PRC's Pegged Exchange Rate Contributes to Global Imbalances

PRC'S PEGGED EXCHANGE RATE CONTRIBUTES TO GLOBAL IMBALANCES

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Executive Summary

Since 1995, the People's Republic of China maintained a pegged exchange rate between the renminbi and the U.S. dollar as a fundamental part of its development strategy. Given the PRC's controls over foreign financial flows, the renminbi is undervalued. To maintain the PRC's undervalued pegged exchange rate, the People's Bank of China accumulated large foreign exchange reserves.

Because of the pegged exchange rate, the real value of the renminbi has generally tracked the real value of the U.S. dollar. From 2002 to 2004, the real values of the U.S. dollar and the renminbi trended down together. Because of these decreases, governments in other major Asian economies feared that their domestic firms and their domestic affiliates of foreign multinational firms would lose export market share in Europe and North America to Chinese firms and Chinese affiliates of foreign multinational firms. Consequently, central banks in these other major Asian economies accumulated large foreign exchange reserves to limit the increase in the real value of their currencies.

Both directly and indirectly, the PRC's pegged exchange rate policy is distorting world prices and contributes to serious imbalances in the global economy. The U.S. goods and services trade deficit with rest of the world is somewhat larger than it would be otherwise. The PRC's pegged exchange rate policy discourages investment in some sectors and encourages excessive or bad investment in other sectors in the United States and other countries. This is producing an inefficient allocation of global resources. If the resulting imbalances fester, then their inevitable correction may become more costly to the PRC, the United States, and the rest of the world in terms of lost employment, production, and wealth.

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PRC'S PEGGED EXCHANGE RATE CONTRIBUTES TO GLOBAL IMBALANCES

I. INTRODUCTION

Since 1995, the People's Republic of China (PRC) pegged its currency, the renminbi, to the U.S. dollar at the rate of $1 equals 8.28 yuan.[1] Under a pegged exchange rate, a country's central bank must intervene in foreign exchange markets to keep the market exchange rate in line with the peg.

If the foreign exchange value of the renminbi begins to increase (i.e., $1 becomes less than 8.28 yuan),[2] the PRC's central bank, the People's Bank of China (PBC), must purchase U.S. dollars with yuan. The PBC buys some U.S. dollars from Chinese individuals and firms. Generally, Chinese individuals and firms must surrender any foreign currency income that they receive from exports or foreign assets to the PBC for yuan at the pegged exchange rate. The PBC buys the remainder from foreigners in foreign exchange markets. The PBC's purchases increase of U.S. dollars the supply of yuan and reduce the renminbi's foreign exchange value until it again equals the pegged exchange rate.[3] Simultaneously, the PBC buys foreign assets, generally U.S. Treasury and U.S. Agency debt securities, with the U.S. dollars that it acquires. Thus, the PBC's intervention increases its foreign exchange reserves (when they are measured in terms of U.S. dollars). If the foreign exchange value of the renminbi begins to decline (i.e., $1 becomes more than 8.28 yuan),[4] this process is reversed.

Every country faces what Federal Reserve Governor Ben S. Bernanke describes as the policy trilemma. Any country may choose to have any two of the following three policies: (1) an independent monetary policy, (2) a pegged exchange rate, and (3) the free flow of capital across its borders. However, it is impossible to have all three policies simultaneously.[5] The two policies that the PRC has chosen are an independent monetary policy and a pegged exchange rate. This choice forced the PRC to sacrifice the free flow of capital across its borders. Therefore, the PRC has regulated foreign financial flows including inward and outward flows of foreign direct and portfolio investment (see Table 1 in Appendix I -Tables).

This study seeks to determine whether the PRC's pegged exchange rate policy has boosted the real value of the U.S. dollar in recent years. This study also seeks to determine whether the PRC's pegged exchange rate policy has caused significant imbalances in the global economy in recent years.

This study finds:

1. A pegged exchange rate between the renminbi and the U.S. dollar is a fundamental part of the PRC's export-led, inward foreign direct investment-dependent development strategy.
2. Given the PRC's controls over foreign financial flows, the renminbi has been undervalued. Consequently, the PBC accumulated U.S. dollars and dollar-denominated assets in foreign exchange markets to maintain the PRC's pegged exchange rate.

3. Because of the pegged exchange rate, the real value of the renminbi has generally tracked the real value of the U.S. dollar. From 2002 to 2004, the real values of the U.S. dollar and the renminbi have trended down together.

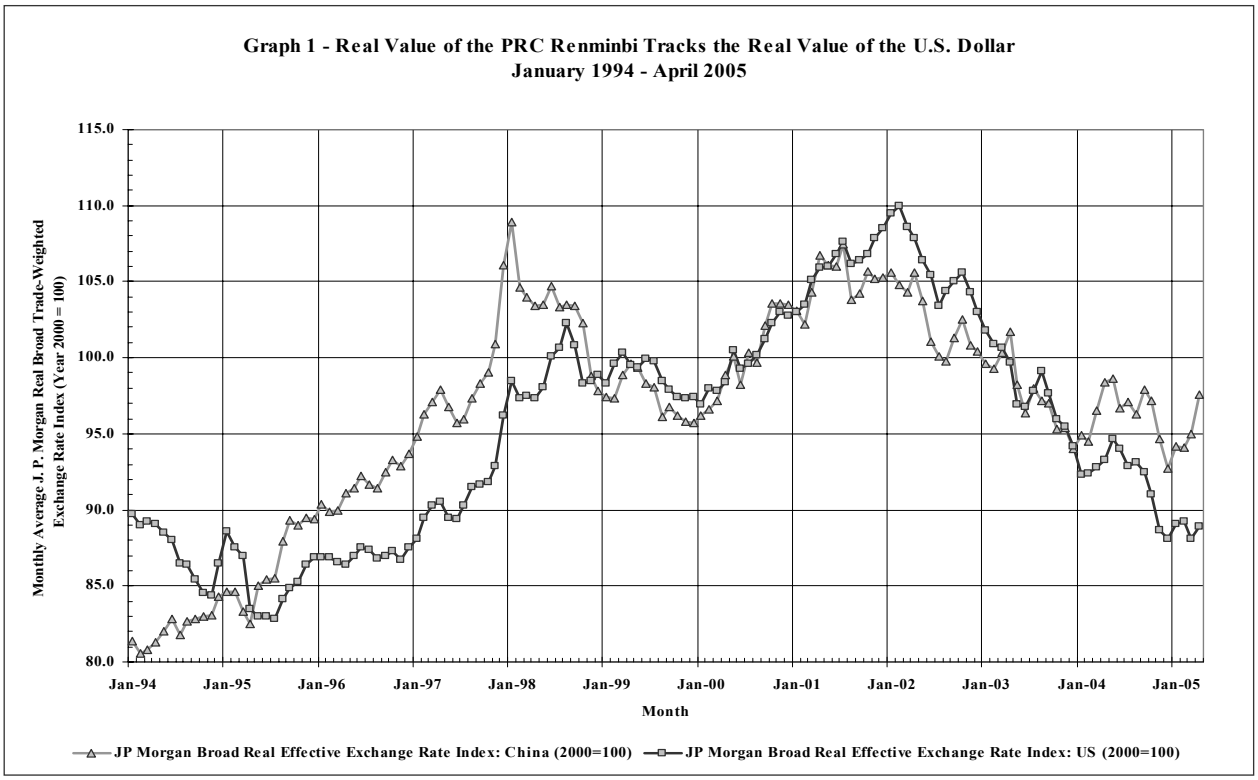
4. Because of these decreases, government leaders in other major economies in Northeast, Southeast, and South Asia[6] feared that their domestic firms and their domestic affiliates of foreign multinational firms would lose export market share in Europe and North America to Chinese firms and Chinese affiliates of foreign multinational firms. Consequently, central banks in other major Asian economies intervened heavily in foreign exchange markets. Such interventions were generally successful in limiting the increase in the real values of their currencies. In contrast, central banks in major economies in the rest of the world[7] did not intervene heavily in foreign exchange markets. Without such interventions, the large majority of major economies in the rest of the world experienced significant increases in the real values of their currencies.[8]

5. The large and historically unprecedented accumulation of foreign exchange reserves in the PBC and central banks in other major Asian economies since 2002 slowed the decline in the real value of the U.S. dollar.

6. The PRC's pegged exchange rate is distorting prices and contributing to serious imbalances in the global economy. The U.S. goods and services trade deficit with rest of the world is somewhat larger than it would otherwise be. Moreover, the PRC's maintenance of its pegged exchange rate policy is affecting expectations about future prices and rates of return on investments. Distorted price signals may cause individuals and firms around the world to make wrong investment decisions. In particular, the PRC's pegged exchange rate policy discourages investment in some sectors and encourages excessive or bad investment in other sectors in the United States and the rest of the world. Thus, the PRC's pegged exchange rate policy is producing an inefficient allocation of global resources. If the resulting imbalances fester, then their inevitable correction may become more costly to the PRC, the United States, and the rest of the world in terms of lost employment, production, and wealth.

II. COMPETING DEVELOPMENT STRATEGIES IN THE NEW PERIPHERY AFTER 1989

The failure of socialism and the collapse of Soviet bloc created a new periphery of developing and transition countries. These countries confronted economic challenges similar to the challenges that had faced Japan and western European countries during the late 1940s and 1950s. Leaders in these countries wanted to liberalize two-way trade and inward foreign direct investment with the rest of the world (for definitions of terms relating to the cross-border transactions such as current account, capital and financial account, foreign direct investment, official transactions, etc., see Appendix II – Description of the U.S. International Account). However, these countries had decrepit capital assets and insolvent financial systems. Lacking modern capital assets and access to current technology, firms in the periphery were inefficient. Except for primary products (e.g., agricultural products, timber, minerals, and oil), their goods and services were not marketable in the rest of the world.



Some of these countries, particularly in central and eastern Europe and in Latin America, adopted the "Washington consensus" development strategy under which countries immediately adoped flexible exchange rates and opened their financial markets to two-way foreign direct and portfolio investment flows. Other countries, including the PRC, adopted an export-led, inward foreign direct investment-dependent development strategy. Under this approach, the latter countries implemented below-market pegged exchange rates, encouraged inward foreign direct investment, restricted other foreign investment flows, and accumulated large foreign exchange reserves in their central banks to maintain their pegged exchange rates.

III. PRC'S EXPORT-LED, INWARD FOREIGN DIRECT INVESTMENT-DEPENDENT DEVELOPMENT STRATEGY

In the late 1980s, Communist Party leaders confronted major challenges in devising a development strategy for the PRC:

- Administrative decisions, rather than the price system, inflexibly allocated too many resources.
- Agricultural reform increased farm efficiency and food output but left millions of rural workers unemployed or underemployed. These rural workers were migrating to the cities to seek new employment.
- State-owned enterprises (SOEs) employed a majority of urban workers. However, the SOEs were inefficient, over-staffed, and unprofitable. The SOEs could not produce internationally marketable goods and services.
- A few large state-owned banks (SOBs) dominated the financial sector. More than half of all bank loans were politically determined subsidies to insolvent SOEs.

Consequently, non-performing loans in the SOBs peaked at about 40 percent of GDP.[9] The SOBs had little experience with market-oriented credit evaluation, loan pricing, or risk management. Therefore, the SOBs could not allocate Chinese savings efficiently.

- Politically appointed managers lacked the entrepreneurial skills necessary to create and manage internationally successful firms.
- Determined to retain power after the events of 1989, Chinese leaders sought to redefine the Communist Party as the provider of rapid economic growth and improving living standards for the Chinese people.

Moreover, the development strategy had to satisfy conflicting goals:

- Create millions of new jobs for surplus rural and urban workers in new industries
- Produce internationally marketable goods and services efficiently
- Avoid any "big bang" reforms to SOEs and SOBs that, however beneficial to the Chinese economy over the long term, may cause a significant increase in unemployment and possible political unrest in the short term

The weakness of the PRC's financial sector prevented serious consideration of a Washington consensus development strategy. Looking at the failures of Argentina, Brazil, Mexico, and India during the 1970s and 1980s, Chinese leaders rejected an import substitution development strategy,[10] and instead chose an export-led development strategy.

However, the PRC could not rely on domestic firms to create internationally competitive industries as Japan, South Korea, and Taiwan did during a similar stage of their development. Thereforer, the PRC welcomed massive inward foreign direct investment so that foreign multinational firms would:

- Establish a functioning price system to allocate resources efficiently;
- Provide financing, entrepreneurial skills, and modern technology to create internationally competitive industries; and
- Employ millions of surplus rural and urban workers as reform proceeds

IV. PRC'S PEGGED EXCHANGE RATE POLICY

A. POLICY IS INTEGRAL TO THE PRC'S DEVELOPMENT STRATEGY

The PRC's pegged exchange rate is integral to its development strategy. Since 1995, PBC has pegged the renminbi to the U.S. dollar at an exchange rate of $1 equals 8.28 yuan.[11] Chinese leaders want the actual value of the renminbi to be less than its value would be if determined solely by market forces to support the PRC's export-led, inward foreign direct investment-dependent development strategy. An undervalued renminbi reduces the real wages of Chinese workers and lowers production costs in the PRC. This allows foreign multinational firms an opportunity to earn higher profits by producing goods for the global market in their Chinese affiliates.[12]

Consequently, an undervalued renminbi encourages foreign multinational firms to invest in the PRC. Foreign multinational firms may shift some of their production from their affiliates

in other countries to their Chinese affiliates. Thus, an undervalued renminbi speeds the PRC's employment growth in internationally competitive industries and allows the PRC to restructure its SOEs and recapitalize its SOBs gradually. Chinese leaders believe that this policy reduces the likelihood of political instability.

The inward foreign direct investment that an undervalued renminbi stimulates has another advantage. To achieve the PRC's development objectives, exports to Europe, North America, and the rest of Asia needed to increase without igniting a protectionist backlash. Chinese leaders were aware that Japan and South Korea encountered a number of nasty "us" versus "them" trade disputes with the European Union and the United States during the 1970s and 1980s, partially because Japanese and Korean exports were from domestic firms rather than from domestic affiliates of American or European multinational firms. Chinese leaders knew that foreign multinational firms that earn profits on their exports from their Chinese affiliates would seek to maintain and expand trade with the PRC.

B. IS THE RENMINBI UNDERVALUED?

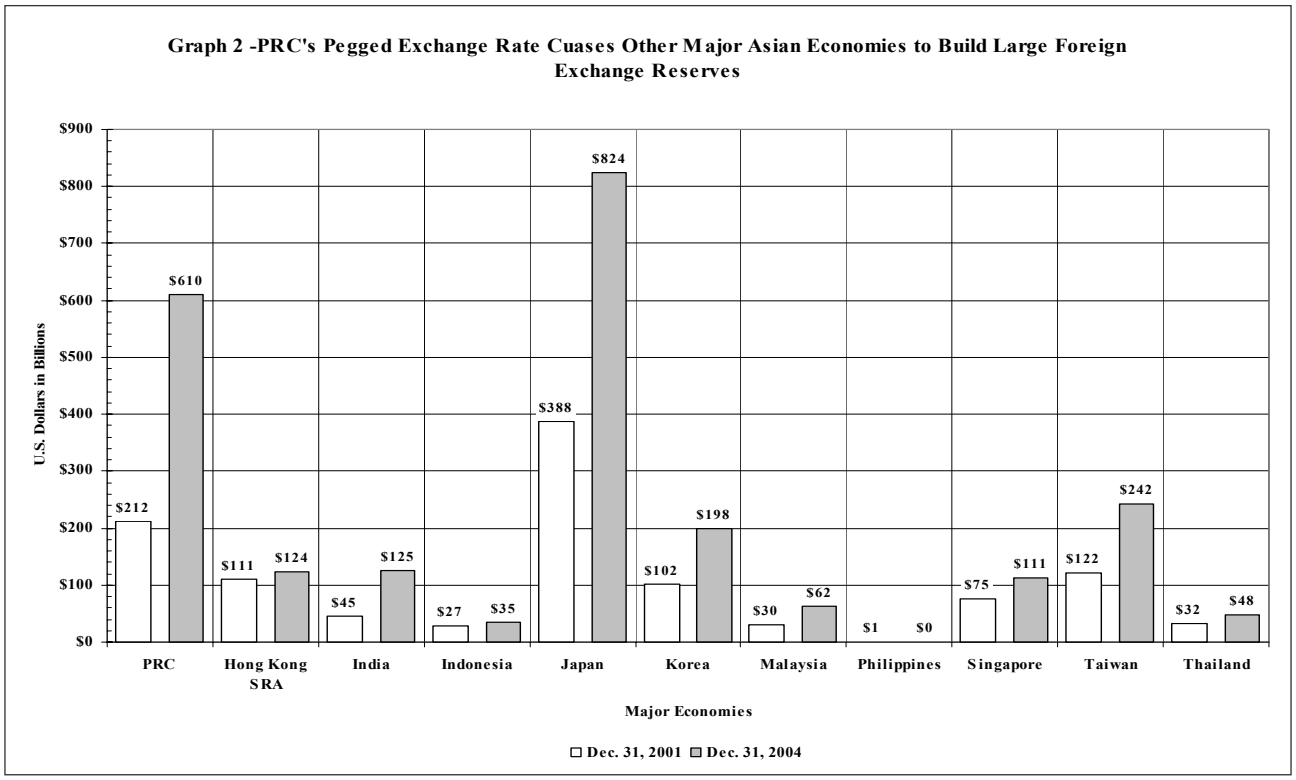
Many economists agree that the renminbi is undervalued. However, quantifying the foreign exchange value of the renminbi under the existing pegged exchange rate policy and under a hypothetical flexible exchange rate policy requires economists to make a number of debatable assumptions about the equilibrium values for current account balance and the capital and financial account balance in the PRC's international accounts. Economists must also make assumptions about the institutional framework. For example, the studies cited below assume that the PRC would retain its current system of controls over foreign financial flows. These assumptions are necessarily arbitrary. Different assumptions can yield substantially different results.

One approach assumes that the equilibrium of the foreign exchange value of the renminbi occurs when the PRC's "normal" foreign investment inflow equals its "underlying" current account balance. Assuming that the PRC's "normal" foreign investment inflow equals 1.5 percent of GDP, Goldstein (2004) assumes that the PRC should have a current account deficit equal to 1.5 percent of GDP instead of a current account surplus equal to 4.2 percent of GDP in 2004. Under this approach, Goldstein estimated that the renminbi was "undervalued by somewhere between 15 and 30 percent."[13]

Another approach assumes that all imbalances in the international accounts of all countries should move toward a general equilibrium. Under this approach, Goldstein estimated that the renminbi was undervalued by 26 percent.[14] Goldstein concluded, "There is compelling evidence that the RMB (renminbi) is presently undervalued – on the order of 15 to 25 percent."[15]

Frankel (2005) argues that the PRC's price level is well below what economic models would predict given the PRC's real per capita income and the empirical relationship between real exchange rates and real per capita income across many countries. Consequently, Frankel estimated that the renminbi was undervalued by 36 percent in 2000 and remains undervalued by at least as much today.[16]

While many economists believe that the renminbi may be undervalued, some disagree. The renminbi appears undervalued on a purchasing power parity basis. Bosworth (2004) asserts, however, that purchasing power parity is a poor guide to evaluating exchange rates in low-



income countries. Looking at macroeconomic factors, Bosworth found that the renminbi was not undervalued.[17]

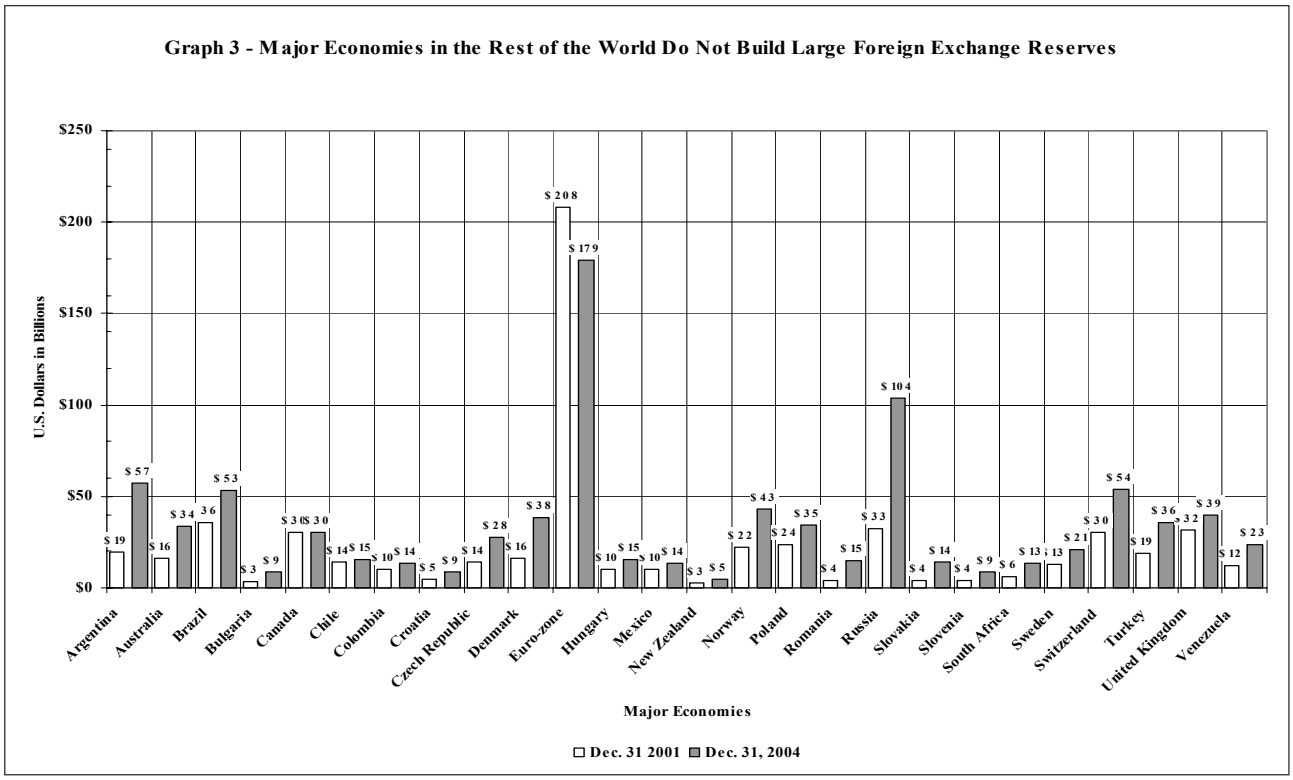
V. PRC'S DEVELOPMENT STRATEGY HAS BEEN SUCCESSFUL

The PRC's development strategy has been successful. Between 1990 and 2004, the number of Chinese goods imports to the European Union (EU), Japan, and the United States that are competitive with similar goods exports from other major Asian economies has increased dramatically (see Table 2 in Appendix I -Tables). In Europe and North America, Chinese goods exports have displaced goods exports from Japan, South Korea, and Taiwan (see Table 3 in Appendix I -Tables). As a result, the PRC's share of the world's goods exports (excluding intra-EU goods exports) increased from 2.6 percent in 1990 to 9.3 percent in 2004.[18]

Chinese goods exports to the United States have grown dramatically. In 1990, the PRC ranked eighth as a source of U.S. goods imports, exporting $15.2 billion of goods to the United States or 3.1 percent of all U.S. goods imports.[19] By 2004, the PRC advanced to third place, exporting $196.7 billion of goods to the United States or 13.4 percent of all U.S. goods imports (see Table 4 in Appendix I -Tables).[20]

Compared to other populous economies, the PRC's growth is highly dependent on international trade. The PRC's two-way goods and services trade expanded from 26.3 percent of GDP in 1990 to 76.5 percent of GDP in 2004.[21] By contrast, in 2004, two-way goods and services trade was equal to 31.2 percent of GDP in Brazil, 25.6 percent of GDP in the European Union-25, 22.8 percent of GDP in Japan, and 24.8 percent of GDP in the United States.[22]

Likewise, the PRC relies heavily on inward foreign direct investment for growth. From 1990 through 2004, the PRC received $517 billion in inward foreign direct investment.[23] In 2003, Chinese affiliates of foreign multinational firms accounted for 55 percent of the PRC's



exports and 56 percent of its imports.[24] More than 25 million Chinese individuals now work for Chinese affiliates of foreign multinational firms.[25]

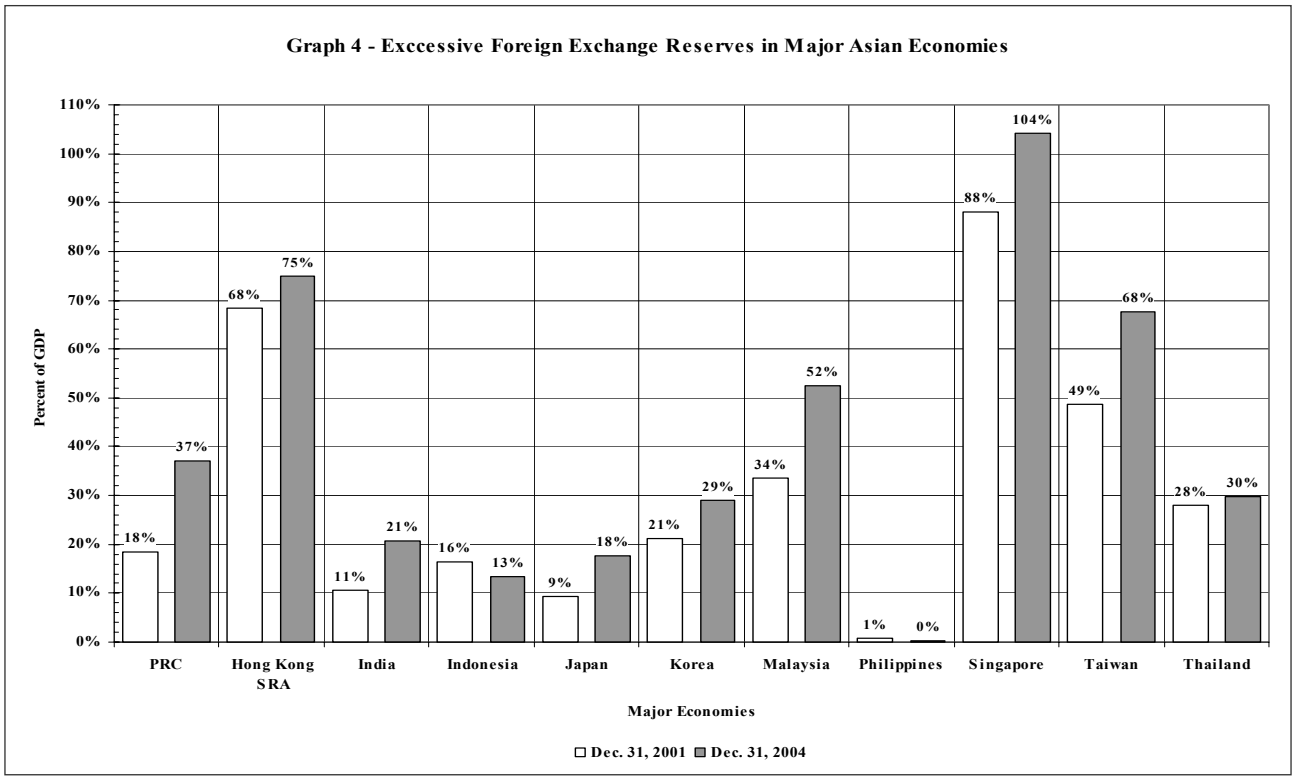
Because of the PRC's success in expanding exports and attracting inward foreign direct investment, real GDP grew by an average of 9.3 percent a year from 1990 to 2004.[26] Moreover, the PRC's real GDP grew at an annualized rate of 9.5 percent in first quarter of 2005.[27] According to the World Bank, the PRC's economic reforms have lifted about 400 million Chinese individuals out of poverty from 1981 to 2002.[28]

However, this apparent success disguises a fundamental economic weakness. The PRC's dysfunctional domestic financial institutions cannot allocate credit efficiently. The PRC's gradual restructuring of its SOEs has delayed resolving the serious insolvency problems in its SOBs. Many of the new loans at the SOBs still go to the SOEs.

Large-scale policy lending by the SOBs to the SOEs limits the availability of credit cards, installment loans, and mortgage loans to Chinese consumers.[29] Individuals must save to buy a car or a home. Moreover, many insurance and annuity products are not yet widely available. Individuals must save still more to self-insure against life's risks. Because of weak banks and incomplete financial product markets, Chinese individuals save a very high percentage of their income. Consequently, the PRC has a very high national saving rate that contributes to what Federal Reserve Governor Ben S. Bernanke describes as a "savings glut" in Asia.[30]

Large-scale policy lending by the SOBs to the SOEs also restricts the availability of loans to small businesses. This limits the ability of Chinese entrepreneurs to invest in new capital assets, expand their businesses, and hire additional workers.

Consequently, the PRC cannot rely on domestic sources to sustain its current economic expansion. Instead, Dooley, Folkerts-Landau, and Garber (2003) observed that the PRC must



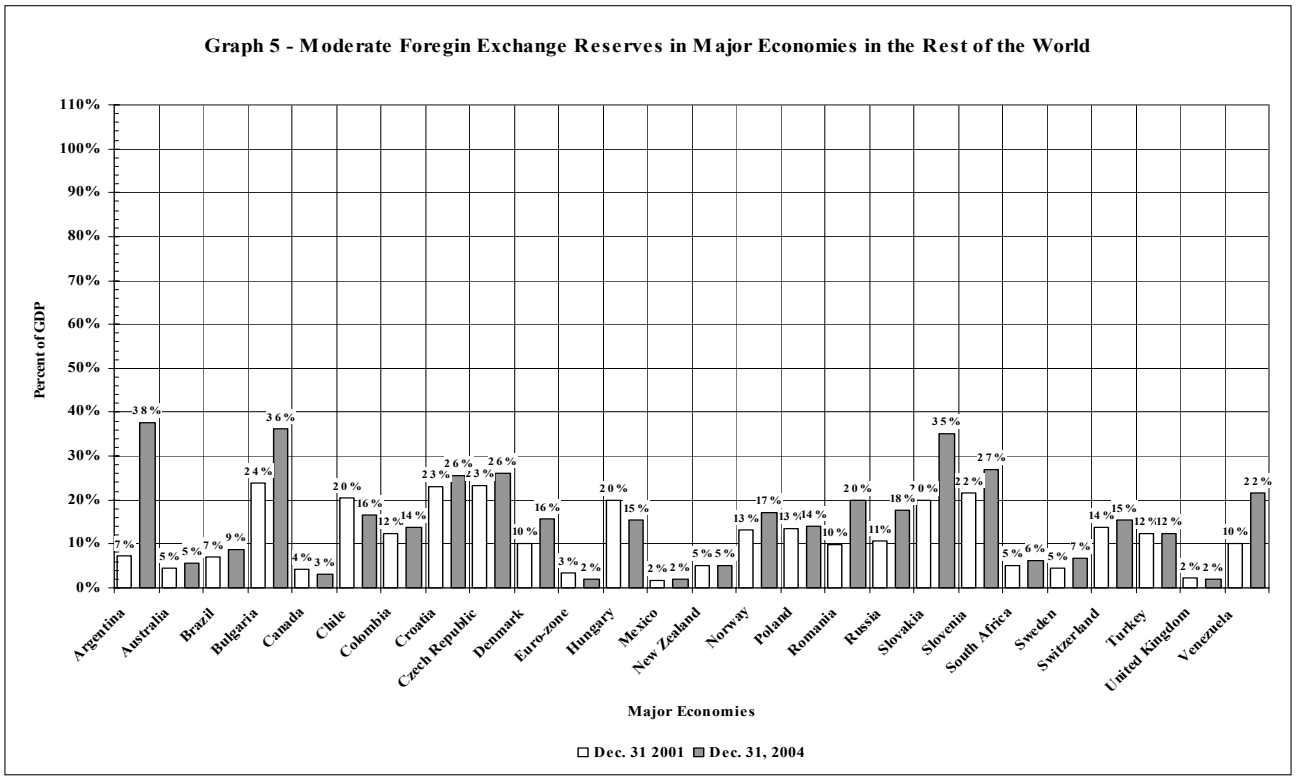
export "gross savings from distorted domestic credit markets" through the PBC's intervention in foreign exchange markets. These exports are then returned to the PRC in "more efficient channels of financial intermediation, usually in the form of direct investment" to sustain the PRC's rapid economic growth.[31] These interrelated problems of unprofitable SOEs, insolvent SOBs, and excessive savings reinforce the PRC's commitment to its pegged exchange rate policy to support its export-led, inward foreign direct investment-dependent development strategy.

VI. PRC'S PEGGED EXCHANGE RATE POLICY CAUSED THE PBC TO ACCUMULATE LARGE FOREIGN EXCHANGE RESERVES

The PRC has been enormously successful in attracting inward foreign direct investment. The PRC's foreign direct investment balance recorded an average inflow from 1994 to 2004 equal to 4.1 percent of GDP (see Table 5 in Appendix I -Tables). In the absence of any official transactions[32] by the PBC, this significant foreign financial inflow suggests that the PRC should have run an average current account deficit from 1994 to 2004 equal to 2.2 percent of GDP. However, the PRC actually recorded an average current account surplus from 1994 to 2004 equal to 2.3 percent of GDP. Running large foreign financial inflows and large current account surpluses simultaneously was only possible because of the PBC's official transactions from 1994 to 2004 that averaged 4.5 percent of GDP (see Table 5 in Appendix I -Tables).[33]

Over time, the effect of the PRC's official transactions on its current account balance has become significant.[34] In 2004, the PRC's official transactions, which equaled 12.5 percent of GDP, transformed what would have been a current account deficit equal to 8.3 percent of GDP into a current account surplus equal to 4.2 percent of GDP (see Table 5 in Appendix I -Tables).[35]

Because of official transactions, the PBC's foreign exchange reserves reached $609.9 billion on December 31, 2004 (see Graph 2 and Table 6 in Appendix I -Tables). During the first



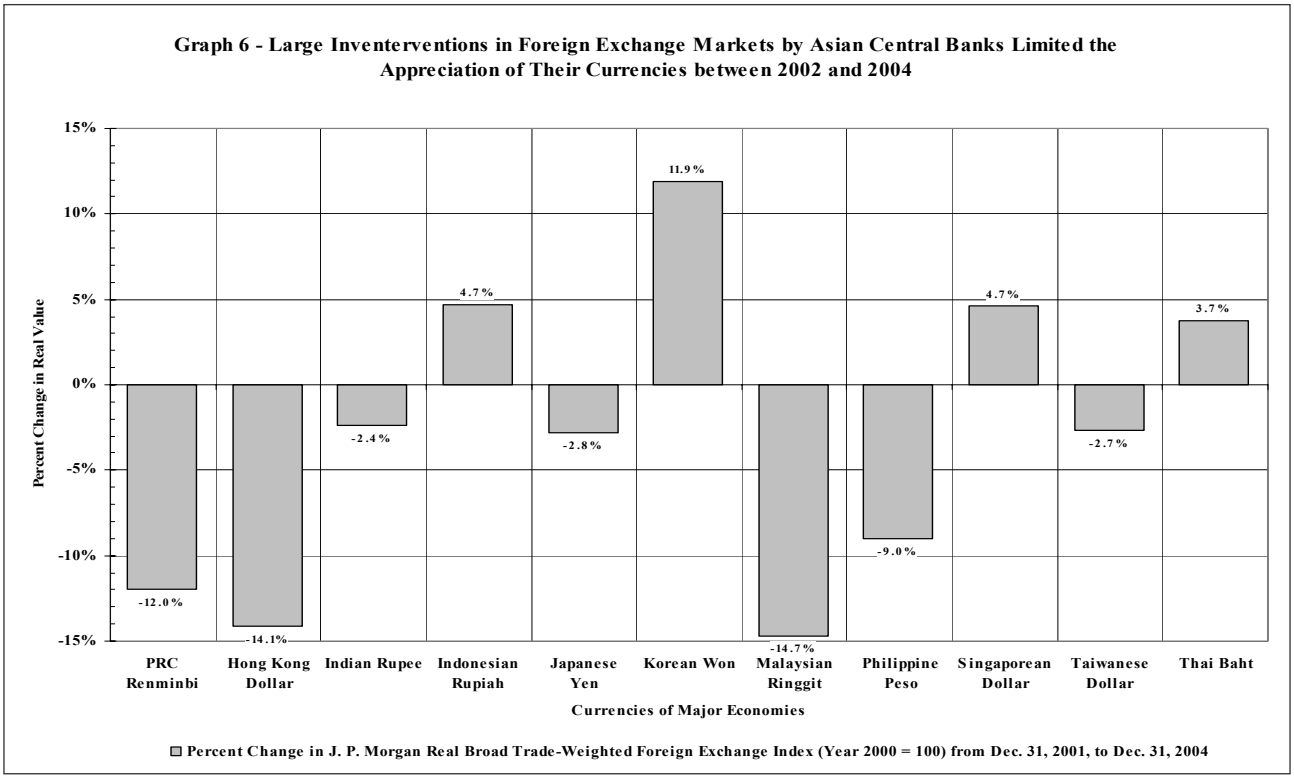
quarter of 2005, the PBC continued to increase its foreign exchange reserves to $659.1 billion on March 31, 2005.[36]

The PBC's foreign exchange reserves are far in excess what one would expect based on the PRC's economic growth or the PRC's international trade and investment flows. For example, the PBC's foreign exchange reserves have increased from 9.5 percent of GDP on December 31, 1994, to 37.0 percent of GDP on December 31, 2004 (see Graph 4 and Table 6 in Appendix I -Tables).[37] Additional acquisitions during the first quarter of 2005 left the relative size of the PRC's foreign exchange reserves virtually unchanged at 36.8 percent of GDP on March 31, 2005.[38]

VII. PRC'S PEGGED EXCHANGE RATE POLICY AFFECTED EXCHANGE RATE POLICIES OF OTHER MAJOR ASIAN ECONOMIES

The PRC's economic growth is both a threat and an opportunity for other major economies. On one hand, the boom has increased the PRC's imports of (1) primary products from countries in the Association of Southeast Asian Nations (ASEAN), Australia, Canada, and New Zealand and (2) capital goods and services from the European Union (EU), Japan, and the United States. On the other hand, exports of apparel, consumer electronics, footwear, luggage, textiles, and toys from the PRC to Europe, North America, and remainder of Asia have grown rapidly, often displacing other Asian products. The PRC's low production costs and rising productivity have squeezed competitors, particularly in Hong Kong SRA, Japan, South Korea, Taiwan, and some ASEAN countries.[39]

Since the establishment of the PRC's pegged exchange rate in 1994, it is not surprising that the real value of the renminbi has generally tracked the real value of the U.S. dollar (see Graph 1). However, the real value of the renminbi deviated significantly from the real value of



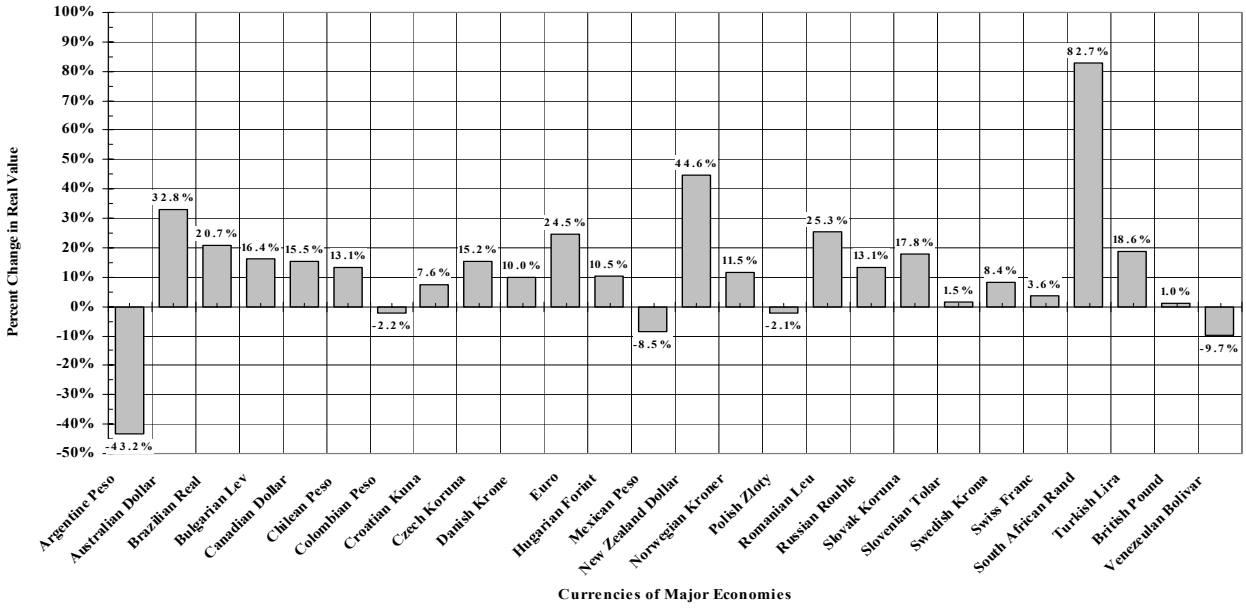
the U.S. dollar between July 1997 and December 1999 because of the Asian financial crisis. This crisis had a larger effect on the renminbi than on the U.S. dollar because the PRC had a larger share of its two-way goods and services trade with the affected countries – Indonesia, South Korea, Philippines, and Thailand – than was the case for the United States. Consequently, the real value of the renminbi rose sharply in the second half of 1997 and then fell back in 1998 and 1999, resuming its loose relationship with the real value of the U.S. dollar.

During the last three years, the real values of both the renminbi and the U.S. dollar have trended down together. From a peak of February 2002 to December 2004, the real value of the U.S. dollar dropped by 19.9 percent.[40] From a peak in July 2001 to December 2004, the real value of the renminbi fell by 13.8 percent (see Graph 1).[41]

These declines in the real values of the renminbi and the U.S. dollar intensified pressure on competitors in other major Asian economies that export apparel, consumer electronics, footwear, luggage, textiles, and toys to North America and Europe. Because of these declines, governments in other major Asian economies feared that their domestic firms and their domestic affiliates of foreign multinational firms would lose export market share in Europe and North America to Chinese firms and Chinese affiliates of foreign multinational firms. Consequently, central banks in other major Asian economies intervened heavily in foreign exchange markets to limit any increase in the real value of their currencies.

As a result, central banks in other major Asian economies increased their aggregate foreign exchange reserves by 89.6 percent to $1,769.5 billion on December 31, 2004 (see Graph 2 and Table 7 in Appendix I -Tables).[42] In contrast, central banks in major economies in the rest of the world increased their aggregate foreign exchange reserves by only 51.3 percent to $905.3 billion on December 31, 2004 (see Graph 3 and Tables 8, 9, 10, 11, and 12 in Appendix I - Tables).[43]

Graph 7 - Most Currencies in the Rest of the World Appreciated Significantly in the Absence of Large Interventions in Foreign Exchange Markets by Central Banks between 2002 and 2004



The foreign exchange reserves held by central banks in other major Asian economies are excessive by any standard. The aggregate foreign exchange reserves of the other major Asian economies were equal to 24.5 percent of their aggregate GDP on December 31, 2004 (see Graph 4 and Table 7 in Appendix I -Tables).[44] Including the PRC, the combined foreign exchange reserves of all major Asian economies were equal to 26.9 percent of aggregate GDP (see Table 12).[45]

In contrast, the aggregate foreign exchange reserves of major economies in the rest of the world were equal to 5.1 percent of their aggregate GDP on December 31, 2004 (see Graph 5 and Tables 8, 9, 10, 11, and 12 in Appendix I -Tables).[46] Moreover, the foreign exchange reserves of the United States were equal to a mere 0.4 percent of GDP on December 31, 2004 (see Table 12 in Appendix I -Tables).[47]

Different foreign exchange policies by central banks produced divergent results in terms of the real value of their currencies from 2002 to 2004. Through massive interventions in foreign exchange markets, central banks in major Asian economies were generally successful in thwarting significant increases in the real value of their currencies (see Graph 6). Between December 2001 and December 2004, for example, the real value of the Japanese yen decreased by 2.8 percent; the Malaysian ringgit, by 14.7 percent; and the Taiwanese dollar, by 2.7 percent.[48]

Without such massive interventions, most central banks in major economies in the rest of the world experienced significant increases in the real value of their currencies (see Graph 7). Between December 2001 and December 2004, for example, the real value of the Australian dollar increased by 34.0 percent; Brazilian real, by 20.7 percent; the euro, by 24.5 percent; the Russian rouble, by 13.1; the South African rand, by 82.5 percent; and the Turkish lira, by 18.6 percent.[49] Two notable exceptions to pattern in the rest of the world are Argentina and

Venezuela. In both of these countries, very poor economic policies caused their GDPs to collapse. Consequently, these countries simultaneously experienced an increase in foreign exchange reserves as a percent of GDP and a significant drop in the real value of their currencies.

In its most recent annual report, the Bank for International Settlements (BIS) concluded:

> *[A]significant factor influencing exchange rates was a high volume of intervention relative to past standards, especially in Asia. These activities helped to alleviate upward pressure on the currencies in the region, raising broader questions about their impact on the adjustment of global current account imbalances*.[50]

VIII. PRC'S PEGGED EXCHANGE RATE POLICY SLOWED THE DECLINE IN THE REAL VALUE OF THE U.S. DOLLAR

Central banks may accumulate foreign exchange reserves for many reasons. Increasing reserves do not necessarily mean that a central bank is trying to manipulate the real foreign exchange value of its currency to gain an unfair trading advantage. For example, central banks in many countries seek to increase their foreign exchange reserves as their country's GDP and two-way goods and services trade grow. Thus, economic growth compels central banks to increase their foreign exchange reserves at a modest pace.

Moreover, an increase in the foreign exchange reserves of a central bank measured in U.S. dollars does not necessarily reflect market interventions. Approximately 70 percent of foreign exchange reserves at all central banks were in U.S. dollars or U.S. dollar-denominated assets.[51] If the value of the U.S. dollar declines against the euro, then the U.S. dollar value of the foreign exchange reserves in euros and euro-denominated assets automatically increases without any central bank intervention. Thus, the recent depreciation in the U.S. dollar explains some of the increase in the U.S. dollar value of foreign exchange reserves in central banks around the world.

However, the PRC has deliberately undervalued the renminbi through its pegged exchange rate policy to speed the PRC's development. This undervalued exchange rate forced the PBC to accumulate massive foreign exchange reserves to maintain the peg. The growing competitiveness of Chinese firms and Chinese affiliates of foreign multinational firms caused the central banks in other major Asian economies to try to limit any increase in the real value of their currencies through massive accumulations of foreign exchange reserves. Most of these increases in foreign exchange reserves were attributable to the purchase of U.S. dollars and U.S. dollar-denominated assets by the PBC and central banks in other major Asian economies. At constant exchange rates, 64.9 percent of the increase in foreign exchange reserves at all central banks in 2002 and 87.8 of the increase in 2003 were attributable to the acquisition of U.S. dollars and U.S. dollar-denominated assets.[52]

Because the U.S. dollar is the world's reserve currency, foreign central banks normally increase their holdings of U.S. dollars and dollar-denominated assets in rough proportion to their economic growth over time. Before 2002, the U.S. international accounts reflected this normal pattern of official transactions by foreign central banks. The U.S. official transactions balance averaged an inflow equal to 0.46 percent of GDP from 1973 and 2001.[53] The U.S. official transactions balance had never been higher than an inflow equal to 1.69 percent of GDP in any year.[54] Thus, the acquisition of U.S. dollars and dollar-denominated assets by foreign central

banks had played, at most, a limited role in determining the real value of the U.S. dollar from 1973 to 2001.

However, the U.S. official transactions balance increased rapidly from an inflow equal to 1.06 percent of GDP in 2002 to a record inflow equal to 3.06 percent of GDP in 2004 (see Graph 8).[55] From 2002 to 2004, the cumulative net official inflow into the United States was $717.2 billion.

The large and historically unprecedented accumulation of foreign exchange reserves in central banks in major Asian economies due directly or indirectly to the PRC's pegged exchange rate regime slowed the depreciation of the U.S. dollar. Since its peak in February 2002, the real value of the U.S. dollar has decreased by 19.2 percent to 88.9 in April 2005. However, this index remains: (1) 13.1 percent above its level of 78.6 in September 1980 immediately before the first exchange rate cycle, (2) 7.4 percent above its level of 82.8 in July 1995 immediately before the beginning of the current exchange rate cycle, and (3) 2.3 percent above its average of 86.9 from May 1988 through July 1995.[56]

IX. PRC'S PEGGED EXCHANGE RATE POLICY CONTRIBUTED TO GLOBAL IMBALANCES

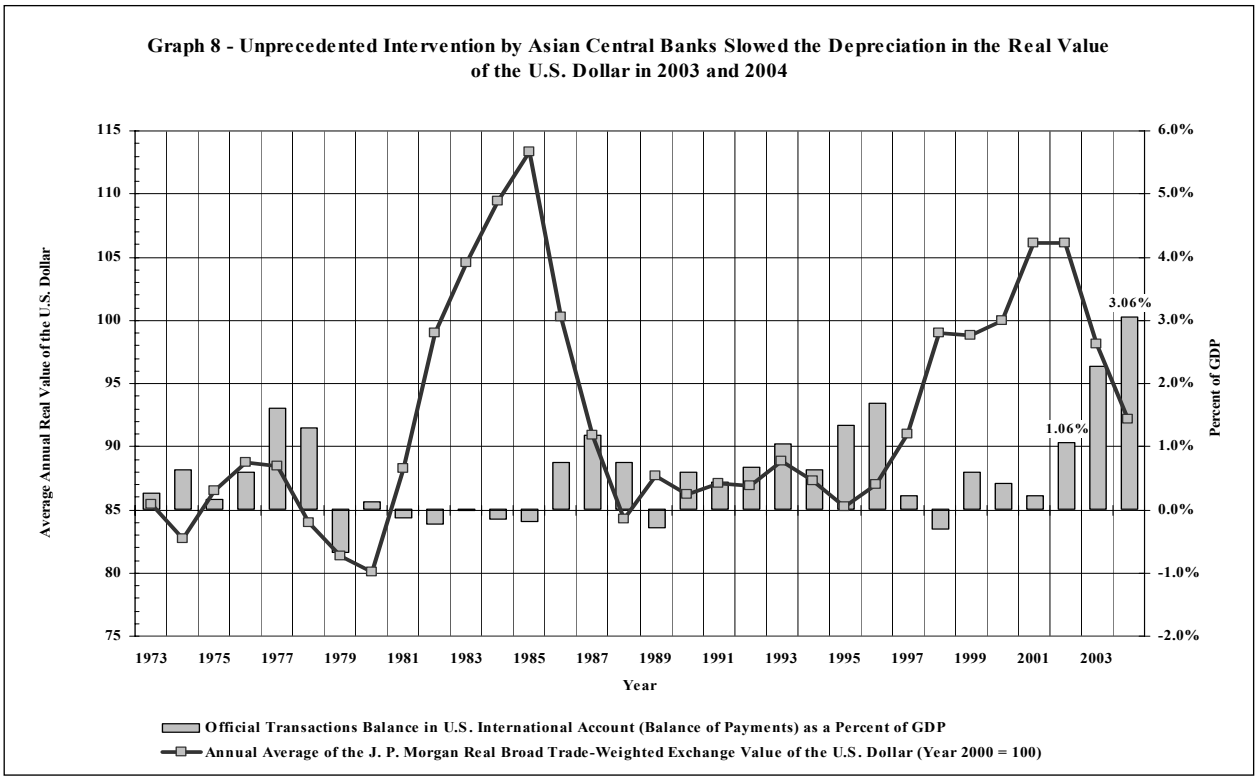
A. DISTORTING TRADE FLOWS

Both directly and indirectly, the PRC's pegged exchange rate is contributing to significant imbalances in the global economy. Since 2001, the massive accumulation of U.S. dollar-denominated foreign exchange reserves in the PBC and central banks in other major Asian economies slowed the decline in the real value of the U.S. dollar. Today, the real value of the U.S. dollar is higher, and the real values of the renminbi and other Asian currencies are lower, than they would be without such intervention. Thus, the PRC's pegged exchange rate policy is distorting global prices.

If the real value of the U.S. dollar or any other currency varies because of massive and persistent official intervention in foreign exchange markets, the global market will receive incorrect price signals, prompting many individuals and firms to make bad decisions. Thus, the PRC's pegged exchange rate policy is distorting global production and employment and creating significant trade imbalances.

In the absence of government intervention, rapidly growing developing countries should have current account deficits and net foreign financial inflows over the long term, while slower growing developed countries should have current account surpluses and net foreign financial outflows. Yet the PRC's pegged exchange rate policy along with the PRC's glut of poorly utilized savings turned these expectations about international flows upside down.

In response to the PRC's pegged exchange rate policy, the large interventions in foreign exchange markets by the central banks in other major Asian economies have significantly affected their international accounts. From 2001 to 2004, the current account surpluses of Hong Kong SRA, Japan, South Korea, Malaysia, the Philippines, and Singapore expanded, while India went from a current account deficit to a current account surplus (see Table 13).[57]



The PRC's pegged exchange rate policy is causing the United States to run somewhat larger current account deficits than it would run based solely on the private decisions of individuals and firms around the world. Thus, the PRC's pegged exchange rate policy has increased the aggregate size of the U.S. goods and services trade deficit at least modestly.[58]

B. DISTORTING INVESTMENT DECISIONS

Moreover, the PRC's maintenance of its pegged exchange rate policy is distorting expectations about future global prices. This increases the expected rate of return for some investments and decreases it for others. Consequently, individuals and firms around the world are making investment decisions based on these false expectations. Thus, the PRC's pegged exchange rate policy is causing underinvestment in some sectors and overinvestment and malinvestment in other sectors in countries around the world. While the public may be concerned about trade imbalances, a change in real exchange rates will normally correct these production and trade imbalances with a lag of eighteen to thirty-six months. However, investment imbalances tend to create larger, longer-lasting economic problems than trade imbalances.

The artificially high real value of the U.S. dollar is shifting investments from the tradable goods sector toward the non-tradable goods and services sectors. On one hand, Federal Reserve Governor Ben S. Bernanke observed, "much of the recent capital inflow into the world has shown up in higher rates of home construction and in higher housing prices."[59] From the first quarter of 2002 through the fourth quarter of 2004, real investment in residential structures and equipment increased by 25.0 percent, while real housing prices increased by 29.3 percent.[60] Some economists fear that the United States may be experiencing a housing bubble. Housing demand has caused construction employment to grow by 4.5 percent from December 2001 to

December 2004 to 7.1 million. U.S. services firms also prospered, expanding services employment by 2.6 percent during the same period to 88.7 million.[61]

On the other hand, Bernanke observed, "the growth in export-oriented sectors such as manufacturing has been restrained."[62] As some have noted, many U.S. manufacturing firms felt intense competitive pressures from foreign products whose prices are lower because of the PRC's pegged exchange rate. From the first quarter of 2002 through the fourth quarter of 2004, manufacturing employment fell by 8.8 percent to 14.3 million, continuing a long-term secular decline in manufacturing employment.[63] However, this decline appears to part of a global trend. In recent years, manufacturing employment has declined in Australia, Canada, the European Union, Japan, South Korea, and Mexico.[64] Even in the PRC, manufacturing employment is below its peak in the mid-1990s despite the PRC's success in attracting foreign direct investment in export-oriented manufacturing.

This distortion in investment patterns because of the PRC's pegged exchange rate extends beyond the United States. Because of massive intervention in foreign exchange markets, the real values of most Asian currencies have generally not appreciated significantly. Consequently, the PRC and other major Asian economies may be overinvesting in the tradable goods sector and underinvesting in the non-tradable goods and services sector. The *Economist* reported that Hong Kong and Japan suffered significant declines in housing prices in recent years.[65]

Because major economies in the rest of the world did not intervene as heavily in foreign exchange markets, most of their currencies have appreciated significantly. Unlike most major Asian economies, the international accounts of major economies in the rest of the world did not behave in a consistent pattern. From 2001 to 2004, eleven reported increases in their current account as a percent of GDP, nine reported decreases, and five were unchanged. However, most of these changes were quite small.

Many of the major economies in the rest of the world may be losing export market shares to the PRC and other major Asian economies. As a result, major economies in the rest of world may be underinvesting in the tradable goods services and overinvesting in the non-tradable goods and services sector. The *Economist* reported rapidly escalating housing prices in Australia, Canada, France, Italy, New Zealand, Spain, South Africa, and the United Kingdom during the last few years. This suggests that many "non-intervening" major economies may also be suffering from housing bubbles.[66]

While the PRC and other major Asian economies may derive short-term benefits from undervalued exchange rates, undervalued exchange rates may have serious long-term consequences. The undervalued renminbi lowers the real income of Chinese individuals, reducing Chinese consumption. As a result, the PRC's economic growth becomes unnaturally dependent on ability of its major trading partners to absorb ever more Chinese exports.

Overinvestment and malinvestment may be occurring in the PRC's tradable goods sector. More than two-thirds of PRC's inward foreign direct investment goes into the manufacturing sector.[67] An eventual significant revaluation of renminbi or the abandonment of the pegged exchange rate policy altogether will reveal the actual size of the PRC's excessive and bad investments. To lesser extent, similar distortions may be occurring in other major Asian economies. If the PRC continues to maintain its undervalued pegged exchange rate policy, the price distortions that it is causing are likely to become larger. Global imbalances from these

distortions will fester, and their inevitable correction will become more costly to the PRC, the United States, and the rest of the world in terms of lost employment, production, and wealth.

X. ALTERNATIVE VIEWS ON THE PRC'S PEGGED EXCHANGE RATE POLICY

Some economists have expressed alternative views about the economic effects of the PRC's pegged exchange policy and the economic consequences of the revaluation or floatation of the renminbi. These economists support the PRC's pegged exchange rate policy and voice concerns about revaluating or floating the renminbi. A summary of their two main arguments, along with responses, follows.

A. REVALUATION OR FLOATATION WOULD UNDERMINE THE PRC'S ECONOMY

Some economists argue that the pegged exchange rate policy gives the PBC a stable anchor, the U.S. dollar, for conducting a non-inflationary domestic monetary policy. Since this policy began on January 1, 1994, the PRC has progressed toward domestic price stability. In 1994, the PRC's annual consumer price inflation (CPI) rate peaked at 24.1 percent and then fell rapidly. From 1997 through 2003, the PRC's annual CPI rate averaged 0.3 percent. The combination of apparent domestic price stability and exchange rate stability made the PRC an attractive destination for inward foreign direct investment. In turn, inward foreign direct investment accounts for much of the PRC's rapid economic growth.

In 2004, however, the PRC's annual CPI rate increased to 3.9 percent.[68] Moreover, the PRC's CPI gives very low weights to education, healthcare, and housing services whose prices have increased rapidly. Consequently, actual consumer price inflation in the PRC may be significantly higher than its official CPI rate.[69]

If the PRC were to revalue the renminbi substantially or to abandon the peg altogether, some economists fear that the PRC's inward foreign direct investment flows would diminish. Economic growth would sputter, causing the PRC's unemployment rate to increase.

Some economists assert that the revaluation or floatation of the renminbi may cause price deflation in the PRC. In particular, falling asset prices would cause some Chinese individuals and firms to default on their loans from the PRC's SOBs, aggravating their insolvency problems.

Finally, some economists claim that the revaluation or floatation of the renminbi would impoverish the PRC by reducing the value of the PBC's foreign exchange reserves in yuan terms.

The economists who advance these arguments implicitly agree with the study's key observation that the PRC is overly dependent on exports and inward foreign direct investment flows because the PRC's partially reformed SOE and SOB sectors cannot sustain its current rapid rate of economic growth. In the short term, these economists are probably correct that the revaluation or floatation of the renminbi would probably slow the PRC's economic growth rate. However, the revaluation or floatation of the renminbi would not necessarily retard the PRC's economic growth rate in the medium term or the long term.

How would Chinese leaders respond to this challenge? The assumption of the economists who oppose revaluing or floating the renminbi is that the PRC may be incapable of reforming its SOEs and recapitalizing its SOBs fast enough to spark domestic-led economic growth. Since 1989, however, Chinese leaders have shown a remarkable ability to adapt the

PRC's economic policies to changing circumstances. As long as exports and inward foreign direct investment flows produced rapid economic growth, Chinese leaders could delay making some politically difficult, but economically necessary decisions about reforming the PRC's SOE and SOB sectors. Given a choice between further delay that might precipitate economic stagnation and incite political unrest and difficult decisions that would sustain economic growth and foster political stability, recent history suggests that Chinese leaders could accelerate domestic economic reforms.

Moreover, the revaluation or floatation of the renminbi should not cause deflation in the PRC. The PBC can offset any deflationary effect from the revaluation or floatation of the renminbi through the PBC's domestic monetary policy. Therefore, the contention that the revaluation or floatation of the renminbi would cause domestic asset price deflation, trigger widespread loan defaults, and aggravate the insolvency problems at the PRC's SOBs, is doubtful.

Indeed, the recent CPI spurt suggests that PBC may be reaching the limits of its ability to sterilize fully the inflationary effects of its intervention in foreign exchange market through bond sales to domestic banks. Consequently, in 2004, the PRC ordered domestic banks to limit their loans to certain industries, including steel, cement, and real estate, to curb mounting inflationary pressure.[70] This order caused the loan growth rate in domestic banks to decelerate from 19.5 percent in 2003 to 8.8 percent in 2004. However, loan growth accelerated again to an annualized rate of 12.5 percent in the first quarter of 2005.[71] Thus, continuation of the PRC's pegged exchange rate policy may actually promote domestic price inflation.

While the revaluation or floatation of the renminbi would reduce the value of PBC's foreign exchange reserves in yuan terms, the revaluation or floatation would simultaneously increase the value of domestic assets owned by Chinese individual and firms in U.S. dollar terms. Because of the PRC's controls on foreign financial flows, Chinese individuals and firms have relatively few assets outside of the PRC. Therefore, Chinese individuals and firms would not suffer significant losses from the revaluation or floatation of the renminbi. Essentially, the revaluation or floatation of the renminbi would reduce the wealth of the PRC's government, but would increase the wealth of Chinese individuals and firms. How the revaluation or floatation of the renminbi would affect the overall wealth in the PRC is unclear and depends on specific circumstances.

B. REVALUATION OR FLOATATION WOULD NOT AMELIORATE INTERNATIONAL IMBALANCES

Some economists assert that the revaluation or floatation of the renminbi would not ameliorate the international imbalances in the global economy. These economists claim that the revaluation or floatation of the renminbi would not significantly change the international accounts of either the PRC or the United States. In the short term, any increase in the foreign exchange value of the renminbi would increase export prices in U.S. dollar terms and decrease import prices in yuan terms, possibly expanding the PRC's current account surplus until current trade contracts expire. In the medium term and the long term, any increase in the foreign exchange value of the renminbi would simultaneously increase the real cost of Chinese labor and lower the real cost of imported inputs. Since Chinese workers assemble many of the PRC's goods exports from imported components, the overall effect on the profitability of making export goods in the PRC is unclear and depends on specific circumstances. Therefore, the revaluation or floatation of the renminbi would not necessarily reduce the PRC's current account surplus.

Likewise, these economists contend that the revaluation or floatation of the renminbi would not reduce the U.S. current account deficit. Macroeconomic forces both here and abroad determine the size of components of the U.S. international account. These economists argue that a revaluation or floatation of the renminbi would not fundamentally alter these macroeconomic forces. Consequently, the overall U.S. demand for foreign goods would remain largely unchanged. The PRC supplied 13.4 percent of U.S. goods imports in 2004.[72] The revaluation or floatation of the renminbi would simply shift the source of imports from the PRC to other countries without altering the overall U.S. current account deficit very much.

Other economists claim that the floatation of the renminbi would not necessarily increase the foreign exchange value of the renminbi. These economists assume that the PRC would remove its controls on foreign financial flows when it floats the renminbi. The PRC has an extremely high national saving rate. Most of these savings are in deposits at the PRC's SOBs, and many of these SOBs are insolvent. Until the insolvency problems of the PRC's SOBs are resolved, the SOBs are vulnerable to bank runs. In the absence of controls on outward foreign portfolio investment, some incident or rumor might ignite a series of bank runs in which many Chinese individuals would simultaneously seek to withdraw their savings from the SOBs, convert their yuan to euros, Japanese yen, or U.S. dollars, and deposit their foreign currency in foreign banks. Such a run would flood foreign exchange markets with yuan, causing the foreign exchange value of the renminbi to collapse. Therefore, the floatation of the renminbi before the insolvency problems in the PRC's SOBs are resolved might worsen rather than ameliorate international imbalances.

The economists that argue that the revaluation or floatation of the renminbi would not significantly alter international accounts seem to downplay the large and historically unprecedented interventions in foreign exchange markets by the PBC to support the pegged exchange rate policy and by central banks in other major Asian economies to respond to the PRC's policy. Between 2002 and 2004, the Asian central banks added $1,218.0 billion to their foreign exchange reserves, mainly by purchasing U.S. dollars and dollar-denominated assets.[73] During the same period, official transactions caused an inflow of $717.2 billion into the United States.[74] If the PRC were to revalue the renminbi significantly or to abolish the peg altogether, the PBC and central banks in other major Asian economies may not purchase such large quantities of U.S. dollars and dollar-denominated assets to prevent the appreciation of their currencies. Without such purchases, the international accounts of the PRC, the United States, and other major Asian economies would necessarily change.

Upon the revaluation or floatation of the renminbi, the value of the renminbi and most of the currencies of the other major Asian economies would increase, while the value of the U.S. dollar would decrease. The price changes from these adjustments in exchange rates and an associated substantial reduction in official transactions flows would probably reduce both the current account surpluses in the PRC and other major Asian economies and the current account deficit in the United States at least modestly.[75]

Economists that warn about the dangers of floating the renminbi and removing controls on foreign financial flows simultaneously before the insolvency problems in the PRC's SOBs are resolved are correct. However, floating the renminbi and removing controls on foreign financial flows are independent policy decisions that can and probably should occur at different times.

For example, Goldstein (2004) advocates a two-stage reform of the PRC's exchange rate policy. In the first stage, the PRC would switch from a peg to the U.S. dollar to a peg to basket of major currencies including the U.S. dollar, the euro, and the Japanese yen and revalue the renminbi by 15 to 25 percent.[76]

Between the first stage and the second stage, the PRC would retain its present controls on foreign financial flows. The PRC could restructure its SOBs by (1) transferring the bulk of the PRC's foreign exchange reserves to the PRC's SOBs to eliminate their negative net worth and (2) eliminating policy lending at the SOBs to the SOEs. The PRC could issue new equity to domestic or foreign investors in the SOBs or sell the SOBs outright to foreign banks.[77] After the SOBs are recapitalized, privatized, and reoriented to the market, the dangers of bank runs would subside.

Then stage two could begin. In this stage, the PRC would remove its remaining controls on foreign financial flows and allow the renminbi to float.[78]

XI. CONCLUSION

The People's Republic of China pegged the renminbi to the U.S. dollar as a fundamental part of its development strategy. Given the PRC's controls on foreign financial flows, the renminbi is undervalued. Consequently, the People's Bank of China has accumulated large foreign exchange reserves to maintain the PRC's pegged exchange rate with the U.S. dollar.

Because of the PRC's pegged exchange rate policy, the real value of the renminbi has generally tracked the real value of the U.S. dollar. From 2002 to 2004, the real values of both the U.S. dollar and the renminbi have trended down together. Because of these decreases, governments in other major Asian economies feared that their domestic firms and domestic affiliates of foreign multinational firms would lose export market share in Europe and North America to Chinese firms and Chinese affiliates of foreign multinational firms. Consequently, central banks in other major Asian economies have intervened heavily in foreign exchange markets to limit the appreciation of their currencies.

Both directly and indirectly, the PRC's pegged exchange rate policy is distorting world prices and contributing to serious imbalances in the global economy. For example, the U.S. goods and services trade deficit with rest of the world is somewhat larger than it would otherwise be. The PRC's pegged exchange rate policy discourages investment in some sectors and encourages excessive or bad investment in other sectors in the United States and other countries, producing an inefficient allocation of global resources. If the resulting imbalances are allowed to fester, then their inevitable correction is likely to become ever more costly to the PRC, the United States, and the rest of the world in terms of lost employment, production, and wealth.

Robert P. O'Quinn
Senior Economist to the Chairman

APPENDIX I -TABLES

Table 1 – Summary of PRC Controls on Foreign Financial Flows	
Financial Transaction	***Regulation***
On capital market securities	
Purchase locally by nonresidents	Nonresidents may purchase "B" shares. Qualified foreign institutional investors may purchase "A" shares.
Sale or issue locally by nonresidents	Not permitted
Purchase abroad by residents	Not generally permitted except for certain financial institutions and firms engaged in international trade
Sale or issue abroad by residents	Prior approval required, must be part of the state plan for utilizing foreign capital
On money market instruments	
Purchase locally by nonresidents	Not permitted
Sale or issue locally by nonresidents	Not permitted
Purchase abroad by residents	Not generally permitted except for certain financial institutions and firms engaged in international trade
Sale or issue abroad by residents	Requires PBC and SAFE[79] approval
On collective investment securities	
Purchase locally by nonresidents	Not permitted
Sale or issue locally by nonresidents	Requires approval of Securities Policy Commission
Purchase abroad by residents	Not generally permitted except for certain financial institutions and firms engaged in international trade
Sale or issue abroad by residents	Requires PBC and SAFE approval
On derivatives	
Purchase locally by nonresidents	Not permitted
Sale or issue locally by nonresidents	Not permitted
Purchase abroad by residents	Subject to prior approval and limits on foreign exchange
Sale or issue abroad by residents	Subject to prior approval and limits on foreign exchange
On commerical loans	
By residents to nonresidents	Non-financial firms may not lend to nonresidents. Financial firms may lend to nonresidents subject to a review by SAFE and limits on foreign exchange
To residents from non-residents	Only financial firms permitted to engage in external borrowing and authorized non-financial firms may borrow from non-residents. Maturities over 1 year must be part of the state plan for utilizing foreign capital
On direct investment and real estate	
Outward	Requires MOFTEC[80] and SAFE approval
Inward	Generally permitted except in industries related to national security

Table 2 – Percent of Goods Exports to the United States in Competition with Similar Goods Exports from the People's Republic of China in 1990 and 2003		
Economy	***1990***	***2003***
Indonesia	48.5%	66.8%
Japan	3.2%	21.9%
Korea	24.8%	40.9%
Malaysia	37.4%	65.0%
Philippines	41.9%	60.7%
Singapore	14.7%	40.1%
Taiwan	27.5%	68.8%
Thailand	36.4%	69.8%

Table 3 – Goods Imports as a Percent of Total Goods Imports in 1990, 1994, and 2004																								
From	***PRC***			***Indonesia***			***Japan***			***South Korea***			***Malaysia***			***Philippines***			***Singapore***			***Thailand***		
To	***1990***	***1994***	***2004***	***1990***	***1994***	***2004***	***1990***	***1994***	***2004***	***1990***	***1994***	***2004***	***1990***	***1994***	***2004***	***1990***	***1994***	***2004***	***1990***	***1994***	***2004***	***1990***	***1994***	***2004***
EU	2.4%	4.6%	11.4%	0.7%	1.2%	1.0%	12.1%	11.4%	7.4%	1.7%	1.9%	2.8%	0.9%	1.4%	1.5%	0.3%	0.4%	0.6%	1.3%	1.8%	1.8%	1.0%	1.3%	1.3%
Japan	5.1%	10.1%	20.7%	5.4%	4.7%	4.1%	N/A	N/A	N/A	5.0%	4.9%	4.9%	2.3%	3.0%	3.1%	0.9%	1.0%	1.8%	1.5%	1.7%	1.4%	0.8%	1.2%	0.9%
US	3.2%	6.0%	13.7%	0.7%	1.0%	0.8%	18.0%	17.8%	8.8%	3.7%	3.0%	3.2%	1.1%	2.1%	1.9%	0.7%	0.9%	0.6%	2.0%	2.3%	1.0%	1.1%	1.6%	1.2%

Table 4 – U.S. Goods Imports in 1990, 1994, and 2004											
Economy	*Rank 1990*	*Amount 1990 in billions*	*Share 1990*	*Economy*	*Rank 1994*	*Amount 1994 in billions*	*Share 1994*	*Economy*	*Rank 2004*	*Amount 2004 in billions*	*Share 2004*
EU-25	1	$100.3	20.2%	***Canada***	1	$128.4	19.4%	***EU-25***	1	$282.6	19.2%
Canada	2	$91.4	18.4%	***EU-25***	2	$121.5	18.3%	***Canada***	2	$255.9	17.4%
Japan	3	$89.7	18.1%	***Japan***	3	$119.2	18.0%	***PRC***	3	$196.7	13.4%
Mexico	4	$30.2	6.1%	***ASEAN-6***	4	$52.0	7.8%	***Mexico***	4	$155.8	10.6%
ASEAN-6	5	$27.2	5.5%	***Mexico***	5	$49.5	7.5%	***Japan***	5	$129.6	8.8%
Taiwan	6	$22.7	4.6%	***PRC***	6	$38.8	5.8%	***ASEAN-6***	6	$81.4	5.5%
Korea, S	7	$18.5	3.7%	***Taiwan***	7	$26.7	4.0%	***Korea, S***	7	$46.2	3.1%
PRC	8	$15.2	3.1%	***Korea, S***	8	$19.6	3.0%	***Taiwan***	8	$34.6	2.4%

Table 5 –People's Republic of China International Account (Balance of Payments) as a Percent of GDP 1994-2004													
Time Period	*Current Account Balance*	*Goods and Services Trade Balance*	*Goods Trade Balance*	*Services Trade Balance*	*Income Balance*	*Unilateral Current Transfer Balance*	*Financial Account Balance*	*Foreign Investment Balance*	*Foreign Direct Investment Balance*	*Foreign Portfolio Investment Balance*	*Foreign Other Investment Balance*	*Official Transactions Balance*	*Errors & Omissions*
1994	1.3%	1.4%	1.3%	0.1%	-0.2%	0.1%	0.4%	6.0%	5.9%	0.7%	-0.5%	-5.6%	-1.7%
1995	0.2%	1.7%	2.6%	-0.9%	-1.7%	0.2%	2.3%	5.5%	4.8%	0.1%	0.6%	-3.2%	-2.5%
1996	0.9%	2.1%	2.4%	-0.2%	-1.5%	0.3%	1.0%	4.9%	4.7%	0.2%	0.0%	-3.9%	-1.9%
1997	4.1%	4.7%	5.1%	-0.4%	-1.2%	0.6%	-1.6%	2.3%	4.6%	0.8%	-3.1%	-4.0%	-2.4%
1998	3.3%	4.6%	4.9%	-0.3%	-1.7%	0.4%	-1.3%	-0.7%	4.3%	-0.4%	-4.6%	-0.7%	-2.0%
1999	2.1%	3.1%	3.6%	-0.5%	-1.5%	0.5%	-0.3%	0.5%	3.7%	-1.1%	-2.1%	-0.9%	-1.8%
2000	1.9%	2.7%	3.2%	-0.5%	-1.4%	0.6%	-0.8%	0.2%	3.5%	-0.4%	-2.9%	-1.0%	-1.1%
2001	1.5%	2.4%	2.9%	-0.5%	-1.7%	0.7%	-1.1%	3.0%	3.2%	-1.7%	1.5%	-4.1%	-0.4%
2002	2.7%	2.9%	3.4%	-0.5%	-1.1%	1.0%	-3.3%	2.5%	3.6%	-0.8%	-0.3%	-5.8%	0.6%
2003	3.1%	2.5%	3.0%	-0.6%	-0.5%	1.2%	-4.4%	3.6%	3.2%	0.8%	-0.4%	-8.0%	1.3%
2004	4.2%	3.0%	3.6%	-0.6%	-0.2%	1.4%	-5.8%	6.7%	3.2%	1.2%	2.3%	-12.5%	1.6%
Average	2.3%	2.8%	3.3%	-0.5%	-1.2%	0.6%	-1.4%	3.1%	4.1%	-0.1%	-0.9%	-4.5%	-0.9%

Table 6 – People's Bank of China Foreign Exchange Reserves at Year-End 1994-2004			
Year-End	*PBC Foreign Exchange Reserves in Billions of U.S. Dollars*	*% Increase in PBC Foreign Exchange Reserves from Previous Year*	*PBC Foreign Exchange Reserves a % of GDP*
Dec. 31 1994	$51.6	143.5%	9.5%
Dec. 31 1995	$73.6	42.5%	10.5%
Dec. 311996	$105.0	42.7%	12.9%
Dec. 31 1997	$139.9	33.2%	15.5%
Dec. 31 1998	$145.0	3.6%	15.2%
Dec. 31 1999	$154.7	6.7%	15.6%
Dec. 31 2000	$165.6	7.0%	15.3%
Dec. 31 2001	$212.2	28.1%	18.3%
Dec. 31 2002	$286.4	35.0%	22.0%
Dec. 31 2003	$403.3	40.8%	27.5%
Dec. 31 2004	$609.9	51.3%	37.0%

Table 7 – Foreign Exchange Reserves at Central Banks in Major Asian Economies at Year-End 1999-2004												
Economy	*PRC*	*Hong Kong SRA*	*India*	*Indonesia*	*Japan*	*Korea*	*Malaysia*	*Philippines*	*Singapore*	*Taiwan*	*Thailand*	*Major Asian Economies excluding the PRC*
End of Year	*FX Reserves U.S.$ in billions*											
Dec. 31 1999	$154.7	$96.2	$32.0	$26.2	$277.7	$73.7	$29.7	$0.2	$76.3	$106.2	$33.8	$752.1
Dec. 31 2000	$165.6	$107.5	$37.3	$28.4	$347.2	$76.6	$28.6	$0.6	$79.7	$106.7	$31.9	$844.6
Dec. 31 2001	$212.2	$111.2	$45.3	$27.0	$387.7	$102.5	$29.6	$0.5	$74.9	$122.2	$32.4	$933.2
Dec. 31 2002	$286.4	$111.9	$67.0	$30.8	$451.5	$120.8	$33.3	$0.5	$81.4	$161.7	$38.1	$1,096.7
Dec. 31 2003	$403.3	$118.4	$97.6	$34.7	$652.8	$154.5	$40.6	$0.6	$95.0	$206.6	$41.0	$1,441.7
Dec. 31 2004	$609.9	$123.5	$125.2	$34.7	$824.3	$198.2	$61.7	$0.2	$111.5	$241.7	$48.5	$1,769.6
End of Year	*FX Reserves % GDP*											
Dec. 31 1999	15.6%	59.9%	8.0%	16.9%	6.2%	16.6%	37.5%	0.3%	93.7%	40.1%	27.6%	12.0%
Dec. 31 2000	15.3%	65.0%	8.9%	17.2%	7.3%	15.0%	31.7%	0.7%	87.1%	43.4%	26.0%	12.8%
Dec. 31 2001	18.3%	68.3%	10.5%	16.4%	9.3%	21.2%	33.6%	0.7%	88.1%	48.8%	28.0%	15.5%
Dec. 31 2002	22.0%	69.9%	14.8%	15.3%	11.3%	22.0%	35.0%	0.6%	92.2%	58.2%	30.0%	18.3%
Dec. 31 2003	27.5%	75.5%	18.6%	14.6%	15.2%	25.4%	39.1%	0.7%	102.8%	64.1%	28.6%	21.9%
Dec. 31 2004	37.0%	75.1%	20.6%	13.5%	17.7%	29.1%	52.4%	0.3%	104.3%	67.6%	29.7%	24.5%

Table 8 – Foreign Exchange Reserves at Central Banks in Major Latin American Economies at Year-End 1999-2004							
Economy	*Argentina*	*Brazil*	*Chile*	*Colombia*	*Mexico*	*Venezuela*	*Major Latin American Economies*
End of Year	*FX Reserves U.S.$ in billions*						
Dec. 31 1999	$26.4	$36.3	$14.2	$8.1	$8.1	$15.2	$108.2
Dec. 31 2000	$25.4	$33.0	$14.7	$9.0	$9.0	$15.9	$107.0
Dec. 31 2001	$19.3	$35.9	$14.0	$10.2	$10.2	$12.3	$101.9
Dec. 31 2002	$35.9	$37.8	$14.8	$10.8	$10.8	$12.0	$122.2
Dec. 31 2003	$40.9	$49.3	$15.2	$10.9	$10.9	$20.7	$147.9
Dec. 31 2004	$57.4	$52.9	$15.5	$13.5	$13.5	$23.5	$176.4
End of Year	*FX Reserves % GDP*						
Dec. 31 1999	9.3%	6.8%	19.4%	9.3%	1.7%	15.5%	6.9%
Dec. 31 2000	8.9%	5.5%	19.5%	10.7%	1.5%	13.6%	6.1%
Dec. 31 2001	7.2%	7.0%	20.4%	12.4%	1.6%	10.0%	6.1%
Dec. 31 2002	34.0%	8.1%	22.0%	13.2%	1.7%	12.9%	8.3%
Dec. 31 2003	31.5%	9.7%	20.6%	13.6%	1.7%	24.7%	9.8%
Dec. 31 2004	37.5%	8.7%	16.5%	13.9%	2.0%	21.6%	10.2%

Table 9 – Foreign Exchange Reserves at Central Banks in the European Union at Year-End 1999-2004										
Economy	*Czech Republic*	*Denmark*	*Euro-zone*	*Hungary*	*Poland*	*Slovakia*	*Slovenia*	*Sweden*	*United Kingdom*	*EU-25*
End of Year	*FX Reserves U.S.$ in billions*									
Dec. 31 1999	$12.8	$21.1	$228.0	$10.7	$24.3	$3.4	$3.1	$13.5	$30.1	$347.0
Dec. 31 2000	$13.0	$14.5	$218.6	$10.9	$25.3	$4.0	$3.1	$13.8	$39.3	$342.5
Dec. 31 2001	$14.2	$16.1	$207.9	$10.3	$23.6	$4.1	$4.2	$12.7	$31.9	$325.2
Dec. 31 2002	$23.3	$25.9	$215.8	$9.7	$26.7	$8.8	$6.9	$15.5	$32.8	$365.4
Dec. 31 2003	$26.3	$36.0	$188.0	$12.0	$31.9	$11.7	$8.3	$18.0	$35.1	$367.4
Dec. 31 2004	$27.8	$38.2	$179.3	$15.3	$34.5	$14.4	$8.7	$20.6	$39.5	$378.3
End of Year	*FX Reserves % GDP*									
Dec. 31 1999	21.7%	12.2%	3.4%	22.3%	15.7%	16.5%	14.4%	4.7%	2.1%	3.9%
Dec. 31 2000	23.3%	9.1%	3.6%	23.4%	16.0%	19.9%	16.3%	4.5%	2.7%	4.1%
Dec. 31 2001	23.3%	10.1%	3.4%	19.9%	13.4%	19.8%	21.6%	4.6%	2.2%	3.9%
Dec. 31 2002	31.5%	15.1%	3.2%	14.9%	14.2%	36.2%	30.9%	5.5%	2.1%	4.0%
Dec. 31 2003	29.0%	17.0%	2.3%	14.5%	15.2%	35.6%	30.0%	6.3%	2.0%	3.3%
Dec. 31 2004	26.0%	15.8%	1.9%	15.3%	14.2%	35.0%	26.9%	6.7%	1.9%	3.0%

Table 10 – Foreign Exchange Reserves at Central Banks in Other Major Developed Economies at Year-End 1999-2004						
Economy	***Australia***	***Canada***	***New Zealand***	***Norway***	***Switzerland***	***Other Major Developed Economies***
End of Year	***FX Reserves U.S.$ in billions***					
Dec. 31 1999	$19.5	$24.4	$4.0	$22.5	$34.2	$104.7
Dec. 31 2000	$16.8	$28.8	$3.0	$26.7	$30.9	$106.2
Dec. 31 2001	$16.4	$30.5	$2.6	$22.2	$30.1	$101.9
Dec. 31 2002	$18.6	$32.7	$3.3	$30.7	$38.2	$123.4
Dec. 31 2003	$30.0	$31.5	$4.2	$35.9	$45.6	$147.2
Dec. 31 2004	$33.9	$30.2	$4.8	$43.1	$53.6	$165.6
End of Year	***FX Reserves % GDP***					
Dec. 31 1999	5.0%	3.7%	7.1%	14.3%	13.6%	6.9%
Dec. 31 2000	4.5%	4.0%	5.8%	16.0%	12.9%	6.8%
Dec. 31 2001	4.6%	4.3%	5.1%	13.1%	13.7%	6.7%
Dec. 31 2002	4.6%	4.4%	5.5%	16.0%	15.7%	7.6%
Dec. 31 2003	5.8%	3.6%	5.4%	16.3%	15.1%	7.4%
Dec. 31 2004	5.5%	3.0%	4.9%	17.0%	15.5%	7.2%

Table 11 – Foreign Exchange Reserves at Central Banks in Other Major Developing Economies at Year-End 1999-2004							
Economy	***Bulgaria***	***Croatia***	***Romania***	***Russia***	***South Africa***	***Turkey***	***Other Major Developing Economies***
End of Year	***FX Reserves U.S.$ in billions***						
Dec. 31 1999	$2.8	$2.8	$1.5	$8.5	$6.4	$23.2	$45.1
Dec. 31 2000	$3.0	$3.4	$2.5	$24.3	$6.1	$22.2	$61.4
Dec. 31 2001	$3.2	$4.6	$3.9	$32.5	$6.0	$18.8	$69.1
Dec. 31 2002	$4.4	$5.9	$6.1	$44.1	$5.9	$26.8	$93.1
Dec. 31 2003	$6.2	$8.2	$8.0	$63.1	$6.5	$33.6	$125.6
Dec. 31 2004	$8.7	$8.8	$14.6	$103.7	$13.2	$36.0	$185.0
End of Year	***FX Reserves % GDP***						
Dec. 31 1999	21.4%	14.2%	4.3%	4.4%	4.8%	11.6%	7.6%
Dec. 31 2000	24.0%	18.3%	6.7%	9.3%	4.6%	10.8%	9.2%
Dec. 31 2001	23.9%	23.1%	9.7%	10.7%	5.1%	12.2%	10.6%
Dec. 31 2002	28.0%	25.8%	13.4%	12.8%	5.3%	14.6%	12.9%
Dec. 31 2003	31.0%	28.4%	14.1%	14.5%	3.9%	14.0%	13.3%
Dec. 31 2004	36.1%	25.5%	20.0%	17.7%	6.2%	12.3%	15.1%

Table 12 – Summary of Foreign Exchange Reserves at Central Banks in Major Economies							
Economy or Region	***United States***	***Major Asian Economies***	***Major Latin American Economies***	***European Union-25***	***Other Developed Economies***	***Other Developing Economies***	***Rest of World (excluding US and Major Asian Economies)***
End of Year	***FX Reserves U.S.$ in billions***						
Dec. 31 1999	$32.2	$873.0	$108.2	$347.0	$104.7	$45.1	$605.0
Dec. 31 2000	$31.2	$978.2	$107.0	$342.5	$106.2	$61.4	$617.1
Dec. 31 2001	$29.0	$1,113.0	$101.9	$325.2	$101.9	$69.1	$598.1
Dec. 31 2002	$33.8	$1,345.1	$122.2	$365.4	$123.4	$93.1	$704.2
Dec. 31 2003	$39.7	$1,804.0	$147.9	$367.4	$147.2	$125.6	$788.2
Dec. 31 2004	$42.7	$2,331.0	$176.4	$378.3	$165.6	$185.0	$905.3
End of Year	***FX Reserves % GDP***						
Dec. 31 1999	0.3%	12.2%	6.9%	3.9%	6.9%	7.6%	4.8%
Dec. 31 2000	0.3%	12.9%	6.1%	4.1%	6.8%	9.2%	5.0%
Dec. 31 2001	0.3%	15.8%	6.1%	3.9%	6.7%	10.6%	4.9%
Dec. 31 2002	0.3%	18.7%	8.3%	4.0%	7.6%	12.9%	5.5%
Dec. 31 2003	0.4%	22.8%	9.8%	3.3%	7.4%	13.3%	5.1%
Dec. 31 2004	0.4%	26.8%	10.2%	3.0%	7.2%	15.1%	5.1%

Table 13 – Current Account Balances as a Percent of GDP in Other Major Asian Economies										
Year	***Hong Kong SRA***	***India***	***Indonesia***	***Japan***	***Korea***	***Malaysia***	***Philippines***	***Singapore***	***Taiwan***	***Thailand***
2001	6.0%	-0.8%	4.2%	2.1%	1.7%	8.3%	1.8%	18.8%	6.6%	5.4%
2002	7.8%	0.2%	3.9%	2.8%	1.0%	8.5%	5.8%	21.3%	9.1%	5.5%
2003	10.3%	0.8%	3.4%	3.2%	1.9%	13.0%	1.8%	29.2%	10.2%	5.6%
2004	9.7%	1.4%	1.1%	3.7%	4.1%	12.8%	2.4%	26.1%	6.2%	4.4%

APPENDIX II – DESCRIPTION OF THE U.S. INTERNATIONAL ACCOUNT

Many of the terms that economists use when talking about a country's international account (also known as its international balance of payments) can be confusing. A brief description of these terms as they apply to the United States follows. These terms have similar meanings in the international accounts of other countries.

The U.S. **international account** (also known as the U.S. balance of payments) records the flow of trade in goods and services, income receipts and payments, unilateral current transfers, capital transfers, investment transactions, and official transactions between U.S. residents and foreign residents during a given time period. The international account is divided into (1) the **current account** and (2) the **capital and financial account**. By definition:

(Current account balance) + (Capital and financial account balance) = 0

The **current account** records:

1. Receipts to U.S. residents from foreign residents for **exports** of goods and services
2. **Income received** by U.S. residents from their foreign investments
3. **Unilateral current transfers to U.S. residents** (e.g., donations, gifts, or foreign aid) from foreign residents
4. Payments from U.S. residents to foreign residents for **imports** of goods and services
5. **Income paid** to foreign residents from their U.S. investments
6. **Unilateral current transfers to foreign residents** from U.S. residents

Thus,

(Current account balance) = (Goods and services trade balance) + (Income balance) + (Unilateral current transfer balance)

&

(Goods and services trade balance) = (Goods and services exports) – (Goods and services imports)

&

(Income balance) = (Income receipts from foreign residents) – (Income payments to foreign residents)

&

(Unilateral current transfer balance) = (Unilateral current transfers to U.S. residents from foreign residents) – (Unilateral current transfers to foreign residents from U.S. residents)

The capital and financial account is divided into (a) the **capital account** and (b) the **financial account**. Thus,

(Capital and financial account balance) = (Financial account balance) + (Capital account balance)

The **financial account** records the flow of transactions between U.S. residents and foreign residents that change the level of international claims or liabilities, such as deposits, ownership of portfolio investment securities, and direct investment during a given period.

The financial account includes:

1. **Foreign direct investment flow**
2. **Foreign portfolio investment flow**
3. **Foreign other investment flow**
4. **Official transactions flow**

Foreign direct investment occurs when a resident of one country obtains a lasting interest in, and a degree of influence over, the management of a firm in located another country. To qualify as foreign direct investment, the resident must obtain ownership of at least 10 percent of the voting securities of an incorporated firm or an equivalent ownership interest of an unincorporated firm. Foreign direct investment flows are funds that parent companies provide to their foreign affiliates net of funds that foreign affiliates provide to their parents. These funds may include equity, inter-company debt, and reinvested earnings.

Foreign portfolio investment occurs when a resident of one country acquires equity securities in an incorporated firm or an equivalent ownership interest of an unincorporated firm that do not qualify as foreign direct investment. Foreign portfolio investment also occurs when a resident of one country acquires debt securities, real estate, or other assets in foreign country unrelated to foreign direct investment.

Foreign other investment occurs when a resident of one country lends to an unaffiliated resident of another country.

An **inward foreign investment flow** involves the purchase of U.S. assets or the increase in claims on U.S. residents by foreign residents. An **outward foreign investment flow** involves the purchase of foreign assets or the increase in claims on foreign residents by U.S. residents.

Official transactions flow involves:

1. Any increase or decrease in official reserve assets (i.e., gold, special drawing rights, reserve position at the International Monetary Fund, foreign currencies, and assets denominated in foreign currencies) by the Federal Reserve or the Exchange Stabilization Fund in the U.S. Department of the Treasury; and
2. Any purchase (or sale) of official reserve assets from (to) U.S. residents by foreign central banks

Thus,

(Financial account balance) = (Foreign investment balance) + (Official transactions balance)

&

(Foreign investment balance) = (Foreign direct investment balance) + (Foreign portfolio investment balance) + (Foreign other investment balance)

&

(Foreign direct investment balance) = (Inward foreign direct investment) – (Outward foreign direct investment)

&

(Foreign portfolio investment balance) = (Inward foreign portfolio investment) – (Outward foreign portfolio investment)

&

(Foreign other investment balance) = (Funds lent to U.S. residents by non-affiliated foreign residents) – (Funds lent to foreign residents by non-affiliated U.S. residents)

&

(Official transactions balance) = (Official transactions by foreign central banks) – (Official transactions by the Federal Reserve or the Exchange Stabilization Fund in the U.S. Department of the Treasury)

The **capital account** records capital transfers between U.S. residents and foreign residents, such as debt forgiveness, migrants' transfers, and acquisitions and disposals of non-produced non-financial assets between residents and nonresidents. Normally, the size of the capital account balance is extremely small compared to the size of the financial account balance.

U.S. residents are individuals, firms, trusts, associations, nonprofit organizations, and governments that have their center of economic interest in the United States and that reside, or expect to reside, in the United States for one year or more.

Foreign residents are individuals, firms, trusts, associations, nonprofit organizations, and governments that have their center of economic interest outside the United States, and reside, or expect to reside, outside the United States for one year or more. Included in this definition are U.S. individuals living abroad for one year or more whom the U.S. government does not employ, foreigners residing in the United States for less than one year, and foreign affiliates of U.S. firms. In addition, foreign nationals employed in the United States by their home governments, foreign students enrolled at U.S. educational institutions, and international institutions located in the United States are considered foreign residents.

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[1] Renminbi means "The People's Currency." In the United States, we use the dollar to refer to both the U.S. currency and the U.S. unit of account. The renminbi is the name of the PRC's currency, while the yuan is the name of the PRC's unit of account. Technically, one should use renminbi to refer to the PRC's currency as a concept (like the U.S. dollar) and yuan to refer to amounts (like five dollars) or circulating notes (like a ten-dollar bill) in renminbi. However, many economists and financial analysts use renminbi and yuan interchangeably.

[2] An increase in the foreign exchange value of the renminbi above the peg can also be expressed as 1 yuan become more than 12.1 U.S. cents.

[3] An increase in the supply of yuan from the PBC's intervention in foreign exchange markets may boost domestic prices in the PRC. To avoid inflation, the PBC may offset an increase in the supply of yuan from the PBC's intervention in foreign exchange markets by selling bonds to domestic banks. Such sales reduce domestic bank reserves at the PBC and thus contract the domestic money supply. Economists describe this process as sterilization.

[4] A decrease in the foreign exchange value of the renminbi above the peg can also be expressed as 1 yuan becomes less than 12.1 cents.

[5] Ben S. Bernanke, "Monetary Policy in a World of Mobile Capital," *Cato Journal* 25 (Winter 2005): 1-2.

[6] Other major economies in Northeast, Southeast, and South Asia include Hong Kong SRA, India, Indonesia, Japan, South Korea, Malaysia, the Philippines, Singapore, Taiwan, and Thailand. For reading simplicity, this study will refer to them as other major Asian economies. Please note that there are other major economies such as Russia and Turkey that are, in part, on the Asian continent that are not included under this definition of other major Asian economies.

[7] Major economies in the rest of the world include: Argentina, Brazil, Chile, Columbia, Mexico, and Venezuela in Latin America; the 25 member-states of the European Union; Australia, Canada, New Zealand, Norway, and Switzerland in other developed countries; and Bulgaria, Croatia, Romania, Russia, South Africa, and Turkey in other developing countries. The 25 member-states of the European Union are Austria, Belgium, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Latvia, Luxembourg, Lithuania, Malta, Netherlands, Poland, Portugal, Slovak Republic, Slovenia, Spain, Sweden, and the United Kingdom.

[8] The United States, the PRC, other major Asian economies, and major economies in the rest of the world account for an average of 98.4 percent of world GDP between 1999 and 2003.

[9] Congressional Research Service. At the end of 2004, non-performing loans at state-owned banks had fallen to about 25 percent of the PRC's GDP.

[10] Import substitution promoted "hot house" industrialization by directing scarce capital and skilled labor resources away from industries in which countries had a comparative advantage toward industries in which they had none. The firms spawned by import substitution did not produce internationally marketable goods and services. These firms required trade barriers and taxpayer subsidies to survive. When countries that had previously adopted an import substitution policy liberalized trade and investment, many of these firms failed, causing significant unemployment.

[11] On January 1, 1994, the PRC unified its official and internal settlements exchange rates and pegged the unified exchange rate to the U.S. dollar. The initial peg was $1 equals 8.7 yuan. Immediately after unification, the PRC had a "crawling" pegged exchange rate policy. The PRC allow the foreign exchange value of the renminbi to appreciate during 1994 before fixing the pegged exchange rate at $1 equals 8.28 yuan in 1995.

[12] Michael P. Dooley, David Folkerts-Landau, and Peter M. Gerber, "An Essay on the Revised Bretton Woods System," National Bureau of Economic Research Working Paper 9971 (September 2003) and Michael P. Dooley, David Folkerts-Landau, and Peter M. Gerber, "Direct Investment, Rising Real Wages, and the Absorption of Excess Labor in the Periphery," National Bureau of Economic Research Working Paper 10626 (July 2004).

[13] Morris Goldstein, "China and the Renminbi Exchange Rate," in Dollar Adjustment: How Far? Against What? eds. C. Fred Bergsten and John Williamson (November 2004): 201.

[14] Ibid., 203.

[15] Ibid., 197.

[16] Jeffrey Frankel, "On the Renminbi: The Choice between Adjustment under a Fixed Exchange Rate and Adjustment under a Flexible Rate," National Bureau of Economic Research Working Paper 11274 (April 2005): 15.

[17] Barry Bosworth, "Valuing the Renminbi," (presented to the Tokyo Club Research Meeting, February 9, 2004). Found at http://www.brookings.org/dybdocroot/views/papers/bosworth/20040209_bosworth.pdf.

[18] Author's calculation based on WTO statistics. Found at http://www.wto.org/english/res_e/statis_e/statis_e.htm.

[19] U.S. Department of Commerce, Bureau of the Census.

[20] Ibid.

[21] Author's calculation based on Haver Analytics.

[22] Ibid.

[23] Haver Analytics.

[24] Wayne Morrison and Marc Labonte, "China's Exchange Rate Peg: Economic Issues and Options for U.S. Trade Policy," *CRS Report for Congress* RL32165 (December 7, 2004): 14.

[25] Ibid.

[26] Haver Analytics.

[27] Ibid.

[28] Found at http://www.worldbank.org/wbi/reducingpoverty/docs/newpdfs/case-summ-China-8-7PovertyReduction.pdf.

[29] Policy lending occurs when banks make loans to individuals, firms, organizations, or governments based on government regulations or suasion rather than market criteria. Under policy lending, banks grant borrowers larger loans, lower interest rates, or more favorable terms than banks would willingly grant in the absence of government regulation or suasion.

[30] Ben S. Bernanke, "Remarks at Homer Jones Lecture," (April 14, 2005). Found at http://www.federalreserve.gov/boarddocs/speeches/2005/20050414/default.htm.

[31] Michael P. Dooley, David Folkerts-Landau, and Peter M. Gerber, "The U.S. Current Account Deficit and Economic Development: Collateral for a Total Return Swap," National Bureau of Economic Research Working Paper 10727 (August 2004): 3.

[32] Official transactions involves any increase or decrease in official reserve assets (i.e., gold, special drawing rights, reserve position at the International Monetary Fund, foreign currencies, and assets denominated in foreign currencies) by a central bank.

[33] Haver Analytics.

[34] Some of the increase in the PRC's current account surplus during 2004 may be attributable to individuals and firms that were over-invoicing exports and under-invoicing imports to circumvent the PRC's controls on foreign financial flows.

[35] Ibid.

[36] Ibid.

[37] Ibid.

[38] Ibid.

[39] Barry Eichengreen, Yeongeop Rhee, and Hui Tong, "The Impact of Chine on the Exports of Other Asian Countries," National Bureau of Economic Research Working Paper 10768 (September 2004).

[40] This study uses the J. P. Morgan Broad Trade-Weighted Index (Year 2000 = 100) to measure the real foreign exchange value of currencies. Author's calculation based on Haver Analytics.

[41] Ibid.

[42] Author's calculation based on Haver Analytics.

[43] Ibid.

[44] Ibid.

[45] Ibid.

[46] Ibid.

[47] Ibid.

[48] Ibid.

[49] Ibid.

[50] "Foreign Exchange Markets," in *Bank for International Settlements 74th Annual Report* (Basel: Bank for International Settlements, June 28, 2004): 89. Found at http://www.bis.org/publ/arpdf/ar2004e.pdf.

[51] Ibid.

[52] Ibid. Data for 2004 are not yet available.

[53] Author's calculation based on Haver Analytics.

[54] Haver Analytics.

[55] Ibid.

[56] Author's calculations based on Haver Analytics.

[57] Haver Analytics.

[58] However, a smaller aggregate U.S. goods and services trade deficit does not necessarily mean that the bilateral goods and services trade deficit with the PRC would decline. A bilateral goods and services trade balance may move in the opposite direction of the aggregate balance for a number of country-specific reasons.

[59] Bernanke (April 14, 2005).

[60] Author's calculations based on Haver Analytics.

[61] Haver Analytics.

[62] Bernanke (April 14, 2005).

[63] Haver Analytics. U.S. manufacturing employment peaked at 19.6 million in June 1979.

[64] Ibid. Australian manufacturing employment peaked in the third quarter of 1989. EU-15 manufacturing employment peaked in September 1989. Canadian manufacturing employment peaked in November 2002. Japanese manufacturing employment peaked at 15.8 million in September 1992. Manufacturing employment has been declining since 1992 in both South Korea and Mexico.

[65] "Will the Walls Come Falling Down?" *Economist* (April 20, 2005). Found at http://www.economist.com/displaystory.cfm?story_id=3786409.

[66] Ibid.

[67] Eswar Prasad and Shang-Jin Wei, "The Chinese Approach to Capital Inflows: Patterns and Possible Explanations," IMF Working Paper (April 2005): 7.

[68] Haver Analytics.

[69] Pieter Bottelier, "China Seminar," American Enterprise Institute (January 10, 2005).

[70] David F. DeRosa, "China's Defense of the Peg Perpetuates Central Planning," *Cato Journal* 25 (Winter 2005): 52.

[71] Haver Analytics.

[72] Ibid.

[73] Ibid.

[74] Ibid.

[75] These price changes include possible changes in interest rates.

[76] Goldstein: 225-228.

[77] The PRC is clearly aware of its need to attract inward foreign direct and portfolio investment in its SOBs. The *Economist* reported that the Bank of America has signed a memorandum of understanding with the China Construction Bank (CCB) to invest $2 billion in the CCB in exchange for a 5 percent of its equity shares. The CCB also plans to float 15 percent of its shares to foreign investors in 2005, hoping to raise another $5 billion. The Bank of China is currently negotiating with several banks, including Royal Bank of Scotland (RBS), UBS, J.P. Morgan-

Chase, and Deutsche Bank, for a similar investment. "Foreign Fillip," *Economist* (May 19, 2005). Found at http://www.economist.com/finance/displayStory.cfm?story_id=3993483.

[78] Goldstein: 225-228.

[79] SAFE is the State Administration for Foreign Exchange.

[80] MOFTEC is the Ministry of Foreign Trade and Economic Cooperation.