COUNCIL *on*
FOREIGN
RELATIONS

Center for Geoeconomic Studies

WORKING PAPER

China's $1.7 Trillion Bet

China's External Portfolio and Dollar Reserves

Brad Setser and Arpana Pandey
January 2009

The Council on Foreign Relations (CFR) is an independent, nonpartisan membership organization, think tank, and publisher dedicated to being a resource for its members, government officials, business executives, journalists, educators and students, civic and religious. Leaders, and other interested citizens in order to help them better understand the world and the foreign policy choices facing the United States and other countries. Founded in 1921, CFR carries out its mission by maintaining a diverse membership, with special programs to promote interest and develop expertise in the next generation of foreign policy leaders; convening meetings at its headquarters in New York and in Washington, DC, and other cities where senior government officials, members of Congress, global leaders, and prominent thinkers come together with CFR members to discuss and debate major international issues; supporting a Studies Program that fosters independent research, enabling Council scholars to produce articles, reports, and books and hold roundtables that analyze foreign policy issues and make concrete policy recommendations; publishing *Foreign Affairs*, the preeminent journal on international affairs and U.S. foreign policy; sponsoring Independent Task Forces that produce reports with both findings and policy prescriptions on the most important foreign policy topics; and providing up-to-date information and analysis about world events and American foreign policy on its website, CFR.org.

For further information about CFR or this paper, please write to the Council on Foreign Relations, 58 East 68th Street, New York, NY 10065, or call the Director of Communications at 212.434.9400. Visit CFR's website, www.cfr.org.

Introduction

China reported $1.95 trillion in foreign exchange reserves at the end of 2008. This is by far the largest stockpile of foreign exchange in the world: China holds roughly two times more reserves than Japan, and four times more than either Russia or Saudi Arabia. Moreover, China's true foreign portfolio exceeds its disclosed foreign exchange reserves. At the end of December, the State Administration of Foreign Exchange (SAFE)—part of the People's Bank of China (PBoC) managed close to $2.1 trillion: $1.95 trillion in formal reserves and between $108 and $158 billion in "other foreign assets." China's state banks and the China Investment Corporation (CIC), China's sovereign wealth fund, together manage another $250 billion or so. This puts China's total holdings of foreign assets at over $2.3 trillion. That is over 50 percent of China's gross domestic product (GDP), or roughly $2,000 per Chinese inhabitant.

If 70 percent of this has been invested in dollar-denominated financial assets, China's dollar portfolio tops $1.7 trillion—a bit under 40 percent of China's GDP. The authors estimate that China held close to $900 billion of Treasury bonds (including short-term bills) at the end of the fourth quarter, another $550 billion to $600 billion of agency (Fannie Mae, Freddie Mac, and Ginnie Mae) bonds, $150 billion of U.S. corporate bonds, and $40 billion of U.S. equities, as well as $40 billion in short-term deposits. These estimates are significantly larger than the numbers reported in the U.S. Treasury data, as those data tend to understate recent Chinese purchases and thus total holdings of U.S. assets.

The pace of growth of China's foreign assets clearly slowed in the fourth quarter of 2008. But it slowed after a period of unprecedented foreign asset growth. From the fourth quarter of 2007 to the third quarter of 2008, China likely added over $700 billion to its foreign portfolio (more than implied by the increase in its formal reserves). One fact illustrates just how rapid the growth in China's foreign assets exceeded the rise in combined foreign assets of the world's oil-exporting countries. As a result, China's government is now by far the largest creditor of the United States: during the period of its peak growth, it likely lent about $475 billion (roughly $40 billion a month) to the United States. Never before has a relatively poor country lent out so much money to a relatively rich country. And never before has the United States relied on a single country's government for so much financing.

China's outsized impact on global capital flows is a relatively recent development—one directly tied to China's policy of managing its exchange rate against the dollar. In the 1990s, China did not have to intervene in the currency market on a huge scale to maintain its peg to the dollar. From 1995 onward the dollar, and thus the renminbi, generally was appreciating and China's overall trade surplus remained modest. Direct investment inflows were offset by other kinds of capital outflows. In 2000, for example, China only added $15 billion to its reserves. The dollar's post-2002 depreciation was combined with tight fiscal policy and limits on domestic lending by the state banks to offset the inflationary impact of China's depreciated currency. This resulted in a large increase in China's trade and current account surplus. The current account surplus reached 11 percent of China's GDP in 2007—and its expansion drove most of the growth in China's reserves.

The enormous growth of China's reserves also reflected increased capital inflows into China. Significant speculative inflows began to emerge in 2003—when the dollar's depreciation began to generate expectations that China would not retain its dollar peg. The scale of those speculative inflows, however, increased dramatically over the course of 2007 and the first part of 2008. China, which was experiencing inflationary pressures, allowed the renminbi to appreciate against the dollar. Moreover, it did not match the U.S. rate cuts that followed the August 2007 subprime crisis. So long as Chinese interest rates were higher than U.S. interest rates, the renminbi was appreciating against the dollar and Chinese growth far exceeded U.S. growth, speculators found holding the renminbi more attractive than holding the dollar. This has clearly changed in the fourth quarter of 2008. China's growth has decelerated rapidly. The foreign exchange market now anticipates that the renminbi will depreciate against the dollar—in part because of the dollar's surprising recent appreciation. Speculative inflows have turned into outflows, bringing down the pace of growth in the foreign assets of China's government.

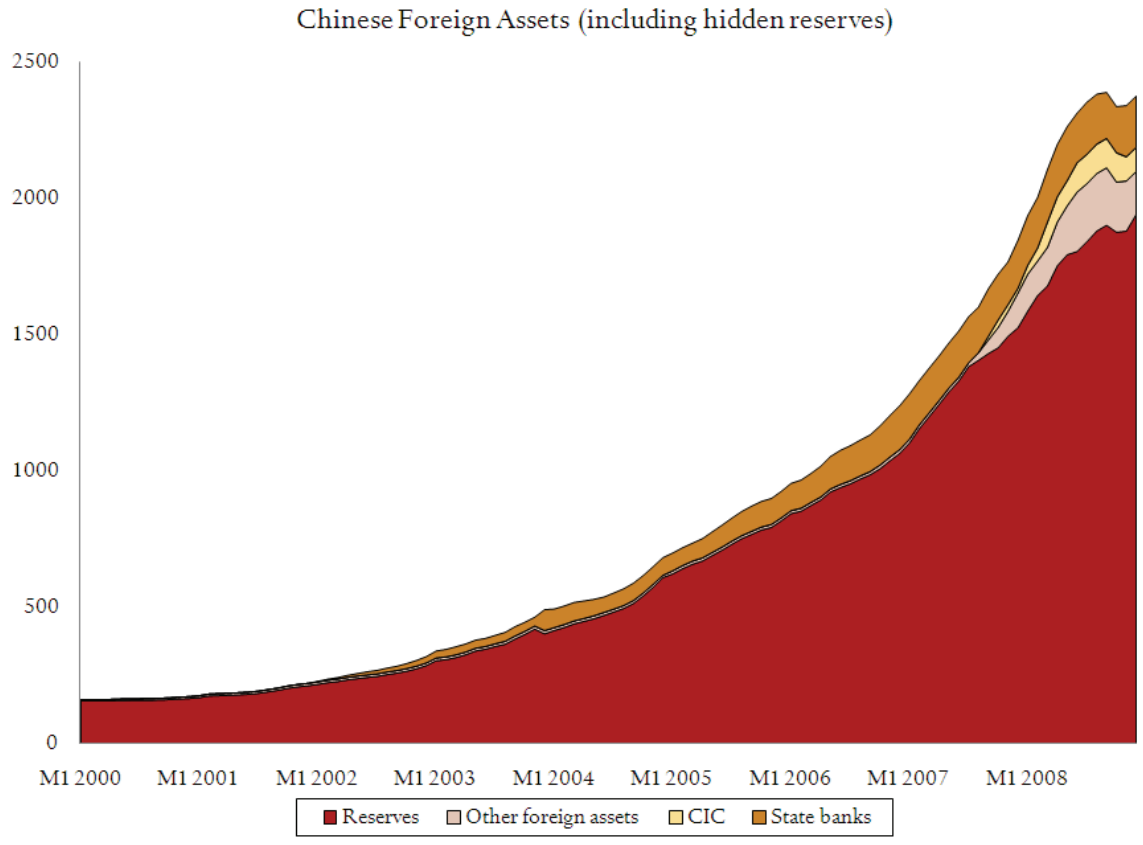
However, the global slump hasn't brought China's surplus down. So far, the fall in China's import bill has exceeded the fall in its exports, as China has benefitted from the fall in commodity prices. So long as China continues to run a large current account surplus, the basis for ongoing growth in China's reserve remains. Should speculative outflows slow, reserve growth should resume. China's impact on the global flow of funds remains hard to overstate.

This paper aims to summarize current knowledge about the size and composition of China's external portfolio in order to get a better sense of China's impact on global markets. The methodology is simple: it compares Chinese data on holdings of foreign assets with U.S. data on China's holdings of U.S. assets. However, the data sources on both sides of the ledger—China's stated foreign exchange reserves and the U.S. Treasury's monthly data on Chinese purchases—understate China's true reserves and its true purchases of U.S. assets. Consequently, the authors have adjusted China's reserves data for China's hidden reserves and adjusted the U.S. Treasury International Capital (TIC) data for China's purchases through London and Hong Kong.

Secrets of SAFE and the CIC

China's foreign exchange reserves totaled $1.95 trillion at the end of December 2008.[1] Among China watchers—though not among the broader public or the market—it is well known that China's central bank also holds a large quantity of foreign assets that is not reported as part of its reserves. The "other foreign assets"[2]—a line item in the PBoC's balance sheet—rose from $14 billion ($13.8 billion) in June 2007 to an astounding $219 billion in June 2008. In the third quarter, it fell to $211 billion. "Other foreign assets" then fell another $26 billion in October and the December data is expected to show an additional fall of around $25 billion to $75 billion. Adding these foreign assets to China's stated reserves bring the PBoC's disclosed foreign assets to approximately $2.1 trillion at the end of the fourth quarter (see Figure 1).

Figure 1

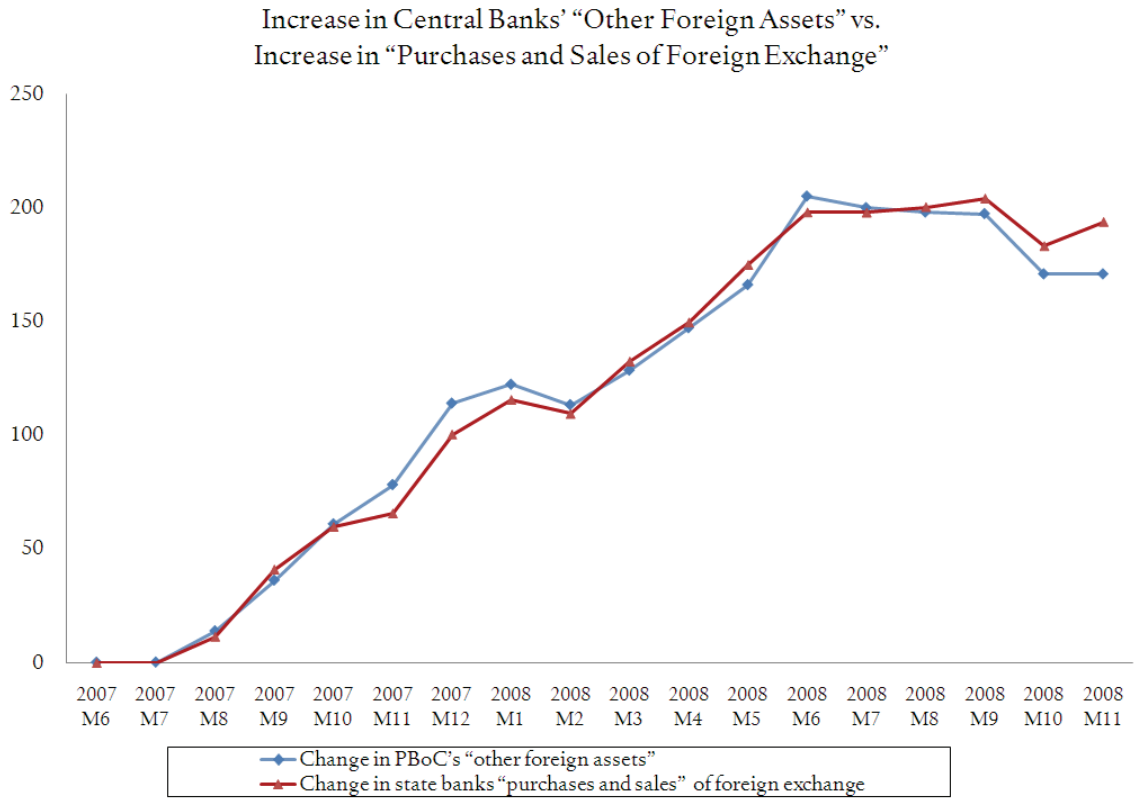


Sources: SAFE and PBoC.

The PBoC's "other foreign assets" correspond with the mandatory reserves that China's banks are holding in dollars. Since August 2007, China's commercial banks have been required to deposit reserves in the form of foreign exchange. These funds are counted as external assets in the PBoC's balance sheet and are managed by SAFE—not by the central bank. As a result, they are, for all intents and purposes, foreign exchange reserves. When the reserve requirement rose, the PBoC's "other foreign assets" rose, and now that the reserve requirement is falling, "other foreign assets" are falling.

The PBoC also reports (on its Mandarin-language site) the aggregate data on the state banks foreign currency balance sheet. As Figure 2 shows, from mid-2007 onward, the line item "purchases and sales of foreign exchange"[3] corresponds perfectly with the growth in the PBoC's other foreign assets. This almost certainly reflects the currency hedges China's state banks received in exchange for holding a portion of their mandatory reserves in dollars. In effect, the state banks bought dollars—reducing China's reported reserve growth—with a portion of their mandatory reserves and placed those reserves on deposit at the central bank, where they were reported as other foreign assets. The state banks in return received protection against any future currency moves.

Figure 2

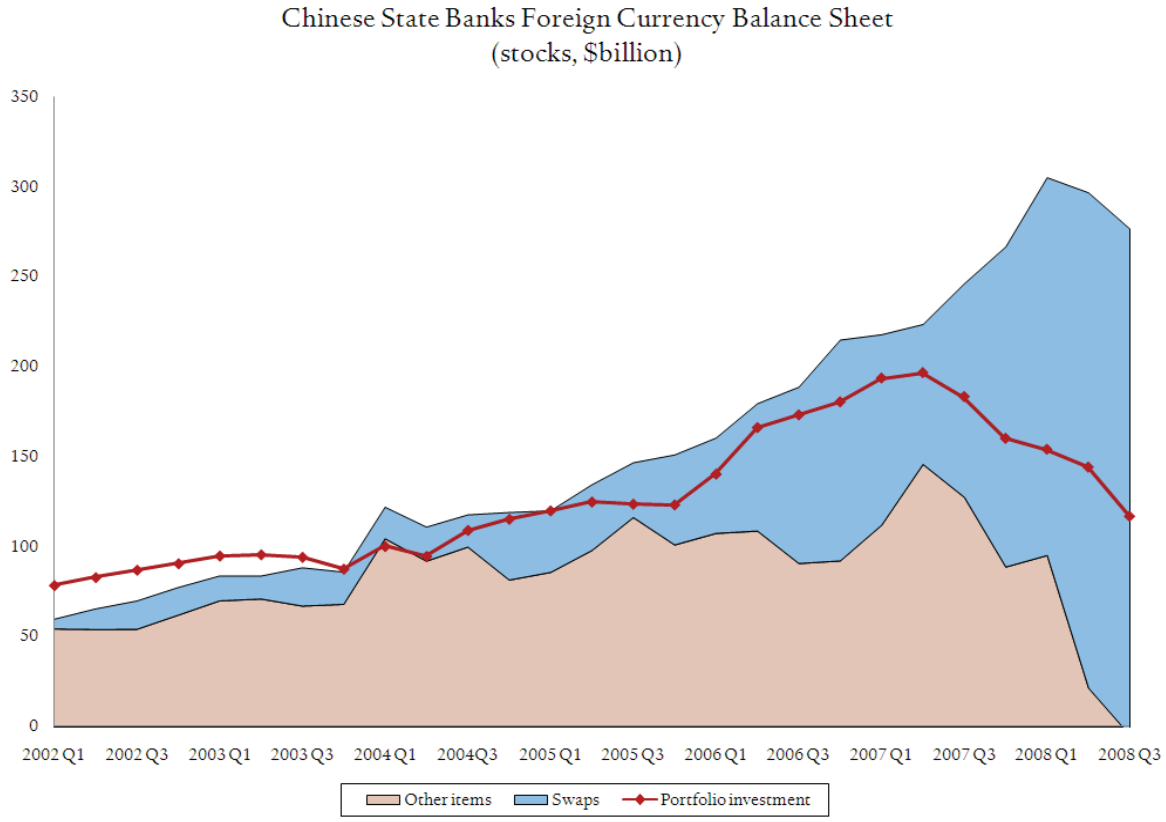


Sources: PBoC and authors' estimates.

Furthermore, there is an additional bit of evidence suggesting that the dollar reserve requirement has been managed by SAFE rather than by China's state banks. Until the middle of 2007, the growth in the state banks' foreign portfolio tended to match the growth in the state banks' "purchases and sales of foreign exchange" (the "swaps" in Figure 3) and "other foreign exchange liabilities" (the "oth-

er items" in Figure 3). However, starting in mid-2007, the state banks' foreign portfolio no longer increased in line with the sum of "purchases and sales" and "other foreign exchange liabilities." The obvious explanation for this change is that the assets offsetting the recent swap contracts are managed by SAFE.

Figure 3



Source: PBoC.

While the state banks' foreign portfolio has declined recently—falling from a peak of $196 billion in the second quarter of 2007 to around $117 billion at the end of quarter three 2008— it remains substantial. These foreign assets seem to originate from two sources: the use of foreign exchange reserves to recapitalize the state banks and the use of swap contracts to transfer the management of a portion of China's reserves to the state banking system in late 2005 and 2006. The "other items" surged in the first quarter of 2004, just after the PBoC shifted $45 billion of reserves to Central Huijin in December 2003. These reserves were subsequently used to finance the recapitalization of the Bank of China and China Commercial Bank. An additional $15 billion was used to recapitalize the Industrial and Commercial Bank of China in the second quarter of 2005.

While the PBoC disclosed the amount of foreign exchange reserves that were used to recapitalize the banking system, the scale of the swap contracts between the banks and the PBoC was not revealed. However, the circumstantial evidence supporting a significant shift in 2006 is overwhelming. The state banks' foreign investment portfolio surged, as did their liabilities arising from the "purchase and sale of foreign exchange." China's balance of payments data show a surge in private purchases of

foreign long-term debt, and its net international investment position indicates a comparable rise in private holdings of foreign debt. It rose from $116.7 billion at the end of 2005 to $227.1 billion—an increase of over $110 billion (somewhat more than the state banks' foreign portfolio investment in the PBoC data). The authors estimate that the state banks (and other state-run financial institutions) now hold around $170 billion in foreign assets.

In 2007 China also created the China Investment Corporation to manage a portion of China's foreign assets. Dedicated bond sales raised 1.550 trillion renminbi, or $207.9 billion, for the CIC.[4] However, $67 billion of this total was used to purchase Central Huijin—the PBoC's bank re-capitalization vehicle. This effectively was a domestic transaction. It did, however, reduce the funds the CIC had to invest abroad. In the fourth quarter of 2007, the CIC injected $20 billion into China Development Bank (CDB) and another $3 billion into China Everbright Bank[5]—and it recently injected another $19 billion into the Agricultural Bank of China (ABC). This left the CIC with roughly $100 billion to invest abroad. In 2007 it took significant equity stakes in Blackstone (a U.S. private equity fund) and Morgan Stanley—and in 2008 it contributed to a private equity fund managed by J. C. Flowers & Co. All have performed badly. But the majority of its assets apparently were held in money market funds (including the ill-fated Reserve Primary Fund) and bank deposits.

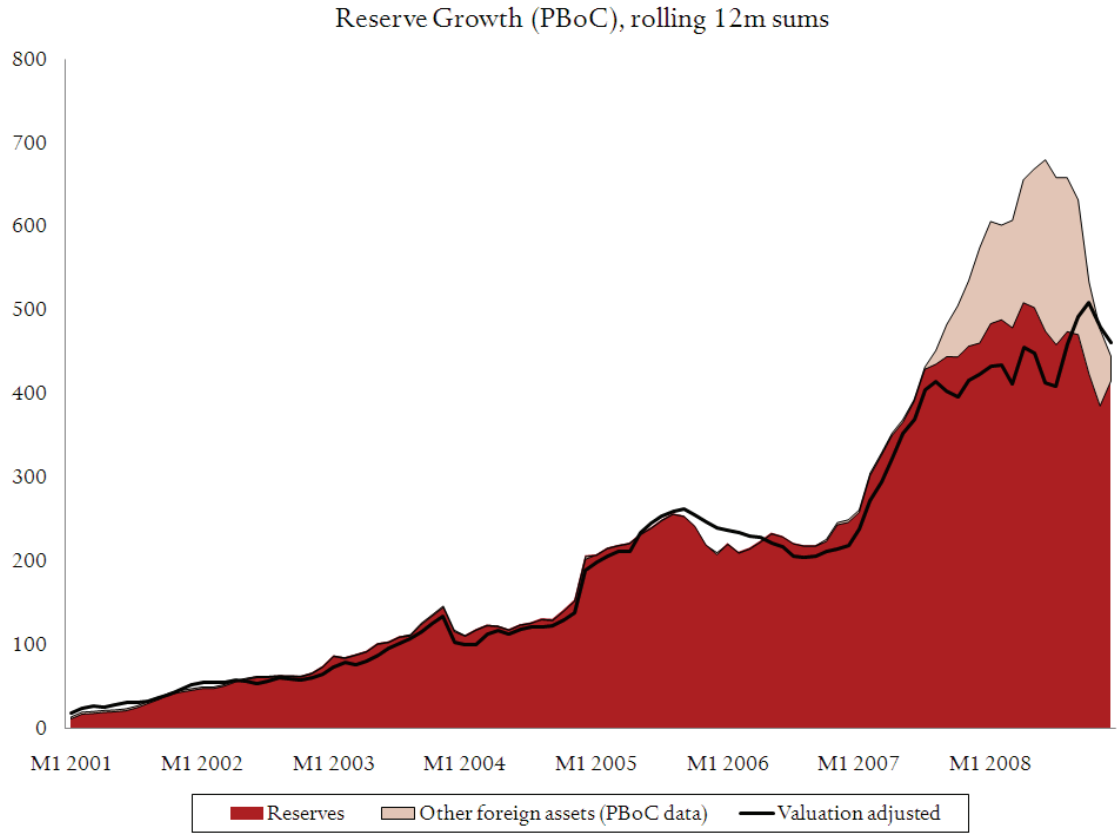
Table 1: Estimated Foreign Assets of China's Government (in U.S. $ billions)

	4th Quarter 2008
FX Reserves (managed by SAFE)	$1,946
"Other foreign assets" of PBoC (managed by SAFE)	$184 (end of November) $108–$158 (end of December)
State banks	$150–$200[6]
CIC (excluding assets managed by state banks)	$80–$100
Total	$2,284–$2,404

Sources: PBoC, SAFE, and authors' estimates.

The effect of these shifts show up clearly in Figure 4, which plots the twelve-month change in the foreign assets of the People's Bank of China. There is a noticeable dip in late 2003—when $45 billion was shifted to the state banks. In 2006, the increase in the PBoC's foreign assets failed to grow along with China's current account surplus. There is another dip in the first quarter of 2008, when the CIC likely bought a substantial sum of foreign exchange from the PBoC. The fall in the fourth quarter of 2008, by contrast, reflects a sudden slowdown in the actual pace of foreign asset growth, as private capital started to move out of China.

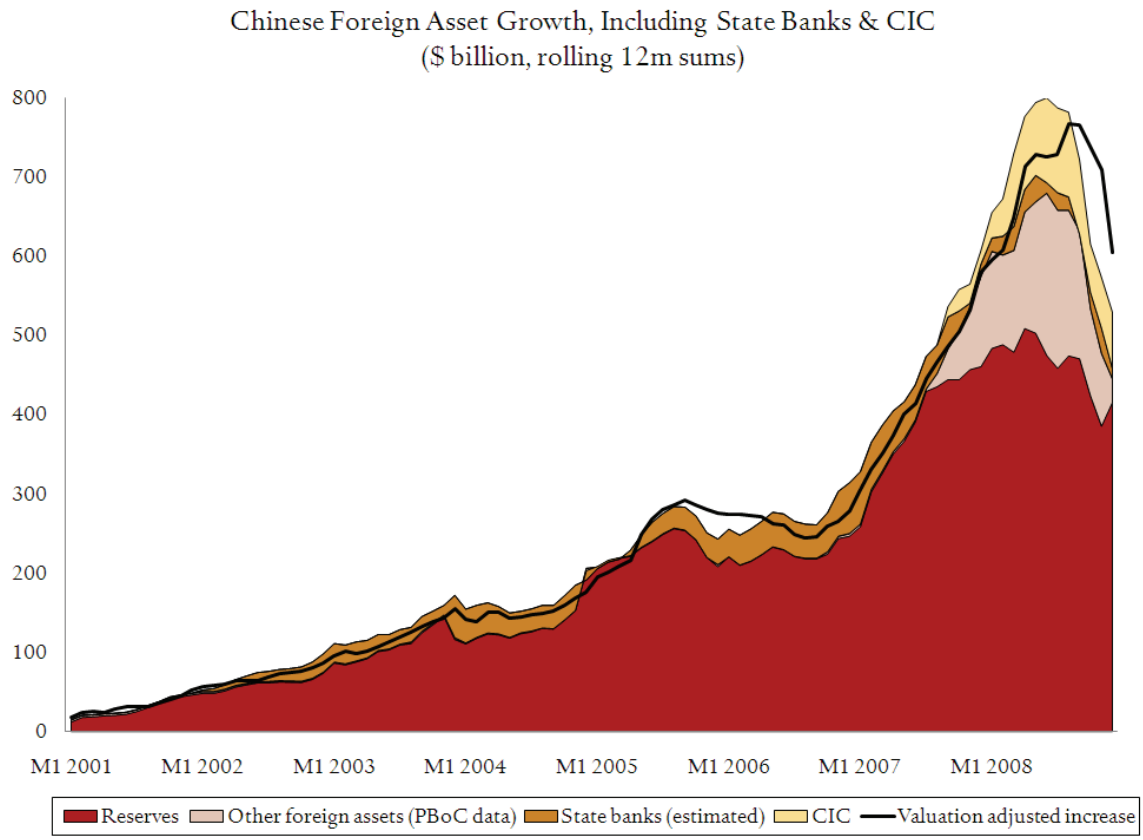
Figure 4



Sources: **PBoC and authors' estimates.**

Adding these shifts to the PBoC reserves data smoothes out some of the gaps—and presents a more accurate picture (the authors hope) of the growth in China's foreign portfolio. There is a bit of uncertainly over the precise size of the state banks' foreign portfolio—it was estimated using the liabilities side rather than the assets side of the banks' balance sheet in order to capture their foreign deposits as well as investments in foreign securities, but in the process some shifts may have been missed (using the "foreign portfolio investment data" fails to smooth out the 2003 shift of assets into the state banks, as portfolio investment didn't immediately rise). The data is particularly confusing from mid-2007 onward as the "hedges" associated with swap contracts represent the banks' reserve requirement rather than protection against currency losses on funds that they are managing on behalf of the central bank. While the authors' estimate is based on the PBoC's data, it also reflects an element of judgment—the release of detailed balance of payments data for 2008 should reduce the level of uncertainty.

Figure 5



Sources: PBoC, SAFE, and authors' estimates.

These calculations imply that China added close to $750 billion to its foreign assets during its period of peak accumulation from the end of September 2007 to the end of September 2008 (see Figure 5):

- $630 billion for SAFE ($660 billion after adjusting for valuation losses), $470 billion from reserves, and $160 billion from the increase in other foreign assets; and
- $95 billion for the CIC—with most of the increase coming in the first quarter—and $20 billion (one would assume) for CDB (the funds shifted to ABC will show up in the fourth quarter data).

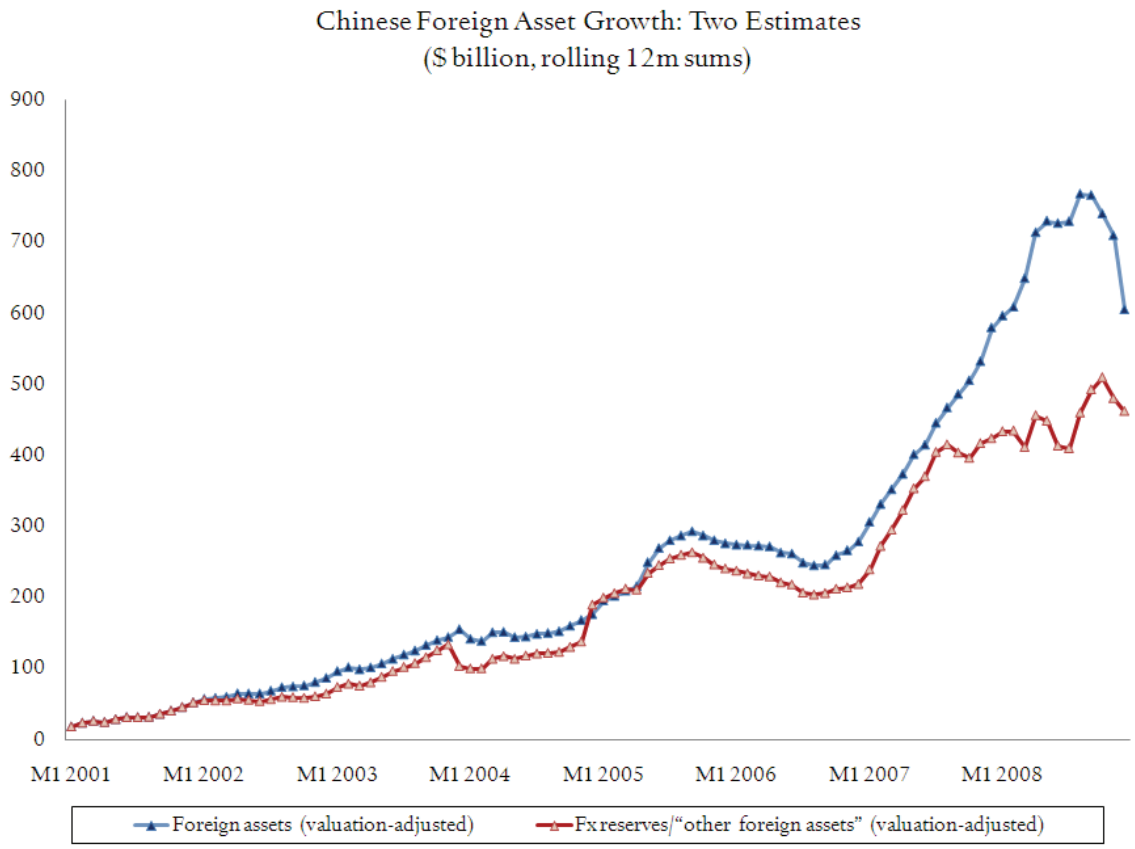
This calculation is based on one important assumption, namely that the state banks have *not dramatically* reduced their total foreign holdings over this period. The state banks clearly reduced their foreign portfolio investments, which are down $66 billion from the end of quarter three 2007 to the end of quarter three2008. Consequently, the authors' estimate will only be accurate if the state banks used the fall in their foreign securities portfolio to increase their holdings of foreign deposits—or increase their lending to Chinese state firms. If the state banks didn't offset the fall in their securities portfolio by increasing their other foreign assets, the estimate for China's total foreign asset growth from September 2007 to September 2008 would need to be revised down by around $65 billion, to $685 billion. This is a fairly modest potential source of error. China's foreign asset growth from Sep-

tember 2007 to September 2008 certainly topped $650 billion—and is unlikely to have exceeded $750 billion (see Figure 6).

The fall in reserve growth in the fourth quarter implies a somewhat slower pace of accumulation for calendar year 2008.

- Reported reserves increased by $418 billion in 2008—or $463 billion after adjusting for valuation losses.
- If the fall in the reserve requirement in December produced a fall in "other foreign assets" equal to the October fall (a conservative assumption), the rise in other foreign assets for the full year will be around $20 billion. If the fall in December is closer to $75 billion, then the other foreign assets would fall by around $50 billion in calendar year 2008.
- The $75 billion in funds that were most likely shifted to the CIC in 2008 and the $20 billion shifted first to the CIC and then to ABC implies a $500 billion to $550 billion increase in China's foreign assets in 2008. That is an enormous sum, even if it implies a somewhat slower pace of accumulation than earlier in the year.

Figure 6



Sources: PBoC, authors' estimates.

Following China's Money

Tracking the growth in China's foreign portfolio is far easier than tracking the composition of China's foreign portfolio. China's reported reserves still account for the majority of its foreign assets—and it reports data on its total reserves every quarter. China's net international investment position data provides—with a long lag—additional data on China's other foreign assets. By contrast, no Chinese data set provides any insight into the composition of China's foreign portfolio.

Tracking changes in the composition of China's foreign portfolio consequently requires using data from the U.S. Treasury—which reports on foreign portfolio investment in U.S. securities. No comparable data series exists for the euro zone or the UK—China's European portfolio has to be inferred from the gap between its U.S. portfolio and China's total portfolio. As both estimates are subject to inaccuracy—and China clearly holds some yen, won, Hong Kong dollars, Canadian dollars, and Australian dollars—there is a large margin of error.

Moreover, the monthly U.S. data on China's purchases of U.S. debt is incomplete. The monthly U.S. data only registers the initial sale of a U.S. security to a foreign investor—not any subsequent sales. As China is thought to purchase U.S. debt through third countries like the UK, the monthly data consequently understates China's true purchases. Guessing China's U.S. portfolio in turn requires estimating just how many of the Treasury and agency bonds sold by American investors to private investors in various financial centers—notably UK and Hong Kong—have then been sold on to China.

Fortunately, the United States produces two data sets that can be used to estimate China's holdings—the monthly data on China's purchases and the annual survey of foreign portfolio holdings of U.S. securities. Over the past few years, the annual survey of foreign portfolio investment in the United States has indicated a far larger rise in China's holdings of Treasury and agency bonds than implied by summing up China's monthly purchases. However, the most recent data comes from the June 2007 survey—when China had about $900 billion less than it does now. The survey data—for reasons that are explained later—also doesn't seem to capture China's full holdings of U.S. corporate bonds, or at least the June 2007 survey suggested far fewer corporate bond purchases than implied by the monthly flow data.

The U.S. data consequently provides the basis for setting a lower limit on China's U.S. holdings. We know that China held $466.5 billion in long-term treasuries and another $2.8 billion in short-term treasuries in June 2007. Since then China has bought an additional $212.7 billion of treasuries, bringing its total holdings up to $682 billion. The June 2007 survey indicates that China held $376.3 billion in long-term agencies and another $9.5 billion in short-term agencies. It has since bought $46.5 billion, bringing its total holdings up to at least $432 billion. China also has $ 68 billion in short-term bank deposits.

Known Chinese holdings of deposits, treasuries, and agencies (which are now backstopped by the U.S. Treasury) consequently now easily exceed $1 trillion—around 25 percent of China's GDP.

The June 2007 survey also indicates that China held $27.6 billion in long-term corporate bonds, another $1.4 billion in short-term corporate bonds, and $28.5 billion in equities. It has since bought $43 billion of corporate bonds and another $11 billion of equities, bringing its total holdings of corporate bonds up to at least $71billion and its holdings of equities up to $40 billion.

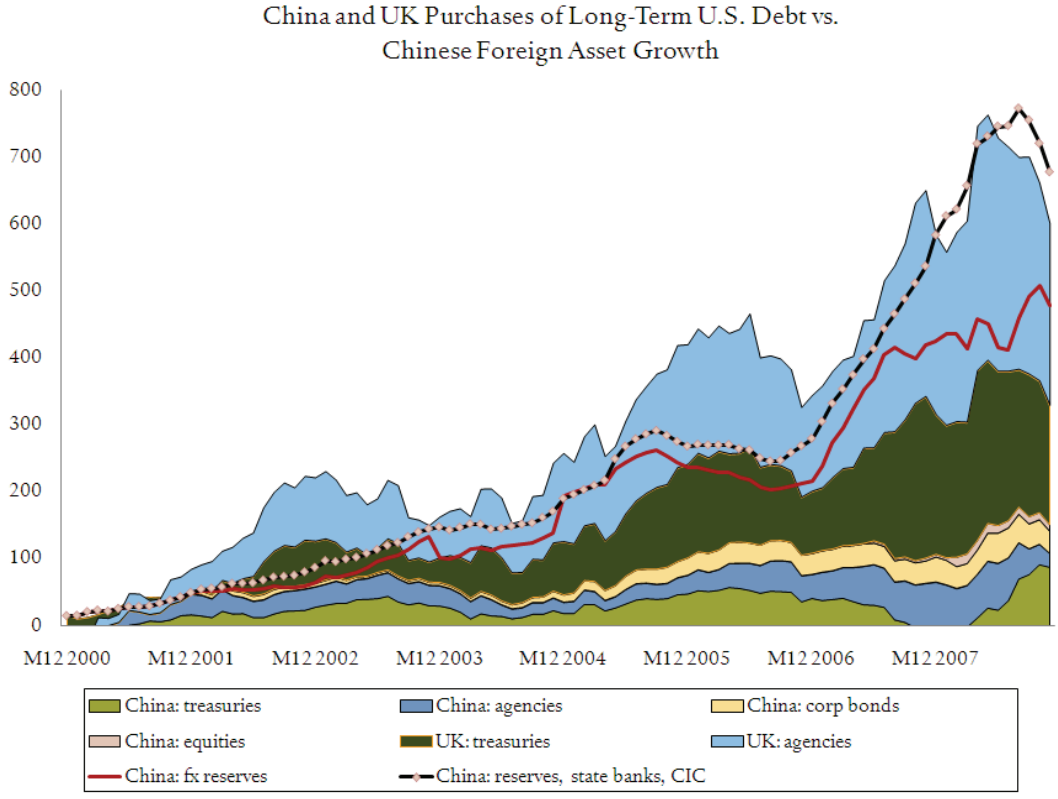
Big as it is, though, this total almost certainly understates China's actual U.S. portfolio.

The $1.293 trillion in Chinese investment in the United States that can be identified in the U.S. data is less than 50 percent of China's total portfolio—and only a bit over 50 percent of SAFE's portfolio (including the "other foreign assets" component).

Moreover, it is understood that the U.S. data tends to be revised over time—and those revisions consistently increase China's total holdings. The last survey of foreign portfolio investment revised China's holdings of treasuries up by $74 billion and its holdings of agencies up by $70 billion. The current data does not yet reflect the results of the June 2008 survey. These revisions, which almost certainly will be large, will take place in early 2009.

Getting a reasonably accurate picture of China's current holdings of U.S. assets consequently requires a bit of educated guess work to flesh out the gaps in the U.S. data. The pattern of revisions in the annual survey data offers vital clues. In addition to revising China's holdings (and thus its implied purchases) up, the recent survey data has tended to revise the holdings of the UK, and to a lesser degree, Hong Kong, down. A plot of China's reserve growth against the UK's purchases of treasuries and agencies also suggests that there is a recent correlation between Chinese reserve growth and the UK's purchases of treasuries and agencies. Indeed, the recent acceleration in China's reserve growth is reflected more in the UK data than in China's data.

Figure 7



Sources: TIC, PBoC, and authors' estimates.

To produce a better picture of China's current portfolio, the authors assumed that the pattern of past revisions wouldn't change. First the authors looked at how the survey data revised up China's Treasury holdings, and then an estimate was produced that redistributed some purchases from the UK and Hong Kong to China to match the adjustment that comes from the survey. It is estimated that China accounted for 59 percent of Treasury purchases through London from mid-2006 and 92 percent of agency purchases through London and Hong Kong. That total implies $161 billion in Treasury and another $221 billion in agency purchases from June 2007 to June 2008—far more than what shows up in the TIC data. It also implies $114 billion of Treasury purchases and net sales of $2 billion of agency bonds in the third quarter. That implies that China held around $860 billion of treasuries and $588 billion of agencies at the end of November 2008.

Table 2: Chinese Holdings of U.S. Assets (End November, 2008)

	Known U.S. holdings	Estimated undercount	Estimated U.S. holdings
Short-term bank deposits	68		68
Treasury bonds (including short-term)	682	178	860
Agency bonds (including short-term)	432	156	588
Corporate bonds	71	69	140
Equities	39		39
Total	1,292	403	1,694
Chinese foreign assets (estimate)	2,383		2,344
U.S. share (estimate)	50 percent		72 percent

Sources: TIC, PBoC, and authors' estimates.

The authors' methodology for estimating China's current holdings of U.S. corporate bonds (a category that includes asset-backed securities that are not guaranteed by one of the agencies/government-sponsored enterprises) is—bizarrely—the opposite of the methodology for estimating China's current holdings of U.S. Treasury and agency bonds. While the survey data revises China's holdings of treasuries and agencies up, it tends to revise China's holding of corporate bonds down. The authors consequently estimated China's current holdings of long-term corporate bonds by simply summing up China's net purchases. This misses amortization payments that have reduced China's holdings over time—but it also misses any purchases through offshore financial centers.

While this methodology seems ad hoc, the authors believe that it is reasonable. China seems to make use of U.S. custodians—including the Federal Reserve Bank of New York—for the majority of its Treasury and agency portfolio. However, the New York Fed doesn't offer custodial services for corporate bonds—and for its corporate portfolio, China likely makes use of a non-American custodian. That would explain why its corporate bond holdings disappear from the U.S. survey data, as the survey only captures bonds held by U.S. custodians.[7] Total Chinese purchases of U.S. corporate bonds in the TIC data over the last five years add up to around $140 billion—a sum that likely provides a more realistic baseline for evaluating China's exposure to riskier U.S. debt than the $30 bil-

lion total in the last survey, or the $70 billion in current holdings implied by adding subsequent purchases to that total.

One side note: it is possible that a disproportionate share of Chinese purchases of U.S. corporate bonds came from Chinese state banks. If so, that would imply large purchases—more than what shows up in the U.S. data—in 2006, a year when "private" Chinese actors added $100 billion to their foreign debt portfolio. After mid-2007, state banks scaled back their holdings of portfolio debt—presumably as a result of the large losses they incurred on their portfolio. However, total purchases of corporate bonds remained significant until August. That suggests that SAFE continued to buy corporate bonds after the state banks scaled back.

Finally, China owns a small portfolio of U.S. equities. The CIC's purchase of equity in Blackstone and Morgan Stanley shows up cleanly in the U.S. data. In addition, SAFE is thought to have put about 5 percent of its portfolio into equities. While 5 percent is a modest percentage, 5 percent of $2 trillion is still a large number. If U.S. equities account for 50 percent of its holdings, it would have needed to buy about $50 billion in U.S. equities over the past few years, which implies total Chinese equity purchases—counting the CIC's purchases—of around $60 billion. That top-down estimate matches the U.S. data reasonably well: the U.S. survey data shows $29 billion in Chinese equity holdings at the end of June 2007 and an additional $11 billion in purchases since then. Of course, the market value of those equities has fallen significantly. China's actual holdings of U.S. equities, marked to market, are probably closer to $30 billion.

All this sleuthing produces an estimate of China's total holdings of U.S. assets of around $1.7 trillion at the end of November 2008—or a bit over 70 percent of China's total estimated portfolio. China's dollar exposure should be a little higher. For example, China holds dollar-denominated bonds issued by Costa Rica. It also has some dollars on deposit in the global banking system that will not show up in the U.S. data.

If China continued to purchase treasuries at the same pace in December as it did from September to November—and also continued to run down its agency portfolio at a similar pace as in the past three months—China's U.S. portfolio would now be close to $1.75 trillion. There is a risk, though, that changes in the way China is managing its reserves—and the huge rise in China's T-bill portfolio suggests something has changed—are leading us to overestimate China's holdings. This overestimation, however, is likely to be modest. There is little doubt China now holds an enormous quantity of U.S. bonds.

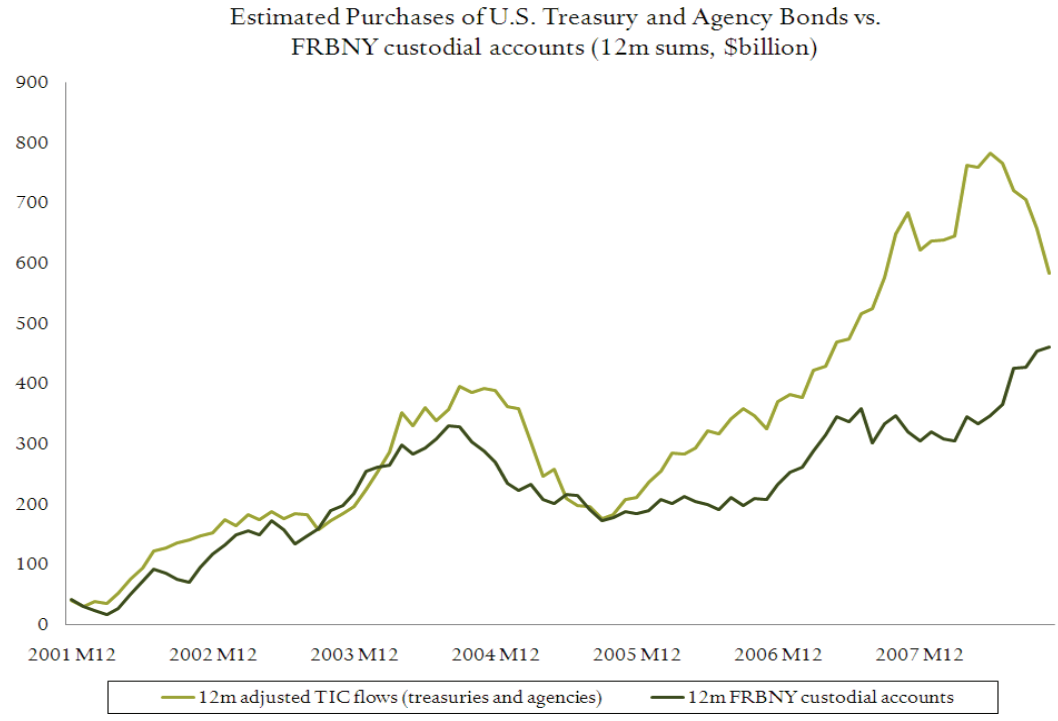
China Now Accounts For a Majority of Official Flows

In addition to producing a more realistic estimate of China's total U.S. portfolio, the authors' methodology allows the production of better real-time estimates of the magnitude of China's current purchases of U.S. assets. During the peak period of growth in China's foreign assets, China would have needed to buy around $500 billion in U.S. assets to keep the dollar share of its portfolio close to 70 percent. The unadjusted U.S. data, however, only shows $189 billion in purchases from September 2007 to September 2008. But the adjusted data suggests that China's true purchases were close to $475 billion.

China's purchases can be compared to both total foreign purchases of U.S. assets and to total purchases of U.S. assets by "official" investors (central banks and sovereign funds). The U.S. data tends to understate total official purchases. However, the same methodology that also allows the estimation of Chinese purchases can also be applied to official purchases. The same assumption is made that was made for China: a lot of "private" demand for treasuries and agencies from the UK and Hong Kong should be reattributed to central banks.[8]

This methodology passes an obvious test—it is consistent, broadly speaking, with the Fed's custodial data (see Figure 8).

Figure 8



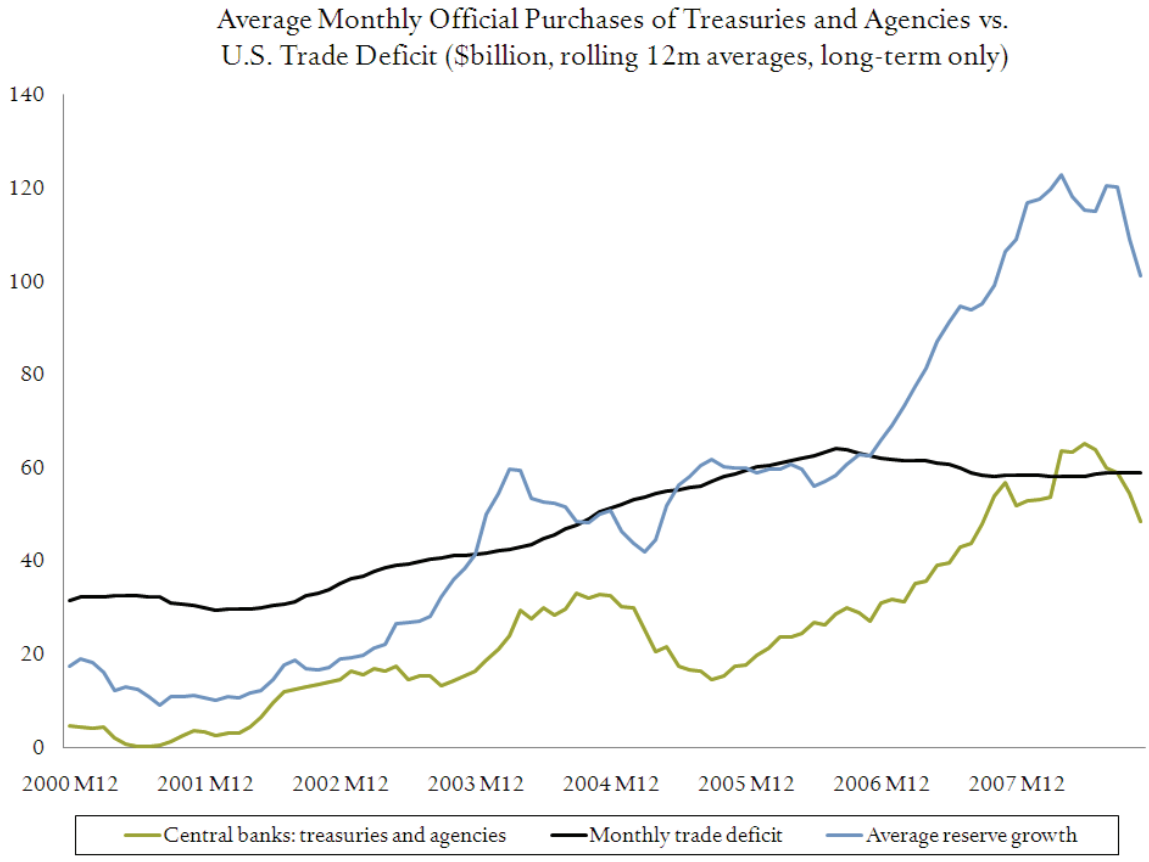
Sources: TIC, FRBNY, and authors' estimates.

The authors also adjusted the data for Japan and the Asian oil exporters—the balance-of-payments category in the U.S. data that corresponds with the Gulf—to allow easy comparison to the adjusted Chinese data. The data for the Gulf—even after the adjustment—almost certainly understates the Gulf's true impact on the market over much of this period, as it doesn't capture the increase in money managed by private fund managers for Gulf-based investors.

The resulting data can be presented in a host of different ways. At the suggestion of Peter Goodman of the *New York Times*, the authors opted to present the data as average monthly purchases rather than as a twelve-month sum, as that allows easy comparison with the monthly trade deficit. Using the average over twelve months of data has the advantage of smoothing out the volatility in high frequency indicators; using the average over a shorter period though can better capture important swings. Neither measure is perfect.

Three things jump out. First, official demand for treasuries and agencies has, over the past twelve months, almost matched the U.S. trade deficit. That is likely to change soon, as global reserve growth slowed sharply in the fourth quarter. But there is little doubt that official demand for U.S. assets allowed the United States to sustain large deficits for about a year after private demand for U.S. assets collapsed. Think August 2007 to August 2008 (see Figure 9).

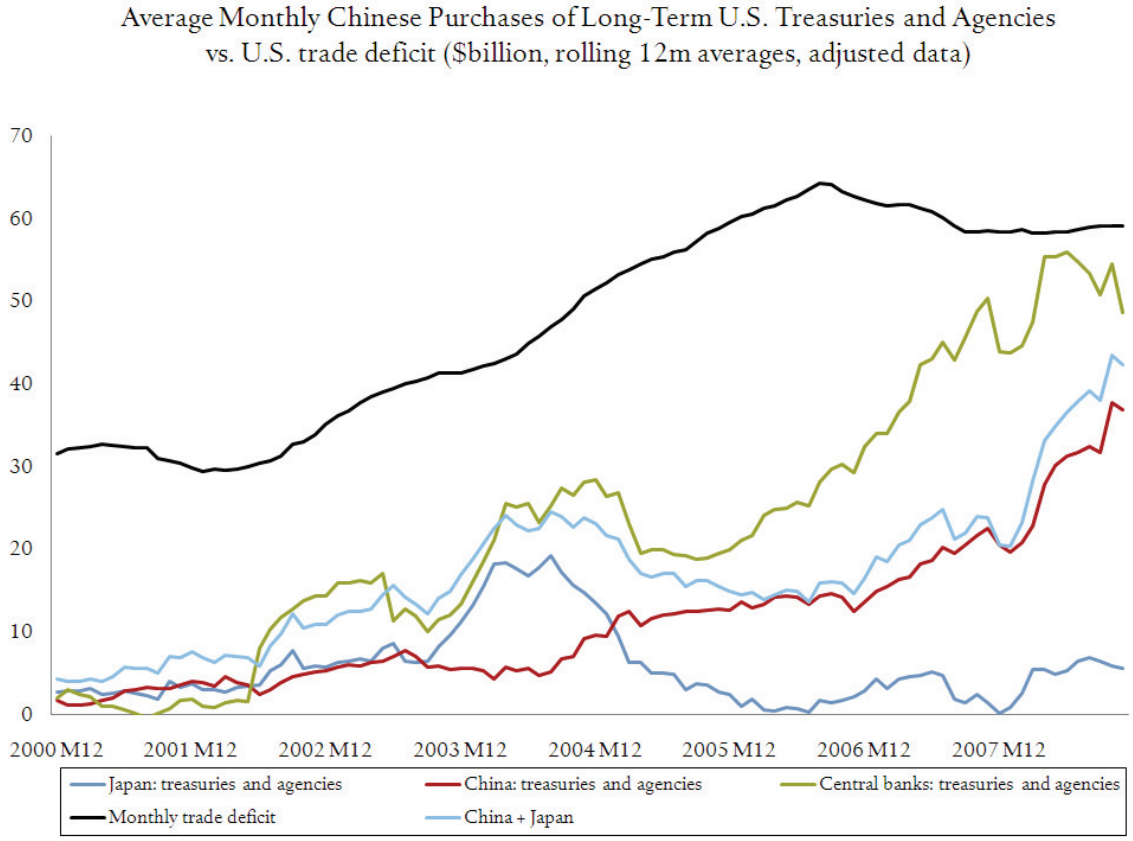
Figure 9



Sources: TIC, BEA, PBoC, and authors' estimates.

Second, China now accounts for both a very large share of all official purchases and a large share of the total financing the United States needs to sustain its trade and current account deficits. In an average month, Chinese purchases of treasuries and agencies have provided about half of the financing the United States needs to sustain its trade deficit (in the absence of private outflows). Looking ahead, it is possible that China will soon account for a larger share of total flows—as the overall deficit is shrinking while China's trade surplus remains large (see Figure 10).

Figure 10

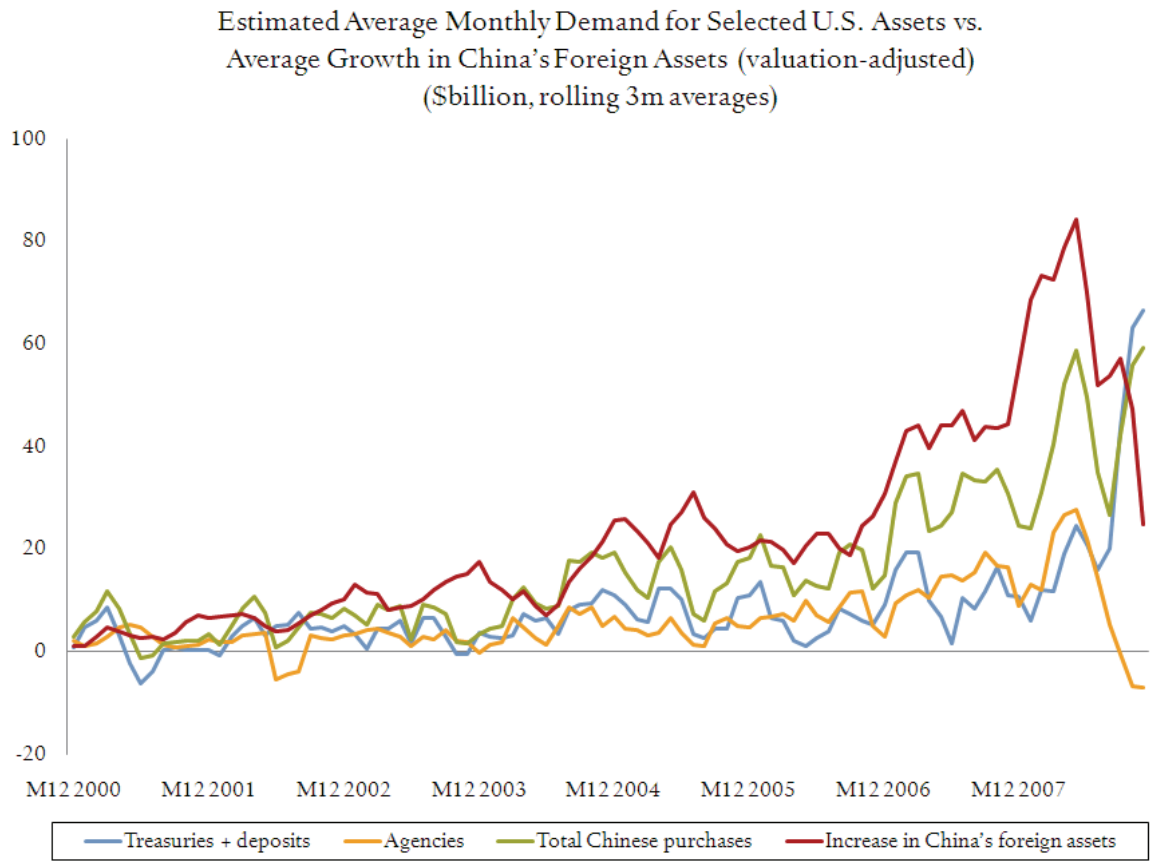


Source: TIC, BEA, and authors' estimates.

Third, available data suggests that China has scaled up its investment in Treasury bonds quite significantly over the past few months even as China's reserve growth slowed. In October, China is known to have added at least $68 billion to its Treasury portfolio while reducing its exposure to other kinds of U.S. debt. Moreover, the New York Federal Reserve's custodial data indicates that foreign central banks—including SAFE—continue to shift away from agencies toward treasuries. This shift is only starting to show up in data that averages estimated purchases over the past twelve months. It shows up clearly, though, in a plot of estimated average purchases over the past three months (see Figure 11). Between September and November, average monthly purchases of treasuries and agencies exceeded $60 billion. This shift almost certainly reflects a decision by China's government to move away from risky assets after Lehman's default and a series of politically embarrassing losses on China's investments in U.S. and European financial institutions. A decision to pull assets from private fund managers—or from private custodians—could explain why the growth in China's reported

U.S. assets over the past three months of data significantly exceeded the increase in the foreign assets of China's government.

Figure 11



Sources: TIC and authors' estimates.

Conclusion

This paper aims to identify the true scale of China's external assets and its likely U.S. portfolio, and thus to provide a benchmark for assessing the impact of China's reserve management on American and indeed global financial markets. The stunning growth of China's reserves and scale of purchases of U.S. securities over the past several years in some sense speaks for itself: never before has a country as poor as China provided so much financing to a country as rich as the United States, and never before has a country that values its independence as highly as the United States relied so heavily on a single country's government for financing. Chinese purchases in 2008 drew close to $400 billion, over half the net inflow needed to sustain the U.S. current account deficit.

Over the past few months, the story has grown more complicated. From 2000 to the middle of 2008, China had to buy an ever-increasing quantity of foreign assets to keep its currency from rising, and consequently the scale of financing that China's government provided to the United States—properly measured—almost continuously increased. That simple story—faster Chinese foreign asset growth propelling rising purchases of treasuries and agency bonds (and some experiments with riskier assets)—has grown more complex. China's reserve growth slowed dramatically in the fourth quarter, as speculative capital fled China. Similar outflows will likely reduce the pace of China's reserve growth in 2009. But the underlying basis for China's reserve growth remains. China's trade surplus rose in the fourth quarter, as China's import bill fell faster than its exports. It seems likely that China will continue to run a significant trade surplus in 2009; the dramatic fall in commodity prices should produce a large fall in China's import bill, offsetting falling exports to the United States and Europe. Should the current speculative outflows from China subside, China's underlying trade surplus would once again push China's reserves up—and the growth in China's dollar reserves would once again provide a large share of the financing needed to sustain the United States' still large current account deficit. If a large U.S. fiscal stimulus leads the world out of its current slump, the U.S. current account deficit could even start to expand once again.

The overarching issue, then, is whether it makes sense to try to maintain, over time, a global financial system based on the ongoing Chinese resistance to a stronger Chinese currency and corresponding growth in China's reserves. The authors' answer is no. China already has far more reserves than it needs to secure its own financial stability given its modest external debts and regulated capital account. China's government has already invested a substantial share of its national savings in U.S. Treasury and agency bonds on terms that imply large losses at China's central bank. Over time, China's large current account surplus suggests that the renminbi will ultimately appreciate against the dollar even if the dollar's unexpected rise and China's sharp slowdown have temporarily created pressure for the renminbi to depreciate.[9] Shifting those reserves to euros or another currency is not likely to help: the renminbi should appreciate over time against the euro, not just against the dollar. Nor can China realistically rely on exports to drive its future growth even if the global economy recovers from its current slump. During the past eight years, China's exports increased by a factor of

over five. They are not likely to increase at a comparable rate over the next eight. Supporting exports rather than domestic consumption has diminishing returns. So far China's financing of the United States has come on exceedingly generous terms—and been remarkably stable. But nothing guarantees that China will always be willing to extend new financing—and rollover maturing debts—on similar terms, or that China will not argue that the scale of its financing should give it influence over U.S. policy choices. The longer the United States relies on Chinese financing to avoid necessary adjustment—one where it pays for its imports with exports rather than debt—the harder the transition is likely to be.

The United States has recently discovered the risks of its own internal financial imbalances, notably an over-indebted household sector. The world's remaining financial imbalances continue to pose similar risks. Creating a more financially balanced global economy will be difficult so long as China's government continues to peg tightly to the dollar and add large sums to its foreign assets. And so long as China's macroeconomic policy mix produces large surpluses, there will be large deficits elsewhere in the global economy—whether in the United States or somewhere else. Rebalancing will be complicated if the United States and other larger deficit countries provide more macroeconomic stimulus in the downturn than the larger surplus countries. It should be possible to find a more stable basis for global growth, one that doesn't require a still-poor country to provide financing to far wealthier countries indefinitely.

Endnotes

1. For reserve size, see the SAFE website, available at http://www.safe.gov.cn/model_safe_en/tjsj_en/tjsj_detail_en.jsp?ID=303030000000000000,17&id=4.
2. See Balance Sheet of Monetary Authority on PBoC's Mandarin-language website for 2008 data, available at http://www.pbc.gov.cn/diaochatongji/tongjishuju/gofile.asp?file=2008S04.htm. The data for the English-language website only goes back to 2007.
3. See Summary of Sources and Uses of Funds of Financial Institutions (in foreign currency) on the PBoC's Mandarin-language website, available at http://www.pbc.gov.cn/diaochatongji/tongjishuju/gofile.asp?file=2008S02.htm.
4. See http://www.amadaninternational.com/reports/TheCreationoftheChinaInvestmentCorporation.pdf.
5. See http://www.ustreas.gov/press/releases/hp873.htm.
6. The $116 billion in the state banks' foreign portfolio holdings reported by the PBoC is smaller than the total funds that were transferred to the state banks in 2003, 2005, 2006, and in late 2007 as a result of the bank recapitalization and the use of swaps to shift foreign currency into the state banks. It consequently seems likely that the state banks' foreign portfolio—counting loans made to state firms to invest abroad—is somewhat larger than this. But it is also possible that some of the foreign exchange shifted to the state banks in 2006 flowed back to SAFE in 2008 when the state banks began to reduce their foreign securities portfolio. The CIC holds another $80 to $100 billion in foreign assets, much of which is likely to be on deposit with large international banks. The CIC recently indicated that it hasn't "invested" the majority of its funds, moderating its losses from recent market moves.
7. In effect, the survey shows smaller Chinese holdings of corporate bonds than would be implied by the monthly TIC data and far larger holdings of Treasury and agency bonds than would be implied by the monthly TIC data.
8. The authors cheated a bit. The revisions associated with the last survey imply that the official sector accounts for 140 percent of the UK's Treasury purchases and 210 percent of the UK and Hong Kong's Treasury purchases from mid-2006 to mid-2007. That reflected a world where official reserve growth was strong and private demand for "safe" U.S. assets was modest. Blindly forecasting similar revisions to the data from mid-2007 to mid-2008—given the strong increase in the UK's purchases—would imply exceptionally large flows. While the increase in global reserve growth implies some increase in official purchases, the authors opted to scale down the adjustment—at the risk of understating total official purchases.
9. While expectations that the renminbi will appreciate against the dollar over the next year have dissipated as the global and Chinese economies have slowed, China's large and still growing current account surplus, its rapid productivity growth, and the trajectory of other Asian economies as they developed all suggest future appreciation.

About the Authors

Brad Setser is a fellow for geoeconomics at the Council on Foreign Relations.

Arpana Pandey is a research associate for geoeconomics at the Council on Foreign Relations.