowing growth and economic reforms on trade, commodities demand, and investor confidence affects global financial markets, which in turn influence U.S. financial markets.

China's Rising Influence on Asian Financial Markets

Given its growing trade and financial heft, China's macroeconomic and financial developments increasingly influence Asian financial markets. A 2016 study from BIS examining China's impact on Asian financial markets concluded, "China's economic and financial developments affect investors' assessment of the region as a whole and fund flows to the region as a whole."⁷² The study used a statistical model to determine correlation trends between Chinese and Asian financial asset classes (stock, bond, and foreign exchange markets).⁷³ It found that in noncrisis periods, the influence of Chinese equities on Asian equities has risen to a level almost on par with that of the United States.⁷⁴ Shifts in the RMB/U.S. dollar exchange rate also increasingly have spillover effects on Asian currencies.⁷⁵ However, Asian bond markets are not swayed by shocks in China's bond markets given China's still relatively closed capital account and the RMB's modest role in international transactions.^{* 76}

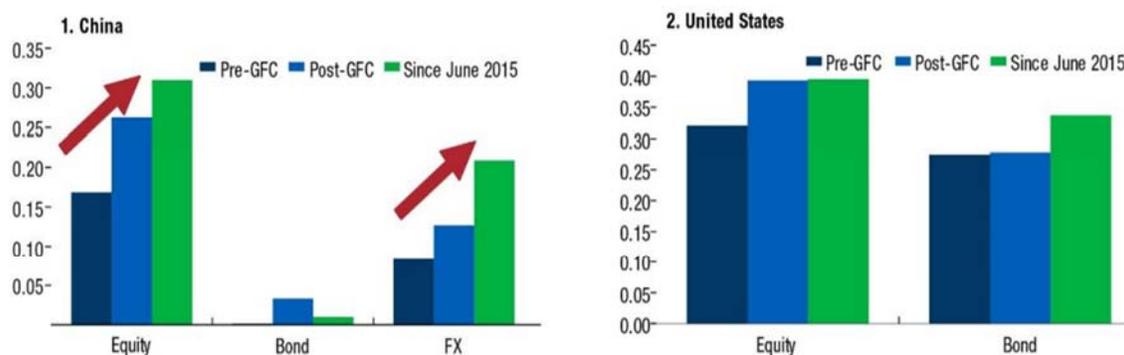
China's influence over Asian financial markets has increased significantly since the global financial crisis. BIS argues that the rise in China's influence likely has less to do with the growth in China's direct financial linkages to Asian economies (which remain very modest, particularly compared to trade flows) than "a reflection of China's importance in the real economy such that developments in China's financial markets can be interpreted as shocks to its real economy and thus can drive investor sentiment towards regional financial markets."⁷⁷

This assessment is supported by a 2016 IMF report, which also found that financial spillovers[†] from China to Asian markets are growing, particularly in equity and foreign exchange markets.⁷⁸ According to the report, the correlation of returns from Chinese and Asian equity and currency markets has risen over time (see Figure 6).⁷⁹ The effects are greater for Asian economies with strong trade linkages to China.⁸⁰

* According to SWIFT, a global provider of financial messaging, in January 2017 the RMB was the sixth-most-used currency, accounting for 1.7 percent of all international payments. The U.S. dollar leads SWIFT rankings with 40.7 percent, followed by the euro (32.9 percent), pound sterling (7.5 percent), Japanese yen (3.1 percent), and Canadian dollar (1.9 percent). SWIFT, "RMB Tracker Monthly Reporting and Statistics on Renminbi (RMB) Progress Towards Becoming an International Currency," February 2017. <https://www.swift.com/file/37556/download?token=mzeVYpRm>.

† The IMF report defines financial spillovers as "the transmission of shock in one country to asset prices in other countries." Serkan Arslanalp et al., "China's Growing Influence on Asian Financial Markets," *International Monetary Fund Working Paper*, August 2016, 6. <https://www.imf.org/external/pubs/ft/wp/2016/wp16173.pdf>.

Figure 6: Asian Market Correlations with China and the United States



Sources: Bloomberg, L.P.; and IMF staff estimates.

Note: Simple average of correlations for Asian economies including Australia, India, Indonesia, Korea, Malaysia, the Philippines, Singapore, Taiwan Province of China, Thailand, and New Zealand. FX = foreign exchange; GFC = global financial crisis. Correlations are reported excluding the GFC period (2008-09). Pre-GFC = January 2001-December 2007; Post-GFC = January 2010-June 2015. The latest data are as of end-January 2016.

Source: Serkan Arslanalp et al., “China’s Growing Influence on Asian Financial Markets,” *International Monetary Fund Working Paper*, August 2016, 6. <https://www.imf.org/external/pubs/ft/wp/2016/wp16173.pdf>.

Sentiment Spillovers: China’s 2015 and 2016 Stock Market Meltdowns

China’s stock market remains largely detached from the real economy, playing only a small role in financing for nonfinancial firms and representing a small percentage of household wealth.* Yet China’s stock market increasingly influences global markets. During the summer of 2015 and January 2016, volatility in Chinese markets led to significant turbulence in world markets.

In August 2015, China introduced a new exchange rate mechanism in anticipation of interest rate hikes by the Federal Reserve.⁸¹ The subsequent sharp depreciation of the RMB triggered market selloffs, as investors feared the depreciation indicated the Chinese economy was faring worse than expected.⁸² In January 2016, the PBOC’s surprise move to guide the RMB weaker against the dollar, coupled with weak economic data, sparked a second selloff. Both events caused pronounced selloffs in global equities, including on Wall Street,[†] based on concerns that a weakening Chinese economy could dampen global growth.[‡]

The United States’ limited direct exposure to the Chinese stock market may appear at odds with Wall Street’s reaction to China’s market turbulence; U.S. stock markets, however, felt the impact through global markets. All told, the August 2015 rout in China’s stock market wiped almost \$3 trillion of value from global stock markets.⁸³ More than \$2 trillion of value was erased from stocks globally in the first trading week of 2016.⁸⁴

In both instances, investors overreacted to market headlines. China’s stock markets are a poor indicator of China’s economic fundamentals, so investors’ reactions revealed a lack of confidence in Beijing’s ability to manage the stock market. U.S. stock markets’ quick recovery in both cases reflects the United States’ limited direct financial

* China’s stock market provided \$110 billion (RMB 760 billion) in funding to nonfinancial firms in 2015, or just 5 percent of total financial flows to the real economy. In comparison, bank loans made up 69 percent of new financing in 2015. According to estimates from investment research firm Gavekal Dragonomics, Chinese households hold about 5 percent of their total assets in the domestic stock market. Yuan Yang, “What Stock Market Turmoil Means for China’s Economy,” *Financial Times*, February 7, 2017. <https://www.ft.com/content/9062c7da-c379-11e5-808f-8231cd71622e>.

† For example, on August 24, 2015—China’s “Black Monday”—the Dow Jones Industrial Average dropped 3.6 percent, while the S&P 500 index fell 3.9 percent. On January 7, 2016, the Dow Jones Industrial Average fell nearly 2.3 percent, while the S&P 500 index dropped 2.4 percent. Corrie Driebusch and Riva Gold, “Dow Tumbles Nearly 400 Points on China Worries,” *Wall Street Journal*, January 8, 2016. <https://www.wsj.com/articles/global-stocks-fall-on-china-volatility-1452156855>; Nathaniel Popper and Neil Gough, “A Plunge in China Rattles Markets across the Globe,” *New York Times*, August 23, 2015. <https://www.nytimes.com/2015/08/25/business/dealbook/daily-stock-market-activity.html>.

‡ For more on stock market turbulence in China in 2015 and 2016, see Nargiza Salidjanova, “China’s Stock Market Meltdown Shakes the World, Again,” *U.S.-China Economic and Security Review Commission*, January 14, 2016; Nargiza Salidjanova, “China’s Stock Market Collapse and Government’s Response,” *U.S.-China Economic and Security Review Commission*, July 13, 2015.

exposure to China.⁸⁵ Absent clear and credible policy communication from Beijing, however, spillovers from Chinese stock market volatility into global markets will likely repeat.

Impacts from Chinese Growth Shocks

Given the importance of the Chinese economy as a driver of global economic growth,^{*} China's slowing growth can have considerable ramifications for global markets. Beyond financial channels, growth shocks or simply news about China's growth can be transmitted to global financial markets through multiple channels, including trade, commodities demand, and general market sentiment.⁸⁶ For example, a slowdown in China's economy would reduce exports to China, potentially weakening the currencies and stock market valuations of countries with significant trade exposure to China. China's slowdown hurts global commodity prices, which could dampen stock market valuations and currencies of major commodity exporters. Finally, a negative growth shock or just uncertainty about China's growth outlook can shake confidence in global financial markets, with impacts on global growth.⁸⁷

According to the Organization for Economic Co-operation and Development (OECD), a 2 percent decline in China's domestic demand growth could slow global GDP growth by 0.3 percent per year for two years.⁸⁸ The effects of weaker demand growth in China become much more severe if they cause corrections in global financial markets (e.g., falling equity prices and higher risk premiums); under such a scenario, the OECD estimates global growth would be reduced by 0.75 percent to 1 percent per year for two years.⁸⁹

Recent research demonstrates how news about China's growth can affect global financial markets. The IMF's 2016 *Global Financial Stability Report* found that news about China's economic growth has had an "increasing and significant impact" on global equity prices.⁹⁰ Similarly, a 2015 study published in the *Journal of International Money and Finance* finds that news about China's manufacturing and industrial output has "substantial influence" on global financial and commodity markets.⁹¹ However, the authors concluded news about China's domestic consumption has little effect on global markets, suggesting markets "view China's economic news primarily as a barometer of the world economy rather than merely an indicator of China's domestic demand."⁹²

Overall, negative spillovers to the United States from a potential growth shock in China appear manageable. Goldman Sachs estimates that a 1 percent decline in China's GDP growth reduces U.S. GDP growth by 0.1 percent from both direct and indirect exposure.⁹³ Estimates from economists at the Federal Reserve Bank of Dallas are slightly higher: they assess that a 1 percent decline in China's GDP lowers U.S. output growth by 0.2 percent.⁹⁴

- **Trade:** Negative spillovers through trade channels are likely to be modest due to the United States' limited direct trade exposure to China. In 2016, U.S. goods exports to China totaled \$115.8 billion, making China the United States' third-largest goods export destination.⁹⁵ However, these exports accounted for 8 percent of total U.S. goods exports and just 0.7 percent of GDP last year.⁹⁶ In 2016, the United States imported \$462.8 billion in goods from China, about 12 percent of the value of all goods consumed in the United States that year.[†] Beyond these direct trade links, the sales exposure of U.S. multinationals to China is low.⁹⁷ According to estimates from Goldman Sachs, in 2014 China accounted for 2 percent of total sales for S&P 500 companies; by contrast, the United States accounted for 67 percent.⁹⁸ Finally, weakened economic conditions in China could spill over to U.S. financial markets through their impact on more exposed U.S. trade partners.⁹⁹
- **Commodities:** As a net commodities importer, the U.S. economy has largely benefited from low global commodity prices and is unlikely to be affected by China's slowdown through commodity price channels.¹⁰⁰

^{*} China's share of global GDP on a purchasing power parity basis reached 17.3 percent in 2015. In comparison, the U.S. share of global GDP was 15.8 percent in 2015. International Monetary Fund, "World Economic Outlook," October 2016, 207.
http://www.imf.org/~media/Websites/IMF/imported-flagship-issues/external/pubs/ft/weo/2016/02/pdf/_statappdf.ashx.

[†] At the end of 2016, U.S. personal consumption expenditures totaled \$13 trillion—\$4.2 trillion in goods and \$8.8 trillion in services. U.S. Department of Commerce, Bureau of Economic Analysis. *Table 2.3.5U. Personal Consumption Expenditures by Major Type of Product and by Major Function*, March 1, 2017.
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- Market sentiment: Risks from China increase substantially if a growth shock negatively affects global market sentiment and increases risk aversion. Goldman Sachs estimates that if markets overreact, U.S. GDP growth could decrease by 0.47 percent for every 1 percent decline in China's GDP growth.¹⁰¹

Conclusions

Overall, the U.S. financial sector has limited direct exposure to China because China has a relatively closed capital account. China's direct financial linkages with the United States have been growing but remain very modest when compared to the two countries' trade linkages. Beijing has taken steps to gradually open its financial sector to foreign investors, but U.S. investors have displayed little interest. Still, as China becomes more integrated with global financial markets, spillover effects from direct financial linkages will become stronger.

Economic and financial developments in China can affect U.S. financial markets more substantially through indirect channels. First, Asian financial markets, which have close linkages to U.S. financial markets, are increasingly driven by economic and financial developments in China. Second, China's stock market developments can affect U.S. equities through sentiment spillovers, as was evident in the reaction of global markets and U.S. equities to China's stock market crashes in 2015 and 2016. More broadly, the impact of China's slowing growth and economic reforms on trade, commodities demand, and investor confidence affects global financial markets, which in turn influence U.S. financial markets.

Ultimately, the magnitude of the shock in China influences the size of the resulting financial spillovers. Implementing difficult but necessary financial reforms would enhance China's ability to manage potential economic and financial shocks, thereby minimizing spillover effects to the U.S. economy.

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