CHINESE FX INTERVENTIONS CAUSED INTERNATIONAL IMBALANCES, CONTRIBUTED TO U.S. HOUSING BUBBLE

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Executive Summary

For a decade prior to 2005, the People's Republic of China (PRC) pegged its currency, the renminbi, to the U.S. dollar. On July 21 of that year, the PRC finally broke this peg. However, the PRC has continued to intervene heavily in foreign exchange markets to limit the subsequent appreciation of the renminbi. Governments in other Asian economies have sought to limit the appreciation of their currencies against both the renminbi and the U.S. dollar to maintain the price competitiveness of their manufactured exports with their Chinese rivals in North American and European markets. Shadowing the PRC's exchange rate policy, other Asian governments have also intervened heavily in foreign exchange markets. From 2001 to 2007, the PRC, India, Indonesia, Japan, South Korea, Malaysia, Taiwan, and Thailand have collectively added $2.7 trillion to their foreign exchange reserves. About 2/3 of these reserves have been invested in U.S. dollar-denominated assets, primarily U.S. Treasury and agency debt securities.

Since 2000, the PRC's exchange rate policy and the shadow policies of other Asian governments slowed the depreciation of the U.S. dollar and lowered interest rates, particularly at the long end of the yield curve. By distorting market price signals, these policies have exacerbated a number of economic problems not only in the United States but also around the world:

- These policies have contributed to the growth of unsustainable imbalances in the international accounts of both the PRC and the United States.
- The PRC's massive accumulation of foreign exchange reserves is stoking rapidly rising inflation in China.
- Low long-term interest rates contributed to the housing price bubble during the first half of this decade. As the bubble approached its peak, reckless lending became rampant.
- The bursting of this bubble revealed significant overinvestment and malinvestment in housing in the United States as well as significant speculative excesses in credit markets around the world.
- The inevitable unwinding of these imbalances, the liquidation of overinvestment and malinvestment in housing, and the restoration of confidence in credit markets may slow real GDP growth in the United States for several years.

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I. INTRODUCTION

During the 1980s and 1990s, the foreign exchange value of the U.S. dollar was largely determined by the market-based, wealth-maximizing decisions of households and firms both here and abroad. Since 2000, however, the strategic interventions by central banks in foreign exchange markets have played a far larger role in determining the foreign exchange value of the U.S. dollar than during the two previous decades. In the last five years, the value of the U.S. dollar has declined (see Graph 1).

For a decade prior to 2005, the People's Republic of China (PRC) pegged its currency, the renminbi,[1] to the U.S. dollar. On July 21 of that year, the PRC broke this peg and finally allowed the value of its currency to rise, but not to a market-determined level. The People's Bank of China (PBC) continued to intervene heavily in foreign exchange markets to limit the subsequent appreciation of the renminbi. Governments in other developing and newly industrializing economies in northeast, southeast, and south Asia feared that significant appreciations of their currencies would cause their manufactured exports to lose their price competitiveness with their Chinese rivals in North American and European markets. Consequently, these governments have sought to limit the appreciation of their currencies against both the renminbi and the U.S. dollar.

Shadowing the PRC's exchange rate policy, the central banks in other Asian economies have also intervened heavily in foreign exchange markets since 2000. From 2001 to 2007, central banks in China, India, Indonesia, Japan, South Korea, Malaysia, Taiwan, and Thailand added $2.7 trillion to their foreign exchange reserves. About 2/3 of these reserves have been invested in U.S. dollar-denominated assets, primarily U.S. Treasury and agency debt securities.[2]

Since 2000, the PRC's exchange rate policy and the shadow policies of other Asian governments have kept dollar-denominated interest rates low, particularly at the long end of the yield curve, in the United States and to a lesser extent in Australia, Canada, and Europe. These policies also slowed the depreciation in the foreign exchange value of the U.S. dollar. Without massive interventions by the PRC and other Asian governments, long-term interest rates in the United States would have been significantly higher, and the foreign exchange value of the U.S. dollar would have been even lower.

By distorting market price signals, the PRC's exchange rate policy and the shadow policies of other Asian governments have exacerbated a number of economic problems not only in the United States but also around the world:

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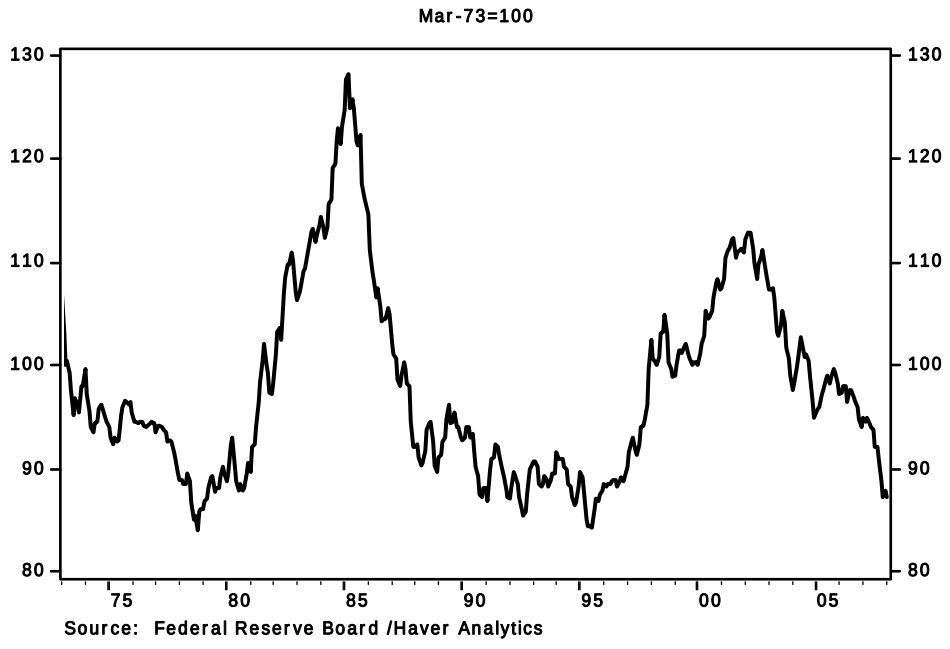
[1] In the United States, the dollar is the name of both the currency and the unit of account. In the People's Republic of China, the renminbi is the name of the currency, but yuan is the name of the unit of account. Thus, this study uses renminbi when referring to the Chinese currency as a concept and yuan when referring to an amount in terms of renminbi.

[2] U.S. Treasury debt securities are obligations of the U.S. government that carry the backing of the full faith and credit of the U.S. government. U.S. agency debt securities are obligations of U.S. government agencies or U.S. government-sponsored enterprises (GSEs) that do not carry the explicit backing of the full faith and credit of the U.S. government. However, bond market participants behave as if U.S. agency debt securities carry an implicit guarantee from the U.S. government. GSEs that regularly issue U.S. agency debt securities include the Federal National Mortgage Association (Fannie Mae), the Federal Home Loan Mortgage Corporation (Freddie Mac), and the Student Loan Marketing Association (Sallie Mae). Agencies that regularly issue U.S. agency debt securities include the Federal Farm Credit Banks, the Federal Home Loan Banks, and the Tennessee Valley Authority (TVA). As of December 31, 2007, U.S. Treasury debt securities outstanding were $4.517 trillion and U.S. agency debt securities outstanding were $8.836 trillion.

- These policies have contributed to the growth of unsustainable imbalances in the international accounts of both the PRC and the United States.[3]
- The PRC's massive accumulation of foreign exchange reserves is stoking rapidly rising inflation in China.
- Low long-term interest rates contributed to a housing price bubble in the United States. As the bubble approached its peak in 2006, reckless lending became rampant.
- The bursting of this bubble revealed significant overinvestment and malinvestment in housing in the United States as well as significant speculative excesses in credit markets around the world [4]
- The inevitable unwinding of these imbalances, the liquidation of overinvestment and malinvestment in housing, and the restoration of confidence in credit markets may slow real GDP growth in the United States for several years.

Graph 1



[3] For a discussion about the international account including definitions of the current account and the capital and financial account, please see the appendix.

[4] Overinvestment is investment that creates more assets than are needed to satisfy current demand for goods and services. Malinvestment is investment that creates the wrong kind of assets to satisfy current demand for goods and services. Overinvestment is generally less costly to liquidate than malinvestment. While overinvestment in assets can be liquidated by reducing new investment in such assets and by lowering the prices of such assets, malinvestment can be liquidated only by adapting existing assets to new uses often through additional investment. Thus, the losses to current asset owners are generally greater from malinvestment than from overinvestment. For example, a home builder may simply suspend new construction on single family detached houses until the inventory clears, while a developer that is constructing a condominium tower in a heavily overbuilt market may have to convert this project to a hotel at considerable expense.

II. HOW ECONOMIC FACTORS DETERMINE EXCHANGE RATES AND INTERNATIONAL ACCOUNTS

Under the Bretton Woods system (1945 to 1971), exchange rates were fixed. Current account transactions such as payments for imported goods were generally unregulated, but capital controls restricted both inward and outward investment transactions. International imbalances were resolved mainly through official flows of gold or U.S. dollars among central banks.

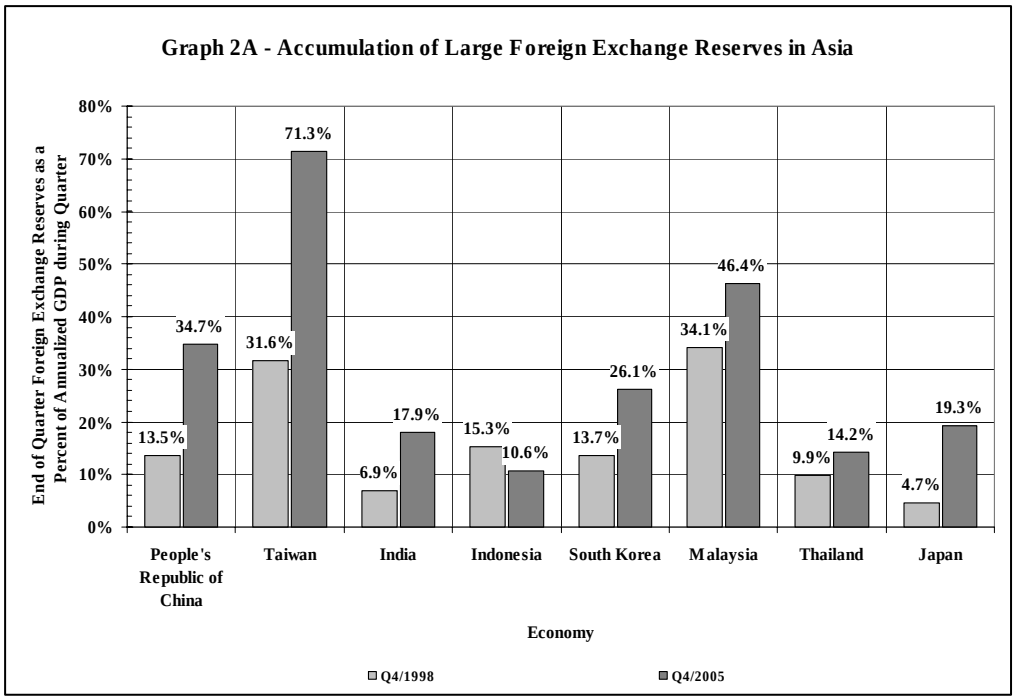
In 1973, the United States and other developed countries allowed market forces to determine the foreign exchange value of their currencies. Economists refer to this system as floating exchange rates. Over the next decade, developed and many developing countries abolished capital controls, freeing their residents to make outward foreign investment and opening their economies to inward foreign investment. In recent decades, international imbalances have been resolved mainly through market-determined changes in exchanges rates. Under floating exchange rates, a government may affect the foreign exchange value of its currency (1) through domestic monetary policy or (2) through its fiscal, regulatory, tax, trade, and other economic policies. Domestic monetary policy determines the supply of money. Changes in this supply relative to international demand affect the exchange rates of one currency with other currencies. Other economic policies affect the international demand for a country's currency by changing market expectations for the risk-adjusted after-tax rate of return. Since foreign residents must exchange their currencies to invest in other countries, policies that increase the expected risk-adjusted after-tax rate of return in one country will increase the foreign exchange value of its currency, and vice versa.

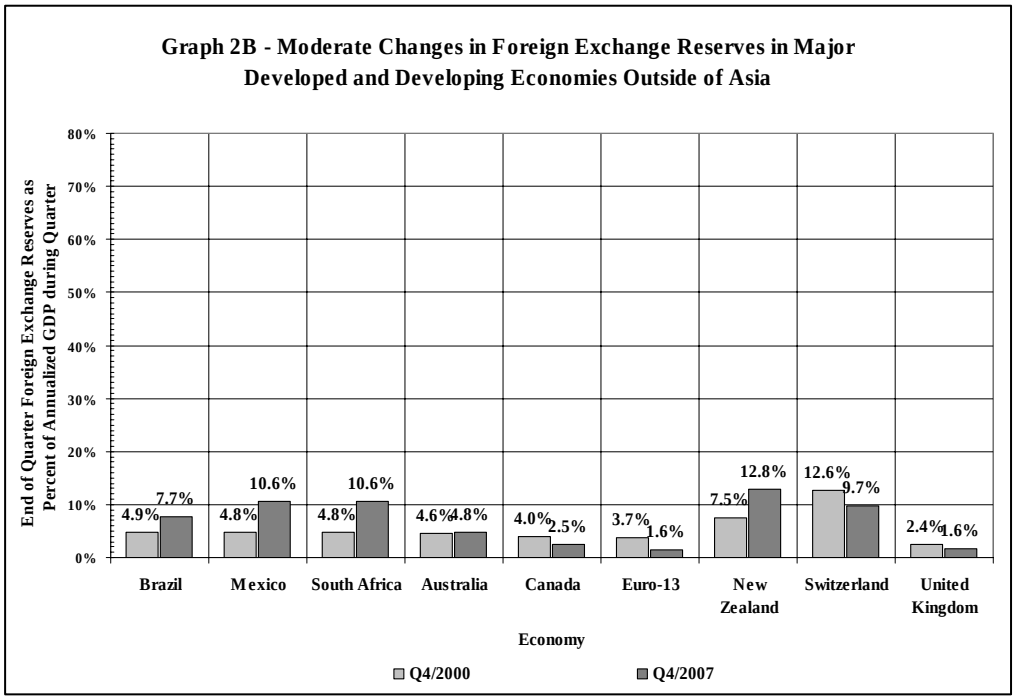
Exchange rates are also affected by the monetary policy decisions of foreign governments. If a foreign central bank were to increase the money supply of its currency faster than the growth in demand for its currency while the Federal Reserve kept the supply of U.S. dollars in line with the demand for U.S. dollars, then the exchange rate of the U.S. dollar is likely to appreciate against this foreign currency.

A policy-induced shift in either the supply of a country's currency or its international demand also changes such country's international accounts. An increase in inward foreign direct and portfolio investment will increase a country's capital and financial surplus (or reduce its deficit). This change automatically causes a country's current account deficit to increase (or its surplus to fall). Usually, this occurs through an increase in a country's trade deficit (or a decrease in its surplus) as the higher foreign exchange value of this country's currency simultaneously increases export prices in terms of other currencies and decreases import prices in terms of its own currency.

Between 1973 and 2000, official interventions by the U.S. Treasury and foreign central banks were limited and did not have a sustained influence on exchange rates. Portfolio investors can buy or sell financial assets almost instantaneously with minimal transaction costs to seek higher risk-adjusted after-tax returns, while trade and direct investment transactions often involve long-term contracts and commitments. Consequently, portfolio investment transactions by private households and firms rather than trade transactions or direct investment transactions have generally driven exchange rate fluctuations.

Both the disinflationary monetary policy pursued by the Federal Reserve and the Reagan administration policies of deregulation and marginal tax rate reductions increased expectations for higher risk-adjusted after-tax rates of return on U.S. investments. This drove a surge of inward private foreign investment in the early 1980s that increased the real foreign exchange value of the U.S. dollar. Again in the late 1990s, a high technology boom, trade liberalization, and a capital gains tax reduction drove another surge of inward private foreign investment, boosting the real foreign exchange value of the U.S. dollar. After these portfolio reallocations toward U.S. dollar-denominated assets peaked in 1985 and 2002, the real foreign exchange value of the U.S. dollar fell (see Graph 1).

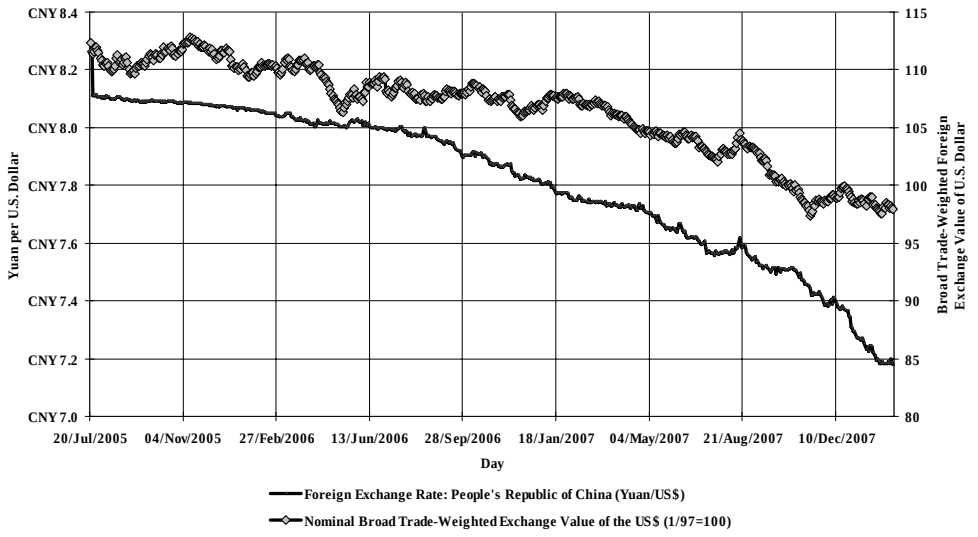




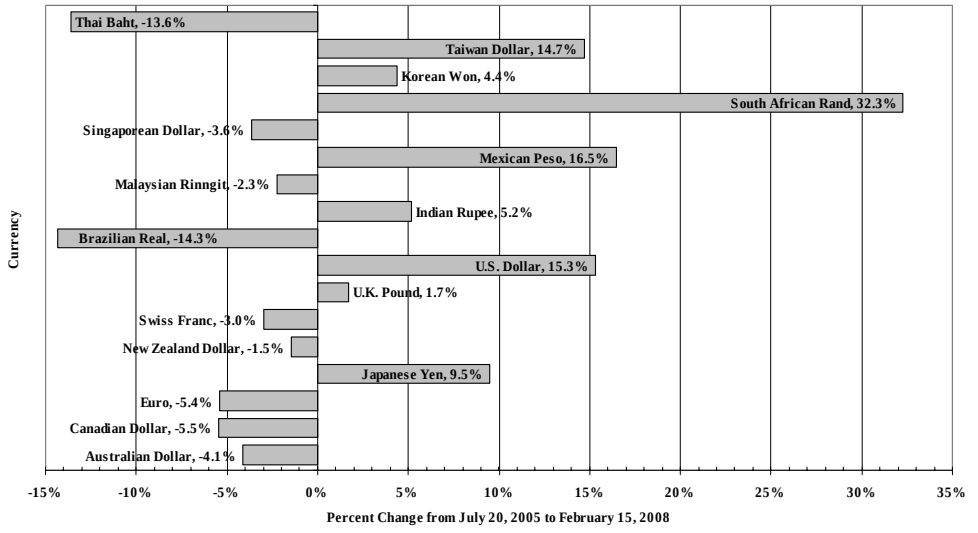
III. MASSIVE INTERVENTION SINCE 2000

After 2000, official transactions by the People's Bank of China and central banks in other Asian economies exerted significant upward pressure on the foreign exchange value of the U.S. dollar to keep the prices of their exports competitive. The PBC pegged the renminbi to the U.S. dollar through July 20, 2005, and thereafter allowed the renminbi to appreciate very gradually against the U.S. dollar. To maintain this peg and then to keep the renminbi from appreciating more rapidly to a market-determined level, China intervened heavily in foreign exchange markets by buying dollars and selling yuan. The

Graph 3 - Change in Renminbi-U.S. Dollar Exchange Rate Reflects Broad Depreciation in Foreign Exchange Value of U.S. Dollar, Not Appreciation of Renminbi



Graph 4 - Changes in Exchange Rates of Major Developed, Major Developing, and other Asian Currencies against the Renminbi (July 20, 2005 to February 15, 2008)



PRC's foreign exchange reserves ballooned by $1.363 trillion since December 31, 2000 to $1.528 trillion on December 31, 2007. At year-end, the PRC's foreign exchange reserves were 34.7 percent of GDP (see Graph 2A). To contain the inflationary effects of issuing so many yuan, the PBC has tried to sterilize its foreign exchange interventions by issuing yuan-denominated bonds and increasing the reserve requirements for Chinese banks and other depository institutions. The PBC has used its dollars to purchase foreign debt securities, about two-thirds of which are believed to be U.S. dollar-denominated.

Fearing a loss of the price competitiveness of their exports, central banks in other Asian economies have intervened in foreign exchange markets to prevent a significant appreciation of their

currencies against the renminbi. From December 31, 2000 to December 31, 2007, the foreign exchange reserves grew by $164 billion in Taiwan, $543 billion in India, Indonesia, South Korea, Malaysia, and Thailand combined, and $601 billion in Japan. Thus, central banks in China, India, Indonesia, Japan, South Korea, Malaysia, Taiwan, and Thailand have collectively added $2,671 billion to their foreign exchange reserves.

Graph 2A also shows how other Asian economies accumulated large foreign exchange reserves relative to their GDP from year-end 2000 to year-end 2007. On December 31, 2007, foreign exchange reserves totaled $270 billion in Taiwan, $763 billion in India, Indonesia, South Korea, Malaysia, and Thailand combined, and $948 billion in Japan.

These interventions have slowed the decline in the U.S. dollar that would have otherwise occurred. From July 20 2005 to February, 15, 2008, the U.S. dollar depreciated by 13.3 percent against the renminbi. However, this change reflects mostly a general decline in the nominal trade-weighted foreign exchange value of the U.S. dollar of 12.8 percent rather than a general appreciation in the foreign exchange value of the renminbi against other currencies (see Graph 3).

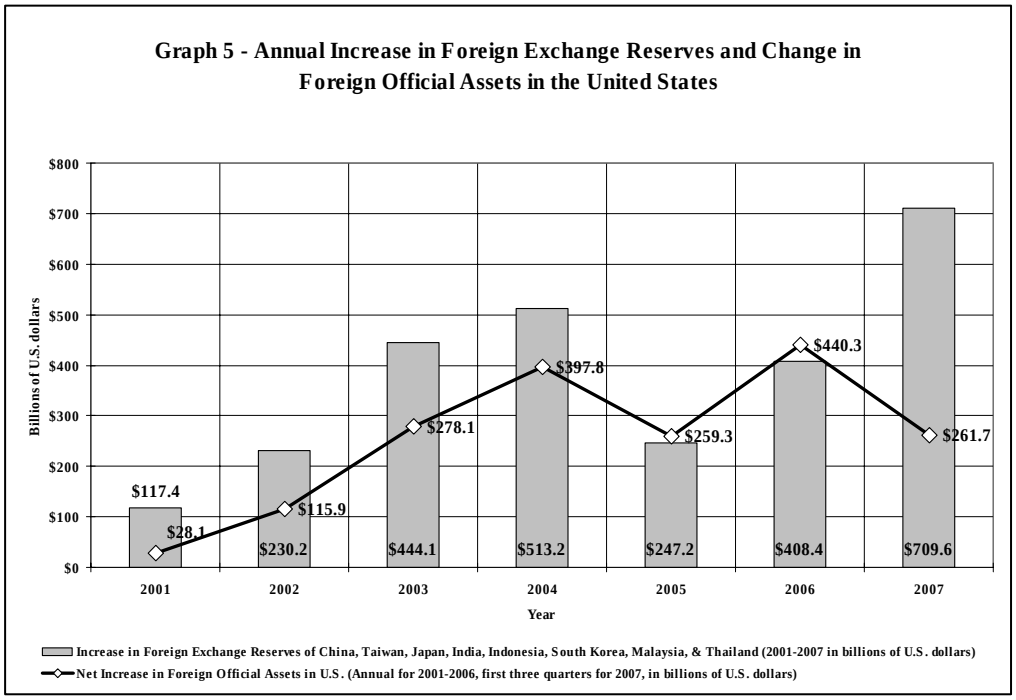
In contrast, major developed and developing economies outside of Asia have not accumulated excessive foreign exchange reserves (see Graph 2B). From July 20, 2005 to February 15, 2008, the renminbi has appreciated by 15.3 percent against the U.S. dollar. During the same period, however, the renminbi has appreciated by much less against the British pound (1.7 percent) and the Japanese yen (9.5 percent). The renminbi depreciated by 5.5 percent against the Canadian dollar, 5.4 percent against the euro, 4.1 percent against the Australian dollar, 3.0 percent against the Swiss franc, and 1.5 percent against the New Zealand dollar (see Graph 4).

Except for the Thai baht, the shadow interventions by central banks in other developing and newly industrializing economies in Asia have kept their currencies broadly in line with the renminbi. Between July 20, 2005 and February 15, 2008, the renminbi has appreciated by 5.2 percent against the Indian rupee and 4.4 percent against the Korean won, while the renminbi has depreciated against the Malaysian rinngit by 2.3 percent and the Singaporean dollar by 3.6 percent (see Graph 4).

There is wide agreement among economists that the renminbi is severely undervalued. Earlier this year, Morris Goldstein, a senior fellow at the Peterson Institute for International Economics, reported that the renminbi "is now grossly under-valued – on the order of 30 percent or more against an average of China's trading partners and 40 percent or more against the U.S. dollar."[5]

The PRC's intervention and the shadow interventions by other Asian economies have boosted the international demand for the U.S. dollar, increasing its foreign exchange value and exacerbating international imbalances. The PRC's current account surplus rose from 1.3 percent of GDP in 2001 to 9.0 percent of GDP in 2006. Global Insight forecasts that the PRC's current account surplus will be at least 9.1 percent of GDP for 2007. The U.S. current account deficit grew from 3.8 percent of GDP in 2001 to 6.2 percent of GDP in 2006, before falling to a seasonally adjusted annualized level of 5.1 percent in the third quarter of 2007.

[5] Morris Goldstein, "A (Lack of) Progress Report on China's Exchange Rate Policies," Presented to China Balance Sheet Conference (May 2007). Found at: http://www.chinabalancesheet.org/Documents/ExchangeRate.doc



The PBC and other Asian central banks have invested their foreign exchange reserves heavily in U.S. Treasury debt securities and U.S. Agency debt securities. As of September 30, 2007, 53 percent of all privately held U.S. Treasuries were owned by foreign residents.[6] About 70 percent of these foreign residents are, in fact, foreign government agencies, mainly central banks in east, southeast, and south Asia and sovereign wealth funds (SWFs) in oil-exporting countries in the Middle East.

This is a significant swing toward foreign ownership since December 31, 2000, when only 37 percent of all privately held U.S. Treasuries were owned by foreign residents. This swing is mainly attributable to a large increase in annual net purchases of U.S. securities by foreign governments from $28 billion (equal to 0.3 percent of GDP) in 2001 to $440 billion (equal to 3.3 percent of GDP) in 2006. Thus, the PBC's intervention and the shadow interventions by central banks in other Asian economies largely explain the spike in net purchases of U.S. securities by foreign governments during this period (see Graph 5).

IV. ECONOMIC CONSEQUENCES

The PRC's exchange rate policy and its shadow policies in other Asian economies have enormous consequences for the United States and the rest of the world. These exchange rate manipulations have distorted prices and sent faulty signals to individuals and firms around the world.

A. Effects on China

- The PRC's exchange rate policy has reduced the real price of Chinese labor relative to labor in other countries. By lowering labor costs, the PRC encouraged a surge of inward direct investment by foreign multinational corporations (MNCs) in the labor-intensive manufacturing of low-tech goods and the final assembly of medium-tech consumer goods

[6] Gross federal debt is composed of federal debt in intra-governmental accounts and federal debt held by the public. Federal debt held by the public is composed of federal debt held by the Federal Reserve and privately held federal debt. By accounting convention, privately held federal debt includes all U.S. Treasury debt securities owned by international organizations and foreign residents. Foreign residents include foreign governments as well as foreign households and firms. See *Treasury Bulletin*, Table OFS-2 (November 20, 2007). Calculation of percentage is by author.

from imported parts. The rapid increase in both exports and imports by Chinese subsidiaries of foreign MNCs has driven the phenomenal growth of China's international trade.

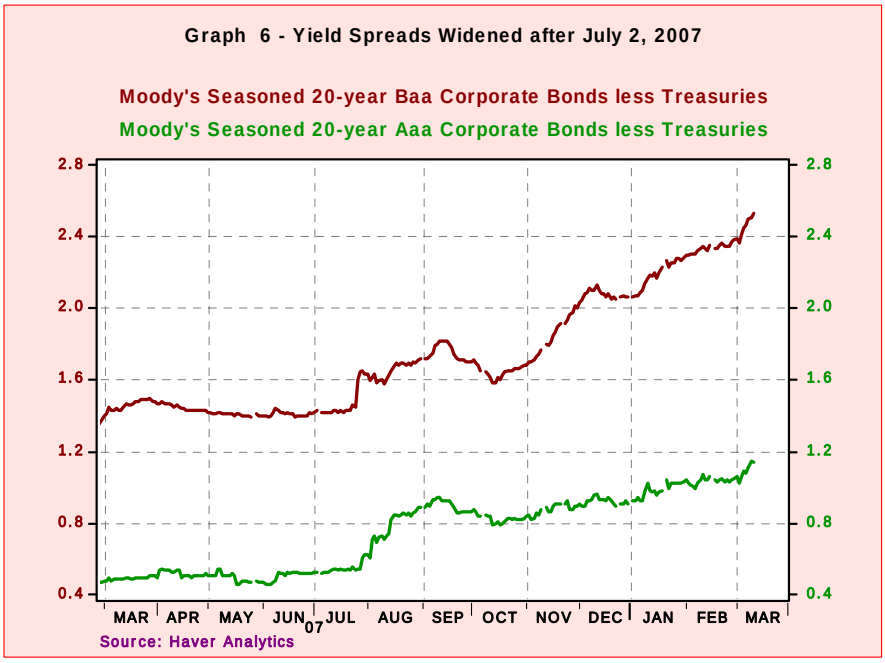
- This exchange rate policy slowed the appreciation of the renminbi and the decline in the prices of imported goods and services in yuan terms. Consequently, Chinese households consume far fewer imported goods and services than they would without this intervention. Shadow exchange rate policies have also slowed the growth of domestic consumption of imported goods and services in other Asian economies.
- The PRC's exchange rate policy has effectively created a price ceiling known as the "China price" that severely limits the ability of manufacturers of labor-intensive goods in other countries to increase their prices and remain competitive.

B. Effects on the United States

- The China price has had disinflationary effects around the world.
- Because of the PRC's distortion of world prices, U.S. exports were lower and U.S. imports were higher than they would otherwise have been. Consequently, U.S. output and employment in the tradable goods and services sector were lower than they would otherwise have been.
- The massive interventions by the PBC and central banks in other Asian economies have tended to reduce long-term interest rates in the United States both directly and indirectly since 2000. First, the PBC and other Asian central banks bid-down U.S. interest rates through their massive purchases of U.S. dollar-denominated debt securities. Second, the China price effect has slowed the increase in various price indices that are used to measure inflation. As a result, inflation and inflationary expectations have been contained. This has allowed the Federal Reserve and other central banks outside of Asia to pursue more accommodative monetary policies that have also helped to keep long-term interest rates low.
- By lowering long-term interest rates, the exchange rate policies of the PRC and other Asian economies deterred investment in the United States and other economies in parts of the tradable goods sector in which Chinese firms and Chinese subsidiaries of foreign MNCs are highly competitive and encouraged investment in non-tradable sectors, especially housing. Thus, these policies contributed to the inflation of a housing price bubble in the United States that peaked in 2006. As the bubble expanded, builders constructed too many new units, and too many households borrowed more than they could reasonably afford in order to buy homes. After the bubble burst, some of this residential investment has been revealed to be either overinvestment or malinvestment.
- The *Economist* reported that other developed countries outside of Asia had experienced a similar inflation in housing prices. "The S&P/Case-Shiller national index, the best gauge of American house prices, peaked last year after rising by 134 percent in the previous decade. France, Sweden and Denmark have all had booms of similar size. In Britain, Australia, Spain and Ireland, the ten-year increase … has been even larger."[7] Thus, China's exchange rate policy and its shadow effect in other Asian economies may be contributing to significant distortions in investment decision-making worldwide. Since actual housing prices have risen much faster than housing price models based on the rates of household formation and real income growth would suggest, these increases in

[7] Economic Focus: House Built on Sand, *Economist* (September 13, 2007). Found at: http://www.economist.com/finance/economicsfocus/displaystory.cfm?story_id=9804125

housing prices in developed countries outside of Asia may also be bubbles that will eventually burst with similar growth-restraining effects to what the United States is now experiencing.



➢ During the bubble years, the speculative finance of housing became common. Prudent lending practices such as significant down-payments and the verification of a potential borrower's income, assets, and liabilities were swept aside. Marginal borrowers that might not be able to service their mortgage loans after teaser rates expired relied on ever rising housing prices to allow them to refinance their homes or sell them at a profit before higher rates kicked-in. These subprime residential mortgage loans were securitized into collateral debt obligations (CDOs) and sold to investors that did not understand the credit quality of the underlying loans and that instead relied on the ratings of credit agencies. After the bubble burst, many of these CDOs were unable to perform as their credit ratings implied, and their market value collapsed. Major commercial and investment banks were forced to write down the value of their CDO assets. The revulsion toward CDOs led to a wider re-evaluation of risk and re-pricing of credit. Despite significant injections of liquidity by the Federal Reserve since September 2007, the availability of credit for riskier transactions such as leveraged buyouts has contracted, and credit risk spreads have widened considerably. From July 2, 2007 to February 15, 2008, for example, the yield spread between Moody's seasoned 20-year grade Aaa (highest investment grade) corporate bonds and comparable Treasuries widened by 60 basis points, while the yield spread between Moody's seasoned 20-year grade Baa (the lowest investment grade) corporate bonds and comparable Treasuries expanded by 91 basis points (see Graph 6). Moreover, the yield spread between the Merrill Lynch index of "junk" corporate bonds (rated CCC by Standard and Poor's) and comparable Treasuries ballooned by 556 basis points. It has become more difficult and more costly for higher risk borrowers to obtain credit. This may reduce aggregate business investment in nonresidential structures, equipment and software and could make a recession more likely.

V. DANGERS AHEAD

The present imbalances in exchange rates and international accounts are unlikely to be sustainable.

- The PBC's ability to sterilize its rapidly increasing foreign exchange reserves may have reached its limit. Inflation is accelerating in China. Excess liquidity is inflating prices of assets as well as goods and services. In January 2007, consumer prices were up 7.1 percent from a year ago. Share prices on Chinese stock markets appear to be a bubble. From December 31, 2005 to January 14, 2008, share prices rose by 405 percent as measured by the Dow Jones Shanghai index before backing down by 15 percent through February 15, 2008. Domestic inflation is now affecting China's export sector. After five years of decline, the prices of Chinese manufactured exports are now increasing. The PBC has increased domestic interest rates six times in 2007 and expected to hike domestic interest rates further in 2008. In a desperate measure to curb swelling inflation, the Chinese Banking Regulatory Commission has imposed quotas limiting new loans at Chinese banks.
- Chinese leaders now face a politically uncomfortable choice between (1) maintaining current exchange rate policy to protect the vested interests in the current industrial structure at the cost of spiraling domestic inflation, or (2) allowing a rapid appreciation of the foreign exchange value of the renminbi to a market-determined level to cool domestic inflation and reduce international trade frictions.
- If Chinese leaders decide to allow the foreign exchange value of the renminbi to appreciate to a market-determined level, the dissipation of PBC's massive intervention in foreign exchange may cause the foreign exchange value of the U.S. dollar, which has already been decreasing, to drop further. Decisions by other Asian countries to allow their currencies to appreciate as well would amplify the depreciation of the foreign exchange value of the U.S. dollar.
- The disinflationary effects of the China price in other economies are likely to dissipate over the next few years through either renminbi appreciation or domestic inflation in China. To prevent domestic inflation from accelerating in the United States, the Federal Reserve may need to pursue a less accommodative monetary policy. As a result, long-term interest rates in the United States are likely to be higher.
- A lower foreign exchange value for the U.S. dollar should stimulate the tradable goods and services sector by increasing exports and reducing imports relative to baseline trends. Consequently, both the U.S. current account deficit and the U.S. capital and financial account surplus are likely to fall as a percent of GDP. However, higher long-term interest rates are also likely to prolong declines in housing prices and investment in residential construction and slow the liquidation of overinvestment and malinvestment in housing. Although beneficial to growth over the long term, a reduction in foreign exchange intervention is likely to dampen real GDP growth for several years.
- A major risk for the United States is that Asian central banks and SWFs in oil-exporting countries decide to reduce their exposure to fluctuations in the U.S. dollar by selling U.S. dollar-denominated assets and buying assets denominated in other currencies, probably euros. While some policymakers have hypothesized that the PBC or SWFs might try to liquidate a substantial portion of their U.S. dollar-denominated assets in a political maneuver against the United States, this scenario is highly unlikely because such a "fire sale" would impose enormous financial losses on any country trying to liquidate its U.S. dollar-denominated assets at once. A plausible scenario is that the Asian central banks

and SWFs may decide to allocate a smaller share of their portfolios to U.S. dollar-denominated assets over several years. Such a marginal portfolio reallocation could nevertheless place significant downward pressure on the foreign exchange value of the U.S. dollar for an extended period.

- A significant and sustained rally in the foreign exchange value of the U.S. dollar is unlikely to occur until market expectations for the future course of tax, regulatory, and trade policies after the 2008 election improve.

VI. CONCLUSION

The PRC's exchange rate policy and the shadow policies of other Asian governments have boosted the foreign exchange value of the U.S. dollar significantly above its market-determined level since 2000. These policies have distorted price signals around the world by holding down the prices of labor-intensive goods and lowering long-term interest rates. These distortions contributed to unsustainable imbalances in international accounts and to overinvestment and malinvestment, especially in housing in the United States.

If the PRC were to announce its intention to phase-out the PBC's interventions in foreign exchange markets over several years and to allow the renminbi to appreciate more rapidly until its foreign exchange value was determined solely by market forces at some fixed date in the future, the unwinding of these international imbalances and the liquidation of overinvestment and malinvestment would accelerate. Although this policy change would significantly improve the long-term growth prospects for China, the United States, and the rest of the world, it may slow real GDP growth in the United States for several years.

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Senior Economist

APPENDIX: WHAT ARE INTERNATIONAL ACCOUNTS?

International accounts are a system of double-entry accounting that records all transactions between residents in a country and nonresidents during a time period, usually a year. In this system, there are two major accounts: (1) **current account** and (2) **capital and financial account**. This is subdivided into: (2a) **capital account** and (2b) **financial account**.

- (1) The current account records transactions in goods, services, income, and unilateral current transfers between residents and nonresidents.
- (2a) The capital account records capital transfers between residents and nonresidents, such as debt forgiveness and migrants' transfers, and acquisitions and disposals of non-produced, non-financial assets between residents and nonresidents.
- (2b) The financial account records transactions between residents and nonresidents resulting in changes in the level of international claims or liabilities, such as in deposits, loans, ownership of portfolio investment securities, and direct investment.

By definition, the (1) current account and the (2) capital and financial account should sum to zero for each country in the world. Thus, a current account surplus implies a capital and financial account deficit and vice versa. Any sum other than zero indicates errors by a country's statistical agency in recording and compiling international transaction data. To compare international account components both among countries and through time, economists normalize balance amounts with a country's contemporaneous gross domestic product (GDP). For example, the U.S. current account balance was 6.15 percent of GDP in 2006.

While many people falsely assume that any surplus must be good and any deficit must be bad, a current account surplus (or a surplus in any of its components including the trade balance) is not necessarily good for a country's economy nor is a current account deficit necessarily bad. Remember, a current account surplus requires a capital and financial account deficit. For example, a country whose economy is in a depression typically runs a current account surplus (because domestic demand for imports has collapsed) and a capital and financial account deficit (because residents and foreigners invest their funds in other countries).