
Understanding the Sources of Friction in U.S.–China Trade Relations: The Exchange Rate Debate Diverts Attention from Optimum Adjustment*

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Abstract

China has been accused of exchange rate manipulation that has caused large U.S. trade deficits, which have reduced U.S. welfare by increasing unemployment and reducing wages. In fact, the strong claims by some observers that the trade imbalances are deeply deleterious to China's welfare almost make it a moral imperative for the United States to use tariffs to force an renminbi (RMB) appreciation for China's own good.

The truth, however, is that:

- *The claim that a 40 percent appreciation of the renminbi (RMB) against the US\$ would reduce the U.S. global trade deficit represents the triumph of hope over experience.* When the average Yen–US\$ exchange rate fell from 239 in 1985 to 128 in 1988, the U.S. global current account deficit only fell from 2.1 percent to 1.7 percent of GDP because the United States replaced Japanese imports with imports from other countries. For similar reasons, a large RMB appreciation would not reduce the United States trade deficits significantly.
- *The claim that China's swelling balance of payments surplus had caused the People's Bank of China (PBC) to lose some control of credit growth is wrong.* Chinese banks face credit quotas, and credit growth could not have stayed high in 2003–07 without continual upward adjustments of the credit quotas by the PBC. The reason is not technical inability to control money growth but the political reality of factional politics.
- *The alleged negative effects on U.S. labor from the trade imbalances are greatly exaggerated.* The average unemployment rate in 1999–2006 was 5 percent compared to 6 percent in 1991–98; and the total compensation (including benefits) for blue-collar workers rose in the 1991–2006 period. Besides accelerated globalization, accelerated technological innovation

* I am grateful to the Asian Economic Panel for insightful comments on an earlier draft; and to Gary Burtless for invaluable help compiling labor market data.

was another important trend in this period. The latter produced large productivity gains that enabled labor income to rise despite the greater competition from imports. These two trends caused more frequent job turnovers, which increased worker anxiety, and hence demand for protection.

China's current account surplus exists because its dysfunctional financial system cannot intermediate the growing savings into investments. The private savings rate is high because China does not have the variety of financial institutions that would 1) pool risks by providing medical insurance, pension insurance, and unemployment insurance; and 2) transform savings into education loans, housing loans, and other types of investment loans. The backward financial system in China has made the private savings rate in China 7.0 to 12.2 percentage points higher than in the United States.

The optimal solution to the present trade tensions is a policy package that emphasizes multilateral actions. It is bad economics and bad politics to focus on only one party (China alone must change), on only one instrument (RMB appreciation alone), or on only one policy objective (current account balance).

I. The acrimony over China's exchange rate policy and the drift toward protectionism

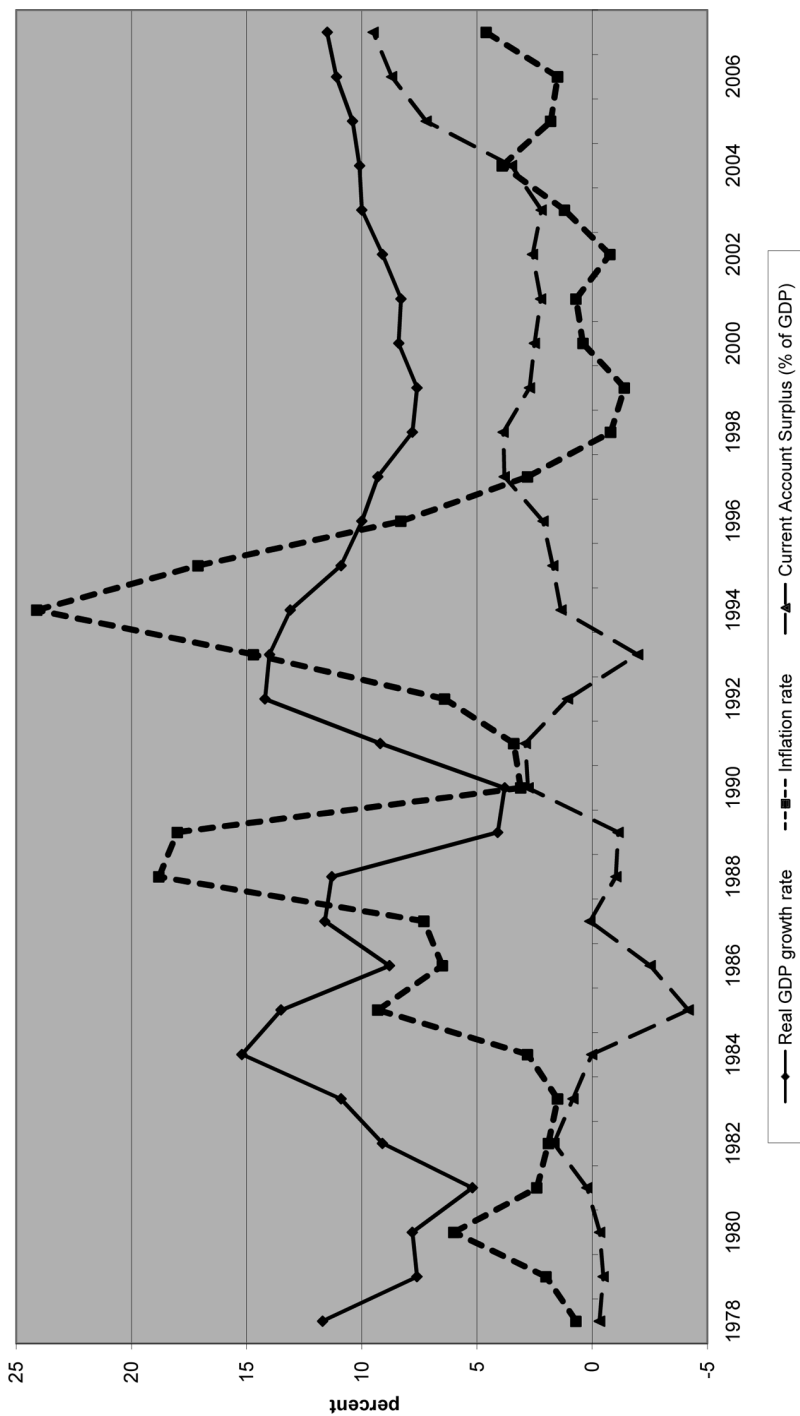
China's current account (CA) balance has been in chronic surplus since 1994. Although the CA surplus did rise rapidly from 1.4 percent of GDP in 1994 to 3.8 percent in 1997 and 3.9 percent in 1998, it also quickly fell to 2.7 percent in 1999 and stayed below that value in 2000–03. Figure 1 shows 2004 to be a turning point in China's CA behavior. The CA surplus accelerated from 2.2 percent of GDP in 2003 to 3.5 percent of GDP in 2004, and then surged to unprecedented values: 7.2 percent in 2005, 8.7 percent in 2006, and 9.5 percent in 2007. One disharmonious result from this large sustained rise in China's CA surplus is that increasingly harsh words are being said about China's trading practices and exchange rate policy.

At a U.S. congressional hearing in March 2007, Morris Goldstein (2007) opined that the RMB was overvalued by 40 percent against the US\$ and accused China of exchange rate manipulation, a charge echoed by Fred Bergsten (2007). On 14 June 2007, four U.S. Senators introduced legislation "to punish China if it did not change its policy of intervening in currency markets to keep the exchange value of the currency, the Yuan, low."¹ Barack Obama, the Democratic presidential nominee, has declared that he supports the bill.²

¹ "4 in Senate Seek Penalty for China," *The New York Times*, 14 June 2007.

² "Clinton and Obama back China crackdown," *Financial Times*, 5 July 2007.

Figure 1. China—Growth, inflation, current account, 1978–2007



The introduction of the U.S. Senate bill was followed by demands from the International Monetary Fund (IMF) and the European Union (EU) that China change its policy regime on external economic engagement. On 19 June 2007, the IMF, with strong endorsement from the U.S. Treasury, adopted a new country surveillance framework that

sets out a catchall obligation on countries not to adopt policies that undermine the stability of the international system, and lists a set of objective criteria that will be used to indicate whether a country is complying with its commitments. Warning lights will include large-scale currency intervention, the accumulation of reserves and “fundamental exchange rate misalignment”—a term that mirrors language in a bill before the U.S. Congress that would impose penalties on nations that fail to correct such misalignments. . . . Rodrigo Rato, managing director of the IMF, said: “This decision is good news for the IMF reform programme and good news for the cause of multilateralism . . . [because this new framework]” gives clear guidance to our members on how they should run their exchange rate policies, on what is acceptable to the international community and what is not.³

According to the *Evening Standard* of the United Kingdom (“Mandelson: China Trade ‘Out of Control’,” 17 October 2007):

European Trade Commissioner Peter Mandelson has warned that China is taking business with Europe for granted. Writing to EU President Jose Manuel Barroso, he said: “The Chinese juggernaut is, to some extent, out of control.” China is the EU’s largest source of manufactured goods but trade the other way is negligible. Mandelson called the relationship “deeply unequal” and said China was being “procedurally obstructive”.

Under the headline of “EU Hoping to Hit Back at Chinese on Trade,” the *International Herald Tribune* reported on 18 October 2007:

[Peter Mandelson, the European trade commissioner, admitted] that dialogue and cooperation with Beijing have failed to secure concessions for Europe, [and he called for the EU to] align policy more closely with Washington and be more ready to take cases against China to the World Trade Organization.

The comments came before EU heads of government were to meet on Thursday in Lisbon to discuss calls from Nicolas Sarkozy, the French president, and Angela Merkel, the German chancellor, for a more aggressive stance toward emerging Asian economies over trade.

³ “IMF set to scrutinize exchange rate policies,” *Financial Times*, 19 June 2007.

These recent developments in the United States and the EU should be seen as warnings that China, Europe, and the United States could be marching toward a trade war. The threat of a serious disruption in trade between China and the developed countries should be taken seriously. The turn against free trade is especially notable in the United States. The Pew Research Center (2007) reported in the 2007 report of the *Pew Global Attitudes Survey* that the proportion of U.S. residents who have a positive view of trade was only 59 percent, the lowest satisfaction level in the sample of 47 countries. This was also a dramatic drop from the 78 percent reported in the 2003 report (Pew Research Center 2003). Even more worrying for the future of the multilateral free trade system as constituted by the WTO is that this rise in discontent with trade is not limited to the United States, it is a global phenomenon.

Table 1 displays the proportion of population in 38 countries who regarded trade in a positive light in 2003 and 2007. Twenty-seven countries reported a drop in support for free trade, two countries were unchanged in their view, and nine countries increased their support. If we take an absolute change of 5 percentage points or less to be indicative of an unchanged level of support for trade, then 13 countries turned significantly against free trade, and 4 countries turned significantly in favor of free trade. The most alarming sign of threat to the WTO system is that five of the G-7 countries are viewing trade in a significantly more negative light than before; the decline in support was 24.4 percent in the United States, 13.9 percent in Italy, 11.4 percent in France, 10.5 percent in Britain, and 6.6 percent in Germany. None of the four countries (Bangladesh, Argentina, India, and Jordan) that became more ardent supporters of trade is a major trading power at present.

Why have the largest stakeholders in the world economic system, especially the United States, become more disenchanted with the present WTO system? Our hypothesis is that many analysts have drawn the wrong conclusions on China's exchange rate policy and on economic globalization because they have not been sufficiently cognizant of the other major driver of the world economy, which is the accelerated pace of technological innovation. The two mutually interacting international trends of deep economic globalization and dynamic technological innovation have brought huge increases in prosperity to some segments in each national economy but they have also caused painful structural adjustments in some other segments of each national economy. Because of the latter, the world multilateral free trade system embodied by the WTO system is under threat.

The proposed disruption in trade with China will unfortunately not solve the major complaints of the U.S.–EU coalition against China because it does not address the true causes that generated the trade tensions between these countries. In particular, the much-touted solution of an immediate downpayment of a 25 percent revalua-

Table 1. The rise in discontent with trade, 2003–07

Country	Proportion of population with a positive view of trade (%)		Increase in level (percentage points)	Proportionate increase in level (percent)
	2003	2007		
United States	78	59	-19	-24.4
Indonesia	87	71	-16	-18.4
Uganda	95	81	-14	-14.7
Italy	79	68	-11	-13.9
France	88	78	-10	-11.4
Turkey	82	73	-9	-11.0
Nigeria	95	85	-10	-10.5
Britain	87	78	-9	-10.3
Mali	95	86	-9	-9.5
Egypt	67	61	-6	-9.0
Venezuela	86	79	-7	-8.1
Russia	88	82	-6	-6.8
Germany	91	85	-6	-6.6
Czech Rep.	84	80	-4	-4.8
Canada	86	82	-4	-4.7
South Korea	90	86	-4	-4.4
Slovakia	86	83	-3	-3.5
Senegal	98	95	-3	-3.1
Mexico	79	77	-2	-2.5
Peru	83	81	-2	-2.4
Lebanon	83	81	-2	-2.4
Ukraine	93	91	-2	-2.2
Ivory Coast	96	94	-2	-2.1
Brazil	73	72	-1	-1.4
Poland	78	77	-1	-1.3
South Africa	88	87	-1	-1.1
Bulgaria	89	88	-1	-1.1
Japan	72	72	0	0.0
Tanzania	82	82	0	0.0
China	90	91	1	1.1
Ghana	88	89	1	1.1
Kenya	90	93	3	3.3
Bolivia	77	80	3	3.9
Pakistan	78	82	4	5.1
Bangladesh	84	90	6	7.1
Argentina	60	68	8	13.3
India	69	89	20	29.0
Jordan	52	72	20	38.5

Source: Pew Research Center (2003, 2007).

tion of the Chinese currency (Renminbi, RMB) against the U.S. dollar does not deserve the central place it has occupied in the discussions of what is to be done about the large and growing trade imbalances with China. The optimum solution is a policy package that uses a wider set of policy instruments (including RMB appreciation); is multilateral in adjustment (the U.S. and the EU also need to make policy changes); and is focused on a wider set of objectives and not just external balance alone.

Figure 1 shows that the earlier period of 1978–96 was typified by large boom–bust cycles in output growth and inflation, and that the post-2004 period has come to look increasingly like the earlier period, especially with the acceleration of inflation at the end of 2007. We will suggest in the last part of this paper that the appropriate

way to stabilize the Chinese economy in May 2008 is to rely more on exchange rate appreciation than on interest rate increases.

2. The triumph of hope over experience: Exchange rate appreciation as panacea

In 2002, Haruhiko Kuroda and Masahiro Kawai (2002) accused China of exporting deflation because China had pegged the RMB to the US\$ and was experiencing deflation in the 1998–2002 period.⁴ They recommended that the RMB be appreciated in order to end China’s negative impact on its neighbors. In 2003, Morris Goldstein and Nicholas Lardy (2003) noted China’s persistent CA surplus and made the first of their many proposals for a substantial appreciation of the RMB. Goldstein and Lardy called for an immediate 15 to 25 percent appreciation of the RMB against the US\$.

On 21 July 2005, China allowed the RMB to appreciate 2.1 percent discretely and announced that it was moving to a more flexible exchange rate regime. This incremental process of appreciation against the US\$ has continued as the upward march of China’s CA surplus has remained unabated. The end-of-year RMB–US\$ exchange rate stood at 8.28 in 2004, 8.07 in 2005, 7.81 in 2006, and 7.30 in 2007. The pace of RMB appreciation has picked up substantially in 2008 to reach 6.98 RMB per US\$ on 18 May 2008: an appreciation of 15.7 percent since 21 July 2005.⁵

In our opinion, there is little doubt that a large appreciation of the RMB against the dollar (say 40 percent as suggested in Goldstein 2007) could eliminate the bilateral U.S.–China trade deficit, and perhaps even China’s global trade surplus as well, but this move would only hurt China and not “save” the world. The economic reasoning involved is straightforward. *Ceteris paribus*, in the aftermath of the 40 percent RMB appreciation, foreign companies producing in China for the G-7 markets would move their operations to other Asian economies (e.g., Vietnam and India) and export from there, and G-7 importers would start importing the same goods from other Asian countries instead. In the absence of a collective appreciation of all Asian currencies, the RMB appreciation would only reconfigure the geographical distribution of the global imbalances and not eliminate them.

4 See Figure 1 for the course of Chinese inflation in the 1978–2007 period. In October 1997, in response to the Asian financial crisis, China pegged the RMB at 8.28 per US\$. China maintained this RMB–US\$ exchange rate until 21 July 2005.

5 It would be politically naive not to notice that this faster rate of appreciation came only after the conclusion of the 17th Congress of the Chinese Communist Party (CCP) in November 2007, which enabled the CCP leader, Hu Jintao, to consolidate his political power.

Table 2. Impact of appreciation of Yen against US\$ on current account balance of Japan and the United States (1985–88)

	Exchange rate (Yen/ US\$)		Global current account balance (% of GDP)				Bilateral Japan–U.S. trade balance	
	end of period	period average	Japan (a)	(b)	United States (a)	(b)	(% of Japanese GDP) (c)	(d)
1984	251.10	237.52						
1985	200.50	238.54	3.76	3.74	–2.10	–2.95	2.97	3.64
1986	159.10	168.52	4.24	4.24	–2.58	–3.30	2.60	2.90
1987	123.50	144.64	3.52	3.43	–2.69	–3.39	2.16	2.43
1988	125.85	128.15	2.74	2.66	–1.70	–2.38	1.61	1.86
1989	143.45	137.96						

Source: IMF, International Financial Statistics and Direction of Trade Statistics.

Note: The Global Current Account Balance is constructed two ways:

Measure (a) is constructed as: $100 * (\text{series } 90c.c - \text{series } 98c.c + \text{series } 98.nc) / \text{series } 99b.c$.

Measure (b) is constructed as: $(100 * \text{series } 78ald * \text{series } rf) / (\text{series } 99b.c)$.

The bilateral trade balance in (c) is calculated as export – import (cif), using Japanese data.

The bilateral trade balance in (d) is calculated as export – import, using U.S. data.

This economic reasoning is supported by the Yen-bashing experience of the 1980s, when a number of prominent economists pushed for a large Yen appreciation against the US\$ to reduce the trade imbalances in both countries. The 1981 Reagan tax cuts had caused the U.S. global CA deficit to soar, and the resulting concern about U.S. unemployment prompted the U.S. Treasury to pressure the other major economies to appreciate their currencies to reduce the U.S. trade account deficit. On 22 September 1985, France, Japan, the United Kingdom, the United States, and West Germany (G-5) signed the Plaza Accord to engineer a collective appreciation against the US\$. The outcome was a spectacular appreciation of the Yen against the US\$ in 1985–88. The end-of-year Yen–US\$ exchange rate fell from 251 in 1984 to 201 in 1985, and then to 159 in 1986 (see Table 2).

This fast, large appreciation of the G-5 currencies against the US\$ was, however, quickly considered to be excessive and destabilizing to global financial markets. The upshot was that the G-5 and Canada signed the Louvre Accord on 22 February 1987 to halt the slide of the dollar. The Yen, nevertheless, continued to appreciate against the US\$ to reach 123 Yen/US\$ at the end of 1987; and it was only in the last part of 1988 that the Yen reversed direction and started depreciating again the US\$ to reach 126 Yen/US\$ at the end of 1988 and 143 Yen/US\$ at the end of 1989 (see Table 2). The outcome of this gyration of the Yen was that the average Yen–US\$ exchange rate was 239 in 1985, 169 in 1986, 145 in 1987, 128 in 1988, and 138 in 1989.

When the average Yen–US\$ exchange rate fell during the 1985–88 period, Japan's global CA surplus declined from 3.76 percent of GDP to 2.74 percent, a drop of

1.02 percentage points (see Table 2). The U.S. global CA deficit, on the other hand, showed little change, going from 2.1 percentage of GDP to 1.7 percent, a drop of 0.4 percentage points.⁶ In short, the sizable appreciation of the Yen against the US\$ had substantial impact on the Japanese global trade imbalance but almost no impact on the U.S. global trade imbalance.

The huge appreciation of the Yen–US\$ exchange rate did cause a sizable decrease in the bilateral U.S.–Japan trade imbalance. The bilateral Japan–U.S. trade surplus declined from 2.97 percent of Japan’s GDP in 1985 to 1.61 percent in 1988, a reduction of 1.36 percentage points.⁷ The drop in the bilateral Japan–U.S. trade surplus was even greater than Japan’s global trade surplus, revealing that the Plaza Accord caused Japan to start running a larger bilateral trade surplus against some other countries.

The mechanism that caused Japan’s bilateral trade surplus with non-U.S. countries to increase under the Plaza Accord was the same mechanism responsible for the small improvement in the U.S. global CA deficit. With the gigantic appreciation of the Yen against the US\$, Japanese companies started investing in production facilities in Southeast Asia and other developing countries, and started exporting to the United States from there. Japan’s bilateral trade surplus with non-U.S. countries increased because of increased Japanese export of capital equipment to Japanese-affiliated companies in these countries. U.S. global CA surplus hardly changed because while the United States imported less from Japan, it imported more other countries.

In short, the present expectation of many analysts that an enormous RMB appreciation would reduce the U.S. global CA deficit represents the triumph of hope over experience. The recent calls for a new Plaza Accord⁸ to reduce the U.S. trade account deficit are thus similarly wrong-headed unless this new accord would include the entire world (and this unprecedented feat in global cooperation is simply not realistic).

6 These estimates are those of column (a) in Table 2. When the global CA balances of these two countries are calculated another way, the respective declines are 1.08 and 0.57 percentage points (see column (b) in Table 2).

7 This statement is based on column (c), which used trade data from Japan’s page in the *Direction of Trade Statistics*. When the trade data from the U.S. page were used, the bilateral imbalance fell from 3.64 percent of Japan’s GDP in 1985 to 1.86 percent in 1988: a drop of 1.78 percentage points.

8 For example, see Cline (2005).

3. What is the correct level for the exchange rate?

The Economist magazine constructs a PPP⁹ exchange rate based on the prices of Big Mac sandwiches sold in different countries. In 2006, it cost RMB 10.4 to buy a Big Mac in China and US\$ 3.15 in the United States, and so the PPP exchange rate was RMB 3.3 per US\$ in 2006 compared to the actual (nominal) exchange rate of exchange rate of RMB 8 per US\$. So is it meaningful to say that the Chinese exchange rate was under-valued by almost 60 percent in 2006? The answer is no because the prices of the sandwiches included non-tradable inputs, and the prices of non-tradables were lower in China than in the United States. In general, the prices of non-tradables are lower in developing countries than in the developed countries because labor costs are lower in the former. With economic development, the prices of non-tradables in the developing country will rise to bring the price ratio of non-tradables to tradables closer to the price ratio in the developed country.

To see that the gap between the usual PPP exchange rate and the actual exchange rate reflects the development gap between the two countries, we first make the following definitions:

(a) Define the consumer price index in China and United States

$$\text{CPI of China, } CPI^C = (1 - a) P_T^C + a P_N^C,$$

$$\text{CPI of United States, } CPI^U = (1 - a) P_T^U + a P_N^U,$$

where CPI = consumer price index,

C = China,

U = United States,

P_T^i = price of tradable good in country i ,

P_N^i = price of non-tradable good in country i ,

a = weight of non-tradable goods in price index.

(b) Defining the PPP exchange rate

$$e^{PPP} = CPI^C / CPI^U.$$

We next state the equilibrium conditions.

⁹ PPP = purchasing power parity.

(1) Goods arbitrage:

$$P^C_T = e^{actual} P^U_T,$$

where e^{actual} = actual (nominal) exchange rate expressed as number of RMB per US\$.

(2) Relationship between prices of tradables and non-tradables within each country:

$$\begin{array}{ll} \text{for developing China,} & P^C_N = d P^C_T, \\ \text{for developed United States,} & P^U_N = f P^U_T. \end{array}$$

(3) The difference between developed and developing country is that relative price of non-tradables is higher in the former:

$$f > d > 0.$$

We can now derive the following relationship between the PPP exchange rate and the actual exchange rate:

$$\begin{aligned} e^{PPP} &= CPI^C / CPI^U, \\ e^{PPP} &= [(1-a+ad)/(1-a+af)] e^{actual}, \\ e^{PPP} &< e^{actual}. \end{aligned}$$

This exercise above shows that it is conceptually difficult to determine the “correctness” of a country’s exchange rate based on PPP exchange rates. The actual exchange rate of a developing country would always be “undervalued” in relation to the PPP exchange rate, and it would be unsustainable for the developing country to set its exchange rate equal to the PPP exchange rate.

There is only one meaningful definition of the “correct exchange rate” and it is the “market-clearing exchange rate,” which is the exchange rate that is generated by the foreign exchange markets in the absence of interventions by any central bank. The fact that the PBC has been accumulating foreign reserves every period means that the RMB is under-valued according to this “market-clearing” definition. However, what would happen if China were to go further in its marketization of foreign exchange transactions by removing its capital controls? Diversification of asset portfolios by private Chinese agents would surely result in a great outflow of funds, possibly causing the RMB to depreciate instead. In such a case, the present exchange

rate of RMB 6.9 per US\$ would be “over-valued” compared to the “complete free market exchange rate.” Of course, no one knows whether the “complete free market exchange rate” would be higher or lower than RMB 6.9 per US\$.

First, suppose the value of the “complete free market exchange rate” is RMB 6.0 per US\$, and the “market-clearing exchange rate with controls on capital outflows” is RMB 4.5 per US\$, and, second, assume that the government stops intervention immediately and then removes capital controls a few years later after it has strengthened the supervision, management, and technical capability of the domestic financial institutions. One plausible result of this particular two-step market liberalization (which we call Option A) would be RMB appreciation to RMB 4.5 per US\$ upon cessation of foreign market intervention followed by RMB depreciation to RMB 6.0 per US\$ upon removal of the capital controls. Option A produced an overshooting of the RMB.

Suppose China adopts another form of two-step liberalization (Option B), incremental appreciation of the RMB and then removal of the capital controls after a few years. Option B is better than Option A because the exchange rate overshooting in Option A creates an unnecessary to-and-fro movement in resources. As mentioned, the removal of capital controls could very well cause the RMB to depreciate past RMB 6.9 per US\$, say, to RMB 7.5 per US\$, meaning that Option A would result in very severe exchange rate overshooting compared to Option B.

In effect, the Chinese government has been implementing a form of Option B since July 2005. In our opinion, however, the Chinese government has chosen a speed of exchange rate adjustment that is too slow, causing the RMB to depreciate significantly against the euro. We recommend that the Chinese government increase the speed of the RMB appreciation—but not in the form of an immediate discrete 10–15 percent appreciation as advocated by Goldstein (2007).

The instinctive calls by some economists for the use of the exchange rate mechanism to solve China’s external imbalance is only partially correct. Given China’s capital controls, a freely floating currency regime could mean a value for the RMB that would be greatly over-appreciated compared to what its value would be under free capital flows; an outcome that could reduce economic growth significantly.¹⁰ Freeing capital flows is not, however, an option at this time. Given the weakness of the bal-

10 In Robert Mundell’s opinion: “China’s growth rate could fall by half and foreign direct investment (FDI) could slow to a crawl if the country were to abandon its long-standing support of pegging the currency.” Quoted in “Abandoning Peg Will Slash Growth 50 pc in China,” *South China Morning Post*, 15 September 2003.

ance sheets of China's state-owned banks, the considerable embezzlement of state assets that has occurred, and the experience with the Asian financial crisis, we advise against allowing the free movement of capital in the short term.

The correct way to think about exchange rate management is to analyze the issue within the context of overall macroeconomic management and not just about its impact on the balance of payment. There are usually combinations of macroeconomic policies that would produce results superior to the one generated by appreciating the RMB alone. The general point is that because the balance of payments is only one of the main outcomes of concern¹¹ and because the exchange rate is only one of the ways¹² to affect the balance of payments, it is seldom optimal to concentrate exclusively on one policy target (which does not dominate the other policy targets in importance) and then to employ only one particular policy tool (which is chosen idiosyncratically) to achieve that one policy target. In short, the much-touted solution of an immediate down payment of a 25 percent revaluation of the RMB against the US\$ does not deserve the central place it has occupied in the discussions of what is to be done about the large trade imbalances with China.

4. Understanding the rise in worker anxiety in the United States

Allegations that the bilateral U.S.–China trade deficit represents the export of unemployment from China to the United States are common. A recent study by Robert Scott (2007) of the Economic Policy Institute used an input–output model to arrive at the claim that the bilateral trade deficit of US\$ 49.5 billion in 1997 caused the loss of 597,300 jobs that year and the 2006 bilateral trade deficit of US\$ 235.4 billion caused the loss of 2,763,400 jobs, and that every state had suffered a net loss in job from the rise in the bilateral trade deficit between 1997 and 2006. The alleged job loss in 2006 from the bilateral trade deficit implied that the unemployment rate that same year was 1.21 percentage points higher than if the bilateral trade balance were zero.¹³

With these alleged job losses, another alleged outcome from U.S.–China trade that is common is that the bilateral deficit has forced down U.S. wages.¹⁴ As it is well docu-

11 The inflation rate and the unemployment rate would be among the other key concerns.

12 Other ways include taxes, subsidies, and interest rates.

13 The U.S. civilian labor force in 2006 was 151.4 million; Table B-35 in Executive Office, Council of Advisors (2007).

14 Strictly speaking, import competition could lower U.S. wages permanently without increasing the unemployment rate permanently. The structural adjustment required to accommodate the increased imports would cause a temporary increase in the unemployment rate.

Table 3. The distribution of the global labor force (millions)

	The non-SIC countries				The SIC countries			
	Global Total	Non-SIC Total	Developed Economies	Developing Economies	SIC Total	China	India	Soviet bloc
1990	2,315	1,083	403	680	1,232	687	332	213
2000	2,672	1,289	438	851	1,383	764	405	214

Source: Freeman (2004).

Note: SIC countries = former Soviet bloc, India and China. Our figure for “total” in 2000 is different from that in Freeman because his “total” does not equal the sum of the components.

mented that worker anxiety¹⁵ in the United States has increased steadily in the last two decades just as U.S.–China trade has increased steadily, it is tempting indeed to blame the rise in worker anxiety in the United States on the rise of China as a major trading nation.

Actually, the integration of China into the international division of labor was only part of the broader process of economic globalization that accelerated in the last decade of the 20th century. The labor force of the former Soviet Union and India joined the international division of labor on a mass scale at about the same time that China did.¹⁶ Table 3 shows that the number of workers already engaged in the international division of labor was 1.08 billion in 1990, and the combined labor force of the former Soviet bloc, India, and China (SIC) was 1.23 billion. The division of labor in 1990 was certainly an unnatural one because half of the world’s workforce had been voluntarily kept out of it by the SIC’s autarkic policies. A decade after the start of the internationalization, the number of workers involved in the international economic system had increased to 2.672 billion in 2000 (with 1.363 billion workers from SIC). The straightforward implication of the Heckscher–Ohlin model is that this

¹⁵ See Otoo (1997) and Valletta (2007).

¹⁶ The economic isolation of the Soviet bloc started crumbling when the new non-communist Solidarity government of Poland began the marketization and internationalization of the Polish economy on 1 January 1990. The economic transition and political disintegration of the Soviet bloc became irreversible when Yeltsin replaced Gorbachev as the unambiguous leader of Russia in August 1991 and implemented market-oriented reforms in January 1992. For the Chinese elite, the events in the Soviet Union confirmed that there did not exist a third way in the capitalism vs. socialism debate. In early 1992, Deng Xiaoping led a successful campaign to put China firmly on the path of convergence to a private market economy. In 1991, India faced a balance of payments crisis, and it responded by going well beyond the administration of the standard corrective macroeconomic medicine of fiscal-monetary tightening and exchange rate devaluation into comprehensive adjustments of microeconomic incentives. India’s trade regime was deregulated significantly, the restrictions on foreign investment were relaxed, reform of the banking sector and the capital markets was initiated, and divestment of public enterprises and tax reform were announced.

doubling of the world labor, achieved by bringing in cheaper labor from SIC, would lower the relative price of labor-intensive goods and hence reduce the income of labor in the industrialized country.¹⁷ The fact that U.S. capital could now move abroad to set up production facilities in the SIC economies to service the U.S. market and foreign markets meant another channel (besides the cross-border movement of goods) for globalization to depress the U.S. labor income.¹⁸

There is no denying that the Heckscher–Ohlin model provides a coherent mechanism for globalization to lower U.S. labor income, and to cause U.S. unemployment to rise during the process. The fact that the U.S. global trade deficit widened steadily from 1.5 percent of GDP in 1991 to 2.5 percent in 1996, 4.4 percent in 2001, and 6.7 percent in 2006 could only have worsened the drop in labor income and the rise in the unemployment rate because U.S. exports are less labor-intensive than U.S. imports.

The inconvenient truth, however, is that these two expectations based on the Heckscher–Ohlin model have turned out to be wrong. The alleged rise in U.S. unemployment is not seen when we use the 1998–2006 period chosen by Robert Scott (2007) as the reference point. The average unemployment rate of 4.9 percent in the 1998–2006 period was actually lower than the average unemployment rates in the immediate previous periods of 1980–88 and 1989–97, which were 7.5 percent and 6.0 percent, respectively. In reality, the U.S. economy has been a highly successful job-creation machine in the 1997–2006 period.

Many analysts have pointed out that the inflation-adjusted weekly earnings (wages and salaries) of non-supervisory employees in 1980 are higher than in every year in the 1982–2006 period.¹⁹ So is the backlash against globalization in the G-7 countries the result of the immiseration of their low-skilled workers? The answer is no, because earnings is only one of the two components of compensation received by workers, the other component is employer-paid benefits (e.g., pension contributions, health insurance). The neglect of benefits gives the wrong picture on income received by labor because the growth of benefits has been especially rapid in the last decade due to the soaring costs of health insurance. When we measure labor income as the sum of earnings (wages and salaries) and benefits, then we find that labor in-

17 More accurately, the wage of the formerly isolated SIC worker would rise while the wage for the worker in the industrialized country would fall.

18 Hence, the imposition of a high U.S. tariff would not only drastically curb imports from SIC but also radically reduce this type of FDI flow from the United States to SIC.

19 For example, see Figure 1 in Polaski (2007).

come in 1980 is lower than in every year in the 1982–2006 period, refuting the conclusion drawn from looking only at the earnings component of labor income.

Figure 2 reports the evolution of four data series over 1979–2006, each indexed at 100 in December 1979:²⁰

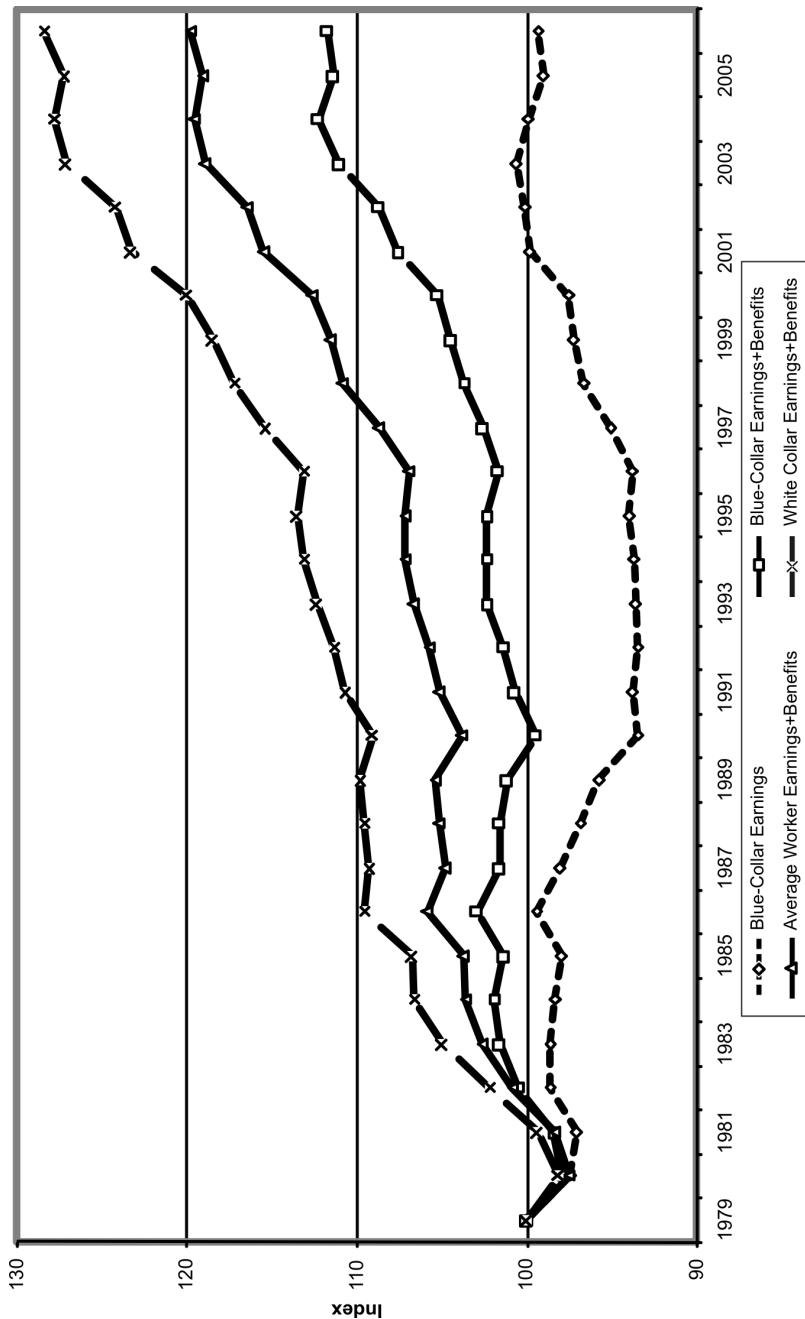
- Series (a) is the inflation-adjusted earnings received by a blue-collar worker in December of each year.
- Series (b) is the inflation-adjusted compensation (i.e., earnings plus benefits) received by a blue-collar worker in December of each year.
- Series (c) is the inflation-adjusted compensation received by an average worker in December of each year.
- Series (d) is the inflation-adjusted compensation received by a white-collar (excluding sales occupations) worker in December of each year.

Series (a) shows that the earnings of the blue-collar worker in 2006 were 1 percent lower than in 1979. Series (b) shows that the compensation (earnings plus benefits) of the blue-collar worker in 2006 was 12 percent higher than in 1979. In fact, blue-collar compensation had been higher than in 1979 since 1991. Furthermore, blue-collar compensation started growing faster beginning in 1997, just as the U.S. global trade deficit began to grow faster. Series (d) shows that the compensation of the white-collar worker in 2006 was 28 percent higher than in 1979. This much higher income growth of the white-collar worker caused the compensation of the average worker, series (c), in 2006 to be 20 percent higher than in 1979. The important message from Figure 2 is that the income growth of the United States in the 1990–2006 period of accelerated globalization was shared by both low-skilled workers and high-skilled workers, albeit the latter received a larger share of the income growth.

The possible key to reconciling the theoretical predictions of the Heckscher–Ohlin model with the actual outcomes is to recognize that economic globalization was not the only significant economic process in the last two decades. The other significant economic process was accelerated technological innovation, especially in the advanced economies, notably the United States. The reason why the U.S. real labor income has not fallen despite economic globalization is that there has been remarkably high U.S. productivity growth since the late 1980s, perhaps enabled in large

²⁰ Each data series is produced by combing the relevant SIC-based series of the 1979–2005 period with the relevant NAICS-based datum for 2006. SIC = Standard Industrial Classification; and NAICS = North America Industrial Classification System. Data are from Bureau of Labor Statistics (2007a, 2007b).

Figure 2. Compensation received by U.S. workers (1979 = 100)



part by the ICT²¹ revolution. It is instructive here to note that Alan Greenspan has attributed his (generally hailed) superior ability in making the “correct” policy to his early recognition that the U.S. entered into a period of rapid technological innovation in the late 1980s.

We note that while this high productivity growth was able to offset the downward pressures on the real labor income from economic globalization, it was also likely to have joined economic globalization in diminishing the labor share of GDP.²² Recent technological innovations have more than substituted capital for labor (e.g., fewer secretaries are needed because answering machines can now convert messages into voice files that can be emailed to traveling professionals). They have also transformed many of what have been traditionally non-tradable services into tradable services, allowing jobs to be outsourced to foreign service providers. For example, the ICT revolution has allowed offshore call centers to handle questions from U.S. customers, offshore accountants to process U.S.-based transactions, and offshore medical technicians to read the X-rays of U.S. patients.²³

What is fueling the resentment toward imports from China when the average U.S. worker is experiencing neither more unemployment nor lower compensation? The explanation is that the U.S. worker is feeling more insecure in the 2000s than in the 1980s because of the faster turnover in employment. Globalization and technological innovation have required the worker to change jobs more often and she finds that there are considerable costs associated with the job change because of the inadequacies of U.S. social safety nets.

The more frequent change in jobs is documented in Table 4 by the declining trend in the length of the median job tenure for older male workers. The median job tenure for males has changed as shown:

21 ICT = information and communications technology.

22 Besides capital-bias technological innovation and economic globalization, there have been two other developments in the U.S. economy that have likely contributed to the decline in labor share of GDP. The first is changes in the institutional nature of the U.S. labor market; union membership has declined and there has been an upward shift in the compensation norms for high-level executives. (This shift in compensation norms could reflect a combination of a shift in social attitudinal norms, and more collusion between managers and their boards. Akerlof (2007) is a recent discussion on “norms” and their economic consequences.) The second of these other developments is increased immigration into the United States (before 2001); see Borjas (1994) and Ottaviano and Peri (2005).

23 There is a large empirical literature on the relative impact of technological changes and globalization on the U.S. wage rate, notable contributions include Sachs and Shatz (1994) and Feenstra and Hanson (1996, 1998).

Table 4. Median years of tenure with current employer for employed wage and salary male workers by ages, elected years, 1983–2004

Age and sex	January 1983	January 1987	January 1991	February 1996	February 1998	February 2000	January 2002	January 2004	January 2006
16 years and over	4.1	4.0	4.1	4.0	3.8	3.8	3.9	4.1	4.1
16 to 17 years	0.7	0.6	0.7	0.6	0.6	0.6	0.8	0.7	0.7
18 to 19 years	0.8	0.7	0.8	0.7	0.7	0.7	0.8	0.8	0.7
20 to 24 years	1.5	1.3	1.4	1.2	1.2	1.2	1.4	1.3	1.4
25 years and over	5.9	5.7	5.4	5.3	4.9	4.9	4.9	5.1	5.0
25 to 34 years	3.2	3.1	3.1	3.0	2.8	2.7	2.8	3.0	2.9
35 to 44 years	7.3	7.0	6.5	6.1	5.5	5.3	5.0	5.2	5.1
45 to 54 years	12.8	11.8	11.2	10.1	9.4	9.5	9.1	9.6	8.1
55 to 64 years	15.3	14.5	13.4	10.5	11.2	10.2	10.2	9.8	9.5
65 years and over	8.3	8.3	7.0	8.3	7.1	9.0	8.1	8.2	8.3

Source: This is Figure 10 in Burtless (2005) updated with 2006 and expanded with addition of (25–34) age group.

- 35 to 44 age group, decreased from 7.0 years in 1987 to 5.1 years in 2006;
- 45 to 54 age group, decreased from 11.8 years in 1987 to 8.1 years in 2006; and
- 55 to 64 age group, decreased from 14.5 years in 1987 to 9.5 years in 2006.

In terms of social safety nets, Gary Burtless (2005) reports that within the G-7 in 2004, only the United Kingdom has a less generous unemployment benefits scheme than the United States. Table 5 shows that an unemployed person in the United States received initial unemployment benefits that equaled 53 percent of previous income compared to 78 percent in Germany, 76 percent in Canada and France, 61 percent in Japan, 60 percent in Italy, and 46 percent in the UK. Table 5 also documents that the duration of unemployment benefits was 6 months in the United States compared to 12 months in Germany, 9 months in Canada, 30 months in France, 10 months in Japan, and 6 months in Italy and the UK.

The dilemma is that the fast rate of technological innovation has been good for labor income but bad for job stability because technological improvements in the production process usually mean occupational obsolescence. The unfortunate fact is that the temporary unemployment associated with job changes are especially painful in the United States compared with most of the advanced countries because of the less generous social safety nets and because health coverage is usually supplied by the employer.

In short, the popular outcry in the United States and the EU against China's trade surpluses is misplaced. Even if China's trade balance were zero, the pains of structural adjustment and income redistribution caused by technological innovations, institutional changes, globalization, and immigration would still be there. The fact that the blue-collar worker did receive a higher level of compensation suggests that

Table 5. Unemployment benefits in 20 OECD countries in 2004

	Percent of net earnings initially replaced by after-tax value of unemployment benefits	Duration of unemployment benefits (months)
Sweden	83	14
Finland	82	23
Switzerland	82	24
Germany	78	12
Netherlands	78	18
Portugal	77	24
Canada	76	9
Denmark	76	41
France	76	30
Spain	75	24
Austria	73	9
Norway	73	36
New Zealand	67	a
Australia	66	a
Belgium	61	b
Japan	61	10
Italy	60	6
Ireland	55	15
USA	53	6
UK	46	6

Source: Burtless (2005).

Notes: a. Australia and New Zealand offer only means-tested benefits. If the eligibility test continues to be met, unemployment benefits can last indefinitely.

b. Belgium essentially provides unemployment benefits of indefinite duration.

the additional pain from the incremental structural adjustment caused by the widening trade deficit is minor by comparison. It is our hypothesis that the enhanced worker anxiety in the developed countries has been created not by a lower real wage and a higher unemployment rate but by job insecurity resulting from (1) occupational obsolescence because of rapid technological innovation, and (2) import competition from economic globalization. The job insecurity in the United States is exacerbated by inadequate social safety nets and by the inappropriate design of the funding of medical insurance.

5. Understanding the evolution of China's current account balance

Since 1986, except for the four years (1990, 1991, 1997, and 1998) associated with an economic downturn in China, the bilateral surplus with the United States has exceeded China's global trade surplus, meaning that China is running massive deficits in its trade with some of its other trade partners. The changing configuration of China's bilateral trade balances since 1986 reflects mainly the steady expansion of production networks into China. In this new geographical division of the production of components and of the production stages in manufacturing, China usually makes the cheaper components and assembles the final products by combining the

domestically produced components with imported components. The fast transfer of manufacturing and assembly operations from Japan, Taiwan, and South Korea to China translates directly into high growth in the China–U.S. bilateral trade surplus because this transfer reduces the bilateral Japan–U.S. trade surplus, the bilateral Taiwan–U.S. trade surplus, and the bilateral South Korean–U.S. trade surplus, correspondingly. In short, the China–U.S. trade deficit could be reduced by transferring the assembly operations of Korean, Taiwanese, Japanese, and European production networks to Vietnam, but the Vietnam–U.S. trade deficit would then increase, leaving the global U.S. trade balance unchanged.

At the same time, however, China's chronic and growing global trade surplus does reveal a deep-seated serious problem in China's economy: its dysfunctional financial system. This problem is revealed by the aggregate-level accounting identity that the global CA balance is determined by the fiscal position of the government, and the savings-investment decisions of the state-controlled enterprise (SCE) sector and the private sector.²⁴ Specifically:

$$CA = (T - G) + (S_{SCE} - I_{SCE}) + (S_{private} - I_{private}),$$

where CA = current account in the balance of payments.

$$CA = (X - M) + R,$$

X = export of goods and non-factor services,

M = import of goods and non-factor services,

R = net factor earnings from abroad (i.e., export of factor services),

T = state revenue,

G = state expenditure (including state investment),

S_{SCE} = saving of the SCEs,

I_{SCE} = investment of the SCEs,

$S_{private}$ = saving of the private sector,

$I_{private}$ = investment of the private sector.

For the last decade, the Chinese fiscal position ($T - G$) has been a small deficit, and so it is not the cause for the swelling CA surpluses in the 2000s. The CA surplus exists because the sum of savings by SCEs and the private sector exceeds the sum of their investment expenditures; and it has expanded steadily because the non-

²⁴ The SCE category covers companies that are classified as SOEs (state-owned enterprises); and joint-ventures and joint-stock companies, which are controlled by third parties (e.g., legal persons) who are answerable to the state. For an analysis of how the principal-agent problem in SOEs has shaped China's macroeconomic performance, see Woo (2006).

government savings rate has been rising faster than the growth of non-government investment.²⁵

Why has China's financial system failed to translate the savings into investments? Such an outcome was not always the case. Before 1994, the voracious absorption of bank loans by SCEs to invest recklessly kept the CA usually negative and the creation of nonperforming loans (NPLs) high. When the government implemented stricter controls on the state-owned banks (SOBs) from 1994 onward (e.g., removing top bank officials whenever their bank lent more than its credit quota or allowed the NPL ratio to increase too rapidly), the SOBs slowed down the growth of loans to SCEs. This cutback created an excess of savings because the SOB-dominated financial sector did not then re-channel the released savings (which were also increasing) to finance the investment of the private sector.

This failure in financial intermediation by the SOBs is quite understandable. First, the legal status of private enterprises was, until recently, lower than that of the state enterprises; and, second, there was no reliable way to assess the balance sheets of the private enterprises, which were naturally eager to escape taxation. The upshot was that the residual excess savings leaked abroad in the form of the CA surplus. Inadequate financial intermediation has made developing China a capital exporting country!

This perverse CA outcome is not new. Before the mid 1980s, Taiwan experienced this same problem when all Taiwanese banks were state-owned and were operated under a civil service regulation that required each loan officer to repay any bad loan that she approved. The result was a massive failure in financial intermediation that caused Taiwan's CA surplus to be 21 percent of GDP in 1986. The reason why China has not been producing the gargantuan CA surpluses seen in Taiwan in the mid 1980s is the still large amount of SCE investments.

Why is the savings rate of the non-government sector rising? The combined savings of the SCE and private sectors rose from 20 percent in 1978 to 30 percent in 1987, and has remained above 45 percent since 2004. In discussions on the rise of the savings rate, a common view is that the rise reflects the uncertainty about the future that many SOE workers feel in the face of widespread privatization of loss-making SOEs. We find this explanation incomplete because it seems that there has also been

²⁵ See Wiemer (2008) for a recent quantification of the increase in the savings rate of the different groups.

a rise in the rural saving rate even though rural residents have little to fear about the loss of jobs in the state-enterprise sector because none of them are employed there.²⁶

We see two general changes that have caused both urban and rural saving rates to rise significantly in China. The first change relates to increased worries about the future by the Chinese. The steady decline in state subsidies to medical care, housing, loss-making enterprises, and education, and mismanagement of pension funds by the state have led people to save more to insure against future bad luck (e.g., sickness, job loss), buy their own lodging, build up nest eggs for retirement, and invest in their children.

The second change is the secular improvement in the official Chinese attitude toward market capitalism. Given the high rate of return to capital, this increasingly business-friendly attitude in the Communist Party of China has no doubt encouraged both rural and urban residents to save for investment, that is, greater optimism about the future has spawned investment-motivated saving.

In our explanations for the existence of the CA surpluses and the growth of the surplus, there is a common element in both: China's financial system. The point is that savings behavior is not independent of the sophistication of the financial system. An advanced financial system will have a variety of financial institutions that would enable pooling of risks by providing medical insurance, pension insurance, and unemployment insurance; and transform savings into education loans, housing loans, and other types of investment loans to the private sector. *Ceteris paribus*, the more sophisticated a financial system, the lower the savings rate.

Liu and Woo (1994) and Woo and Liu (1995) tested the proposition that financial market sophistication influences the private savings rate by adding a financial sophistication (FS) variable to the well-known private savings rate equation of Modigliani (1966, 1970) to arrive at the following econometric specification:

$$PSR = f(PROD, AGER, DEPR, RETS, R, FS),$$

where PSR = private savings rate,
 $PROD$ = productivity growth,
 $AGER$ = ratio of aged population to working population,
 $DEPR$ = ratio of young population to working population,

²⁶ *The Economist Intelligence Unit* (2004, pp. 23) reported that "farmers' propensity to save seems to have increased."

$RETS$ = length of retirement span,
 R = real interest rate.

Liu and Woo (1994) estimated this equation for a sample of 18 OECD countries and Taiwan over 1975–85, using three different proxies for FS. In addition to confirming the earlier results of Modigliani (1966, 1970), they found that the coefficient of FS was negative and highly significant statistically. We used the estimated coefficients of FS²⁷ and the actual values of FS in China and the United States in 2000–05 period to compute the difference in the PSR of these two countries that could be attributed to the difference in the sophistication of their financial markets. We found that the backward financial system in China made the non-government savings rate in China to be 7.0 to 12.2 percentage points higher than the private savings rate in the United States.²⁸

Because the Chinese CA surplus was less than 7.0 percent of GDP before 2005, this meant that if China had financial markets that were as sophisticated as those of the United States, it would have been a net borrower instead of a net lender in the global financial markets during 1994–2004. In short, China generates a chronic CA surplus because of inadequate financial intermediation. The dysfunctional financial system fails to pool risks to reduce uncertainty-induced savings and fails to provide loans to reduce investment-motivated saving.

6. A multilateral policy package to address the trade tensions with China

The real source for the anxieties that have given rise to the present U.S. obsession with RMB appreciation is not the large trade imbalances but the large amount of structural adjustment necessitated by the acceleration of economic globalization and of labor-saving technological progress. Dollar depreciation and trade barriers will slow down the process of structural adjustment but will not stop it because the other main driver (quite possibly, the bigger driver) of structural adjustment in the United States is technological progress.

Furthermore, the real source of China's proclivity to run CA surpluses is its primitive financial system. RMB appreciation is a highly indirect way to affect the CA sur-

²⁷ We used equations (1), (2), and (3) in Table 2 of Liu and Woo (1994).

²⁸ The non-government sector refers to the SCE sector and the private sector. This calculation assumes that the SCE sector behaves like the private sector. Developments since the mid 1990s indicate that the SCEs are converging in behavior to the private enterprises; there has been a steady decline in the proportion of SOEs, the increasing corporatization and listing of SCEs, and the surreptitious process of effective privatization by the managers.

pluses. The failure of the Plaza Accord in 1985 to reduce the U.S. CA deficit significantly indicates how unreliable the exchange rate is in effecting the desired change. It is therefore correct for the U.S. Treasury in the Strategic Economic Dialogue with China to focus on the fundamental importance of financial market development in China.²⁹

The optimal solution to reducing the friction in U.S.–China trade relations is a policy package that emphasizes multilateral actions to achieve several important objectives. It is bad economics and bad politics to dwell on just one region (China alone), dwell on just one instrument (RMB appreciation alone), and dwell entirely on one target (external imbalance). The multilateral policy package that we propose can be framed as answers to the following three questions:

1. What should the United States do?
2. What should China do?
3. What should the United States and China do collaboratively?

6.1 What should the United States do?

Congress should accelerate the reduction in fiscal imbalance; strengthen social safety nets and programs that upgrade the skills of younger workers; and make health care insurance coverage independent of individual employers. In particular, the Trade Adjustment Assistance (TAA) program still functions inadequately after its overhaul in 2002. Lael Brainard (2007) reported that:

Participation has remained surprisingly low, thanks in part to confusing Department of Labor interpretations and practices that ultimately deny benefits to roughly three-quarters of workers who are certified as eligible for them. TAA has helped fewer than 75,000 new workers per year, while denying more than 40 percent of all employers' petitions. And remarkably, the Department of Labor has interpreted the TAA statute as excluding the growing number of services workers displaced by trade . . . Between 2001 and 2004, an average of only 64 percent of participants found jobs while they participated in TAA. And earnings on the new job were more than 20 percent below those prior to displacement.

In addition to improving the TAA program, the establishment of wage insurance is an excellent way to bring U.S. social safety nets more in line with the type of struc-

²⁹ Our analysis supports three recent policy positions of the U.S. Treasury: (1) China must increase "the pace of reform in financial services market" (Paulson, 2007); (2) China has not engaged in currency manipulation; and (3) China should increase the rate of RMB appreciation.

tural adjustments driven by globalization and technological changes. Occupational obsolescence created by the latter should not be forestalled by Luddite regulatory measures, but rather, they should be accommodated by establishing extensive skill-upgrading programs (e.g., training loans, apprentice stipends) and improving the formal education system especially at the grade school and high school levels.

6.2 What should China do?

The obvious short-run policy package has three components. First, the RMB appreciation begun in July 2005 should be accelerated, and be used more aggressively as an anti-inflation instrument. Second, import liberalization (e.g., implement seriously the commitments made in negotiations for WTO membership like protection of intellectual property rights) should be quickened and expanded beyond WTO specifications.

Third, state expenditure (e.g., rural infrastructure investments, and rural health programs) should be accentuated to soak up the excess savings, with an emphasis on import-intensive investments (e.g., buying airplanes and sending students abroad). However, there must be time limits put on the expanded public works and SCE investments because, in the long run, the increased public investments could follow an increasingly rent-seeking path that is wasteful (e.g., in Japan, building a second big bridge to a lowly populated island to benefit a politically connected construction company), and the increased SCE investments could convert themselves into non-performing loans at the SOBs.

It is now common to hear calls for China to rebalance its growth path by reducing savings, cutting investment, and increasing consumption.³⁰ We think, however, that the correct advice on rebalancing is to reduce only investments that are unprofitable, and to increase consumption to drive the CA surplus to zero. Our recommended policy mix for rebalancing is based on the understanding that economic growth (by definition) requires an enlargement of output capacity. A government-induced increase in consumption that lowers investment will maintain full usage of the existing output capacity but it will diminish the expansion of output capacity, causing a lower GDP growth rate and, hence, a slower absorption of China's surplus labor. Furthermore, China still has a long way to go before its technological level reaches that of the G-7; and technological upgrading requires investing in more modern capital equipment. So a policy that increases consumption and decreases investment is not only a slow-growth policy, it is also a slow technological upgrading policy.

30 For example, Lardy (2007) wrote that the more desired growth path is one marked by "a reduction in China's national savings rate" (p. 10), and by a reduction in "China's excessive rate of investment" (p. 10). The latter "is a prerequisite to a successful transition to a more consumption-driven growth path" (p. 10).

Consumption could be increased without lowering investment by (1) the state providing an integrated health insurance system, a comprehensive pension system, and an extensive scholarship program; and (2) the financial system providing more sophisticated financial products like education and housing loans, and various types of insurance schemes, and stopping its discrimination against private investors. The establishment of a modern financial system requires the appearance and growth of competitive *domestic* private banks. As China is required by its WTO accession agreement to allow foreign banks to compete against its SOBs on an equal basis by 2007, it would be akin to self-loathing not to allow the formation of truly private banks of domestic origin.

We therefore recommend that following the recapitalization of the four big state banks,³¹ at least two of them should be broken into several regional banks, and that the majority of these regional banks should be privatized. It would be a good idea to sell a few of the regional state banks to foreign banks to facilitate the transfer of modern banking technology to Chinese banks as the more local staff the foreign bankers train, the larger the pool of future managers for Chinese-owned banks. At the same time, the laws on the establishment of new banks should be loosened, and interest rates should be deregulated. However, it is most crucial that financial sector liberalization proceed no faster than the development of the financial regulatory ability of the state in order to avoid the danger of substituting financial crash for financial repression.

An important part of financial reform should be the promotion of the development of sound rural financial institutions. In particular, we wish to draw attention to the successful Indonesian experience of establishing a self-sustaining and profitable banking system (the *Unit Desa* system) in the countryside to provide a starting point for discussing how to accelerate financial development in rural China.³² As quickly as adequate prudential supervision could be put into place, China should allow the creation of new small-scale rural financial institutions that will mobilize local savings to finance local investments.

6.3 What should the United States and China do collaboratively?

Earlier, we reported the survey finding of the Pew Research Center that there has been a dramatic decline in support for free trade within the United States and the

³¹ They are the Agricultural Bank of China, Bank of China, China Construction Bank, and Industrial and Commercial Bank of China.

³² Indonesia is similar to China in key economic and institutional features: a geographically vast and heavily populated economy, and a rural financial system dominated by branches of a state bank (Bank Rakyat Indonesia and Agricultural Bank of China, respectively); see Woo (2005).

major developed countries. It is important that the United States and China start collaborating immediately to push the Doha Rounds to a successful conclusion. The commitment of China to work for continued economic globalization will help strengthen the now wavering U.S. commitment to the WTO system.

The United States, which has traditionally been at the forefront for expanding the multilateral free trade system, is now beset by self-doubt for three major reasons. First, the United States was willing to put up with the pains of structural adjustments in 1960–90 to accommodate the growing imports from Japan, South Korea, Taiwan, and ASEAN because they were frontline allies in the Cold War. With the end of the Cold War, it is natural for the United States to reconsider the economic cost of structural adjustment because the security and ideological benefits from it have decreased.

Second, the amount of required structural adjustment in the United States to accommodate the rise of the SIC bloc is far greater than the earlier adjustment to the rise of its Cold War allies. As noted, the entry of the SIC economies has doubled the labor force participating in the international division of labor.

Third, the strongest lobby for free trade in the United States has been the economics profession, and the free trade doctrine has come under strong internal criticism in the last few years. Most notably, Paul Samuelson, who made many fundamental contributions to the development of the standard trade models that convinced mainstream economists that free trade is the best policy, argued in 2004 that under free trade, where outsourcing accelerates the transfer of knowledge to the developing country, there could be a decline in the welfare of the developed country.³³ Intellectual apostasy on free trade is spreading. In 2005, Alan Blinder, another eminent economist, joined in the criticism of free trade fundamentalism.

In April 2007, the United States bypassed multilateralism in free trade by agreeing to form a Free Trade Area (FTA) with South Korea. With the United States weakening in its resolve to protect the multilateral free trade system, it is the time for China to show that it is a responsible stakeholder by joining in the stewardship of the multilateral free trade system, from which it had received immense benefits. With China so far playing a passive role in pushing the Doha Round forward, by default, Brazil and India have assumed the leadership of the developing economies camp in the trade negotiations. According to Susan Schwab, the U.S. Trade Representative at the

³³ See Samuelson (2004), "Shaking Up Trade Theory," *Business Week*, 6 December 2004, and "An Elder Challenges Outsourcing's Orthodoxy," *The New York Times*, 9 September 2004.

G-4 (the United States, the EU, Brazil, and India) meeting in Potsdam in June 2007, Brazil and India retreated from their earlier offers to reduce their manufacturing tariffs in return for cuts in agricultural subsidies by the developed economies because of “their fear of growing Chinese imports.”³⁴ The Brazilian–Indian action caused the Potsdam talks to fail and hurt the many developing economies that were agricultural exporters.

The reality is that Brazil is now attempting to bypass multilateral trade liberalization by entering into FTA negotiations with the EU. A growing number of nations like Brazil “are increasingly wary of a multilateral deal because it would mandate tariff cuts, exposing them more deeply to low-cost competition from China. Instead, they are seeking bilateral deals with rich countries that are tailored to the two parties’ needs.”³⁵

The current international atmosphere is ripe for protectionism. Therefore, China and the United States must now work together to provide leadership to prevent the unraveling of multilateral free trade. We realize of course that although it is desirable for Chinese economic growth for China to become more active in supplying global public goods, it might not be allowed to do so because of the usual reluctance of the existing dominant powers to share the commanding heights of the world political leadership. The slow structuring of the global governance structure to reflect present distribution of economic power is an example of the many important instances where reform is urgently needed to improve the supply of global public goods.

7. Final remarks

Quite a number of China-watchers have advocated a drastic appreciation of the RMB not primarily because this would reduce protectionist sentiments in the United States, but because this would improve China’s own welfare. The most often heard version of this “for-your-own-good” claim is that the undervalued RMB was undermining China’s social stability with inflation. This claim is based on the budget identity of central bank intervention in the foreign exchange market: a balance of payments surplus necessarily means an increase in foreign exchange reserves, whose correspondence is an expansion in the stock of high-power money, and hence an increase in the amount of credit in the economy.

³⁴ “Schwab Surprised by Stance of India and Brazil,” *Financial Times*, 22 June 2007; and “China’s Shadow Looms over Doha Failure,” *Financial Times*, 22 June 2007.

³⁵ “Brazil, Others Push Outside Doha For Trade Pacts,” *The Wall Street Journal*, 5 July 2007.

There has been a great amount of effort by a growing number of people to determine the ability of China's central bank—the People's Bank of China (PBC)—to conduct independent monetary policy.³⁶ Because credit growth and M2 growth have been high from January 2003 to December 2007, it was inevitable that almost all studies have concluded that the swelling balance of payments surplus had caused the PBC to lose some control of credit growth.³⁷ This frequent finding led Eswar Prasad (2008, pp. 78) to offer the assessment that:

Monetary policy is typically the first line of defense against [large shocks like loss of confidence in the banking system, a collapse of external demand, and flaring tensions over Taiwan], but constrained by maintaining a tightly managed exchange rate, it can at best play a very limited role for China. . . . [Furthermore, holding] monetary policy hostage to an exchange rate objective . . . makes an already difficult reform process even harder.

The accounting approach in these studies is analytically wrong because such a direct link is institutionally impossible in China. It is incredible that none of these studies paid serious attention to the fact that all Chinese banks are state-controlled, and they face individually set credit quotas. Because the managers of the state-controlled banks (for their own career advancement) would give much greater weight to the credit-quota directives issued by their government regulators than to the maximization of bank profits, credit growth could not have stayed high without continual large upward adjustments of the credit quotas by the PBC.

The empirical literature on the link between China's balance of payments surpluses and China's credit growth is so simple-mindedly mechanical that it misses the crucial question of why there has been a continual raising of the credit quota. This literature has been trying to determine the economic mechanism in the link, when it is Chinese politics that determines whether the economic mechanism would be turned on or not. What these empirical studies have estimated is not the ability of the PBC to conduct independent monetary policy but the willingness of the PBC to allow

³⁶ Many of the studies used various measures of correlation between the change in foreign reserves accumulation and the change in money supply (e.g., M0, M2) or between the movements of U.S. and Chinese interest rates as informal tests of the economic mechanism linking the two. One theoretically constrained approach is to estimate China's "offset coefficient," that is, to estimate the ability of the PBC to conduct offsetting open-market operations to keep the amount of high-power money unchanged in the face of the balance of payments surpluses. A value of 0 for the offset coefficient means that the PBC has completely lost control of the money supply (M2), and a value of 1 means that the PBC has complete control over M2.

³⁷ The theoretically constrained studies found the estimated offset coefficients to be less than 1.

high credit growth. In other words, even if the balance of payments surplus had not increased secularly during the 2003–07 period, the PBC would have engineered the observed money growth in this period.

The reason for the large upward adjustments of the credit quotas (until December 2007) was the exercise of political patronage by Hu Jintao (who became the head of the Chinese Communist Party in November 2002) to consolidate his position. The flood of investment loans was politically useful as long as CPI inflation was quiescent, which was the case until production bottlenecks started appearing in the latter half of 2007. A part of the newly created liquidity flowed into the stock market and the housing market, creating record booms in 2006 and 2007.

With the end of the 17th Party Congress in November 2007, the Chinese government has been taking serious steps to slow the growth of aggregate demand (e.g., by raising interest rates and bank reserve requirements, and appreciating the RMB), and the first prominent casualty is share prices. There has been no question about the Communist Party of China losing control of the money supply since 2002. The economics literature that has claimed that the pegged exchange rate has caused China to lose at least partial control over money growth is simply wrong. One would have to look elsewhere for a reason for why RMB appreciation would be beneficial for China's welfare.

Based on the economic circumstances of May 2008 (at the time this paper was being written), when inflation is accelerating, we think that a quicker appreciation of the RMB is now desirable. The inflation rate in 2007 was 4.6 percent, but the annualized inflation rates in the last six months of 2007 were all above 4.6 percent. It rose from 5.6 percent in July 2007 to 6.5 percent in December 2007, and then continued soaring to reach 8.7 percent in February 2008, and stayed at about that level during March and April 2008. As a result, the PBC has raised interest rates substantially and increased banks' reserve requirements frequently.

It appears to us, however, that the present anti-inflationary policies run the risk of undermining high long-term economic growth. The sustained high growth in Chinese aggregate demand in the 2003–07 period was powered by an investment boom and a rapidly growing trade surplus; and lowering the inflation rate would require reducing the growth rate (if not the level) of these two demand components.³⁸ The

³⁸ China's accelerating inflation reflects a similar climb in its GDP growth rate, from the already high 11 percent in 2006 to 11.5 percent in 2007. The proximate cause of price growth since mid 2007 is the appearance of production bottlenecks as domestic demand exceeds supply in an increasing number of sectors, such as power generation, transportation, and in-

best policy mix in our opinion is to focus more on the reduction of the trade surplus and less on the reduction of investment spending, that is, more emphasis on RMB appreciation and less on higher interest rates to cool the economy. A sizable reduction in aggregate demand through RMB appreciation is achievable without being imprudent, because the CA surplus in 2007 was 9.5 percent of GDP. Investment (especially in infrastructure in backward areas and social investments) should not bear the brunt of the expenditure squeeze, because today's investment is tomorrow's growth in production capacity, and the production of more goods tomorrow would reduce inflation.

It is worth emphasizing that the suggestion that China should reduce investment and rely on consumption-led growth is an oxymoron. This type of consumption-led growth means lower growth because with lower investment there would be slower expansion of production capacity. The Chinese economy should be rebalanced by increasing consumption at the expense of the trade surplus and not at the expense of domestic capital accumulation. The government should therefore stop its present reliance on the reduction of investment as the primary instrument to curb inflation, and employ RMB appreciation instead.

Using RMB appreciation as the primary tool to fight inflation means, however, accepting a temporarily higher unemployment rate now in exchange for a permanently lower unemployment rate in the future. This is because manufactured exports are typically more labor-intensive than investment projects. As a result, an RMB 1 billion reduction in exports would create more unemployment than an RMB 1 billion reduction in investment spending. However, tomorrow's capacity expansion from today's investment would mean a permanent increase in the number of jobs created from tomorrow onward.

Nevertheless, China must be careful when implementing RMB appreciation. Policymakers should closely monitor potential changes in the economic conditions in the G-7. A deep recession in the United States resulting from the sub-prime crisis would significantly lower Chinese exports and cut the prices of oil and other primary commodities. In that case, a large RMB appreciation undertaken now would

intermediate-goods industries. Sustained robust growth and rising aggregate demand has also caused production bottlenecks outside of China, most notably in the agricultural commodity and mining sectors, which have helped lift oil prices to more than US\$ 100 per barrel. Adding to these woes are two other inflationary factors: first, Porcine Reproductive and Respiratory Syndrome (PRRS, or "blue-ear disease") has been killing pigs—China's main meat source—nationwide, and, second, terrible storms in January reduced the supply of grain and vegetables.

be overkill. Moreover, as we had pointed out, China should not be led to believe that RMB appreciation by itself would reduce U.S.–China trade tensions significantly. When the U.S. CA deficit fell only slightly despite the huge Yen appreciation, Japan-bashing continued under a new guise: the additional demand that Japan must remove its “structural impediments” to imports.

As we had outlined previously, a significant reduction in U.S.–China trade tensions would require economic analysts to abandon the tripartite position that China alone is responsible for the trade imbalance, that RMB appreciation is the only acceptable policy response by China, and that China’s economic management be focused mainly on keeping its trade imbalance small. In its place, we recommend a policy package that stresses (1) multilateral adjustment (e.g., the United States would reduce its budget deficit while China would reduce its import barriers and hasten financial sector development); and (2) U.S.–China cooperation to bring the Doha Round to a successful conclusion in order to strengthen the supply of global public goods by the World Trade Organization.

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