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INTERNATIONAL TRADE

Treasury Assessments Have Not Found Currency Manipulation, but Concerns about Exchange Rates Continue



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Highlights

Highlights of [GAO-05-351](#), a report to congressional committees

Why GAO Did This Study

The 1988 Trade Act requires the Department of the Treasury to annually assess whether countries manipulate their currencies for trade advantage and to report semiannually on specific aspects of exchange rate policy. Some observers have been concerned that China and Japan may have maintained undervalued currencies, with adverse U.S. impacts, which has brought increased attention to Treasury's assessments. In 2004, Congress mandated that Treasury provide additional information about currency manipulation assessments, and Treasury issued its report in March 2005. Members of Congress have continued to propose legislation to address China currency issues.

We examined (1) Treasury's process for conducting its assessments and recent results, particularly for China and Japan; (2) the extent to which Treasury has met legislative reporting requirements; (3) experts' views on whether or by how much China's currency is undervalued; and (4) the implications of a revaluation of China's currency for the United States.

In commenting on a draft of this report, Treasury emphasized it does consider the impact of the exchange rate on the economy, and factors influencing exchange rates also affect U.S. production and competitiveness.

www.gao.gov/cgi-bin/getrpt?GAO-05-351.

To view the full product, including the scope and methodology, click on the link above. For more information, contact Loren Yager at (202) 512-4128 or yagerl@gao.gov.

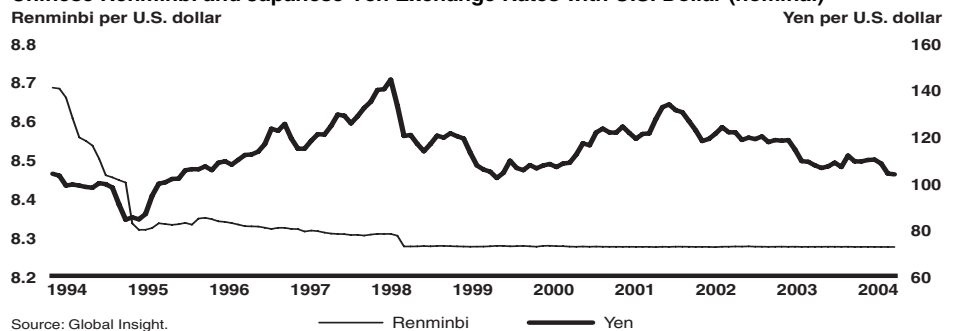
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Treasury Assessments Have Not Found Currency Manipulation, but Concerns about Exchange Rates Continue

What GAO Found

Treasury has not found currency manipulation under the terms of the 1988 Trade Act since it last cited China in 1994. Treasury officials make a positive finding of currency manipulation only when all the conditions in the Trade Act are satisfied—when an economy has a material global current account surplus and a significant bilateral trade surplus with the United States, and is manipulating its currency with the intent to gain an unfair trade advantage. Treasury said that in its 2003 and 2004 assessments, China did not meet the criteria for manipulation, in part because it did not have a material global current account surplus and had maintained a fixed exchange rate regime through different economic conditions. Japan did not meet the criteria in 2003 and 2004 in part because its exchange rate interventions were considered to be part of a macroeconomic policy to combat deflation.

Chinese Renminbi and Japanese Yen Exchange Rates with U.S. Dollar (nominal)



Treasury has generally complied with the reporting requirements for its exchange rate reports, although its discussion of U.S. economic impacts has become less specific over time. Recent reports stress the importance of broad macroeconomic and structural factors behind global trade imbalances, which Treasury officials contend meets the intent of economic impact requirements.

Many experts have concluded that China's currency is undervalued, but by widely varying amounts, while some maintain that undervaluation cannot be determined. The significant variation in estimates can be attributed in part to different methodological approaches, but experts also believe that exchange rate assessments are especially challenging for rapidly developing economies such as China's. Among experts who believe China's currency is undervalued, views on policy steps to correct the imbalance differ.

A revaluation of China's currency could have implications for various aspects of the U.S. economy, although the impacts are hard to predict. They depend on multiple factors, including how much appreciation is passed through to higher prices for U.S. purchasers and the extent to which reduced imports from China are replaced with imports from other countries. In addition to affecting trade-related sectors, a revaluation could have implications for U.S. capital flows.

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Abbreviations

BEER	Behavioral Equilibrium Exchange Rate
FDI	Foreign Direct Investment
FEER	Fundamental Equilibrium Exchange Rate
GDP	Gross Domestic Product
GNP	Gross National Product
IMF	International Monetary Fund
PPP	Purchasing Power Parity
TIC	U.S. Treasury International Capital

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United States Government Accountability Office
Washington, D.C. 20548

April 19, 2005

The Honorable Olympia J. Snowe
Chair
Committee on Small Business and Entrepreneurship
United States Senate

The Honorable Donald A. Manzullo
Chairman
Committee on Small Business
House of Representatives

A significant portion of the recently growing U.S. merchandise trade deficit¹—36.4 percent—is made up of large bilateral deficits with China and Japan. In response to earlier concerns regarding exchange rate policies of certain Asian countries and their trade with the United States and the world, Congress passed the Omnibus Trade and Competitiveness Act of 1988² (the 1988 Trade Act), which mandates that the Secretary of the Treasury annually analyze the exchange rate policies of foreign countries and consider whether any manipulate their currencies to gain an unfair trade advantage. A separate provision of the 1988 Trade Act requires that Treasury report to Congress on specific international economic policy and exchange rate issues. Some observers are concerned that China and Japan have intervened in currency markets to maintain an undervalued currency and that these actions adversely affect U.S. output and employment, particularly for small manufacturers. Because of these concerns, Treasury's currency manipulation assessments have attracted increased attention, and Congress recently mandated that Treasury report on how statutory requirements about currency manipulation could be clarified to result in a better understanding of currency manipulation.³

You asked us to review Treasury's efforts to meet its requirements under the 1988 Trade Act and related issues. Specifically, we examined (1) the

¹The U.S. merchandise trade deficit for 2004 was \$650.8 billion, compared to \$532.3 billion for 2003, according to the U.S. Census Bureau.

²Pub. L. No. 100-418, §§ 3001-06, 102 Stat. 1372 and following.

³Pub. L. No. 108-447, Div. H, title II, § 221, 118 Stat. 3242, required Treasury to report on how the statutory requirements of the 1988 Trade Act could be clarified administratively to enable currency manipulation to be better understood by the American people and Congress. Treasury issued its report on March 11, 2005.

process Treasury uses to conduct its assessments of currency manipulation and the results of recent assessments, particularly for China and Japan; (2) the extent to which Treasury has met the 1988 Trade Act reporting requirements; (3) experts' views on whether or by how much China's currency is undervalued; and (4) the implications of a revaluation of China's currency for the United States.

To determine the process Treasury uses to conduct its assessments of currency manipulation and recent results, particularly for China and Japan, we reviewed the 1988 Trade Act, its legislative history, and Treasury's analysis of foreign currency manipulation. In addition, we interviewed responsible Treasury officials to better understand the assessment process and Treasury's reasoning behind its analyses for China and Japan. To determine the extent to which Treasury has met 1988 Trade Act reporting requirements, we analyzed the reports Treasury has issued since 1988 that are required by the Trade Act. Finally, to determine experts' views on whether or by how much China's currency is undervalued and the implications of its revaluation for the United States, we reviewed academic papers, other studies, and congressional testimonies by economists with expertise in this area, and we interviewed experts with a range of opinions on the matter. We also analyzed relevant country economic data and macroeconomic indicators used by many of these experts. For a complete description of our scope and methodology, see appendix I. We conducted our work from September 2003 through February 2005 in accordance with generally accepted government auditing standards.

Results in Brief

Although China and Japan have engaged in economic activities that have led to concerns about currency manipulation, the Department of the Treasury has not in recent years found that either country meets all the legal criteria for manipulation under the terms of the 1988 Trade Act. More broadly, Treasury has not made a positive finding of currency manipulation since it last cited China in 1994. Treasury officials stated that they make a positive determination on currency manipulation only when all the

conditions specified in the Trade Act are satisfied.⁴ Treasury has significant flexibility in making its determinations, including determining the intent of any manipulation. Treasury officials told us that they do not make an official determination of undervaluation as a part of their manipulation assessments although, according to their March 2005 report to Congress, they do consider measures of undervaluation. With respect to China, Treasury officials told us that China did not meet the Trade Act's definition for currency manipulation for the purposes of Treasury's 2003 and 2004 assessments, in part because it did not have a material global current account surplus and had maintained a fixed exchange rate regime since 1994 through different economic conditions. However, Treasury has stated that China should move from its long-term fixed exchange rate toward a more flexible exchange system and has entered into discussions with China to this end. Treasury also did not find that Japan met the Trade Act's definition for currency manipulation in 2003 and 2004. Treasury officials told us that they viewed Japan's exchange rate interventions as part of a macroeconomic policy aimed at combating deflation in Japan, and they expressed general skepticism about the efficacy of intervention to affect the yen's value.

Treasury has generally complied with the requirements in the 1988 Trade Act that it report to Congress on several specific issues related to international economic and exchange rate policies, although its discussion of U.S. economic impacts has become less specific over time. Treasury has consistently met four of the reporting requirements, and two others allow Treasury to report at its discretion.⁵ Treasury's analysis and discussion in response to a remaining requirement, that it assess the impact of the exchange rate on the U.S. economy, have changed. From 1988 through the 1990s, Treasury generally discussed at least some elements of the exchange rate impact reporting requirement, which includes impacts of the exchange rate of the dollar on the U.S. current account and production and

⁴The conditions are (1) manipulating the exchange rate for the purposes of gaining an unfair trade advantage or preventing effective balance of payments adjustments and (2) having a material global current account surplus and a significant bilateral trade surplus with the United States. The global current account surplus is the current account surplus of merchandise, services, and transfers with all other countries, while the bilateral trade surplus is the surplus in goods and services trade with one trading partner country only.

⁵One requirement pertained to reporting on certain U.S.-International Monetary Fund consultations, information about which was not publicly available in 1988. Treasury officials noted that the International Monetary Fund now makes information on these consultations available through the Internet.

employment. Treasury's impact-related analyses after the 1990s have generally cited the importance of broad macroeconomic and structural factors behind global trade imbalances. These reports have not directly discussed the impact of exchange rates on aspects of the U.S. economy set forth in the 1988 Trade Act, although Treasury's December 2004 report did identify exchange rate flexibility for certain Asian economies as an area of policy the administration is following to reduce global imbalances. Treasury officials stated that they consider the impact of the exchange rate on areas such as U.S. production and employment while conducting their analysis and that their current approach meets the intent of the exchange rate impact reporting requirements.

Many experts have concluded that China's currency is undervalued, by amounts ranging from a few percentage points to almost 50 percent, while some maintain that undervaluation cannot be determined. The significant variation in estimates can be attributed in part to different methodological approaches, but similar methodologies can also yield differences. Treasury officials, and some other experts we spoke with, stated that exchange rates assessments are especially challenging for developing economies with rapidly changing economic structures, such as China. Even among experts who believe that China's currency is undervalued, there is no consensus on how and when China should move to a more flexible exchange rate regime and whether or not loosening controls on capital flows—such as restrictions on Chinese citizens investing abroad—should be a part of that process.

A revaluation of the Chinese currency, the renminbi, could have implications for various aspects of the U.S. economy—with both costs and benefits—although the impacts are hard to predict. A higher-valued renminbi would make China's exports to the United States more expensive and U.S. exports to China cheaper (in terms of renminbi), which could increase U.S. production and employment in certain sectors, but the extent of these impacts depends on many factors. One key factor, for example, is the degree to which Chinese exports to the United States would be replaced by imports from other countries. Some groups could be negatively affected by a higher-valued renminbi, including U.S. producers who use imports from China in their own production and would face higher prices and costs of production. Consumers in the United States could also face higher prices. Finally, an upward revaluation of the renminbi could affect flows of capital to the United States from China, which have in recent years accounted for a significant source of financing of the U.S. current account deficit.

While we have no recommendations in this report, we observe that the level of concern over exchange rate issues—especially with respect to China—is not surprising in light of the rising U.S. trade deficit, the rapid growth of China’s exports to the United States, and the recent depreciation of the dollar against several major currencies. As trade agreements reduce many of the industry-specific barriers to world trade, there has been a shift in attention toward the macroeconomic aspects of trade, such as savings and investment rates and exchange rates. News that China’s trade and current account surpluses were higher than expected in 2004 increases the need for good information on factors affecting trade and financial flows—including exchange rates—and the implications of those flows for the United States. Treasury’s March 2005 report, in response to Congress’s mandate for more information on its assessments, provided a high-level discussion of key factors Treasury considers and shed additional light on the complexities of the assessments; but it did not provide—and was not required to provide—country-specific information about Treasury’s recent assessments. Since then, Members of Congress have continued to propose legislation directed at China’s currency issues. We believe that the analysis in our report enhances the basis for further discussion of exchange rate policy concerns.

We provided a draft report to the Department of the Treasury. Treasury provided written comments, which are reprinted in appendix VIII. Treasury stated that the report is generally thoughtful and hopes that it will contribute to increased understanding of the complex issues covered in its exchange rate reports. Treasury also emphasized several aspects of its exchange rate assessments and its reports. For example, with respect to Treasury’s reporting on U.S. economic impacts of exchange rates, it stated that when conducting its analysis it does consider how the exchange rate of the dollar affects areas such as the sustainability of the current account deficit, production, and employment. Treasury stated that it believes it is often more helpful to look at underlying developments that have an impact on exchange rates and other macroeconomic conditions rather than to achieve a false sense of precision by isolating the exchange rate in the analysis. Treasury also provided technical comments, which we incorporated in the report as appropriate.

Background

Congress passed the Omnibus Trade and Competitiveness Act of 1988 (the 1988 Trade Act) to achieve macroeconomic and exchange rate policies consistent with a sustainable current account balance.⁶ The law increases the executive branch's accountability for assessing the impact of international economic and exchange rate policies on the economy. Congressional concerns at the time included concern that the exchange rates of other countries placed competitive pressures on U.S. producers.

The 1988 Trade Act directs the Secretary of the Treasury to analyze the exchange rate policies of foreign countries for the purpose of considering whether any are manipulating their currencies to gain an unfair trade advantage and to report on international economic policies, including exchange rates.⁷ To find that a country is manipulating the rate of exchange between its currency and the U.S. dollar within the meaning of the Trade Act, Treasury must determine that the country

- is manipulating the exchange rate for the purpose of gaining an unfair trade advantage or preventing effective balance of payments⁸ adjustments, and
- has a material global current account surplus and a significant bilateral trade surplus with the United States.

If Treasury finds that a country is manipulating its currency as defined by the Trade Act, the act requires Treasury to initiate negotiations with that country to ensure a foreign currency exchange rate adjustment that eliminates the unfair trade advantage. Treasury's international policy and exchange rate reports must meet eight reporting requirements, including an analysis of currency market developments, an assessment of the impact of the exchange rate of the dollar on three broad aspects of the U.S.

⁶The current account balance is a summary measure of a country's net balance over a period of time with all other countries in trade of goods and services, income, and unrequited transfers (such as foreign aid payments and workers' remittances). The balance of trade in goods and services is a subset of the current account balance.

⁷The language pertaining to Treasury's manipulation assessment and exchange rate reporting obligations is in sections 3004(b) and 3005, respectively. 22 U.S.C. § 5304(b).

⁸The balance of payments is a summary measure of a country's total trade, other economic transactions, and financial flows. It is made up of the current account (current transactions), the capital and financial account (capital and financial transactions), and a balancing item to even out difficulties in recording international transactions.

economy, and an analysis of capital flows. (See app. II for the exact language of the law.)

China and Japan follow different policies for determining their currency values. China has, since 1994, when it unified its dual exchange rate system,⁹ pegged the value of its currency, the renminbi, to the U.S. dollar.¹⁰ Chinese authorities maintain this peg by standing ready to buy and sell renminbi in exchange for other currencies within a narrow band around the fixed rate. When there is an excess supply of foreign exchange at this rate, such as from surpluses in trade or net private capital flows, China's purchases of that excess lead to an increase in its foreign reserves. China maintains controls on capital flows that to some extent limit the volume of transactions in the foreign exchange market, although these controls have not prevented substantial recent capital inflows. In contrast, the Japanese yen is on an independent float, which means that its value relative to other currencies is determined by demand and supply in the currency market. In the past, Japan has carried out significant interventions in the foreign exchange market through the sale of yen in exchange for U.S. dollars, which has put downward pressure on the value of the yen relative to the U.S. dollar. Nevertheless, from January 2002 through January 2005, the yen's value relative to the dollar increased 22 percent, from 132 yen per U.S. dollar to 103 yen per U.S. dollar. Japan has not intervened in the foreign exchange market since March 2004.

Treasury Has Not Found Recent Instances of Currency Manipulation

Although the Chinese and Japanese governments have carried out certain economic policies and practices related to their currencies' values that have raised concerns among observers, Treasury has found in recent reports that neither country meets all the legal criteria for currency manipulation. Treasury's overall approach to determining the presence of currency manipulation under the terms of the Trade Act includes screening countries and economies using a range of indicators to identify some for closer examination, applying legally mandated criteria, and considering multiple aspects of economic conditions and activities. Although Treasury

⁹The dual exchange rate system consisted of an official rate that applied to state-controlled transactions including trade, and a lower market rate that applied to all other activities. See appendix IV for more details.

¹⁰The pegged rate has not varied from 8.28 per U.S. dollar since 1998.

has cited Taiwan, Korea, and China for currency manipulation in the past, it has found no such instances since 1994.

Stages in Treasury's Assessment of Currency Manipulation under the 1988 Trade Act

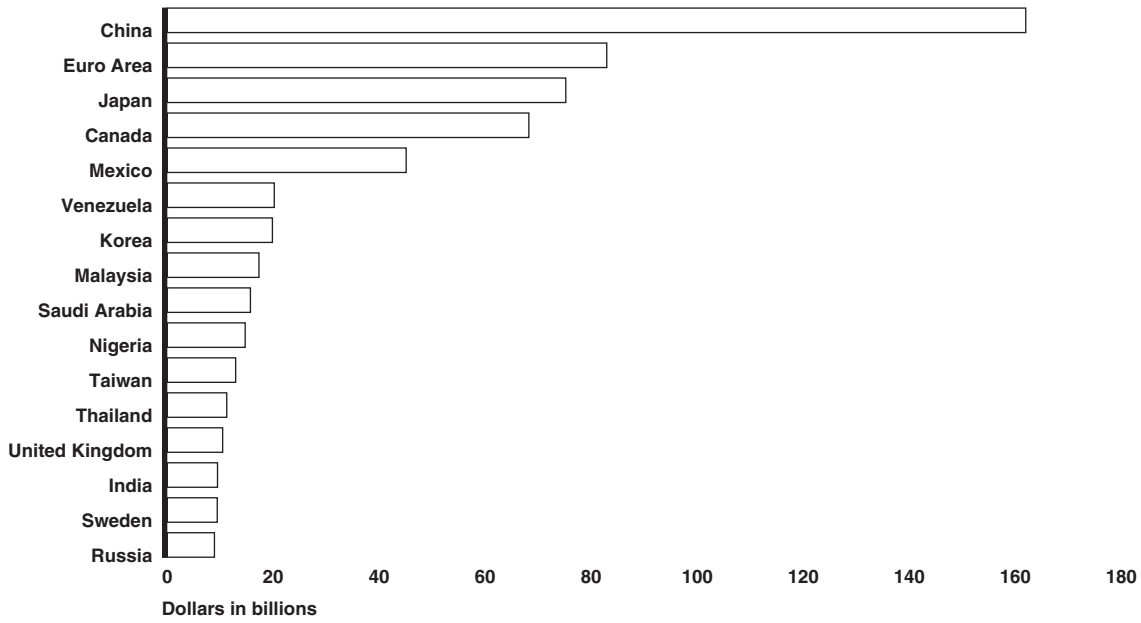
Treasury's Office of International Affairs begins its analysis of currency manipulation by soliciting input from country desk officials responsible for monitoring economic activity. Treasury officials stated that they use analyses and information obtained throughout the year as the basis for determining whether a country is manipulating its currency.¹¹ Treasury officials responsible for the currency manipulation analysis compile available information on exchange rates and other economic conditions. Treasury also collects information from external sources, such as private sector experts, and meets regularly with the IMF on broad international economic policy issues.

Treasury officials use the collected data to identify those economies¹² deserving closer examination. In addition to including bilateral trade surplus and global current account surplus information in this initial consideration, they also take into account other factors, such as changes in currency value, capital flow conditions, and country size. (Fig. 1 presents the ranking of economies with the largest bilateral trade surpluses with the United States, and fig. 2 presents the ranking of those same economies according to their current account balance as a percentage of gross domestic product.)

¹¹Treasury does not have formal departmental guidance for performing its assessment of manipulation under the 1988 Trade Act. According to Treasury, it provides guidance to desk officers for country analysis, specifying a set of indicators to be examined. Senior staff coordinate desk officer submissions to ensure that countries are analyzed in a consistent manner.

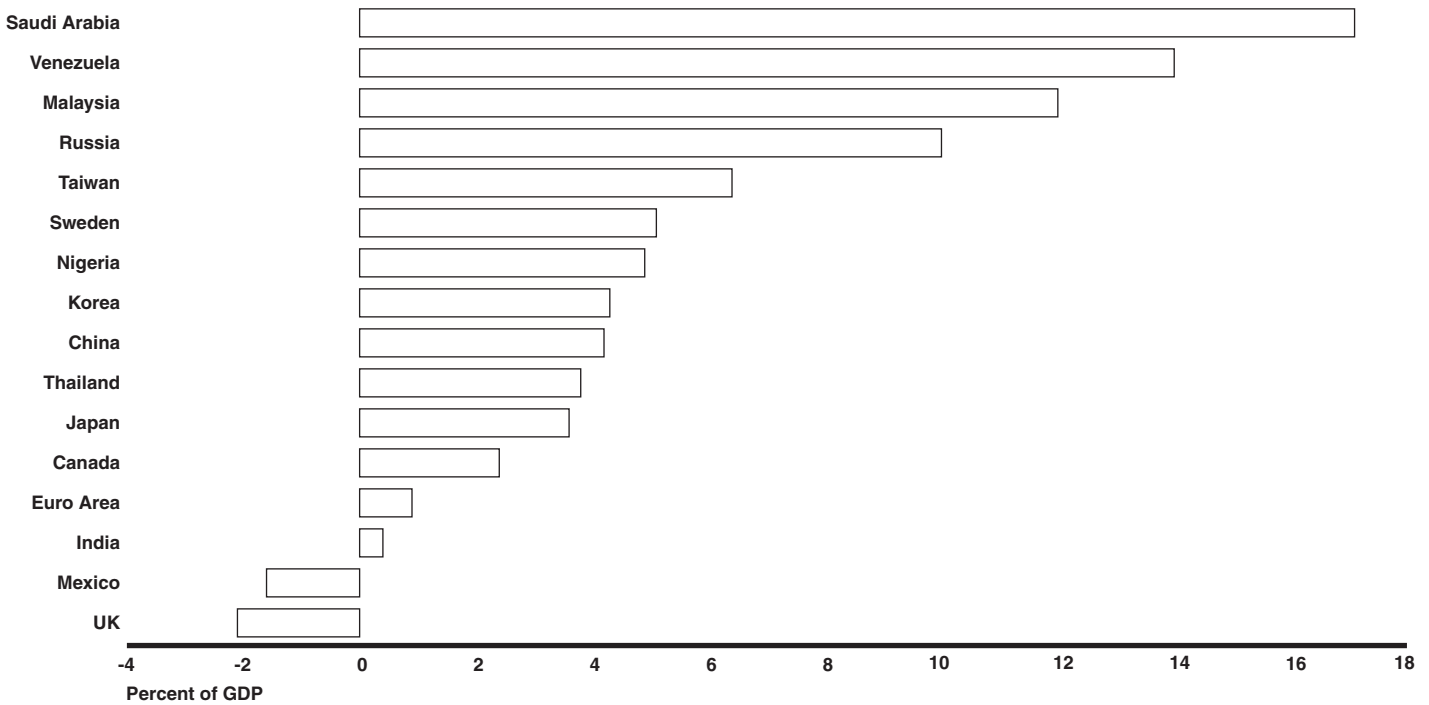
¹²Technically, not all the economies monitored by Treasury (e.g., Hong Kong) are countries.

Figure 1: Economies with the Largest Bilateral Merchandise Trade Surpluses with the United States, 2004



Sources: U.S. Department of Commerce, U.S. International Trade Commission.

Figure 2: Global Current Account Balance as Percent of GDP for Selected Economies, 2004



Source: Global Insight.

Note: Estimates for Asia-Pacific, Africa and Middle East, and Latin America updated using *Global Insight Quarterly Review and Outlook*, March 2005. The economies shown are those with the largest bilateral merchandise trade surpluses with the United States in 2004.

Treasury does not usually scrutinize economies with large, obviously explainable, trade balances, such as major oil-exporting nations, for currency manipulation. On the other hand, Treasury reviews some economies regardless of economic indicators. For instance, Treasury consistently reviews the activities of major U.S. trading partners, such as Japan, the European Union, and Canada. It also monitors the three economies that it previously found to be manipulating their currencies—Taiwan, Korea, and China. Treasury selectively includes other nations in currency manipulation assessments when it determines that economic conditions merit.

Treasury officials stated that they make a positive determination on currency manipulation only when all the conditions specified in the Trade Act are satisfied. According to these officials, to reach a positive finding of currency manipulation under the Trade Act, Treasury must find that the economies have a material global current account surplus and a significant bilateral trade surplus with the United States, and they are manipulating their currency with the intent of gaining trade advantage. Treasury has significant flexibility in determining whether countries meet these criteria. Treasury officials told us they do not have operational definitions of a “material” global current account surplus or a “significant” bilateral trade surplus.¹³

Treasury officials stated that they do not limit their analysis to the use of the material global current account surplus and significant bilateral trade surplus criteria listed in the Trade Act, but rather consider multiple aspects of the economy. Treasury officials also stated that they do not use a definitive checklist to make their determinations. Treasury officials told us that the country-specific economic and international trade factors they consider include

- restrictions and regulations governing the use and retention of foreign exchange and international financial flows;
- movement of exchange rates, authorities’ intervention in foreign exchange markets, and the effectiveness of that intervention;
- accumulation of foreign exchange reserves;
- institutional development related to banking and financial sectors;

¹³In its March 2005 report to Congress, Treasury defined these concepts generally. It defined “material global current account surplus” as a large current account surplus, measured as a percent of an economy’s GDP. It defined “significant bilateral trade surplus” as a large bilateral trade surplus with the United States, relative to the size of U.S. trade.

With respect to data for China, Treasury stated it uses official Chinese statistics when determining China’s global current account and trade balances, but it has also examined trade statistics reported by China’s trading partners. China’s global current account and trade balance statistics differ markedly from the aggregate statistics of its trading partners. One reason is that much trade to and from China travels via Hong Kong, and while both China and its trade partners usually report the actual source of their imports, they often record the destination of their exports as Hong Kong, even though the goods may go on to other markets. Treasury is analyzing these data discrepancies, according to Treasury officials.

-
- macroeconomic indicators, including gross domestic product (GDP) growth rates, inflation, and unemployment rates;
 - savings/investment balances and underlying factors;
 - foreign investment and international portfolio investment flow patterns;
 - trade regime barriers; and
 - external shock factors such as financial crises, oil price hikes, or natural disasters.

The 1988 Trade Act does not require Treasury to determine if a currency is undervalued while performing its currency manipulation assessments. Although Treasury has in the past included observations on whether currencies were undervalued,¹⁴ it no longer does so. While Treasury officials told us they do not make an official determination on undervaluation, in its March 2005 report to Congress (discussed below), Treasury included measures of undervaluation among the indicators it considers in its manipulation analysis.

Upon completion of the currency manipulation assessments, managers within the Office of International Affairs prepare recommendations for the approval of the Under Secretary for International Affairs.¹⁵ In the case of a positive finding of currency manipulation, Treasury initiates negotiations with officials of the economy in question, as called for by the Trade Act.

Treasury generally summarizes the results of the currency manipulation assessments in its semiannual report to Congress,¹⁶ but does not explain how it weighs the multiple economic factors it analyzes when making its currency manipulation determinations. Over time, Treasury reports have

¹⁴In October 1988, Treasury reported that the Taiwanese and Korean currencies were undervalued.

¹⁵According to Treasury officials, approval ultimately rests with the Secretary of the Treasury.

¹⁶While Treasury is only required to make a manipulation assessment on an annual basis, it includes an assessment in each of the semiannual exchange rate reports that will be discussed in the next section.

included varying lists of factors the department considers in conducting its currency manipulation analysis.¹⁷

Congressional concern over Treasury's currency manipulation assessments led to a mandate in the fiscal year 2005 Consolidated Appropriations Act requiring Treasury to report on how the statutory requirements of the 1988 Trade Act could be clarified administratively to enable currency manipulation to be better understood by the American people and by Congress. Treasury issued its report on March 11, 2005. In this report, Treasury provided a high-level discussion of factors it considers when conducting its currency manipulation assessments, including measures of undervaluation, capital controls, and trade balances, and also described difficulties related to rendering manipulation assessments. Treasury did not—and was not required to—provide information on a country-specific basis about recent currency manipulation assessments.

Treasury Has Not Found Recent Instances of Currency Manipulation under the Terms of the 1988 Trade Act

Since 1994, Treasury has not cited any economies for manipulating their currency as defined by the Trade Act. Treasury officials stated they have closely monitored recent economic behavior in China and Japan, due in part to the rapid accumulation of foreign currency reserves in those countries. Although Treasury has not cited China recently, it has engaged in discussions encouraging China to move to a more flexible exchange rate regime. Treasury did not find that Japan was manipulating its currency in 2003 and 2004. Treasury officials told us that they viewed Japan's interventions as a part of macroeconomic policy aimed at combating deflation in Japan, and they expressed skepticism about the efficacy of intervention to affect the yen's value.

Before 1994, Treasury Cited Taiwan, Korea, and China for Currency Manipulation

Since the enactment of the 1988 Trade Act, Treasury has identified three economies—Taiwan, Korea, and China—that manipulated their currencies under the Trade Act's terms. Treasury first cited Taiwan and Korea in 1988 and China in 1992. Taiwan was cited again in 1992. Each citation lasted for at least two 6-month reporting periods for Taiwan and Korea, while China's lasted for five reporting periods.

¹⁷For example, the October 2001 report listed two economic factors that Treasury considered to determine currency manipulation, the October 2003 report listed none, and the April and December 2004 reports listed seven.

Treasury reported evidence that the criteria for currency manipulation under the Trade Act had been met in most of these cases. At the time of their citations, Taiwan, Korea, and, on three occasions, China had relatively large bilateral trade surpluses with the United States and relatively large global current account surpluses. However, China, on two later occasions in the mid 1990s, had either a substantially declining current account surplus or a current account deficit when cited by Treasury for currency manipulation.¹⁸

The three economies also had other economic characteristics that Treasury considered when it determined they were manipulating their respective currencies. For instance, all three economies had also been rapidly accumulating foreign exchange reserves. In addition, for both Taiwan and Korea, Treasury found excessive restrictions on foreign exchange markets and capital controls and evidence of heavy direct intervention in foreign exchange markets by the authorities of Taiwan and Korea. In China's case, Treasury was concerned by Chinese efforts in 1991 and 1992 to frustrate effective balance of payments adjustments through the use of a dual exchange rate system. Treasury cited continued devaluations of the official exchange rate and excessive controls on the market rates. (See app. III for more details on Treasury's previous findings of manipulation for these three economies.)

As required by the Trade Act, Treasury entered into negotiations with Taiwan, Korea, and China, and all three made substantial reforms to their foreign exchange regimes. In addition, their currencies appreciated and external trade balances declined significantly until they reached the point at which the three were removed from the list of currency manipulators.¹⁹ Treasury continues to monitor the policies and practices of these economies for evidence of currency manipulation.

¹⁸For the fourth and fifth findings of manipulation against China, covering 1993 and 1994, Treasury reported that China's current account had, in the first instance, declined substantially, and, in the second instance, gone into deficit. Treasury officials observed that in those cases, mandated negotiations that had begun earlier were still being carried out and institutional changes deemed necessary to remedy conditions were incomplete.

¹⁹Taiwan's global current account surplus declined from 18.5 percent (1987) of gross national product (GNP) to 8.5 percent (1988) during the first period it was on the list of manipulators, and from 6.7 (1991) to 3.8 (1992) during the second period. Korea's current account surplus declined from 8.3 percent GNP (1987) to 2.5 percent (1989), and China's declined from 3.3 (1990) percent to a small surplus (1994).

Treasury's Recent Reporting on China and Japan

In recent reports Treasury has not found that either China or Japan meets the statutory criteria for currency manipulation. Since 2001 both countries have had periods of increasing current account surpluses and also periods of rapid accumulation of foreign exchange reserves.

With respect to China, while Treasury did not report data on China's global current account surplus for the second half of 2003 or the first half of 2004, Treasury officials stated that the surplus had not reached a material level. In April 2004, Treasury reported that China's overall trade surplus had been 2.6 percent of GDP in the second half of 2003. In December 2004, Treasury reported that for the first half of 2004 China had an overall trade deficit of 1 percent of its GDP.²⁰ In the same report, Treasury stated that while Chinese foreign exchange reserves had risen sharply, the accumulation was due in large part to steady foreign direct investment inflows and a sharp increase in other capital inflows.²¹ (See app. IV for more details on China's external account development in recent years.)

Treasury officials also stated that they do not think China's current restrictions in foreign exchange markets and other administrative controls on trade are comparable to conditions in the early 1990s. At that time, important factors in Treasury's determinations were China's pervasive direct controls on external trade activities and a dual exchange rate regime with massive restrictions and controls. Since then, China has removed restrictions on the convertibility of the renminbi for trade transactions and substantially liberalized its trade regime, including implementing a variety of reforms related to its accession to the World Trade Organization in 2001.

Since 1994, China has followed a policy of maintaining its currency peg to the dollar regardless of economic conditions, according to Treasury officials. For example, during the Asian financial crisis of the late 1990s,

²⁰China reports its current account balance on an annual basis, with a lag of several months after the end of the year. In July 2004, the IMF reported that based on preliminary data China had a global current account surplus of 3.3 percent of GDP for 2003. Also in July 2004, Global Insight's estimate for China's 2004 current account surplus was 1.0 percent of GDP. Recent estimates from Global Insight for China's global current account surplus for 2004 are higher.

²¹The IMF defines foreign direct investment as the acquisition of a lasting interest in an enterprise operating in an economy other than that of the investor and characterized by an effective voice in management of the enterprise. The Organization for Economic Cooperation and Development states that a 10 percent or greater ownership stake would satisfy this requirement.

China kept the renminbi's value steady rather than depreciating it to stay competitive with the cheaper currencies of other Asian exporting economies. While this helped maintain the stability of its own economy and the region, it was not consistent with a policy of keeping a cheap currency for trade advantage, according to Treasury officials.

Despite the absence of a positive determination on currency manipulation, Treasury has stated that China should move from its long-term fixed exchange rate and has engaged in discussions with China to advocate a shift to market-based exchange rate flexibility. The Chinese government has indicated its willingness to move to a flexible exchange rate regime after undertaking a series of preparative steps but has established no specific timetable to complete them. To date, China has taken some steps to reduce barriers to capital outflows, liberalize interest rates, remove investment restrictions, and strengthen its financial infrastructure. Treasury has provided technical assistance to help China develop market mechanisms needed for the transition to a flexible regime, including central bank supervision of currency risk and regulation of foreign exchange derivative markets.

With respect to Japan, Treasury officials stated that the country's ongoing current account surplus reflects a long-term imbalance between savings and investment. In the last three exchange rate reports covering 2003 and 2004, Treasury noted that Japan justified its currency market interventions as a response to market overshooting, or excess volatility, and that such activity did not target particular exchange rate values. Treasury officials stated that Japan's interventions were part of a macroeconomic policy aimed at combating domestic deflationary pressures. In addition, Treasury officials expressed general skepticism about the efficacy of intervention.²² Japan has not intervened to prevent the appreciation of the yen since March 2004.

²²Treasury officials noted that between late February 2002, when the Federal Reserve's trade-weighted index of the dollar reached its most recent maximum, and the end of June 2004, the dollar depreciated by 18.7 percent against the yen, broadly similar to its 22.6 percent depreciation against the major currency component of the index over the same period.

Treasury Has Generally Complied with Reporting Requirements, but Its Approach to Assessing the Impact of Exchange Rates on the U.S. Economy Has Changed

Treasury has generally complied with the reporting requirements mandated by the 1988 Trade Act (see table 1), although its discussion of U.S. economic impacts has become less specific over time. Treasury exchange rate reports have consistently included information responding to four requirements: (1) analysis of currency market developments, (2) evaluations of underlying conditions in the United States and other economies, (3) descriptions of currency market interventions, and (4) analysis of capital flows.²³ Treasury can respond to a fifth reporting requirement, recommendations for changes necessary to attain a sustainable current account balance, at its discretion. A sixth requirement, reporting outcomes of negotiations, is only relevant when Treasury makes a finding for currency manipulation under section 3004 of the act, and Treasury has complied with this requirement when applicable. Treasury did not include updates for the seventh requirement—U.S.–IMF consultations—in six reports from 2001 to 2004. According to Treasury officials, by this time summaries and complete reports of IMF consultations with the United States had become publicly available on the Internet, and reporting on these consultations was unnecessary. The December 2004 report included an Internet link to IMF consultation information.

²³Explicit capital flow analysis was not included in reports issued from 1995 to 1997.

Table 1: Treasury’s Reporting on 1988 Trade Act Exchange Rate Requirements

Trade Act reporting requirements	Reporting status
Analysis of currency market	Reported since 1988
Evaluation of underlying conditions	
Description of currency market intervention	
Report on capital flows ^a	Reported at Treasury discretion
Recommendations for sustainable current account balance	
Report on negotiation results per section 3004(b)	Reported as needed
Update on U.S.–IMF Article IV consultation	Deemed unnecessary by Treasury from 2001 through 2003 ^b
Assessment of impact of the exchange rate on:	Reports generally discussed at least some impact elements through 1999.
(a) Ability of the United States to maintain sustainable current and merchandise trade accounts	Reports generally did not directly discuss impact elements in 2000-2004. ^c
(b) Production, employment, and non-inflationary growth	
(c) U.S. global industrial competition and external indebtedness	

Source: GAO analysis of Treasury exchange rate reports.

^aTreasury did not include explicit capital flow analysis in reports issued from 1995 to 1997.

^bTreasury’s December 2004 report included an Internet link to IMF consultation information.

^cTreasury’s December 2004 report identified exchange rate flexibility for certain Asian countries as one area of policy the administration is following to reduce global imbalances.

Treasury has over time changed its approach for complying with its remaining requirement—an assessment of the impact of the exchange rate on the U.S. economy. According to Treasury officials and our analysis of the exchange rate reports, Treasury’s view of the role of exchange rates on the U.S. balance of payments and the economy in general has changed since 1988. Treasury’s reports generally discussed at least some elements of the impact-reporting requirement from the late 1980s through the 1990s. From 1988 into the early 1990’s, Treasury’s reports generally discussed exchange rate effects on U.S. external balances and economic growth. From 1994 through 1999 and into 2000, Treasury reports generally advocated a “strong dollar” policy. Reports in 1994 through 1997 discussed specific U.S. benefits of such a policy, such as lower inflation and higher investment and economic growth.

Treasury's impact-related analysis after the 1990's cited the importance of broader macroeconomic and structural factors behind global trade imbalances. Treasury viewed exchange rates as one of several interacting economic variables needing attention to address global imbalances. For example, in the October 2003 and April 2004 reports, Treasury reported that the current account deficit represented the gap between savings and investment, and its sustainability depended on the attractiveness of U.S. capital markets to foreign investors. Its analysis also emphasized the importance for U.S. economic interests of strong growth of U.S. trading partners. Treasury's most recent report in December 2004 did identify exchange rate flexibility for certain Asian economies as an area of policy the administration is following to reduce global imbalances.²⁴

Given its broad approach to impact-related analysis, Treasury's semiannual reports do not contain discrete examinations of the effect on the U.S. economy of changes in the dollar's value. Thus, Treasury's reports do not specifically address the impact of the dollar on aspects of economic activity listed in the 1988 Trade Act, including production, employment, and global industrial competition. Treasury states that it does consider the impact of the exchange rate on these variables and that their broader approach meets the intent of the impact reporting requirements set forth in the 1988 Trade Act.

Estimates of the Undervaluation of China's Currency Vary Widely, and Views on Policy Steps Differ

Many experts maintain that China's currency is significantly undervalued, while some believe that undervaluation is not substantial or that calculating reliable estimates is not possible. Even among experts who believe that China's currency is undervalued, there is no consensus on how and when China should move to a more flexible exchange rate regime and whether or not capital account liberalization, including, for example, lifting restrictions on outward flows of Chinese capital, should be a part of that process.

²⁴The other policies cited were increasing U.S. public and private sector savings and improving global economic growth.

**Many Experts Conclude
China's Currency is
Undervalued, but
Methodological Challenges
Cause Differences**

Most of the estimates we reviewed indicated that China's currency is undervalued to some extent, with some experts suggesting substantial undervaluation and others slight misalignment. While there is no consensus methodology for determining whether a country's currency is undervalued, experts have applied a number of commonly used approaches to the case of China.²⁵ (See app. V for details of the various methodologies and their limitations.) These approaches generally involve determining an equilibrium exchange rate, broadly defined as the exchange rate that is consistent with a country's economic fundamentals,²⁶ when the country is operating at full employment and in a free market. As table 2 illustrates, estimates of renminbi undervaluation range from none to over 50 percent. Some of these estimates are rough calculations based on "rule-of-thumb" assumptions while others are based on formal models. In addition, some of these estimates may be most appropriately categorized as measures of near-term undervaluation or short-term pressure indicators. Moreover, the margins of error for these estimates are generally unknown.

²⁵Some of these include the Purchasing Power Parity (PPP), Fundamental Equilibrium Exchange Rate (FEER), Behavioral Equilibrium Exchange Rate (BEER), Macroeconomic Balance, and External Balance approaches.

²⁶These analyses can focus on different sets of economic fundamentals to determine the equilibrium rate.

Table 2: Estimates of Undervaluation of the Renminbi^a

Source	Estimate (percentage)	Methodology ^b
Lawrence Lau (Stanford) ^c	Indeterminate	Qualitative assessment, with consideration of factors such as capital account restrictions
IMF	No clear evidence of substantial undervaluation	Macroeconomic Balance approach ^d
Stephen Roach (Morgan Stanley)	Not undervalued	PPP (relative version) and Qualitative approaches
Barry Bosworth (Brookings Institute) ^e	Not fundamentally undervalued	Macroeconomic Balance approach
	40	PPP (absolute version) approach
Pieter Bottelier (Johns Hopkins) ^f	4-5	External Balance approach
Barry Eichengreen (University of California, Berkeley)	5-10	Qualitative approach
Jim O'Neill (Goldman Sachs)	9.5-15	FEER/BEER approach (lower) External Balance approach (upper) (Trade-Weighted Renminbi)
Funke/Rahn (Hamburg University)	11	BEER approach
Goldstein/Lardy (Institute for International Economics)	15-25	External Balance approach
Gene Hsin Chang (University of Toledo)	22	PPP (absolute version) approach
Jon Anderson (UBS) ^g	15-25	External Balance approach
Jeffrey Frankel (Harvard)	35	PPP (absolute version) approach
Ernest Preeg (Hudson Institute, Manufacturers Alliance/MAPI)	40	External Balance approach
Benassy-Quere et al. (University of Paris)	47.3	BEER approach
Big Mac Index (<i>Economist</i>) ^h	56	PPP (absolute version) approach

Source: GAO synthesis of published studies and selected communication with authors.

^aEstimates using certain methodologies are particularly sensitive to changes in China's balance of payments data, and thus can change as new information becomes available.

^bPPP is Purchasing Power Parity, FEER is Fundamental Equilibrium Exchange Rate, and BEER is Behavioral Equilibrium Exchange Rate. Appendix V describes these methodologies in detail.

^cLau stated that no methodology can determine the true equilibrium rate given capital account restrictions in China.

^dThe IMF uses at least in part the Macroeconomic Balance Approach, which is closely related to FEER. Its view on the renminbi is based on the perceptions of "most directors."

^eBosworth's two methodological approaches resulted in significantly different results. He stated that his overall conclusion is that this type of analysis implies a degree of precision that does not really exist.

^fBottelier reported this estimate, using a Basic Balance approach, in January 2005. He stressed that there is no standard methodology for estimating undervaluation and such estimates are valuable primarily as indicators of direction of potential change.

^gAnderson stated that he does not have an estimate for "fundamental" over or undervaluation of the renminbi.

^h*The Economist* has also calculated a PPP (absolute version) index based on the “Tall Latte,” which showed the renminbi to be undervalued by 1 percent.

The significant variation in estimates of renminbi undervaluation can be attributed in part to different methodological approaches, but similar methodologies can also yield differences. The absolute version of the Purchasing Power Parity (PPP) methodology, which determines the exchange rate at which identical goods would trade at the same price in both countries, produces estimates that generally show the renminbi is considerably undervalued. The External Balance approach is based on calculating an exchange rate that would result in a country achieving a sustainable balance in its external accounts, such as its current account balance or its trade balance. In the studies we reviewed, this approach generally produced estimates of currency undervaluation for China from 4 to 25 percent, with one estimate of 40 percent.²⁷ Moreover, there are often significant differences in estimates even when similar methodologies are used. For example, experts who use the Behavioral Equilibrium Exchange Rate (BEER) approach, which uses econometric relationships between exchange rates and other economic variables to estimate an equilibrium exchange rate, have found renminbi undervaluation ranging from 11 to 47 percent.

Some experts doubt that equilibrium exchange rates can be estimated and thus believe that whether a currency is under- or overvalued cannot be reliably determined. Treasury officials and some other experts we spoke with stated that estimating equilibrium exchange rates is especially challenging for developing economies with rapidly changing economic structures, such as China. According to Treasury, the determination of under- or overvaluation requires analysis of key economic variables, the measures for which are subject to considerable uncertainty in China. Moreover, determining an equilibrium exchange rate is especially difficult for China because China restricts the outflow of funds from the country. (See app. IV for a discussion of China’s capital controls.)

²⁷The economic profession has no consensus on the model to be used in determining what the appropriate or sustainable external balance should be for a given country. Some experts have pointed out that certain external account balance standards, such as an overall balance of zero in a country’s balance of payments accounts, would require that China run a trade deficit to meet that standard in order to offset the net investment flows into the country.

Some observers and analysts view China's growing foreign exchange reserves as evidence that the renminbi is undervalued. China's foreign exchange reserves increased by \$399 billion dollars—185 percent—from the end of 2001 to the end of 2004. These observers maintain that the reserves, which partly reflect China's surpluses in global trade²⁸ and foreign direct investment (FDI), are evidence that the value of the renminbi is too low relative to the demand for renminbi-denominated goods, services, and other investments; as a result, China must purchase large amounts of dollars to keep the renminbi's value from increasing beyond its U.S. dollar peg.

Using reserve accumulations as evidence of a mismatch between the current value of the renminbi and its long-run equilibrium value has limitations, however, according to several analysts. China's foreign reserve accumulation has several components: the current account balance, FDI net inflows, non-FDI net inflows (which include portfolio investment such as stocks and other investments), and undocumented capital—referred to as errors and omissions.²⁹ China's current account surpluses and FDI inflows were the primary components of the \$117 billion increase in its reserves in 2003, accounting together for about 80 percent. Net non-FDI inflows and errors and omissions accounted for about 20 percent of the reserve increase.³⁰ (See further details in app. IV.)

Views on Policy Steps for China Differ

Treasury has urged China to move to a market-based flexible exchange rate and take steps to remove restrictions on capital flows. There is debate regarding steps and timing on both issues. With respect to whether and when China should change its exchange rate policy, there are varying views even among experts who believe the currency is undervalued. Some experts have recommended that China immediately revalue the renminbi, either relative to the U.S. dollar or to a broader group of currencies. Others have suggested that China should move to a more flexible system—with a

²⁸China's current account surpluses were 1.5 percent, 2.8 percent, and 3.2 percent of GDP in 2001, 2002, and 2003, respectively. Its 2004 current account balance, not yet officially reported, is 4.2 percent of GDP, according to a March 2005 Global Insight estimate.

²⁹These non-FDI inflows and undocumented capital are believed to include speculative inflows in anticipation of a renminbi revaluation.

³⁰Also in 2003, China used \$45 billion of its foreign exchange reserves to support, or recapitalize, its banks.

freely floating exchange rate being the most flexible. Analysts have identified potential advantages of such policy changes for China and also for other countries. Analysts have also identified a number of challenges for China. For example, some experts have cautioned that there could be economic costs to China if the monetary authorities revalue the currency and guess wrong about how large the revaluation should be. They have stated that a small revaluation could encourage further speculative capital flows into the country in anticipation of a further revaluation, which would increase reserves. Some have also expressed concern that a large appreciation in the renminbi's value could unnecessarily slow down the Chinese economy and worsen labor conditions in the country, which has high unemployment in certain regions.

There are also varying views on changes in China's policies regarding restrictions on capital flows. China currently restricts outward flows of Chinese capital for foreign direct investment and purchases of securities abroad, although it eased some restrictions in 2004. (See app. IV for additional information on these restrictions.) A number of advocates of greater exchange rate flexibility maintain that China is not ready for significant capital account liberalization and that the government should maintain some capital controls after moving to a more flexible exchange rate. One reason cited is that liberalization would expose China's financial sector to risk if, for example, banks in China that are not financially strong experienced erosion of their deposit base from investors switching funds offshore.³¹

Several policy options advocated for China's currency involve a gradual or multistep process, which proponents maintain could minimize the potential for adverse effects of revaluation. One expert, for example, has advocated a two-stage currency reform process for China. The first stage would entail pegging the renminbi to a group of currencies, including the dollar, rather than pegging to the dollar alone; a 15 to 25 percent revaluation; and setting a 5 to 7 percent band for renminbi fluctuation against the new currency basket. The second step would be a significant liberalization of capital outflows and adoption of a managed float. The

³¹A related concern that has been expressed is that if China's restrictions on capital outflows were lifted, bad news about the banking system or the economy more generally could cause large-scale capital flight from China and sharp currency depreciation.

second step would occur following adequate strengthening of China's banking system.³²

The U.S. Impact of a Renminbi Revaluation Would Depend on Multiple Factors

A revaluation of the renminbi could have implications for various aspects of the U.S. economy—with both costs and benefits—although the impacts are hard to predict.³³ First, a higher-valued renminbi would make Chinese exports to the United States more expensive and U.S. exports to China cheaper—with the extent depending on several factors—which could increase U.S. production and employment in certain sectors. Some groups could be negatively affected by a higher-valued renminbi, including U.S. producers who use imports from China in their own production and would face higher prices and costs of production. Consumers in the United States could also face higher prices. Finally, an upward revaluation of the renminbi could also affect flows of capital to the United States from China, which have in recent years accounted for a significant source of financing of the U.S. trade deficit.

Several Factors Could Significantly Influence the Impact of China's Currency on the U.S. Economy

Although a revaluation of the renminbi relative to the dollar would tend to make U.S. exports to China cheaper and U.S. imports from China more expensive, just how much more expensive China's imports would become—and the impact on the U.S. trade deficit, production, and employment—would ultimately depend on several factors. Some key factors include the following:

³²This two-stage approach has been proposed by Morris Goldstein. (See Morris Goldstein, "China and the Renminbi Exchange Rate," in C. Fred Bergsten and John Williamson, ed., *Dollar Adjustment: How Far? Against What?* Institute for International Development, Washington, D.C: 2004.) Goldstein also summarizes other proposed approaches, including (1) a "go-slow" approach, combining a series of trade, capital account, and tax measures with a very small revaluation; (2) floating the currency but maintaining controls on capital outflows, and (3) open capital markets with a floating exchange rate.

³³The discussion in this section presumes that if China did change its nominal exchange rate, it would result in a change in its inflation-adjusted, or real, exchange rate. That is, it assumes that the real exchange rate is an instrument over which Chinese authorities have some control. This is in contrast to an assumption in traditional economic theory that under free market conditions countries' real exchange rates are determined by broader economic relationships, and governments cannot control them in the long run. Many analyses of developing economies with significant economic controls still in place, such as China, presume that governments in these economies do have some ability to affect real exchange rates over some period of time.

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- *How much of the exchange rate appreciation is “passed-through” to higher prices for U.S. purchasers.* Experience with other nations generally shows that pass-through is less than complete, particularly in the short term, because contracts for exports to the United States may be written in dollars. Longer term, the extent of pass-through depends on factors such as the extent to which Chinese exports to the United States are made up of inputs from other countries (since these would become cheaper with a stronger renminbi),³⁴ and the extent to which Chinese exporters reduce their costs or profit margins.
 - *The extent of the U.S. market response to the higher prices.* In some markets, U.S. purchasers may continue to buy nearly the same volume of Chinese imports at the higher prices, while in others U.S. purchasers may decide to sharply reduce their purchases. The less responsive the overall U.S. demand is to price changes of Chinese imports, the less changes in the renminbi-dollar exchange rate will affect the U.S. trade balance, production, or employment.³⁵ The same is true on the other side of the market; if Chinese demand for U.S. exports is unresponsive to the lower prices of U.S. goods, Chinese buyers will not buy much more in the short run even if prices of U.S. exports have fallen.
 - *The extent to which products now being manufactured in China would be produced in other countries rather than in the United States.* It is probable that goods from other countries with low labor costs would replace a portion of Chinese exports to the United States if the renminbi were to increase in value, thus reducing the impact on the U.S. economy. Specifically, some experts believe that decreased imports from China would be largely replaced by slightly higher-priced imports from other low-income countries such as Sri Lanka, Vietnam, Bangladesh, and Pakistan, among others, instead of being manufactured in the United States.

³⁴It also depends on other factors, such as the flexibility of the Chinese labor market and the strategic pricing decisions of multinational enterprises.

³⁵In fact, the total import bill and thus the trade deficit could rise in the short run rather than fall, in response to a revaluation of the renminbi, if prices of Chinese imports go up faster than demand for Chinese goods falls. Economists have found empirical evidence of this short-term effect of exchange rate changes, which is sometimes called the J-curve.

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- *Whether other countries follow China and adjust their policies.* Some analysts contend that the renminbi's peg to the dollar induces other East Asian countries to intervene in currency markets to keep their currencies weak against the dollar so that they can remain competitive with China. Some believe that a revaluation by China might encourage other countries to change their exchange rate policies as well.³⁶ This would magnify the impact of a revaluation on the United States.
 - *The time period necessary for these adjustments to take place.* While a currency appreciation has some immediate effects, the impacts on the trade statistics, production decisions, and employment generally take a longer time. In the short term, the U.S. trade deficit may increase as it takes more dollars to buy the same amount of Chinese products. As the higher prices are factored into new purchasing decisions, the appreciation would lead to effects on U.S. production and employment that could occur over a period of months or years.

(See app. VI for an additional discussion of these and other factors affecting the extent of revaluation impacts.)

A Renminbi Revaluation Could Have Both Costs and Benefits for the U.S. Economy

Changes in the value of a currency like the renminbi could affect the U.S. economy in a variety of ways, and assessing the effects is complex. For example, an increase in the renminbi's value could affect the mix of jobs in certain sectors, benefiting those sectors that compete directly with foreign products. However, in terms of employment, many experts believe that a rise in the value of the renminbi relative to the dollar would be unlikely to have much, if any, effect on aggregate employment in the United States. This is because the overall level of U.S. jobs is generally viewed as being largely determined by factors such as the domestic labor supply and broader macroeconomic factors such as U.S. monetary policy. In addition, an increase in the value of the renminbi could have other types of impacts that affect the economy more broadly, such as influencing the prices of goods and interest rates.

³⁶There are differing views about how a revaluation of the renminbi might affect the exchange rates of other Asian countries. One view is that if China revalued its currency against the dollar, other Asian economies, including Korea, Taiwan, and perhaps Japan, would also let their currencies appreciate relative to the dollar. In contrast, some experts, citing modeling exercises, maintain that these currencies are unlikely to strengthen relative to the dollar if the renminbi appreciates and, in fact, might weaken, which would have opposite implications for the U.S. balance of payments.

Examples of groups that would be expected to benefit from an upward revaluation of the renminbi include:

- *U.S. firms and workers exporting to China*—U.S. exports would become cheaper for Chinese consumers.
- *U.S. firms and workers producing goods that compete with Chinese imports*—Chinese imports would become more expensive for U.S. consumers.
- *Low-wage countries other than China*—Their exports could displace Chinese exports to the United States.
- *U.S. investors in China*—The value of assets in China would increase.

Examples of groups that would be expected to experience some losses from an upward revaluation of the renminbi include:

- *U.S. consumers*—Imports from China would cost more.
- *Certain U.S. producers*—Firms that import Chinese components in the production of final goods would pay more for those components.
- *Borrowers in U.S. capital markets*—A possible decrease in capital flows from China could increase pressure on U.S. interest rates.
- *Multinational firms in China*—The cost of production in dollars would increase and possibly raise the prices of final goods shipped to the United States.

Analysis of Impacts of a Renminbi Revaluation on the U.S. Deficit and Manufacturing Sector Illustrates the Importance of Methodological Assumptions

Discussions of a revaluation of the renminbi have tended to focus on the outcome for workers in the U.S. manufacturing sector because U.S. employment in this sector has shrunk considerably in recent years and is believed to be sensitive to international trade.³⁷ Predicting the manufacturing sector production and employment effects of a change in the renminbi's value is complex and is related to changes in trade flows. Therefore, some analysts have used estimates of changes in the U.S. trade deficit to estimate potential manufacturing production and employment effects, at least over the short run, although such linkages involve further uncertainties.

The following exercise illustrates how possible impacts of a renminbi revaluation on the U.S. trade deficit could vary under different assumptions.³⁸ The estimates use as a starting point an assumption for the relationship between the overall exchange rate of the dollar and the U.S. trade deficit³⁹ from the IMF's April 2004 *World Economic Outlook* and then illustrate the impact of additional assumptions regarding exchange rate pass-through, import displacement, and follow-on exchange rate adjustments (see table 3).

³⁷The number of jobs in the U.S. manufacturing sector declined by about 2.8 million, or 15.9 percent, between 2000 and 2003, according to the Bureau of Labor Statistics. One recent study estimated that about 314,000 of those jobs were lost due to U.S. trade with all countries. (See Martin Bailey and Robert Lawrence, "What Happened to the Great U.S. Job Machine? The Role of Trade and Electronic Offshoring" Brookings Papers on Economic Activity; 2004; 2: Washington, D.C. One study that looked directly at the relationship between U.S. manufacturing employment and exchange rates estimated that for each 1 percent increase in the real trade-weighted value of the dollar, the number of workers employed in U.S. manufacturing falls by 0.12 percent (or by about 17,400 jobs in 2003). (See Robert Blecker, "The Benefits of a Lower Dollar," EPI Briefing Paper, 2003.)

³⁸We use these percentages of revaluation for illustrative purposes only.

³⁹This assumption is that a 10 percent depreciation in the real (inflation-adjusted) trade-weighted value of the dollar leads to an improvement in the U.S. trade balance equal to 0.5 percent of GDP.

These assumptions are not analytically precise, and other researchers have used different assumptions.⁴⁰

Table 3: Illustrative Scenarios of Upward Revaluation of the Renminbi on the U.S. Trade Deficit

Scenario	Decrease in U.S. trade deficit (dollars in billions)	
	5 percent upward revaluation	20 percent upward revaluation
Scenario 1: Baseline assumption, ^a with no additional assumptions about exchange rate pass-through, shift to other foreign sources, or follow-on exchange rate adjustments	2.8	11.1
Scenario 2: 50 percent exchange rate pass-through and no shift to other foreign sources ^b	1.4	5.5
Scenario 3: 50 percent exchange rate pass-through and 40 percent shift to other foreign sources	0.8	3.3
Scenario 4: Follow-on exchange rate adjustments (Korea, Taiwan, and Japan) ^c plus 50 percent exchange rate pass-through and 40 percent shift to other foreign sources	3.3	13.3

Source: GAO analysis based on assumptions specified.

^aThese estimates employ a rough assumption discussed in the IMF's April 2004 *World Economic Outlook* that a 10 percent depreciation in the dollar would lead to an improvement in the U.S. trade balance equivalent to 0.5 percent of GDP.

^bSpecifically, this scenario assumes that the exchange-rate pass-through is 50 percent less than any pass-through level represented in scenario 1.

^cThe follow-on exchange rate adjustments are assumed to be half as large, in percentage terms, as the renminbi revaluation.

⁴⁰For example, prominent analysts have used an estimate for changes in the value of the dollar relative to changes in the trade deficit that is about double the rule employed in this illustration—that a 1 percent decline in the trade-weighted value of the dollar would lead to a \$10 billion reduction in the U.S. trade deficit (implying a 10 percent decline leads to a \$100 billion reduction in the trade deficit—roughly 1 percentage point of GDP). See Morris Goldstein (2004), “China and the Renminbi Exchange Rate” in C. Fred Bergsten and John Williamson, ed., *Dollar Adjustment: How Far? Against What?*, Institute for International Economics, Washington, D.C.: 2004. See also Ernst H. Preeg, “Exchange Rate Manipulation to Gain an Unfair Competitive Advantage: The Case of Japan and China” in C. Bergsten and J. Williamson (eds.) *Dollar Overvaluation and the World Economy*, Institute for International Economics, Washington, D.C.: 2003.

As shown in the table, with a hypothetical upward revaluation of 20 percent, the estimates for trade deficit reduction due to a revaluation of the renminbi under these assumptions range from \$3.3 billion to \$13.3 billion, depending on pass-through, the displacement effect, and follow-on exchange rate adjustments. Estimates outside of the range of estimates provided here could be obtained using different assumptions. These estimates could change further by accounting directly for other factors such as the sensitivity of U.S. demand to price changes of Chinese imports.

Some analyses have drawn conclusions about the impact of exchange rate changes on U.S. manufacturing jobs by using additional assumptions to those employed above. For example, one analysis used the assumption that a \$1 billion increase in the U.S. trade deficit would lead to a decline in U.S. manufacturing jobs of about 15,000.⁴¹ Applying such a value to estimates of a 20 percent renminbi revaluation, under the assumptions shown in scenario 3, would lead to estimates of manufacturing sector job impacts of about 49,800 jobs.⁴² Under scenario 4, with the additional assumption of follow-on exchange rate adjustments if the renminbi were revalued, the manufacturing sector job impact estimate would be 199,000. These analyses have limitations. Researchers have observed that trade affects the demand for manufacturing labor in complex ways, particularly with respect to imported goods and components. Moreover, as noted above, the long-run level of employment in the economy is generally viewed as being determined by demographic and broader macroeconomic factors such as monetary policy. Thus, to the extent there are manufacturing sector job impacts of a renminbi revaluation, they may be offset by job losses in other sectors of the economy.

⁴¹That value is similar in magnitude to job-multiplier analyses used in other studies, including a 1997 government analysis of NAFTA job impacts that assumed that about 13,000 jobs are supported for every \$1 billion in increased U.S. exports.

⁴²According to the U.S. Bureau of Labor Statistics, total employment in the U.S. manufacturing sector was about 14.3 million at the end of 2004.

An Upward Renminbi Revaluation Could Have Implications for U.S. Capital Flows

Capital flows must also be considered in an assessment of the implications of a renminbi revaluation. The U.S. bilateral trade deficit with China—and its maintenance of a fixed exchange rate to the dollar—has been accompanied by an inflow of funds into U.S. capital markets from China.⁴³ This has occurred during a period of an overall rise in inflows of foreign capital accompanying increasing U.S. trade and current account deficits. To the extent that a revaluation of the renminbi would lead to a decrease in the U.S. global current account deficit, it would also be associated with lower capital inflows. Such capital inflows—U.S. borrowing from foreign sources—can benefit the United States by lowering interest rates and stimulating investment and consumption. However, U.S. interest payments on this foreign-held debt are sent abroad.⁴⁴ In addition, some analysts believe that U.S. dependence on inflows of foreign capital carries risk because of the potential for foreign investors to decide to hold or purchase less U.S. debt. The potential for, and consequences of, a widespread withdrawal of investment funds from U.S. markets has recently been debated. While some analysts believe that the effects of a foreign withdrawal from U.S. financial markets—or a reduction in foreign purchases of U.S. debt—would have limited effects over the long run, some acknowledge that short-run disruptions, such as the loss of value of assets and higher interest rates, could be significant.

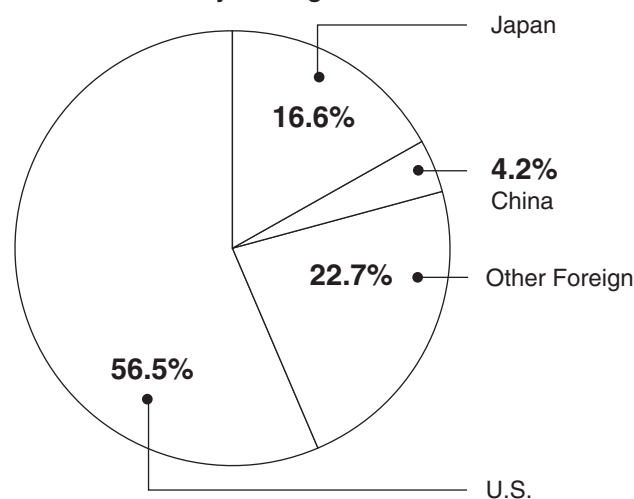
⁴³When the United States runs a current account deficit, it necessarily borrows from the rest of the world by having a net inflow of foreign capital.

⁴⁴Some analysts have focused on the broader issue of the overall level of the U.S. debt owed to both citizens and foreigners and the implications of future interest obligations more generally for the U.S. government and the U.S. economy. They note that inflows of foreign capital accompanying the U.S. current account deficit are one manifestation of a relatively low U.S. savings rate.

According to Treasury data, about 44 percent of the total value of outstanding U.S. Treasury securities held by the public is held by foreigners. At the end of 2004, China held 4.2 percent of the total holdings of outstanding U.S. Treasury securities, which is about 10 percent of these securities held by foreigners (see fig. 3).⁴⁵ By far the largest holder of U.S. Treasury securities is Japan, which holds 16.6 percent. The United Kingdom, with 3.0 percent, is third behind China.⁴⁶

Figure 3: Percentage of U.S. Treasury Securities Held by Japan and China, 2004

Total U.S. Treasury holdings = \$4.27 trillion



Source: GAO calculations based on U.S. Department of Treasury and Federal Reserve System data.

Note: These percentages are approximate because of data limitations detailed in appendix I. Estimates are as of the end of the third quarter, 2004.

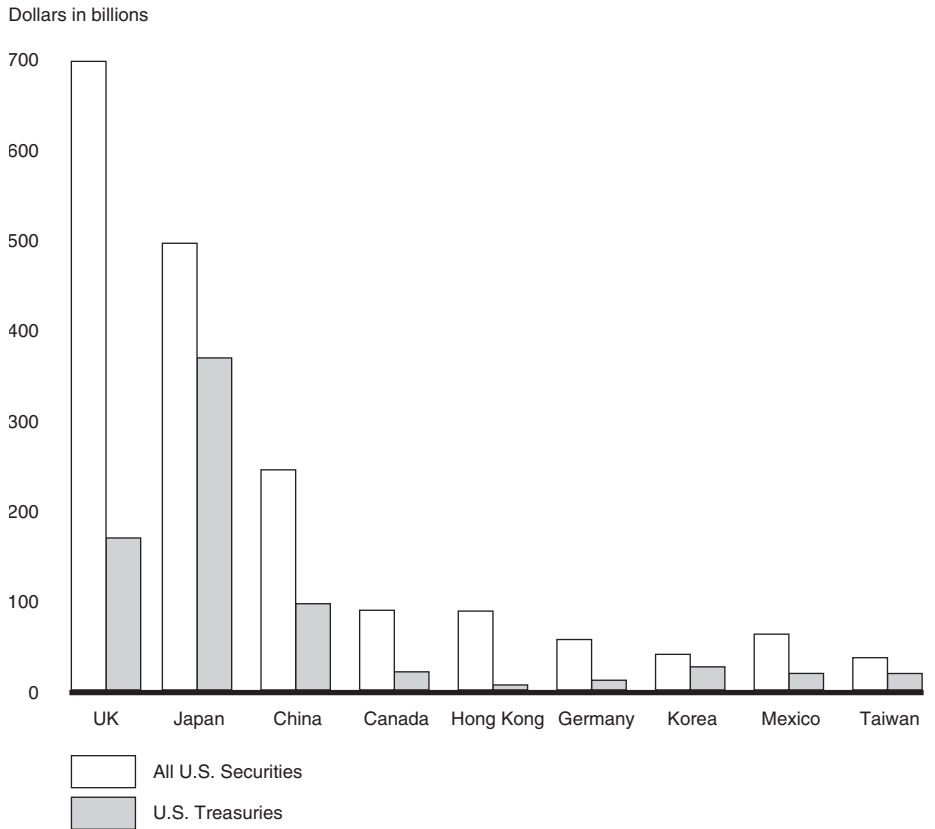
⁴⁵These values are based on data from the U.S. Treasury and the Board of Governors of the Federal Reserve System.

⁴⁶China and Japan collectively held roughly 1 percent of outstanding U.S. corporate equity at the end of 2003.

As figure 4 illustrates, China was one of the largest purchasers of U.S. Treasury securities from 2001 to 2004—\$95.4 billion, compared to \$367.4 and \$168.1 billion for Japan and the United Kingdom, respectively. Like other foreign central banks, China’s central bank has chosen to purchase large quantities of U.S. Treasury securities with renminbi in part because it can buy and sell them quickly with minimal market impact. Figure 4 also shows that, in recent years, China has been a strong purchaser of other types of U.S. securities, especially agency bonds,⁴⁷ according to data from the Treasury International Capital (TIC) reporting system. Between 2001 and 2004 China purchased on net about \$243.5 billion in total U.S. securities, behind the United Kingdom and Japan. (See app. VII for more data on net purchases of U.S. Treasury securities by China and other countries).

⁴⁷Agency bonds are bonds issued by government and government-sponsored agencies, including Fannie Mae and Freddie Mac.

Figure 4: Net Purchases of U.S. Securities by Select Economies, 2001-2004



Source: GAO calculations based on U.S. Treasury's International Capital (TIC) system and Congressional Research Service data.

Notes: Figures are adjusted for inflation using the GDP deflator. Data includes commissions and taxes associated with each transaction. Reporting procedures for the collection of these data lead to a bias toward overcounting flows from economies that are major financial centers and undercounting flows from other economies. Errors may also occur due to the manner in which repurchases and securities lending transactions are recorded within the TIC system. See appendix I for data limitations.

Observations

While we make no recommendations in this report, we believe that our analysis provides important insights into the debate over exchange rates and U.S. government assessments of currency manipulation. The debate involves several issues that are related, but distinct. The first is currency manipulation. Assessing currency manipulation under the terms of U.S. law is complex and involves both country-specific and broader international economic factors. A second issue is undervaluation of currencies.

Countries with undervalued currencies are presumed to obtain trade benefits from the undervaluation and therefore are often assumed to be manipulating their currencies to maintain these benefits. Many experts tend to focus on undervaluation—which Treasury is not required to determine. A third issue is the policy response that is expected from nations that are the focus of the debate. For example, experts who believe that China’s currency is undervalued have varying views about what action China should take, including whether certain policy options entail risks to China’s economy. In this report, we have tried to keep these issues distinct, because we believe it aids in clarifying the debate.

The level of concern over exchange rate issues—especially with respect to China—is not surprising given the continuing growth of the U.S. trade deficit, the rapid growth of China’s exports to the United States, and the recent depreciation of the dollar against several major currencies. In addition, as trade agreements reduce many of the industry-specific barriers to world trade, there has been a shift in attention toward the macroeconomic aspects of trade, which include exchange rates as well as national savings and investment rates. News that China’s trade and current account surpluses were higher than expected in 2004 increases the need for good information on factors affecting international trade and financial flows, especially with respect to China, and the implications of these flows for the United States. Congress recently required Treasury to provide information on aspects of its reporting under the 1988 Trade Act, to facilitate better understanding by the American people and Congress. Treasury’s March 2005 report in response to this mandate provided a high-level discussion of key factors Treasury considers in its currency manipulation assessments and sheds light on the complexities of the assessments but did not provide—and was not required to provide—country-specific information about Treasury’s recent assessments. Since then, Members of Congress have continued to propose legislation to address China currency issues. We believe that the analysis in this report provides a basis for further discussion of currency manipulation concerns.

Agency Comments and Our Evaluation

We provided a draft report to the Department of the Treasury. Treasury provided written comments, which are reprinted in appendix VIII. Treasury stated that the report is generally thoughtful and hopes that it will contribute to increased understanding of the complex issues covered in its exchange rate reports. Treasury also emphasized several aspects of its exchange rate assessments and its reports. For example, with respect to reporting on U.S. economic impacts, Treasury stated that when conducting

its analysis it does consider how the exchange rate of the dollar affects areas such as the sustainability of the current account deficit, production, and employment. Treasury stated that it believes it is often more helpful to look at underlying developments that affect exchange rates and other macroeconomic conditions rather than to achieve a false sense of precision by isolating the exchange rate in the analysis. Treasury also provided technical comments, which we incorporated in the report as appropriate.

As agreed with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of its issuance. At that time, we will send copies of this report to interested congressional committees, the Secretary of the Treasury, and other interested parties. We will make copies available to others upon request. In addition, the report will be available at no charge on the GAO Web site at <http://www.gao.gov>.

If you or your staffs have any questions concerning this report, please contact me at (202) 512-4128 or at yagerl@gao.gov. Other GAO contacts and staff acknowledgments are listed in appendix IX.

A handwritten signature in black ink that reads "Loren Yager". The signature is written in a cursive style with a large initial "L" and "Y".

Loren Yager
Director, International Affairs and Trade

Objectives, Scope, and Methodology

The Chairs of the Senate Committee on Small Business and Entrepreneurship and the House Committee on Small Business asked us to review the Department of the Treasury's efforts to fulfill its legal obligations under the 1988 Trade Act and related issues. We examined (1) the process Treasury uses to conduct its assessments of currency manipulation and the results of recent assessments, particularly with respect to China and Japan; (2) the extent to which Treasury has met the 1988 Trade Act reporting requirements; (3) experts' views on whether or by how much China's currency is undervalued; and (4) the implications of a revalued Chinese currency for the United States.

To determine the process Treasury uses to conduct its currency manipulation assessments and the results of recent assessments, particularly with respect to China and Japan, we reviewed the legal provisions of the 1988 Trade Act requiring Treasury to analyze foreign currency manipulation, and the act's legislative history. We also interviewed responsible Treasury officials to better understand the assessment process. In addition, we reviewed Treasury exchange rate report findings on whether other countries are manipulating their currencies. Specifically, we examined the conditions cited in the Treasury reports that led to determination of currency manipulations for Taiwan, Korea, and China from 1988 to 1994. We also examined the changes in the economies' conditions that led to removals of citations or, in some cases, subsequent citations for these economies; and we interviewed Treasury officials to understand Treasury's reasoning behind its findings for China and Japan. We interviewed IMF officials to obtain information on Treasury's consultive process with IMF. To gain a broader perspective on the economic conditions of China and Japan, we examined recent domestic and international economic data and information on those two countries' current exchange rate regimes and practices.

To determine the extent of Treasury's compliance with reporting requirements, we reviewed all of Treasury's exchange rate reports since 1988. We analyzed the reports and categorized our assessment of Treasury's compliance for each of the eight reporting requirements. In addition, we interviewed Treasury officials to discuss Treasury's recent efforts to address the requirement to assess the impact of the exchange rates on the U.S. economy. Finally, for verification, we compared statements of Treasury officials with the exchange rate reports.

To obtain experts' views on whether or by how much China's currency is undervalued and the value's implications for the United States, we

identified studies and views of economists with expertise in the area that had been cited in congressional testimony and in other prominent policy forums, reviewed those and related studies, and interviewed a selection of experts spanning the spectrum of opinions on Chinese currency valuation. GAO economists reviewed these research papers and testimonies solely to describe the analyses and differences among them. The inclusion of the results of these studies is to show that estimates of undervaluation for China vary widely and that the analysis of the impact on the U.S. economy is complex; their inclusion does not imply that we deem them definitive. To describe and analyze country economic data and indicators used by many of these experts, we used data from the International Monetary Fund's (IMF) World Economic Outlook and other sources, including the Bureau of Labor Statistics and the Federal Reserve Board. We also obtained foreign exchange reserve data from Global Insight and data on Japanese interventions for the 2000 to 2004 period from Japan's Ministry of Finance. We used U.S. trade statistics compiled by the Department of Commerce's statistical agencies to analyze the composition and trends in the U.S. merchandise trade deficit. We note that there are significant differences between U.S.–China bilateral trade data reported by the United States and that reported by China. We did not conduct an evaluation of these differences, which others have attributed to general differences in how imports and exports are valued, how the United States and China record imports and exports shipped through Hong Kong, and the quality of Chinese statistics. The reliability of Chinese statistics may also impact IMF's statistics because much of the data used by IMF is self-reported by member countries. We determined that these data are sufficiently reliable for our purposes of presenting and analyzing trends in trade patterns and basic economic trends for China.

In addition, to describe a range of views on how China might move to an alternative exchange rate value or regime, we identified several representative policy suggestions from the studies we reviewed and the experts we consulted regarding assessments of whether China's currency is undervalued.

To describe the implications of a revalued Chinese currency for the United States, we identified and reviewed studies that had been cited in congressional testimony and other policy forums, and by research institutions including the IMF. We discussed these studies with several experts spanning a range of views. To illustrate how estimates of the effects of exchange rates on U.S. manufacturing jobs depend on key assumptions, we identified assumptions from studies we reviewed and made illustrative

calculations using different assumptions. These assumptions are not analytically precise, and we did not present particular estimates as being superior to others. Alternative combinations of assumptions or alternative assumptions can yield impact estimates outside the ranges presented in our analysis. The hypothetical percentages of undervaluation and assumptions are for illustrative purposes; the illustration does not imply that GAO has taken a position on the value of China's currency or its actual impact on the U.S. economy.

We also obtained data on hourly compensation costs from the Bureau of Labor Statistics to provide background for our discussion of the role of labor costs in international competitiveness. We determined that the data are sufficiently reliable for the purpose of illustrating substantial variations in labor costs across countries. However, the data are partially estimated and thus the statistics should not be considered precise measures of comparative costs and are subject to revision. For some foreign economies, the estimates are based on less than one year of data. There may also be variations in the definitions, scope, coverage, and methods used in compiling the data and in its presentation. These include the treatment of the financing of social security and the systems of taxes or subsidies.

In addition, we calculated the portion of U.S. Treasury bills and corporate equities held by the two countries using the *U.S. Treasury International Capital Reporting System* (TIC) and the Federal Reserve Board's *Flow of Funds* data to present information on China and Japan's weight in U.S. capital markets. We used these data because they constitute the only data available for these transactions, but we note in presenting the information that because of the way the data are collected there is a bias toward overcounting flows to countries that are major financial centers and toward undercounting flows to other countries.¹ As a result, excessive foreign holdings may be attributed to some countries that are major custodial centers, such as the United Kingdom, Switzerland, Belgium, and Luxembourg. Moreover, because the Bureau of Economic Analysis adjusts

¹This is because the sale or purchase of a financial asset is attributed to the country in which the transaction was conducted rather than the residence of the buyer. As a result, a Chinese resident's purchase of a U.S. security using an intermediary in Hong Kong would be reported as a Hong Kong purchase of a U.S. security. For a discussion of the system used to estimate foreign holdings, including methodological limitations, see William L. Grier, Gary A. Lee, and Francis E. Warnock, "U.S. System for Measuring Cross-Border Investment in Securities: A Primer with a Discussion of Recent Developments," *Federal Reserve Bulletin* (Washington, D.C.: October 2001).

the TIC data somewhat before it reaches the Federal Reserve Board and because of timing issues, the data on total foreign holdings from the two sources have slight but insignificant differences. We determined that the data are sufficiently reliable for our purpose of illustrating whether China and Japan are major holders or purchasers of U.S. securities. We note, however, that as a result of the limitations identified, GAO calculations of the percentage of U.S. securities held by Japan and China based on the primary TIC and Federal Reserve data should be viewed as approximations.

In addition to the bias detailed above, the raw transactions data (net purchases) documented in figure 5 and the associated tables in appendix VI may contain errors due to the manner in which repurchase and securities lending transactions are recorded within the TIC system. Because these transactions are known to be substantial, producers of the data note that this could produce significantly inaccurate data. Moreover, because these data include commissions and taxes associated with each transaction, the result is a slight overestimation of net purchases. These data are also revised periodically. The TIC system is the official source of this data, it is widely used by outside experts, and the limitations are not particular to any one country. Therefore we determined that they were sufficiently reliable for a comparison of net purchases of U.S. securities by China with other major purchasers and generally assessing the role of China in U.S. financial markets. However, the data must be interpreted with caution because recent transaction data may have overstated net foreign purchases of U.S. securities, especially debt instruments.

To verify the reliability of most data sources, we performed several checks to test the data's accuracy or we reviewed limitations, wherever possible. We reviewed agency or company documents related to their quality control efforts and conferred with GAO's statistical expert for relevant data. For several sources, we tracked secondary data to the source data and reviewed other experts' uses and judgments of that data. For several sources, we compared the raw data, or the descriptive statistics computed using the data, with equivalent statistics from other sources. We determined that the data sources we used were sufficiently reliable for the purposes of this audit. Although in many cases there were limitations, they are generally minor in the context of this report. We were unable to conduct a review of the Japanese Ministry of Finance intervention data. However, given that the Ministry of Finance is the primary and official source of these data and they are widely used by outside experts and

Appendix I
Objectives, Scope, and Methodology

policymakers, including the Federal Reserve Bank of New York, we have included some of the data in this report for illustrative purposes.

We conducted our work from September 2003 through February 2005 in accordance with generally accepted government auditing standards.

Omnibus Trade and Competitiveness Act of 1988

Omnibus Trade and Competitiveness Act of 1988¹ (Pub. L. No. 100-418, §§ 3004(b) and 3005)

Sec. 3004. International Negotiations on Exchange Rate and Economic Policies.

(b) Bilateral Negotiations—The Secretary of the Treasury shall analyze on an annual basis the exchange rate policies of foreign countries, in consultation with the International Monetary Fund, and consider whether countries manipulate the rate of exchange between their currency and the United States dollar for purposes of preventing effective balance of payments adjustments or gaining unfair competitive advantage in international trade. If the Secretary considers that such manipulation is occurring with respect to countries that (1) have material global current account surpluses; and (2) have significant bilateral trade surpluses with the United States, the Secretary of the Treasury shall take action to initiate negotiations with such foreign countries on an expedited basis, in the International Monetary Fund or bilaterally, for the purpose of ensuring that such countries regularly and promptly adjust the rate of exchange between their currencies and the United States dollar to permit effective balance of payments adjustments and to eliminate the unfair advantage. The Secretary shall not be required to initiate negotiations in cases where such negotiations would have a serious detrimental impact on vital national economic and security interests; in such cases, the Secretary shall inform the chairman and the ranking minority member of the Committee on Banking, Housing, and Urban Affairs of the Senate and of the Committee on Banking, Finance and Urban Affairs of the House of Representatives of his determination.

Sec. 3005. Reporting Requirements.

(a) Reports Required—In furtherance of the purpose of this title, the Secretary, after consultation with the Chairman of the Board, shall submit to the Committee on Banking, Finance and Urban Affairs of the House of Representatives and the Committee on Banking, Housing, and Urban Affairs of the Senate, on or before October 15 each year, a written report on international economic policy, including exchange rate policy. The Secretary shall provide a written update of developments six months after

¹This appendix only includes language relevant to Treasury's manipulation assessment criteria and exchange rate reporting requirements.

the initial report. In addition, the Secretary shall appear, if requested, before both committees to provide testimony on these reports.

(b) Contents of Report—Each report submitted under subsection (a) shall contain

(1) an analysis of currency market developments and the relationship between the United States dollar and the currencies of our major trade competitors;

(2) an evaluation of the factors in the United States and other economies that underline conditions in the currency markets, including developments in bilateral trade and capital flows;

(3) a description of currency intervention or other actions undertaken to adjust the actual exchange rate of the dollar;

(4) an assessment of the impact of the exchange rate of the United States dollar on

(A) the ability of the United States to maintain a more appropriate and sustainable balance in its current account and merchandise trade account;

(B) production, employment, and noninflationary growth in the United States;

(C) the international competitive performance of United States industries and the external indebtedness of the United States;

(5) recommendations for any changes necessary in United States economic policy to attain a more appropriate and sustainable balance in the current account;

(6) the results of negotiations conducted pursuant to section 3004;

(7) key issues in United States policies arising from the most recent consultation requested by the International Monetary Fund under article IV of the Fund's Articles of Agreement; and

(8) a report on the size and composition of international capital flows, and the factors contributing to such flows, including, where possible, an assessment of the impact of such flows on exchange rates and trade flows.

Conditions that Led to the Determination of Currency Manipulation and Removal

At different times during the period from 1988 to 1994, Treasury found that Taiwan, Korea, and China manipulated their currencies under the terms of the 1988 Trade Act. The conditions leading to their first citations and the changes in conditions that later led to their removal are listed below.

**Appendix III
Conditions that Led to the Determination of
Currency Manipulation and Removal**

Table 4: Conditions Treasury Cited in Earlier Determinations of Currency Manipulation

Conditions	Taiwan (first half of 1988)	Korea (first half of 1988)	China (second half of 1991)
Bilateral trade surplus with U.S.	\$17.4 billion (18% of GNP) in 1987	\$9.4 billion in 1987 (8.3% of GNP)	\$12.7 billion in 1991, second only to Japan, grew rapidly
Current account surplus (% of GNP)	\$18.1 billion (18.5% of GNP) in 1987)	Near \$10 billion (8.3% of GNP) in 1987	\$12.2 billion (3.3% of GNP) in 1990
Other indicators highlighted	<p>Strong economic fundamentals and rapidly rising foreign exchange reserves</p> <p>Insufficient currency appreciation (40% since 1985 Plaza Accord, less than 92% appreciation by Japanese yen, and 60% by German mark)</p> <p>Undervaluation, resulting from interventions, capital controls, and administrative mechanisms preventing further appreciation</p>	<p>Strong economic fundamentals, prepayment of external debt, and rising foreign exchange reserves</p> <p>Insufficient currency appreciation (26% since 1985 Plaza Accord, less than 92% appreciation by Japanese yen and 60% by German mark)</p> <p>Undervaluation, resulting from interventions, capital controls, and administrative mechanisms preventing further appreciation</p>	<p>Rising foreign exchange reserves, \$44 billion in 1991, enough to cover 10 months of imports</p> <p>Dual exchange rate regime—continued devaluations of the fixed official exchange rate and excessive controls on the dual market determined rates. (China claimed these actions were aimed at eliminating costly export subsidies and unifying dual rates.)</p>
Activities considered as potential manipulation or conditions considered as constraining market forces in foreign exchange market	<p>Substantial capital and exchange restrictions under the managed float system</p> <p>Heavy direct interventions (buy or sell) by the central bank in foreign exchange markets</p>	<p>Substantial capital and exchange restrictions under the managed float system</p> <p>Established currency value administratively based on undisclosed basket (combination) of currencies</p>	<p>Pervasive administrative controls over external trade</p> <p>Treasury interpreted Chinese repeated devaluations and controls on dual market rates as efforts to frustrate effective balance of payment adjustments</p>
Number of 6-month periods continuously cited for manipulating currency	2	3	5
Changes in conditions that led to removal of citation	<p>12% more appreciation of currency since first citation</p> <p>Reduction of global current account surplus by 43% (8.5% of GNP)</p> <p>Implemented a new exchange rate system (5 months before the Treasury report was issued) that liberalized the system and reduced capital controls</p> <p>No evidence of substantial interventions, but concern remained on potential interventions by government controlled banks</p>	<p>Global current account surplus reduced to \$5.1 billion (2.5% of GNP)</p> <p>Bilateral surplus reduced to \$6.3 billion in 1989</p> <p>Introduction of new “market average rate” system of exchange rate determination in March (1 month before Treasury report was issued)</p> <p>Initiation of the bilateral Financial Policy Talks during the period</p>	<p>Current account turned from negative in 1993 to small surplus in 1994</p> <p>Bilateral surplus projected to be \$28.7 billion for 1994</p> <p>Foreign exchange reserves \$39.8 billion, can cover 5 months of imports</p> <p>Unified the dual exchange rate regime and liberalized domestic firms’ access to foreign exchanges in 1994</p> <p>Government approval of foreign exchange purchases by foreign-funded enterprises remained</p> <p>Treasury determined that China was not manipulating exchange rate but maintained capacity to do so in the future</p>

**Appendix III
Conditions that Led to the Determination of
Currency Manipulation and Removal**

(Continued From Previous Page)

Conditions	Taiwan (first half of 1988)	Korea (first half of 1988)	China (second half of 1991)
Changes in conditions that led to additional citation and its removal	<p style="text-align: center;">Additional Citation</p> <p>(Second half of 1991 and first half of 1992)</p> <ul style="list-style-type: none"> • Current account surplus rose to \$12 billion (6.7% of GNP) in 1991 • Bilateral surplus \$9.8 billion • Official foreign exchange reserves rose significantly to \$83.2 billion in Feb 1992, the world's largest, and enough to cover 17 months of imports • Continued intervention to moderate upward pressure • Remaining restrictions prevent full market forces in foreign exchange market • Strong economic fundamentals <p style="text-align: center;">Removal</p> <ul style="list-style-type: none"> • Current account surplus fell to \$7.9 billion (3.8% of GNP) in 1992 • Bilateral surplus declined slightly to \$9.4 billion in 1992 • Foreign exchange reserves declined slightly to \$82.3 billion, second to Germany • Remaining foreign exchange restrictions and capital controls no longer constrained currency appreciation • It appears that Chinese authorities engaged in direct interventions in foreign exchange markets to prevent currency depreciation 	N/A	N/A

Source: GAO analysis of Treasury exchange rate reports.

Overview of China and Japan's Recent Economic Conditions

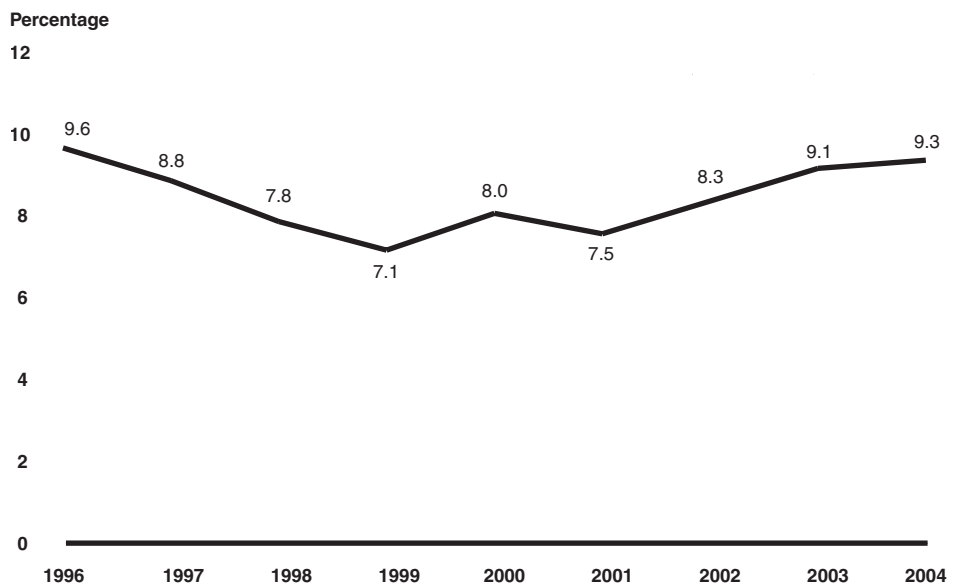
This appendix presents an overview of recent economic conditions for China and Japan that are relevant to exchange rate policies. These include economic growth, external account balances, foreign exchange reserves, exchange rate movements, currency exchange rate regimes, and direct interventions in foreign exchange markets by national authorities.

China

Economic Growth and Trade Balance

China has experienced high rates of economic growth in recent years. According to IMF-reported country data, the Chinese economy grew at annual rates of 7.1 percent to 9.6 percent during 1996 to 2004 (see fig. 5). Although economists have questioned the quality of Chinese national account statistics, there is a general consensus that the Chinese economy has grown rapidly during the past 2 years. In fact, the Chinese government has implemented policies since mid-2003 to slow economic growth because of concerns about overheating the economy.

Figure 5: China's Real GDP Growth Rate, 1996-2004



Source: IMF, World Economic Outlook September 2004.

Note: The 2004 value is an estimate from Global Insight.

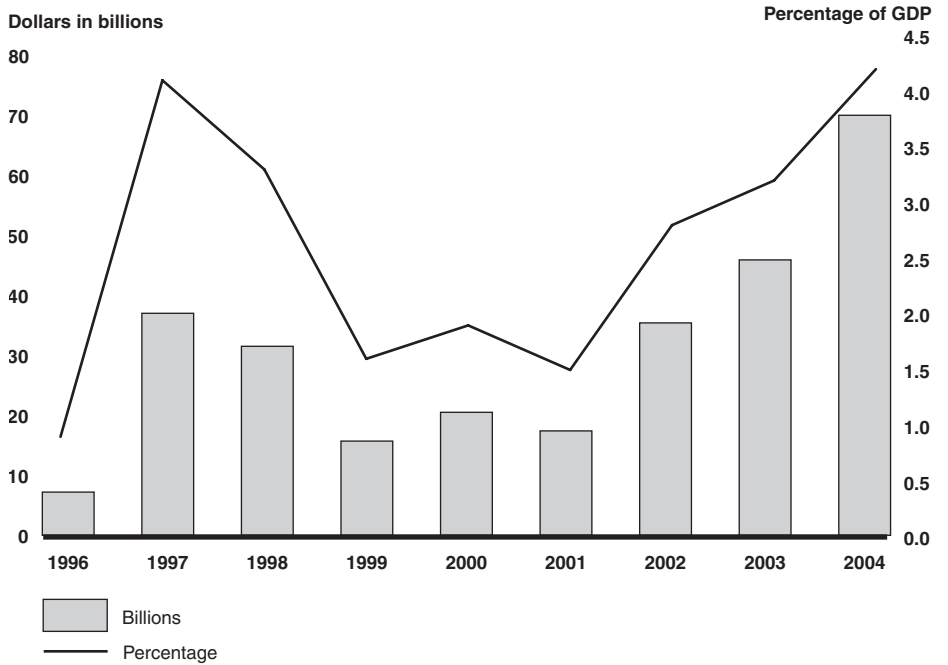
Appendix IV
Overview of China and Japan's Recent
Economic Conditions

China's economic growth has been accompanied by a large total trade volume, which was 59 percent of gross domestic product (GDP) in 2003 and 73 percent of GDP according to preliminary 2004 data. The large trade volume has been accompanied by China's consistently positive current account balance.¹ While China's current account surplus declined from around 3.3 percent of (GDP) in 1998 to less than 2 percent in 1999 to 2001, it rose to 2.8 percent in 2002 after accession to the World Trade Organization and then to 3.2 percent in 2003. Preliminary data for 2004 indicated a surplus of 4.2 percent.² (See fig. 6.)

¹The current account balance is a summary measure of a country's net balance over a period of time with all other countries in trade of goods and services, income, and unrequited transfers (such as foreign aid payments and workers' remittances).

²These preliminary data are Chinese statistics reported by Global Insight, *Monthly Outlook Asia-Pacific*, issued in March 2005.

Figure 6: China's Current Account Surplus in Billions of U.S. Dollars and as a Percentage of GDP, 1996-2004



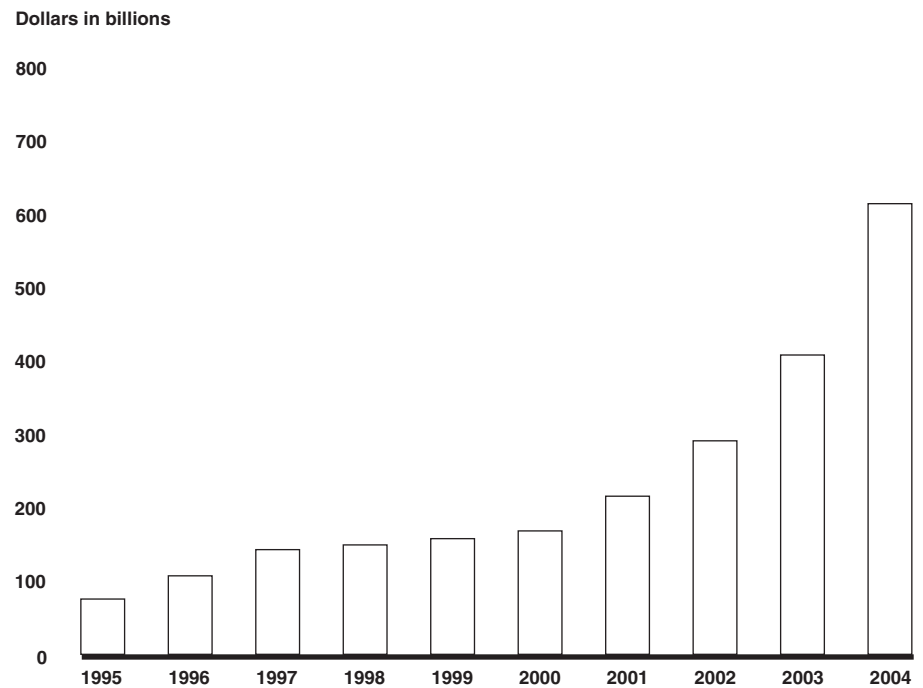
Sources: IMF, World Economic Outlook September 2004, and Global Insight.

Note: The 2004 value is an estimate from Global Insight.

Foreign Exchange Reserves

The Chinese government has rapidly accumulated foreign exchange reserves in recent years, which some observers have seen as evidence of currency undervaluation and manipulation. China's total foreign exchange reserves (excluding gold and other assets at the IMF) reached \$614.5 billion by the end of 2004. As figure 7 shows, this represents approximately three times the level of China's reserves in 2001.

Figure 7: China's Total Foreign Exchange Reserves, 1995-2004



Source: Global Insight.

Note: Values represent total foreign exchange reserves, minus gold.

Changes in China's foreign exchange reserves have several components: changes in the current account balance, changes in net flows of foreign direct investment (FDI), changes in net non-FDI flows, and undocumented capital—or errors and omissions. Both China's current account surplus and net FDI inflows were major components of the reserve increases from 2001 through 2003. (See table 4.) In addition, changes in non-FDI net inflows (defined as portfolio investment and other investment) and errors and omissions have also been important to the reserve increases. These components had been strongly negative—meaning significantly greater outflows than inflows—in 1999 and 2000, which had worked to dampen China's reserve accumulation. However, the balance changed and in 2003 non-FDI flows and errors and omissions were strongly positive. One reason for the increase in these inflows into China is large speculative inflows that may be driven by expectations of an upward revaluation of the renminbi.

**Appendix IV
Overview of China and Japan's Recent
Economic Conditions**

Table 5: China's Balance of Payments

Balance of payments concepts	1999	2000	2001	2002	2003^a
Dollars in billions					
Current account balance	\$21.1	\$20.5	\$17.4	\$35.4	\$45.9
Capital and financial account balance	7.6	2.0	34.8	32.3	52.8
Net foreign direct investment	37.0	37.5	37.4	46.8	47.2
Net portfolio investment	- 11.2	- 4.0	- 19.4	- 10.3	11.4
Net other investment ^b	- 20.5	- 31.5	16.9	- 4.1	- 5.9
Errors and omissions ^c	- 17.6	- 11.7	- 4.7	7.5	18.0
Overall balance (increase in foreign exchange reserves)	8.7	10.7	47.5	75.3	116.6
Basic balance (Current account + FDI)	58.1	58.0	54.8	82.2	93.1

Source : IMF.

^a2003 is the most recent year for which complete data on the balance of payments component are available.

^bOther investment includes trade credits, loans, and currency and deposits.

^cErrors and omissions often reflect undocumented capital flight.

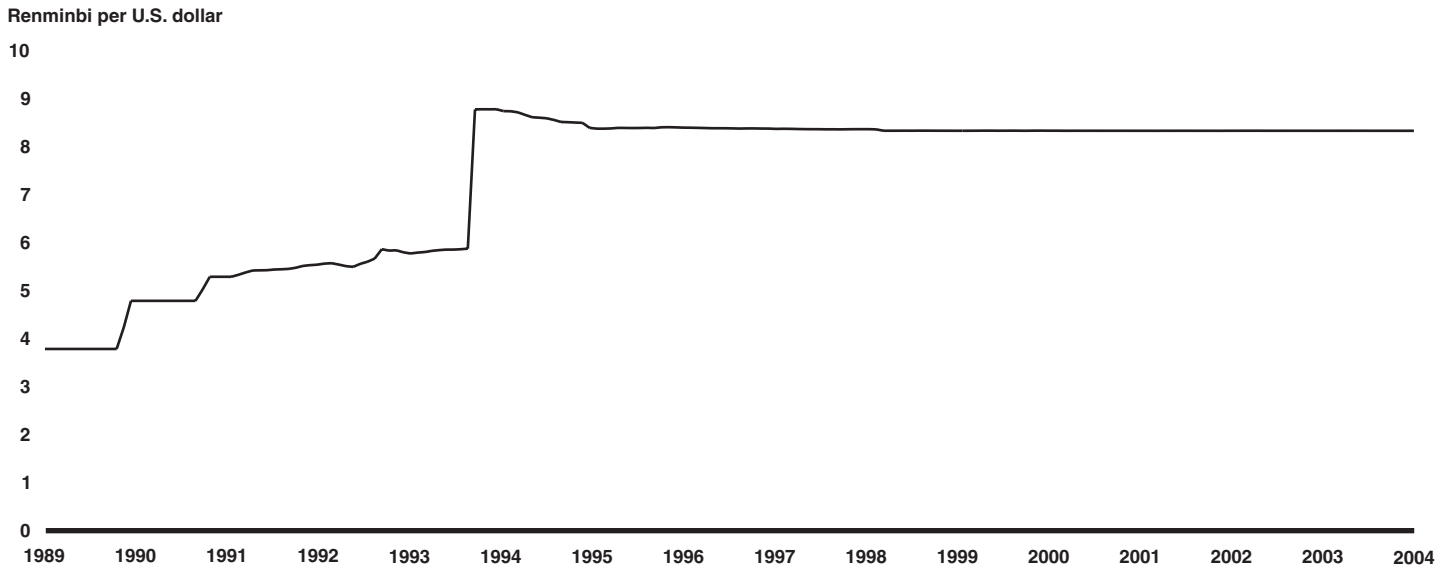
Balance of Payments

The basic relationship between China's current account balance and capital and financial account flows is also depicted in table 4. For 2003, the last year for which complete data is available, China had a current account surplus of \$45.9 billion accompanied by a capital account surplus of \$52.8 billion. Maintaining large surpluses in both current and capital accounts is relatively unusual compared to other countries. For example, the United States has had in recent years a current account deficit financed by a capital account surplus; that is, the United States borrows from foreigners to purchase goods. Japan, in contrast, has generally had in recent years a current account surplus and a deficit in its capital account, including a net outflow of FDI. China's net capital inflow in 2003 was predominantly in the form of direct investment. This is in part because China has a relatively open door policy on FDI but restricts other forms of foreign investment.

China's Exchange Rate

China has, since the fall of 1994, had a de facto fixed exchange rate regime, as classified by the IMF, with its exchange rate pegged to the dollar (see fig. 8). Prior to that point, China maintained a dual exchange rate regime with an official fixed rate and market-negotiated rates. The official fixed rate was devalued several times before it was unified with the prevailing market rate in early 1994, and the exchange rate regime was officially changed to a managed float.³ The renminbi began to appreciate slightly (to 8.3 renminbi per U.S. dollar) soon after the unification, mainly due to export growth caused by a wave of foreign direct investment. Chinese authorities decided to hold the rate within a small band of 0.25 percent. By 1998, the exchange rate had been allowed to appreciate slightly to 8.28 renminbi per U.S. dollar, with a narrow band, where it has stayed until the present.

Figure 8: Chinese Renminbi/Dollar Exchange Rate, 1989-2004



Source: Board of Governors of the Federal Reserve System.

³According to the IMF, under a pure managed float regime, the monetary authority can influence the movement of the exchange rate through active intervention in the foreign exchange market without specifying, or precommitting to, a pre-announced path for the exchange rate.

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Between 1986 and 1994, China had a dual exchange rate regime in which the official fixed exchange rate coexisted with the market-negotiated rates in Foreign Exchange Adjustment Centers (also called swap centers).⁴ The official rate applied to trade transactions and other activities that were controlled by state planning. Market rates, which were significantly lower than the official rate, suggesting overvaluation of the official rate, applied to all other activities. By 1993, the official rate was 5.7 renminbi per U.S. dollar and the market rate was 8.7 renminbi per U.S. dollar.

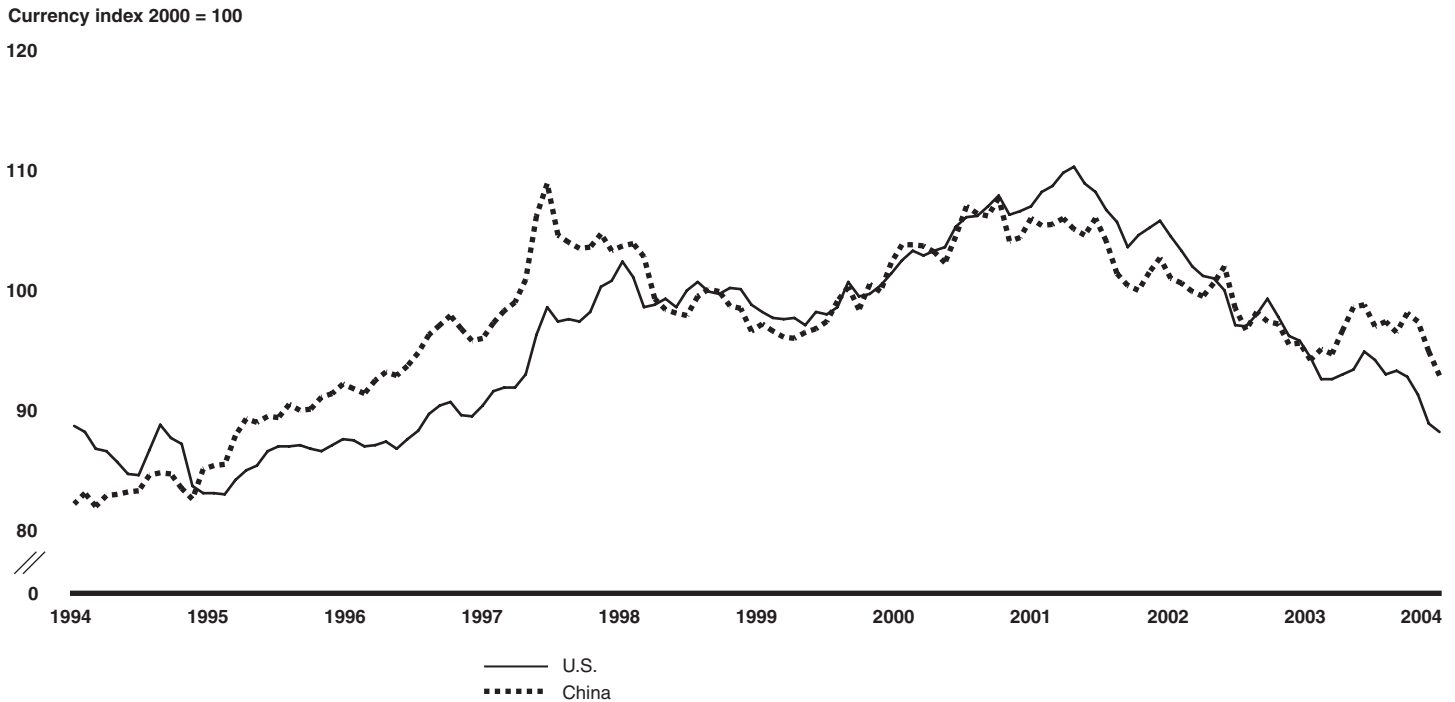
It is the real effective exchange rate that affects Chinese products' trade competitiveness.⁵ Although the nominal exchange rate of Chinese currency has remained relatively stable since 1994, the real effective exchange rate of Chinese currency has shown variations since 1994 (see fig. 9). The variation is parallel to that of the U.S. dollar because the renminbi has been pegged to dollar.

⁴Multiple market-negotiated rates existed because the arbitrage among swap centers was imperfect.

⁵The real effective exchange rate is the real, or inflation-adjusted, exchange rate between a country and its trade partners, computed as a weighted average of bilateral real exchange rates.

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Figure 9: Real Effective Exchange Rate Indexes (China and the United States), 1994-2004



Source: Global Insight.

Note: JP Morgan indexes, 2000=100

Foreign Exchange and Capital Controls

Chinese authorities keep controls on foreign exchange earned from exports and other current account activities through “repatriation and surrender requirements” on foreign exchange proceeds. Under these controls, some exporters must sell a significant portion of their previous year’s foreign exchange earnings to authorized banks at a fixed rate for China’s currency.⁶ China also maintains controls on the use of foreign currencies related to imports and other outward flows for investment purposes. For instance, importers must provide proof of import needs and commercial bills to obtain foreign currencies. Overall, these measures are less restrictive than those in place in the early 1990s.

⁶Since May 2004, this portion has been 50 percent to 70 percent. Before that, it was 80 percent. Some special-purpose transactions, such as donations, are exempted from this requirement.

In addition to controls related to current account transactions, other restrictions continue to apply to most capital transactions. For instance, only certain qualified foreign institutional investors can bring in foreign capital to invest in the segment of Chinese domestic security markets denominated in renminbi. Foreign entities can purchase securities denominated in U.S. dollars more freely. China maintains an "open door" policy with respect to inbound FDI, but outward investment is limited and requires government approval. Chinese purchases of capital and money market instruments abroad are restricted to selected institutions and enterprises. In 2004, China eased some restrictions on outward capital flows, including allowing domestic insurance firms to invest a portion of their portfolios offshore and permitting multinational companies to transfer foreign exchange among subsidiaries.

Japan

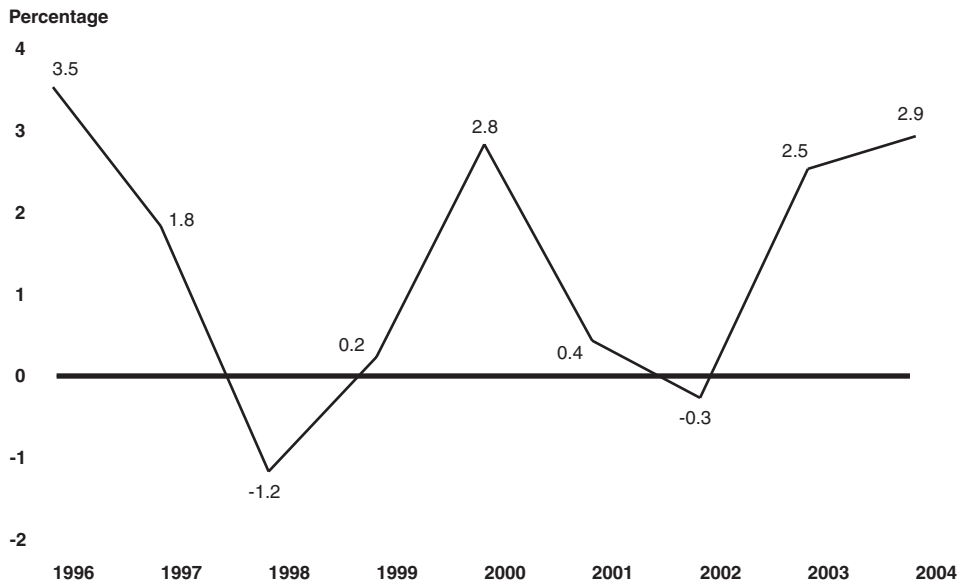
Growth Rate and Trade Balance

Japan suffered from recession and deflation in the years immediately following the 1997 to 1998 Asian financial crisis (see fig. 10). Its economy recovered briefly with a 2.8 percent annual growth rate in 2000, declined in 2001, and stagnated in 2002 before picking up again in 2003. Despite inconsistent growth, Japan has maintained a consistent current account surplus, which fluctuated between 2.1 percent and 3.6 percent of GDP during 1998 to 2004 (see fig. 11). Nevertheless, Japan's trade volume as a percentage of GDP was 18 percent in 2003 and 20 percent according to preliminary 2004 data, both of which were less than one-third that of China for the same years.⁷

⁷These trade volume data are from Global Insight.

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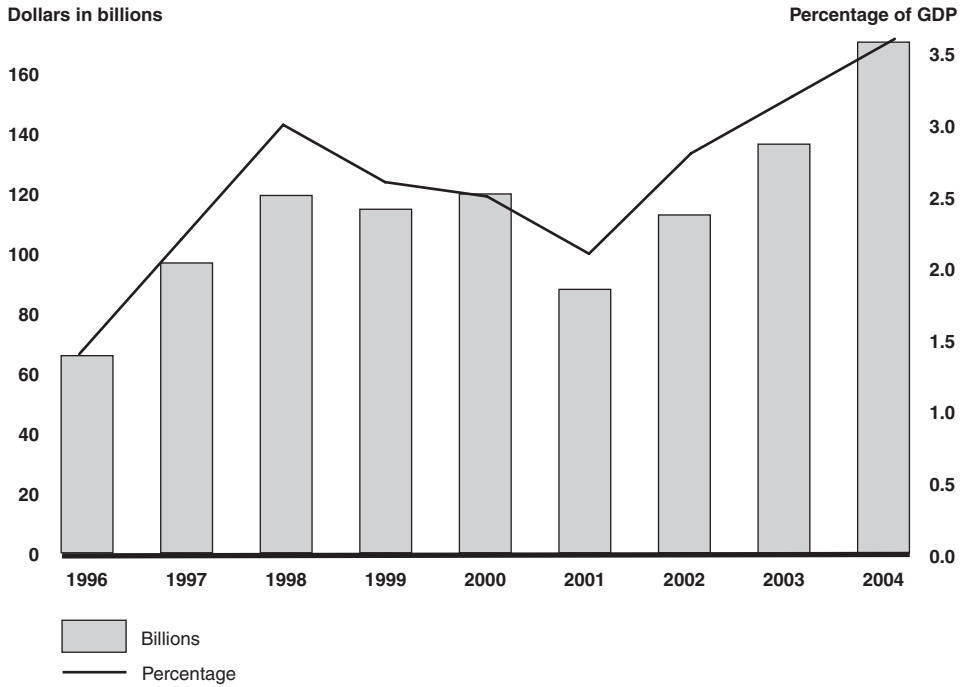
Figure 10: Japan's Real GDP growth rate, 1996-2004



Source: IMF, World Economic Outlook September 2004.

Note: The 2004 value is an estimate from Global Insight.

Figure 11: Japan's Current Account Surplus in Billions of U.S. Dollars and as a Percentage of GDP, 1996-2004



Source: IMF, World Economic Outlook September 2004.

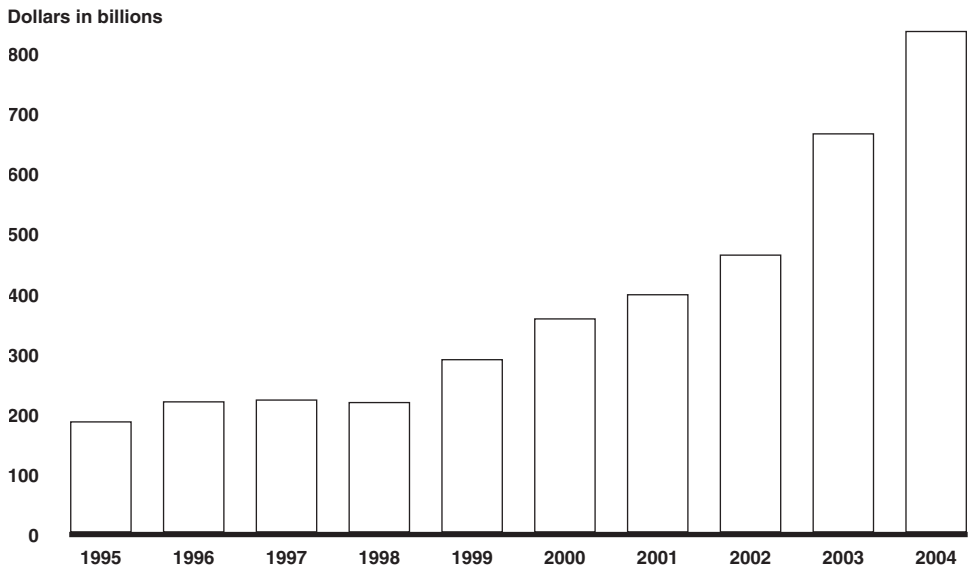
Note: The 2004 value is an estimate from Global Insight.

Foreign Exchange Reserves

Japan's total foreign exchange reserves increased from \$215.5 billion in 1998 to \$663.3 billion in 2003 and \$833.9 billion in 2004 (see fig. 12). The rapid increase reflected a reversal of net capital flow direction—from a net outflow to a net inflow. The rapid accumulation of foreign exchange reserves in 2003 is attributable to an increase in non-FDI capital inflows. This increase was due to an equity market rally caused primarily by Japan's economic recovery,⁸ an increase in the Japanese interest rate in the summer of 2003, and market anticipation of further yen appreciation. In contrast to China, Japan has had a steady FDI outflow over time. It ranged from \$23 billion to \$32 billion from 2000 to 2003.

⁸The recovery was driven by stronger Chinese market demand for Japanese goods, among other factors. China, not including Hong Kong, has become the second largest market for Japanese exports.

Figure 12: Japan's Total Foreign Exchange Reserves, 1995-2004



Source: Global Insight.

Note: Values represent total foreign exchange reserves, minus gold.

Japan's Exchange Rate

The Japanese yen is on an independent float, with the exchange rate primarily determined by market forces.⁹ Japanese authorities have periodically carried out large interventions in the foreign exchange market through the sale of yen in exchange for U.S. dollars, resulting in slower yen appreciation.¹⁰ Japanese authorities intervened frequently in its foreign exchange markets in 2002,¹¹ increased the frequency and magnitude of interventions in 2003, and continued interventions into early 2004 (see fig. 13). U.S. Treasury officials told us they did not think such interventions led to lasting effects on the yen exchange rate. Since 2003 Treasury has reported that it actively engages Japanese authorities to urge greater exchange rate flexibility.

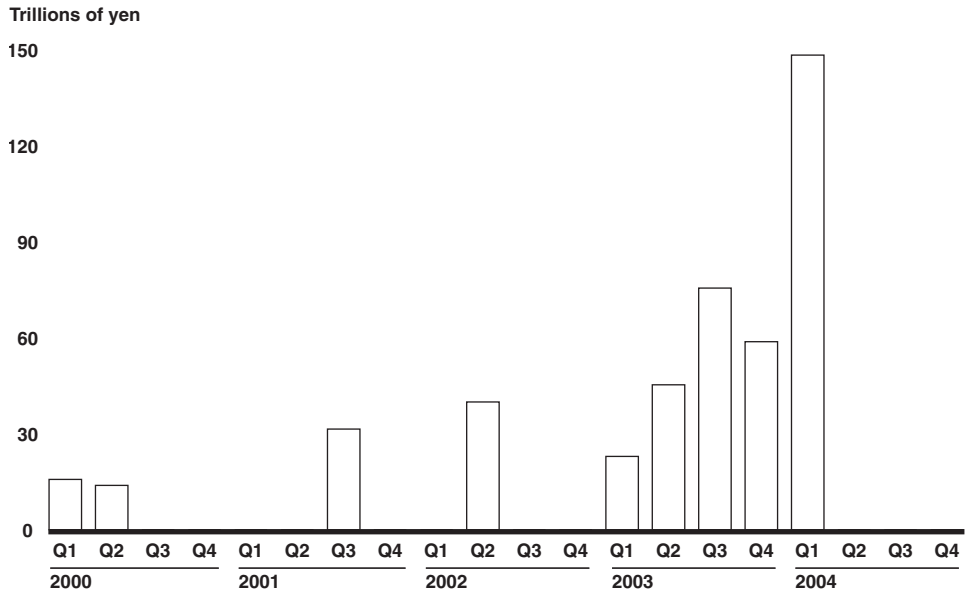
⁹As classified by the IMF.

¹⁰According to the IMF, countries with independent floating exchange rates can intervene in foreign exchange markets if the goal is to moderate the rate of change and prevent undue fluctuations in the exchange rate.

¹¹Japanese authorities intervened eight times in the first half of 2002.

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Figure 13: Yen/Dollar Interventions, January 2000-December 2004



Source: Ministry of Finance, Japan.

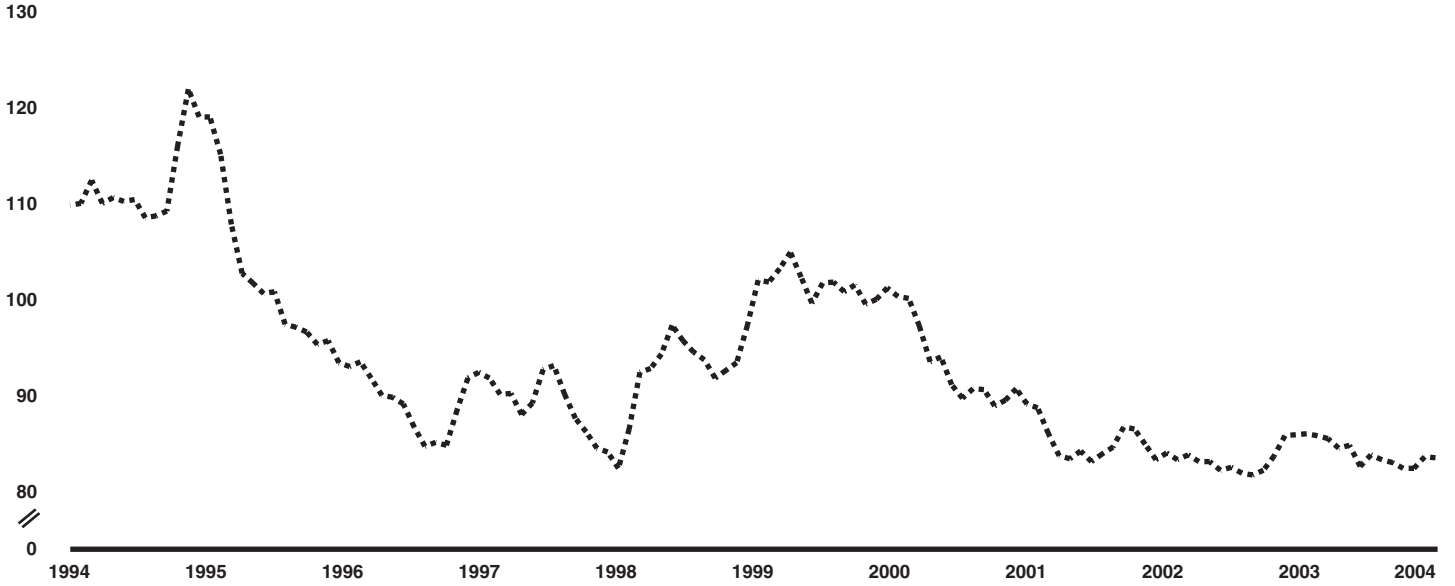
Note: GAO did not assess the reliability of the Ministry of Finance data. This is quarterly data.

The yen's real effective exchange rate has fluctuated over the past decade (see fig. 14). Some market appreciation pressure on the nominal value of the yen during this period was due to larger capital inflows, particularly a large inflow from Europe in 1999 and another large inflow in 2003 due to prospects of higher stock market prices. Strong inflows continued into early 2004.

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Figure 14: Real Effective Exchange Rate Index for Japan, 1994-2004

Yen index 2000 = 100



Source: Global Insight.

Note: JP Morgan indexes, 2000=100.

Commonly Used Methods to Determine Equilibrium Exchange Rates

Economists use various methods to analyze whether exchange rates are misaligned. In general, determining whether a country's currency is under- or overvalued involves first determining the country's equilibrium exchange rate as a reference or baseline. This is complex because estimating the equilibrium exchange rate requires information on what value the exchange rate would attain if it were consistent with a country's economic fundamentals at a particular point in time. Different approaches to estimating equilibrium exchange rates and under- and overvaluation can yield widely varying results, especially for developing countries, and even similar approaches can result in different outcomes depending upon which assumptions and economic judgments are used. Thus, estimates of undervaluation for China vary substantially—from 0 to 56 percent. This appendix outlines some of the methodologies commonly used to estimate the extent of undervaluation of the renminbi.

Purchasing Power Parity (PPP) Approach

One methodology commonly used to define equilibrium exchange rates and determine if a currency is under- or overvalued is the Purchasing Power Parity (PPP) approach. The PPP approach is rooted in the *law of one price*, which states that identical goods in different countries should trade at the same price. Thus, the equilibrium exchange rate is defined as the exchange rate at which the general level of prices will be the same in every country and is calculated as the ratio of the domestic and foreign price levels. The goods and services analyzed are typically those that make up the GDP of each country. In some cases, narrower units have formed the basis of PPP comparisons, such as the “Big Mac” index which is a widely cited shortcut version that analyzes one standardized good across countries.

Unfortunately, the law of one price has limitations; it does not hold across nations of sharply differing levels of development and is biased toward finding undervaluation for low-income countries compared to their higher-income counterparts.¹ Additionally, the approach ignores other important factors that lead to inequality in prices, such as trade barriers and nontraded goods. Many experts maintain that PPP measures are more useful for analyzing cost-of-living differences than inferring the extent of currency misalignment.

A variation of the absolute PPP approach discussed above is the relative version of the PPP methodology, which is based on the hypothesis that

¹This is mainly due to the fact that low productivity, wages, and income in developing nations are often not accounted for properly.

changes in the exchange rate are determined by the difference between inflation rates in the two countries—or, equivalently, the real exchange rate between two currencies remains constant over time.² The technique involves choosing a point in time that corresponds to equilibrium and then projecting the new equilibrium rate using the inflation differentials between countries. This analysis is based on trade-weighted exchange rate indexes because they are better indicators of overall competitiveness. One limitation of the approach is that it is very sensitive to the type of price index used for base calculations (e.g., the consumer price index vs. the producer price index), and the results depend on the time periods selected as the base year. The methodology also ignores structural changes in the economy that might cause the real exchange rate to change over time.

Fundamental Equilibrium Exchange Rate (FEER) Approach

The FEER approach to assessing currency valuation is based on the relationship between the current account and capital flows.³ The FEER is defined as the exchange rate that will bring the current account balance (consistent with domestic full employment) into equality with the “normal” or sustainable capital account balance.⁴ Thus, it is the value of the exchange rate that is consistent with both internal and external economic equilibrium. The FEER calculation requires macroeconomic or trade models to obtain the current account position that is consistent with internal balance, known as the “trend” current account. The second stage involves determining the real exchange rate changes necessary to ensure balance between medium-term capital flows and the trend current account. Within this framework, the equilibrium exchange rate is deemed “fundamental” in the sense that it is related to the fundamental economic determinants over the medium term.

²For example, if U.S. inflation is 5 percent a year, while inflation in China is 2 percent a year, relative PPP dictates that the dollar should depreciate against the renminbi by 3 percent a year.

³The balance of payments identity states: Current Account = – Capital and Financial Account. This means that any change in a country’s current account (trade in goods and services plus miscellaneous items) must be balanced by an offsetting change in the capital and financial account, with the exception of changes in foreign exchange reserves.

⁴The capital and financial account tracks the movement of funds for investments and loans into and out of a country. The capital and financial account makes up part of the balance of payments. The current account, which makes up the other part, records the flow of current transactions, including goods, services, investment and other income, and current transfers between countries.

Significant limitations of this approach are that it requires extensive modeling to capture the major trade relationships and economic judgments that are criticized by some as ad hoc (including a decision about “normal” or sustainable capital flow levels) and that it relies on estimates of the sensitivity of demand to prices that are difficult to make. In addition, changes in the structure of the economy that affect the current account and the equilibrium exchange rate may introduce further uncertainty in the estimates. This is important in China’s case because many economic conditions and institutions are rapidly changing in the move toward a market-based economy. Also, this approach is difficult to apply to China because of limitations in the quality of Chinese statistics.

Macroeconomic Balance Approach

This methodology is based on the premise that there is an appropriate current account position (external balance) associated with the equilibrium savings and investment balance within a country (internal balance). Once the full employment savings-investment position is established and its associated current account is determined, this approach uses estimated trade models to determine how much the real exchange rate would have to change to generate the required external balance. The approach is related to the FEER concept because the equilibrium exchange rate is associated with internal and external economic balances.⁵ Similar to the FEER, this methodology also requires considerable modeling and economic judgment, and the results are highly sensitive to variations in key parameters. The IMF notes that in its macroeconomic balance modeling approach assumptions are used to assess the current account positions and exchange rates that may not be entirely appropriate for developing countries. Moreover, the IMF industrial country methodology largely abstracts from the impact that structural policies and adjustments could have on the equilibrium savings investment position.⁶ Again, this is important in China’s case because of the many structural adjustments the country is currently undergoing.

⁵However, this approach is rooted in the national income accounting identity: (Domestic Savings – Domestic Investment) = Current Account. This identity holds true because any excess of investment above national savings must be made with foreign savings (capital inflows). Changes in capital flows must be balanced by changes in the current account.

⁶See IMF (2001), *Methodology for Current Account and Exchange Rate Assessments*, Occasional Paper 209.

External Balance Approach

Similar to the FEER and Macroeconomic Balance approaches, this method is based on the premise that there is an appropriate external account position. That is, there is a particular level of the current account that balances the “normal” capital flows so that there is no change in international reserves. It differs from these two approaches in that it does not consider internal equilibrium. This approach involves determining the sustainable external account balance—meaning one appropriate for a country’s economic situation.⁷ Once the relevant external balance is identified, estimated trade models or rule-of-thumb relationships⁸ are used to determine the exchange rate change needed to generate the target outcome. This method is highly dependent upon which portion of China’s external balances is considered. For example, the selection of China’s current account balance might lead to a finding that the renminbi is not significantly undervalued, while the broader basic balance might lead to a finding of substantial undervaluation. The approach also relies on elasticities that are difficult to estimate or rules of thumb that are not analytically precise. Moreover, the approach does not include an explicit consideration of a country’s internal economic equilibrium situation, such as whether the country is at full employment.

Behavioral Equilibrium Exchange Rate (BEER) Approach

Under this approach, equilibrium exchange rates are determined through observing long-run relationships between real exchange rates and the economic variables that determine them. That is, the BEER approach uses econometric relationships to model the equilibrium exchange rate, based on predicted economic relationships derived from an array of relevant theories.⁹ Misalignment of a currency is measured as the difference between the actual exchange rate and that predicted by the model

⁷Different analysts consider different portions of a country’s external accounts. For example some use the current account while others use the basic balance (current account plus foreign direct investment flows) or broader balance of payment measures.

⁸One such rule of thumb analysts have used is that a 1 percent depreciation of the dollar leads to a \$10 billion improvement in the U.S. trade balance. Another such rule of thumb is that a 10 percent depreciation in the real effective exchange rate of the dollar leads to an improvement in the U.S. trade balance equal to .5 percent of GDP over a period of 2 to 3 years.

⁹Analysts typically identify a small number of key relationships describing some behavioral relationships between major economic variables and then combine these to derive a single equation to explain the determination of the observed exchange rates over time.

variables. However, the determinants of exchange rates and their links to any underlying notion of economic fundamentals are neither well understood nor easily predicted. Thus, many complex BEER models do not predict exchange rates any better than simpler techniques.¹⁰ The BEER approach also uses a number of simplifying assumptions and precludes the identification of many other key parameters important to explaining the economic system. This makes it difficult to judge the plausibility of its estimates.

Qualitative Approaches

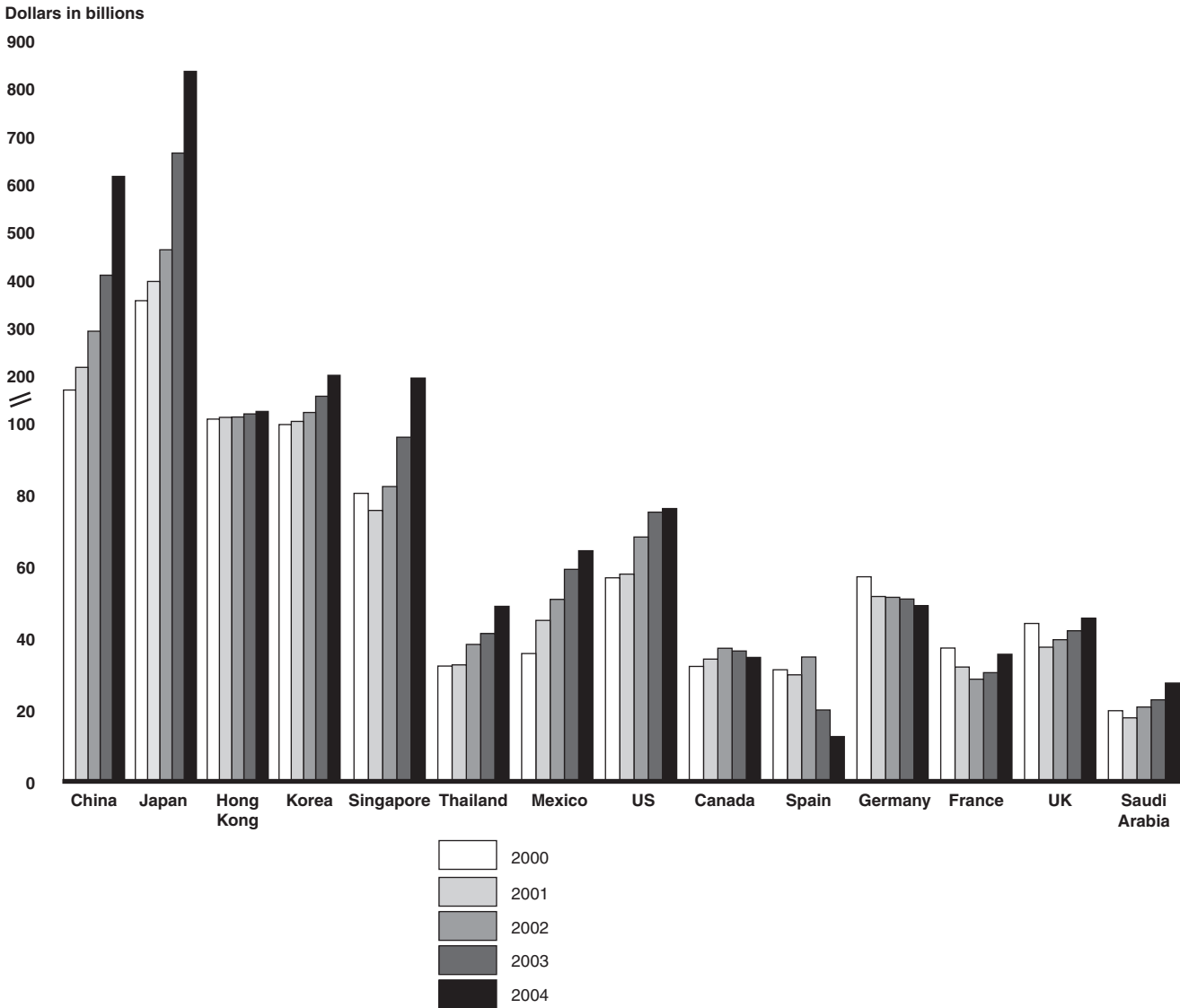
Some analysts do not formally define an equilibrium exchange rate, but look at trends in certain data to determine whether or not a country's currency is misaligned. One of the most widely cited trends used to infer currency misalignment is foreign exchange reserve growth. Some observers have noted that China has been accumulating reserves at a rapid pace and conclude that the renminbi must be undervalued. While it is true that China's foreign exchange growth has outpaced all other countries, with the exception of Japan (see fig. 15), using China's reserve accumulations as a measure of currency misalignment has limitations. For example, some analysts have noted that a significant portion of the capital inflow into China has been short-term speculative money, triggered by expectations of a renminbi appreciation. Given China's commitment to a fixed exchange rate regime, the government must absorb this excess foreign exchange.¹¹ Moreover, if China removes restrictions on capital account transactions, as many have been advocating, some analysts believe the currency may depreciate due to capital outflow. Thus, while rapid reserve growth indicates upward pressure on the currency, it does not necessarily suggest by itself that the current value of the renminbi is lower than its long-run equilibrium value.

¹⁰Federal Reserve Board Chairman Alan Greenspan before the Economic Club of New York stated that despite extensive efforts, "No model predicting directional movements in exchange rates is significantly superior to tossing a coin" (New York, N.Y.: Mar. 2, 2004).

¹¹Some believe that the capital inflow is unsustainable and that further inflow may induce excessive investment and asset price bubbles.

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Figure 15: Total Reserves for Selected Economies, 2000-2004



Source: Global Insight.

Note: Values represent total foreign exchange reserves, minus gold.

Factors Influencing the Final Impact of Exchange Rate Changes

An undervalued currency relative to the dollar would tend to make U.S. exports more expensive and U.S. imports less expensive. However, just how much cheaper imports would be and the degree of impact on the U.S. trade deficit, production, and employment would ultimately depend on complex factors. This appendix discusses some of these important factors.

The impact of China's currency on the U.S. economy would first depend on a number of factors that can weaken the exchange rate pass through—that is, the extent to which a change in the value of China's currency changes the price of exports to the United States. These include:

- *The import content of Chinese exports to the United States.* A large portion of China's export operations consists of the final assembly of products using components produced in other countries, especially Japan, Korea, and Taiwan. Some experts believe that the import content of Chinese exports to the United States may be 35 to 40 percent of the total value, and others have estimated as much as 80 percent. An appreciation of the renminbi could thus have limited impact on the prices of these exports to the United States because the currency change would leave the imported portions of the products (as much as 80 percent) unaffected, while a smaller portion (20 percent) would become more expensive.¹
- *The flexibility of the Chinese labor market.* Some researchers believe that Chinese laborers might willingly take wage cuts to keep their jobs given the high unemployment rate in the country. Thus, the extent to which an increase in the value China's currency increases the price of exports to the United States would depend on whether a revaluation of the renminbi leads to lower wages.
- *The response of foreign-invested enterprises (multinational companies operating in China).* The response of import prices to the exchange rate would also be smaller if foreign producers absorb the exchange rate movements in their profit margins to sustain their U.S. market share. According to Chinese statistics, foreign firms, some of them U.S.-owned, produced more than 50 percent of all exports in 2002 and accounted for 65 percent of the total increase in Chinese exports from 1994 to mid-2003.

¹An increase in the value of the renminbi also implies that China would be able to purchase inputs from other Asian countries and other foreign territories more cheaply.

Once the impact on import prices is determined, the impact on trade flows, production, and the U.S. economy would still depend on additional factors.

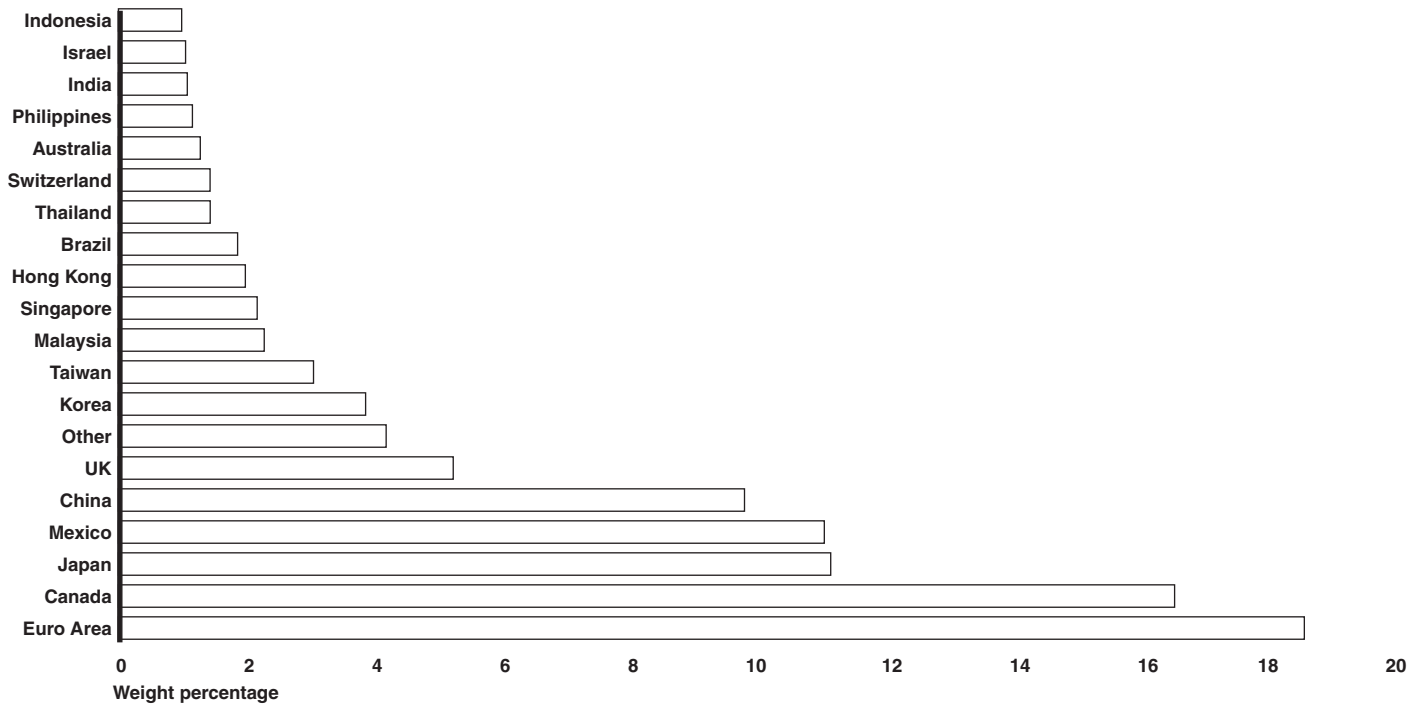
- *Elasticity of demand.* The sensitivity of U.S. demand for Chinese goods and of China's demand for U.S. goods to price changes are also important factors. If U.S. consumers are sensitive to price changes of Chinese imports (i.e., elasticity of import demand is high), then an increase in import prices would significantly reduce the demand for Chinese goods and improve the bilateral trade deficit with China. Similarly, if the Chinese elasticity of demand for U.S. goods is low, an appreciation of the renminbi may not result in an increase in the demand for the cheaper U.S. products.
- *China's weight in the U.S.'s overall trade.* The trade-weighted dollar is a measure of the dollar's value with respect to its major trading partners. Such indexes are useful for discussion of the relationship between exchange rates and the aggregate trade balance.² According to the Federal Reserve Board, the renminbi carries a weight of approximately 10 percent in the trade-weighted real effective exchange rate (see fig. 16).³ Therefore, a 20 percent change in the value of the renminbi means the Federal Reserves' trade-weighted dollar would change by roughly 2 percent. Thus, some maintain that a revaluation of the renminbi must be accompanied by an increase in the value of other currencies to have a significant impact on the United States' global trade deficit.

²However, such indexes omit industry-specific distinctions and thus ignore the distributional effects of bilateral exchange rate movements. As we discussed earlier, bilateral exchange rate changes impact different producers differently.

³According to a recent Chicago Federal Reserve Board study, China's manufactured goods accounted for 2.7 percent of the U.S. domestic market (domestic production plus imports) in 2001, up from .4 percent in 1989. See W. Testa, J. Liao, and A. Zelenev, "Midwest Manufacturing and Trade with China," *Chicago Fed Letter*, No. 196 (2003).

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Figure 16: Total Trade Weights (broad index of the foreign exchange value of the dollar)



Source: Federal Reserve Board.

Note: These weights are those in use between December 16, 2003, and February 2, 2005. The index weights, which change over time, are derived from U.S. export shares and from U.S. and foreign import shares.

- *How countries react to China's exchange rate policies.* Some analysts contend that China's currency peg to the dollar induces other East Asian countries to intervene in currency markets to keep their currencies weak against the dollar so that they can remain competitive with China, thus magnifying the impact of China's currency on the United States. Moreover, they conclude that a revaluation by China would encourage other countries to follow. As a result, there could be a large enough change in the trade-weighted dollar to impact the United States' global trade deficit.

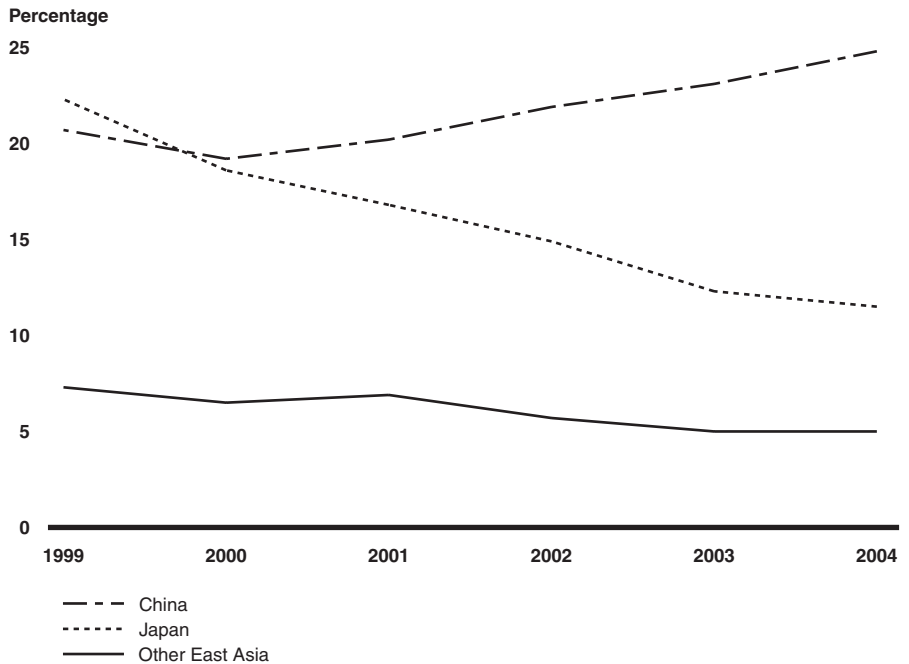
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- *Labor-intensive tasks once performed in other countries are now being performed in China.*⁴ As figure 17 shows, while the portion of the U.S. merchandise trade deficit accounted for by Japan and the rest of East Asia has fallen since 1999, China's share has risen. This reflects the fact that exports from Japan and other East Asian countries to the United States are now increasingly finished and exported from China. For example, from 2000 to 2002, U.S. imports from China increased by \$25.2 billion, while imports from Japan fell \$24.5 billion. The extent to which Chinese exports to the United States are substituting for exports that would otherwise have entered the United States from alternative low-cost countries makes the impact on the U.S. economy difficult to quantify.

⁴According to the Congressional Budget Office, its analysis based on data from 1997 through 2002 showed that over 80 percent of the increased U.S. imports from China displaced imports from other countries rather than U.S. production. See D. Holtz-Eakin, "The Chinese Exchange Rate and U.S. Manufacturing Employment," CBO Testimony before the Committee on Ways and Means, October (2003), 19.

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Figure 17: Percentage of U.S. Merchandise Trade Deficit Accounted for by Selected East Asian Economies, 1999-2004

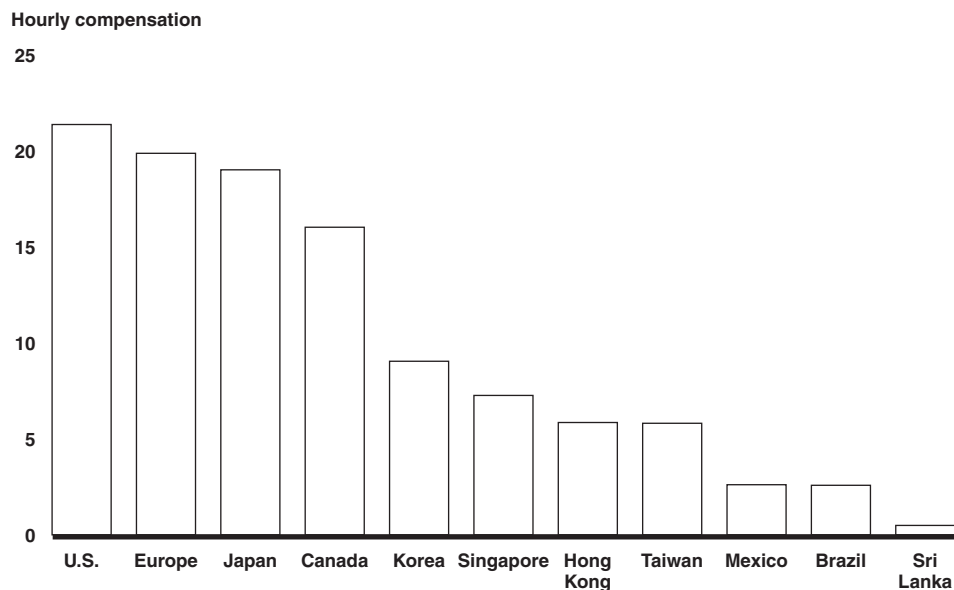


Sources: U.S. Department of Commerce, U.S. International Trade Commission.

Note: Other East Asia is Korea and Taiwan.

- *The role of cheap labor:* Many believe that China competes primarily in terms of low labor costs. There are also a number of other countries whose manufacturing wages are only a fraction of those in the United States (see fig. 18). As a result, some believe a renminbi appreciation would not induce increased output in American factories. Instead, U.S. imports from other low-wage foreign suppliers would increase. If this is true, the bilateral trade deficit with China would decrease, but the trade deficits with other low-wage countries would increase, leaving the overall trade deficit unchanged (or slightly worse due to more expensive imports).

Figure 18: Hourly Compensation Costs for Production Workers in Manufacturing in U.S. Dollars, 2002



Source: U.S. Department of Labor, Bureau of Labor Statistics.

Note: Europe denotes the EU-15. These statistics should not be considered as precise measures of comparative compensation costs given the data limitations including the fact that compensation is partially estimated for some countries. See appendix I for details.

- *Degree of competition.* The effects of the exchange rate are stronger when countries compete in similar markets. Some researchers maintain that the overlap between the production of China and the United States is small; that is, relatively few imports from China compete with domestic production in the United States. Others believe that the market competition is high enough that Chinese imports have displaced U.S. workers.

Lastly, potential income effects on China and economic interdependence between major trading partners are relevant to exchange rate impacts. For example, some experts have concluded that an appreciation of the renminbi would reduce employment, income, and growth in China, thereby affecting Chinese demand for U.S. exports. Similar forces must be considered for the United States, although it is unclear whether they would be significant given the distinct effects on the various sectors of the economy. Some believe that an appreciation of the renminbi (especially if accompanied by the elimination of capital restrictions) would lead to

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economic and financial instability in China and jeopardize other Asian countries that rely in part on exports to China to sustain their economies. Such instability in East Asia, if it were to occur, would likely have negative repercussions on the U.S. and global economies.

Net Foreign Purchases of U.S. Securities

China has in recent years purchased substantial amounts of U.S. securities, mostly agency bonds and U.S. Treasury securities (see table 5). However, China's net purchases are not as large as those of the United Kingdom and Japan. Like other foreign central banks, China's central bank has chosen to purchase large quantities of U.S. Treasury securities with renminbi in part because it can buy and sell them quickly with minimal market impact. According to monthly data compiled by the Treasury International Capital System, China's investment in U.S. securities climbed sharply during the 2000 to 2003 period, but was lower in 2004. This appendix presents detailed tables on foreign transactions in U.S. securities. While these transactions data are useful for showing China's relative size in overall securities purchases, they have certain reliability limitations which are noted in the table and are further discussed in appendix 1.

Table 6: Real Net Purchases of U.S. Securities by China

	U.S. Treasuries	U.S. agencies	U.S. corporate bond	U.S. corporate stocks	Foreign bonds	Foreign equity	Total
Dollars in millions							
1989	-\$274	-\$18	\$26	\$12	-\$138	\$0	-\$392
1990	457	-4	-15	1	224	-1	662
1991	142	59	19	8	554	0	782
1992	4,254	608	870	14	507	5	6,258
1993	553	678	188	-54	-270	-131	963
1994	14,649	598	125	-25	247	-706	14,888
1995	827	1,006	16	-13	-323	-188	1,324
1996	16,683	3,181	297	-2	39	-73	20,125
1997	9,263	1,939	79	70	60	-548	10,864
1998	2,919	980	53	1	1,927	-9	5,871
1999	9,066	9,236	576	226	372	-246	19,230
2000	-4,302	20,389	875	-112	1,959	-272	18,537
2001	20,226	27,485	7,076	3	4,267	42	59,099
2002	25,058	30,457	6,205	168	3,642	-39	65,491
2003	31,176	30,282	4,728	-79	2,524	-10	68,622
2004	18,895	16,387	12,341	-290	3,603	-614	50,322

Source: GAO calculations based on the U.S. Treasury's International Capital (TIC) reporting system.

Notes: Figures are adjusted for inflation using the U.S. GDP deflator.

Data includes commissions and taxes associated with each transaction.

Appendix VII
Net Foreign Purchases of U.S. Securities

Reporting procedures for the collection of these data lead to a bias toward over-counting flows to countries that are major financial centers and undercounting flows to other countries. Errors may also occur due to the manner in which repurchases and securities lending transactions are recorded within the TIC system.

U.S. agencies include bonds issued by government-sponsored agencies such as Freddie Mac and Fannie Mae.

China's net purchases slowed during a portion of 2004, giving rise to speculation that China's willingness to invest in U.S. Treasury securities or other assets had decreased. However, China's purchases were relatively strong during the last quarter of 2004.

Table 7: Real Net Purchases of U.S. Securities by Foreigners, Selected Countries

	UK	Japan	China	Canada	Hong Kong	Germany	Korea	Mexico
Dollars in millions								
1993	-\$46,773	\$35,646	\$963	-\$8,457	\$3,738	-\$14,767	-\$2,519	-\$14,842
1994	81,198	22,822	14,888	-2,624	3,934	8,683	-1,649	-7,565
1995	84,361	-10,077	1,324	-7,654	5,260	10,982	2,599	2,171
1996	106,748	56,883	20,125	1,568	1,361	18,114	-1,179	-3,330
1997	166,494	27,822	10,864	1,092	21,921	41,485	-15,349	-409
1998	159,179	20,797	5,871	134	9,059	16,646	11,971	1,332
1999	186,843	-300	19,230	13,347	12,092	23,446	11,014	1,740
2000	147,455	79,062	18,537	16,040	8,804	31,642	5,403	10,085
2001	164,452	38,588	59,099	17,867	30,073	22,322	325	8,831
2002	199,715	84,668	65,491	7,105	15,149	24	13,524	10,607
2003	165,864	152,387	68,622	36,399	19,844	14,528	12,745	11,025
2004	165,528	218,623	50,322	26,761	22,154	18,877	12,758	31,229

Source: GAO calculations based on the U.S. Treasury's International Capital (TIC) reporting system and data from the Congressional Research Service.

Notes: Figures are adjusted for inflation using the GDP deflator. Data includes commissions and taxes associated with each transaction. Reporting procedures for the collection of these data lead to a bias toward over-counting flows to countries that are major financial centers and the undercounting flows to other countries. Errors may also occur due to the manner in which repurchases and securities lending transactions are recorded within the TIC system. See appendix I for data limitations.

Comments from the Department of the Treasury



DEPARTMENT OF THE TREASURY
WASHINGTON, D.C. 20220

April 1, 2005

Loren Yager
Director
International Affairs and Trade
Government Accountability Office

Dear Mr. Yager:

Thank you very much for the opportunity to review the draft report entitled "International Trade: Treasury Assessments Have Not Found Currency Manipulation but Concerns about Exchange Rates Continue." The draft report is generally thoughtful, and we hope it will contribute to increased understanding of the complex issues covered in the Treasury reports.

It is important to underscore that Treasury does not view the exchange rate as a policy instrument. Exchange rates are determined through the complex interplay of macroeconomic and microeconomic forces throughout the world. As you know, it is not Treasury's policy to target a specific value for the dollar or a current account objective.

The focus of Treasury's policy efforts is to promote good macroeconomic management, to maintain a healthy environment for Americans to produce goods and services, to strengthen the openness of our economy and to reinforce the depth and liquidity of the U.S. financial system. By keeping its own affairs in order, the United States can both enhance growth and employment at home and contribute to the health of the global economy and financial system. Strong and persisting foreign demand for U.S. financial assets is emblematic of the strength of the U.S. economy.

Treasury does indeed consider the impact of the exchange rate on such areas as the sustainability of the current account deficit, production, employment, and industrial competitiveness in the United States. Allow me to make two specific comments in this regard:

- The sustainability of any country's current account deficit depends directly on the strength of the country's economy and the attractiveness of its investment environment. A strong economy, particularly one like that of the United States with persistently high productivity growth, creates jobs, fosters profitable investment opportunities and attracts capital from the rest of the world.
- Regarding the interplay between the exchange rate and real economy, some of the most important basic influences on exchange rates – such as the flexibility of labor markets, the inflation rate, and productivity growth – also affect production, employment and competitiveness. Instead of trying to achieve a false precision by isolating the exchange rate

Appendix VIII
Comments from the Department of the
Treasury

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in the analysis, it is often more helpful to look at underlying developments that have an impact on both exchange rates and other macroeconomic conditions. The U.S. experience of the late 1990s, when the dollar appreciated even as production and employment rose, illustrates the utility of this approach.

The draft report's description of the complex issues that must be examined in assessing China's exchange rate regime is valuable, as is the discussion of the wide range of modeling results produced by a large number of analysts. Treasury's analysis takes into account, among other things, the maintenance of China's peg through widely varying international economic conditions and recent developments in China's current account, international reserve growth, capital flows and controls on capital flows. However, Treasury's policy analysis also concludes that, while China's peg may have been useful in the past, given the changes that have taken place in the Chinese economy and its greatly increased role in the international trade and financial systems, China should now move to a market-based flexible exchange rate. This would benefit both the Chinese and international economies.

Finally, I would note that Treasury has provided in past reports under Section 5304 considerable detail about the reasoning behind its currency manipulation conclusions. Treasury will continue to do so in its future reports, supported by the draft report's helpful suggestions.

Thank you once again for the effort that went into this draft report and the opportunity to comment on it.

Sincerely,



Mark Sobel
Deputy Assistant Secretary
International Monetary and Financial Policy

GAO Contacts and Staff Acknowledgments

GAO Contacts

Celia Thomas, (202) 512-8987
Anthony Moran, (202) 512-8645

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