The Global Credit Crisis and China's Exchange Rate

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Abstract

The case for stabilizing China's exchange rate against the dollar is strong. Before 2005 when the yuan/dollar rate was credibly fixed, it helped anchor China's domestic price level. But gradual RMB appreciation from July 2005 to July 2008 created a "one-way-bet" that disordered China's financial markets in two respects: (1) no private capital outflows to finance China's huge trade surplus leading to an undue build up of official exchange reserves and loss of monetary control, and (2) a breakdown of the forward exchange market in 2007-08 so that exporters could no longer get trade credit—probably worsening the severe slump in Chinese exports. But after July 2008, the credit crunch induced an unexpected unwinding of the dollar carry trade leading to a sharp appreciation in the dollar's effective exchange rate. The People's Bank of China (PBC) then stopped RMB appreciation against the dollar. China's forward exchange market was restored and monetary control regained. Now the PBC can better support the fiscal stimulus by promoting a parallel expansion of bank credit.

Keywords: China's exchange rate, capital flows, trade credit, forward exchange market, carry trade, bank credit, fiscal stimulus

JEL codes: E62, F31, F32, F42

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1. Introduction

Tensions between the United States and China escalated last January when Timothy Geithner, nominated to be the U.S. Secretary of the Treasury, suggested that China could be designated as a "currency manipulator'. This prompted Premier Wen Jiabao to mount a vigorous defense of China's existing exchange rate policy. In late January at meeting of world leaders in Davos, Switzerland, Mr.Wen pledged to keep the renminbi at a "reasonable and balanced level". Fortunately, after Secretary Geithner was confirmed, he opted in April not to officially designate China as a currency manipulator—but warned that China's exchange rate should appreciate in the future.

China has strong monetary and financial reasons for stabilizing the yuan/dollar rate.

- First, as long as the fixed rate is credible—as it was between 1995 and 2004 at 8.28 yuan per dollar—it served as an effective monetary anchor for China's internal price level. After inflation had exploded to more than 20 percent per year in 1993–95, the fixed rate anchor helped China regain price-level stability (McKinnon and Schnabl, 2009).

- Second, when China gave in to American pressure and allowed the RMB to appreciate gradually by a predictable 6 percent or so per year between July 2005 and July 2008, this "one-way bet" led to hot money capital inflows and huge increases in official exchange reserves. The People Banks of China's monetary control was undermined, while the forward market in foreign exchange was severely disrupted [Wang 2009].

- Third, from July to November 2008 when the global credit crisis provoked and unwinding of the dollar carry trade with the sharp appreciation of the dollar against most other currencies (Lee 2009), the PBC was emboldened to suspend the ongoing appreciation of the RMB against the dollar. Monetary control was regained while the bias against Chinese exporters hedging in the forward exchange market was eliminated. Bank credit expanded rapidly.

- Finally, China's big fiscal stimulus, announced in November 2008, is most effective if the yuan /dollar rate is kept stable— as it has been since July 2008.

2. Pressure to Appreciate and the Loss of Monetary Control

By 2004, China bashing, i.e., mainly U.S. pressure to appreciate the RMB, had become intense. To deflect American protectionist threats, after July 21, 2005, the Chinese authorities allowed the RMB to appreciate slowly—about 6 percent per year against the dollar (Figure 1). But the resulting one-way bet that the RMB always rises prevented private capital outflows from financing China's huge trade surplus. Chinese banks and other financial institutions refused to acquire predictably depreciating dollar assets. Compounding the situation, inflows of international "hot" money to buy ever-higher renminbi assets led to enormous balance of payments surpluses—despite the fact that the State Administration for Foreign Exchange (SAFE) imposed additional constraints on inflows of financial capital.

[Insert Figure 1]

To prevent the RMB from ratcheting upward, the PBC intervened massively to sell renminbi and buy dollar assets thereby expanding the domestic monetary base. By July 2008, China had accumulated about 2 trillion U.S. dollars in official exchange reserves (Figure 2). Despite the PBC's massive sterilization efforts to curb excess domestic money growth, including imposing high reserve requirements on commercial banks, CPI inflation increased from 2006 to peak out at over 8 percent in the spring of 2008 (Figure 3).

[Insert Figures 2 and 3]

Relatively low interest rates in the U.S. led to the general decline of the dollar's effective exchange rate from 2002 up to July 2008 (Figure 4), thus creating inflationary problems in the world economy: the U.S. housing bubble began about 2004 (Taylor 2009), and then, as U.S. short-term interest fell toward zero in 2007 into 2008, bubbles in a wide variety of commodity prices were ignited (Figure 5)—with oil peaking out at more than $130 a barrel by July 2008. Thus China's inflation in 2007 and the first half of 2008 was not just "made in China", but the loss of monetary control in China from the one-way bet on RMB appreciation aggravated inflationary pressure worldwide—particularly in the prices of primary commodities.

[Insert Figures 4 and 5]

3. Carry Trades, the Credit Crunch, and Dollar Appreciation

By mid 2008, the worsening credit crunch in the United States had become a global problem, leading to a precipitate fall in exports worldwide—from both developed

and industrial countries. With a lag, this provoked a worldwide run into dollars. Virtually everybody was surprised when the weak dollar became the strong dollar. From July to November 2008, the dollar appreciated 20 to 25 percent against all major currencies, except the Japanese yen. Because the RMB remained tied to the dollar, figure 4 shows an equally sharp appreciation in China's effective exchange rate. Unsurprisingly, the PBC then stopped the gradual appreciation of the RMB against the dollar: the yuan/dollar rate has been remarkably stable at about 6.83 ± 0.3 percent since July 2008 (Figure 1).

What might explain this stunning reversal in the dollar's fortunes? Since 1945, the dollar has been has been the principal international reserve currency. Although other long periods of dollar weakness occurred, as in the 1970s, eventually tighter American monetary policy has led to recovery—as in 1981-84. So the simplest explanation for the run into dollars in the financial panic of the last half of 2008 was a flight to safety, which was paradoxical given the disarray in American financial markets. Nevertheless, this flight-to-safety argument is bolstered by the incredibly strong demand for U.S Treasury bonds in 2008 compared to over other dollar assets: the yield on short-term Treasuries was driven close to zero.

However, an alternative, not mutually exclusive, explanation is the existence of a dollar carry trade before July 2008, (Lee 2009). Because of relatively low U.S. interest rates and a slowly declining dollar from 2002 to July 2008 (Figure 4), speculators the world over had a double incentive to borrow mainly in dollars at short term in New York in order to invest in higher-yield foreign currency assets, which were also appreciating.

Table 1 shows just three peripheral countries—Brazil, Mexico, and Canada—around the United States, and also peripheral countries around Japan for potential yen

carry trades, (Obviously, the assignment of "peripheral" countries in Table 1 is somewhat arbitrary.) Nevertheless if an investor ignored the risk of a large discrete appreciation of the American currency, he could make steady profits from 2000 to 2007 (7.9 percent per year) by borrowing in U.S dollars and then investing in assets denominated in Brazilian real, Mexican pesos, or Canadian dollars. No doubt our speculator found other "peripheral" countries (not listed in Table 1) throughout Asia, Latin America, and even Europe in which to invest.

[Insert Table1]

All these carry trade investments seem profitable until some macroeconomic shock occurs. The recent shock was the U.S. credit crunch, which became particularly acute in the second half of 2008. Then our shocked carry trader could no longer roll over his or her (short-term) dollar credits in New York and, instead, was suddenly forced to sell his foreign exchange assets. This abrupt unwinding of the dollar carry trade caused sharp depreciations in the exchange rates of peripheral countries—only three of which are shown in Figure 6. Collectively, these depreciations of the dollar's peripheral currencies—except for the Japanese yen (see below)— showed up as the sharp appreciation of the dollar's effective exchange rate shown in Figure 4.

[Insert Figure 6]

Until the dollar carry trade quickly unwound in the summer and fall of 2008, it had been largely hidden from most observers. The large U.S. current account (saving)

deficit necessitated heavy U.S. borrowing abroad, and made it seem unlikely that the U.S. itself would be a source of short-term speculative capital outflows—despite unduly low interest rates in New York.

However, most financial observers had long been aware of a yen carry trade. Because of Japan's infamous liquidity trap, short-term interest rates in Tokyo had been stuck near zero since the mid 1990s. And Japan's large current account (saving) surpluses made the existence of speculative capital outflows seem more plausible.

Indeed, an apocryphal figure, the Japanese housewife, "Mrs. Watanabe", emerged in the financial press as the leading speculator. At home, Mrs. Watanabe spent half her time watching television and the other half was spent trading on her computer screen. She would sell her near-zero-yield yen saving deposits, or more aggressively borrow at short term from her banker in Tokyo, in order to buy much higher yield bonds in Australia, New Zealand or Korea.

From 2000 to 2007, Table 1 shows the annual profits of 10 percent or so from Japan's yen carry trade with three peripheral countries to be even higher than the 7 to 8 percent profit from the dollar carry trade with its America's peripheral countries. The higher profit on the yen carry trade arose from greater gradual appreciation of its peripheral currencies against the yen during the 2000-07 period (Figure 7), which itself could have been partly due to Mrs. Watanabe's investing abroad.

[Insert figure 7]

Although the credit crunch originated in the United States, it shook the confidence of banks worldwide. Thus it could well have been the trigger for the joint unwinding in 2008 of both the yen and dollar carry trades, as shown in Figure 8. Because carry traders

could no longer renew their short-term dollar credits in New York or yen credits in Tokyo, they suddenly had to sell off their foreign exchange assets to get back into dollars or yen. Most remarkably, after the yen's net depreciation from 2000 to 2007, its effective exchange rate jumped by over 30 percent in 2008— more than twice as much as the dollar's sudden appreciation (Figure 8). Correspondingly, in 2008 the yen's peripheral currencies—the Australian and New Zealand dollars, and the won—all depreciated very sharply (Figure 7), even more than currencies directly on the dollar's periphery (Figure 6). Of course, the two peripheries are not that separable in practice.

[Insert figure 8]

The carry trade principle applies to commodities as well. Speculators, fearful of inflation but getting only derisory low yields on dollar or yen assets, may well opt to invest in long positions in commodities if commodity prices seem likely to rise. Of course, such investing itself induces commodity prices to rise faster. Figure 5 shows *The Economist* magazine's general commodity price index rising about 150 percent from 2002 to 2007, with the price of oil rose an astonishing 600 percent. Then, with the unwinding of the dollar and yen carry trades in 2008, commodity prices collapsed as well. The two are linked insofar as our illustrative peripheral countries, around the currencies of the U.S. and Japan, are largely producers of primary commodities.

4. Monetary Control in China Accidentally Regained

The sudden and unexpected unwinding of the dollar carry trade was beneficial for China. The "accidental" dollar appreciation from July to November 2008 carried the

RMB, which was, and is, pegged to the dollar, upward with it. Early in July 2008, the PBC was then emboldened to prevent further appreciation of the RMB by resetting the yuan/dollar rate at 6.83 ± 0.3 percent—where it remains almost a year later. The re-fixed yuan/ dollar rate gained credibility almost immediately. The RMB's sharp appreciation with the dollar against most other currencies seemed to reduce fears of further RMB appreciation by giving the PBC a plausible excuse to stop the upward crawl.

The impact on China's financial markets of the newly stabilized yuan/dollar rate was dramatic. Because the one-way bet on exchange appreciation had ended, net hot money inflows stopped, and private financial capital—including trade credit—began to flow outward to help finance China's huge current account (saving) surplus of more than $300 billion per year. The PBC's foreign exchange interventions to buy dollars slowed sharply: Figure 2 shows the correspondingly slower buildup of official exchange reserves from the middle of 2008 through 2009. Internally, monetary management became much easier as the PBC no longer had to sell bonds, or increase reserve requirements on the commercial banks, in order to sterilize the inflationary effects of unwanted increases in the monetary base.

China, like the United States, is uncomfortably poised between inflation and deflation. Before July 2008, inflation was the major threat (Figure 3) because of spiraling bubbles in international commodity prices and an internal loss of monetary control from the one-way bet that the renminbi always rises. In July 2008, the ongoing global credit crisis suddenly crunched sharply and forced carry traders—in yen, dollars, and commodities— to unwind their positions. Although being partly endogenous, this

"accidental" fall in commodity prices was also a partly exogenous deflationary shock to the world economy.

By late 2008, however, worldwide deflationary pressure had become much greater than could be explained by the sudden collapse in commodity prices. Failing confidence in major banks in the U.S. and Europe created counterparty risks that caused credit markets to seize up with a severe worldwide downturn in economic activity. International trade was particularly hard hit (see next section), and China's exports fell by half from mid 2008 into 2009 (Figure 9).

[Insert figure 9]

The PBC, having regained internal monetary control, is now well placed to offset the domestic deflationary impact of the fall in exports by instigating a huge domestic credit expansion. No longer having to sterilize hot money flows, it has cut domestic reserve requirements on commercial banks and loosened other direct constraints on bank lending. With inflation no longer a problem, it has cut both bank lending and deposit rates of interest, but kept both comfortably above zero to avoid a liquidity trap (Figure 10). To sustain bank profitability, lending rates remain about 3 percentage points higher than deposit rates.

[Insert figure 10]

From November 2008 to the present, bank lending increased by more than 30 percent year-over-year (Figures 11 and 12). This expansion is sustaining industrial

production and most guesses, including the World Bank's (June, 2009), for GDP growth in 2009 remain at 7 percent or better: quite an achievement for an open economy that has just suffered a severe negative shock to its huge export sector!

[Insert Figures 11 and 12]

5. Trade Finance and the Fall in China's Exports

Why China's exports turn down so sharply? It is worthwhile to look more closely in order to better assess the prospects for their recovery. Beginning at their peak in mid 2008, China's exports fell more than 50 percent to their trough in early 2009 (Figure 9). In the world economy more generally, after decades when international trade grew much faster than GDPs, it fell by 6 percent in 2008. In 2009, the IMF projects a worldwide decline in international trade of as much as 12 percent in comparison to "just" 6 percent declines in industrial output and 2.5 percent in per capita incomes, Particularly hard hit are countries heavily dependent on exports of manufactures—the larger ones being China, Germany, and Japan. Still the sharp fall in China's exports is quite extraordinary.

The worldwide cyclical downturn originated with the credit crunch and banking crisis from the collapse of the U.S. housing bubble, which itself is not particularly related to international trade. So, why should international trade be hit so hard?

First, world trade is very intensive in manufactures. And purchases of durable goods are most easily postponed when peoples' incomes fall and they feel less secure.

Second, and more subtly, international trade is more vulnerable to the credit crisis and associated counterparty risk than is purely domestic transacting. The use of formal bank letters of credit has long been much more common in foreign trade than in domestic

trade, and these are designed to facilitate normal trade credit from exporter to importer—when the foreign importer may not be as well known to the domestic exporter, i.e. , the natural counterparty risk is high. But if the solvency of the bank providing the letter of credit becomes suspect, this risk-reducing mechanism breaks down.

Even more subtly, the impairment of American and European interbank markets at wholesale (from counterparty risk) makes forward exchange transacting more difficult and expensive—particularly at medium to longer terms to maturity. Thus, at retail, importers or exporters find it more difficult to hedge themselves from currency fluctuations. Without forward cover, they find it even harder to secure credible bank letters of credit.

The upshot is that trade finance around the world has become more expensive. "Trade financing in Brazil, for example, costs about 400 basis points over interbank lending rates, while in South Korea trade financing costs 300-350 bp over interbank rates", (*Financial Times*, June 15, 2009 p.1).

Government export-import banks are the natural agencies to step up and provide much more trade credit. But despite frenetic efforts of many of them to do so, they were too late to prevent the severe downturn in world trade. And, in 2009, the risk premiums on trade credit remain unnaturally wide. So restoring "normal" trade credit with forward cover for exporters through improving the financial health of commercial banks is imperative.

However, unlike American and European banks, China's did not, and do not, have impaired balance sheets. If only because of residual capital controls, they did not participate in the frenzied purchases of asset-backed mortgage securities, many of which

originated with the giant U.S. bubble in house prices after 2003, but also with significant if lesser housing bubbles in Europe. Instead, from 1997 to 2007, Chinese regulatory authorities drastically reduced the proportion of nonperforming loans (NPLs) on their banks' balance sheets from more than 40 percent to about 6 percent (Table 2). Much of the improvement came from moving bad assets into separate asset management companies—so called "bad" banks. But Table 2 also shows that this restructuring was sustainable because of a dramatic improvement in the profitability of State Owned Enterprises (SOEs)—the principal borrowers.

[Insert Table 2]

Nevertheless, beyond the sharp worldwide fall in the demand for Chinese exports, their supply may also have been constrained by limited credit availability. From mid-2007 to mid-2008, the onshore Shanghai forward market in foreign exchange became seriously misaligned with interbank interest differentials, (Wang 2009). This misalignment arose from the interaction between the one-way bet that the RMB always appreciates in the foreign exchange market and the sharp drop in U.S. interest rates from August 2007 to December 2008, when the federal funds rate fell to zero. This unfortunate conjunction of events resulted in the violation of key interest parity conditions, which may well have exacerbated the downturn in China's exports in 2008.

Open Interest Parity (OIP): $E(\Delta S) = i_t(yuan) - i_t(dollars)$, where S = yuan/dollar

Figure 13 compares annual percentage changes in the yuan/dollar rate to the U.S. federal funds rate and China's overnight interbank rate—the difference between the two is the darker dashed line. When the yuan/ dollar rate was fixed at 8.28 before July 2005, the interest differential was small—and thus fairly closely reflected the unchanging exchange rate. The possible exception was at the very end of the period when the interest differential became slightly negative reflecting some anticipation that the RMB would start appreciating in the future. This expectation slightly bid down China's interbank rate as if to satisfy open interest parity, as defined above.

[Insert Figure 13]

Once the RMB was actually appreciating in 2006 and 2007, however, this was largely offset (if only fortuitously) by the increased U.S. federal funds rate so as to continue satisfying OIP. Thus the first shaded area in Figure 13 shows open interest parity holding pretty well from 2005 through mid 2007. Despite the fact that the RMB was now obviously appreciating at about 5 to 6 percent per year, it was more or less offset by higher interest rates on dollar compared to RMB assets. Thus the inflow of "hot" money into China was manageable (with aid of some capital controls), and some agents within China were actually willing to hold dollars without immediately converting them into RMB. Although precarious, this monetary equilibrium was "sustainable".

What upset the apple cart, however, was the sudden plunge in the U.S. federal funds rate from mid 2007 through 2008. Not only did OIP fail but, by July 2008 as shown in Figure 13, the interest differential had the wrong sign: U.S. interest rates were 1

to 2 percentage points less than Chinese *despite* the dollar's being the depreciating currency. (Of course, with American short rates forced to zero, Chinese rates would have had to become highly negative for OIP to hold!) Unsurprisingly hot money flowing into China became enormous despite emergency new controls on capital inflows, and private finance for China's huge trade surplus dried up. This led to inflation and the loss of monetary control described above. But it also resulted in disorganization in Shanghai's onshore forward exchange market and the breakdown of covered interest parity.

Covered Interest Parity (CIP): $f_t = i_t(yuan) - i_t(dollars)$, where f = (F – S)/S is the forward premium on dollars

Only fairly recently has an onshore interbank forward market for foreign exchange been permitted in China, and the dark line in Figure 14 shows quotes for the six-month forward contract from October 2006 to April 2009. The dashed line represents the differential between SHIBOR, i.e., the Shanghai Interbank Offer Rate $i_t(yuan)$ and LIBOR, i.e., the London Interbank Offer Rate $i_t(dollars)$, at six-month maturities: the "implied" forward rate according to the right-hand side of the CIP condition above .

[insert Figure 14]

Before April 2007, the actual forward rate tracked the interest differential very closely (Figure 14), so that covered interest parity held. Arbitrage between the two markets was apparently unimpeded. And before April 2007, open interest parity also held as per Figure 13.

Then, beginning about May 2007, the actual and implied forward rate began to diverge, (Wang 2009). By March 2008, Figure 15 shows the huge divergence from CIP of more than 6 percentage points for the six-month contract—a sharp widening of the forward discount on dollars. Figure 15 also shows the divergence strongly increasing with the term to maturity. Selling dollars forward, particularly at longer terms, had become more expensive than borrowing dollars spot for repayment three, six or nine months hence. But with the parallel violation of open interest parity, the government's concern with hot money had resulted in controls on (spot) capital inflows[1]. Although aimed at speculators, these controls penalized legitimate Chinese exporters who wanted to hedge their dollar earnings for six months forward by borrowing dollars spot.

[Insert Figure 15]

Thus risk-averse Chinese exporters who wanted to hedge their dollar earnings were trapped. Controls on capital inflows prevented most of them from borrowing dollars in order to hedge spot; whereas if they tried to sell in the forward exchange market, their dollars would be deeply discounted. The 6-month contract's discount of 6 percentage points in mid-2008 shown in figure 15 only reflects rates quoted at wholesale among banks themselves. The quotes on forward dollars by Chinese banks to their retail customers, i.e., exporters, could well have been more steeply discounted because of the

[1] A conference hosted by China's State Administration for Foreign Exchange (SAFE) during May 2007 mentioned that there should be a revision of the "easy in, tough-out" policy governing foreign currency flows. That capital controls on inflows had tightened was re-emphasized in a press release by SAFE in January 2008, (summarized and translated by David Wang)

difficulties banks had in covering themselves in a disorganized spot market. Indeed, in the global credit crunch, many exporters were probably strictly rationed or turned away altogether.

Without forward cover, many exporters—particularly small- and medium-sized—would find it impossible to get letters of credit from banks in order to give "normal" trade credit to importers. Foreign importers, with their own financial problems, would then reduce or cease ordering Chinese goods—thus contributing to the dramatic drop in China's exports from mid 2008 into 2009 shown in Figure 9. True, the slump in world aggregate demand also played a huge role in the decline in China's exports. And the global credit crunch and zero interest policy of the United States could also have generated problems with forward exchange markets elsewhere. However, from mid-2007 through 2008, China seems to have been uniquely disadvantaged when the low interest rate policy of the United States was combined with the one-way bet on RMB appreciation.

Although lags of many months still exist from the fall in export orders in 2008 to export recovery in 2009–10, the "accidental" stabilization of the yuan/dollar rate since July 2008 has now lessened the financial penalties facing China's exporters. Figures 14 and 15 show covered interest parity being restored, and the forward discount on the dollar pretty well eliminated in the first few months of 2009. Because the credible stabilization of the exchange rate has greatly lessened or eliminated the threat of hot money inflows, exchange controls on inflows of financial capital can safely be relaxed.

Thus China's exporters seeking to sell dollars forward, i.e., to hedge the proceeds of their export earnings some months hence, can now do so directly through their banks

in Shanghai's onshore forward exchange market without having to pay a steep forward premium on the RMB when they sell dollars forward. Alternatively, they could borrow dollars today from foreign banks in order to repay some months hence with lesser impediments from capital controls. Consequently, because of the restoration of credible exchange rate stability, export recovery now seems more likely on the supply side as credit constraints are relaxed. However the recovery of aggregate demand in the world economy, and that for Chinese exports in particular, remains problematic.

6. A Concluding Note on Net Saving Imbalances

What is the principal threat to maintaining stability in the yuan/dollar rate? Ending China bashing to appreciate the RMB once-and-for-all poses more than just a political problem. In both the United States and Europe, economists—and the politicians they indoctrinate—must discard the false theory that one can use changes in the exchange rate to control the net trade balance in a predictable way.

Contrary to widely held beliefs in both China and the U.S., a discrete appreciation of the renminbi against the dollar need not reduce China's trade surplus or America's trade deficit, (McKinnon and Schnabl, 2009; Qiao, 2007). It could have the perverse effect of causing investment in China to slump, as firms see China becoming a higher-cost area. Investment in China is huge, more than 40 percent of GDP as shown in Figure 16. Thus, China's net current account (trade) surplus—the difference saving and investment— could actually increase with a discrete appreciation! And predictable gradual appreciation, the one-way bet, wreaked havoc on China's domestic financial markets—particularly the forward market in foreign exchange.

Instead of being an exchange rate question, the huge trade imbalance between the two countries has two related causes:

First: "surplus" saving in China. Figure 16 shows China's domestic saving, as a proportion of GDP, to be even higher than its enormous investment to GDP ratio—5 to 6 percentage points higher. In recent years, this increased saving has been associated with a rise in operating income in China's now-highly profitable corporate sector including state-owned enterprises; correspondingly, the share of personal disposable income declined (Figure 17). In order to shift China to becoming a more consumption-led economy with a reduced trade surplus, requires (1) a shift in income back to households, and (2) an increase in household spending for consumption.

[Insert Figures 16 and 17]

Second: an even bigger net saving deficiency in the United States. Since the collapse of the housing bubble in 2008−09, U.S household consumption has plunged, and saving has risen, depressing the global economy while reducing the U.S. trade deficit. In order to buoy China's and the world economy while further correcting the festering trade imbalance between China and the United States, fiscal expansion in surplus-saving countries like China is desperately needed. Because U.S fiscal expansion would enlarge the U.S. saving and trade deficits, better to convince the Chinese that they should do most of the fiscal stimulating, which, incidentally, reduces their trade surplus.

Fiscal expansion in China is most effective in buoying the Chinese economy when the exchange rate is stable [Mundell 1963]. Thus having the Americans agree to the PBC stabilizing the yuan/dollar rate is the natural quid pro quo for China's engaging in a much greater fiscal cum bank credit expansion than the welcome half-trillion dollar amount announced on November 9, 2008. Indeed, as the world economy continues to turn downward, the threat of beggar-thy-neighbor devaluations becomes acute—as in the 1930s. Thus, stabilizing the exchange rate between the world's two largest trading countries is a useful fixed point for checking the devaluationist proclivities of other nations around the world.

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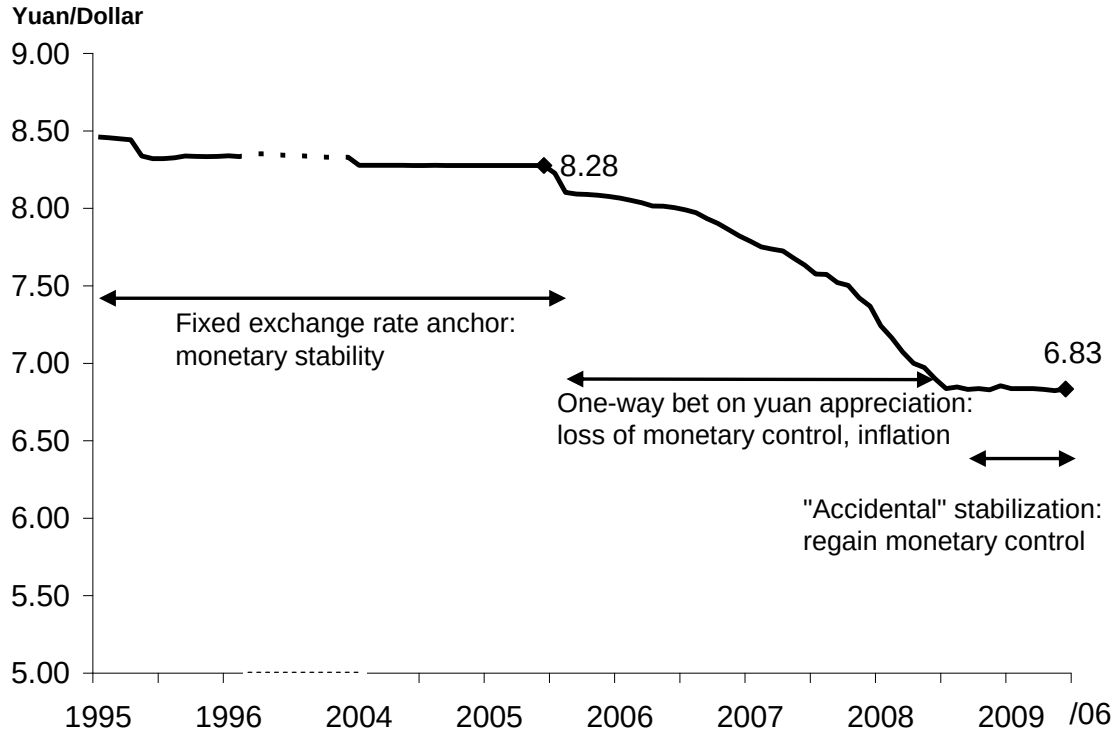
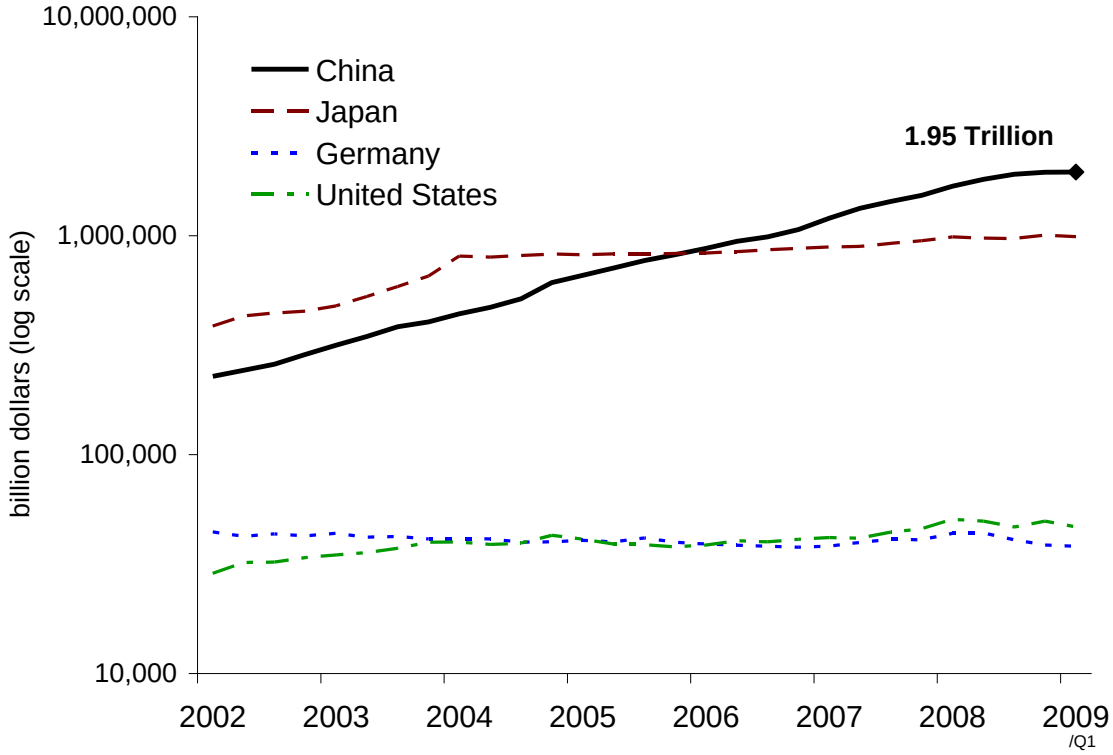
Figure 1: China's monetary policy and the yuan/dollar rate, 1995-2009



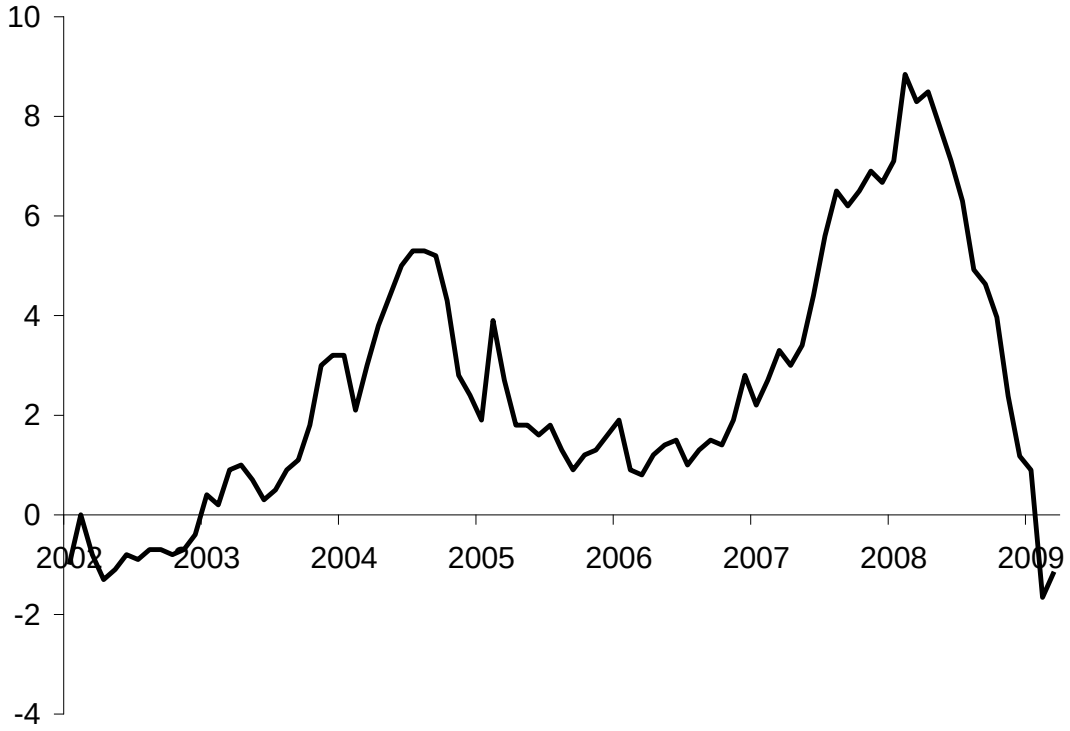
Source: FRB

Figure 2: Foreign Reserves of China, Japan, Germany, and U.S., 2002-2009



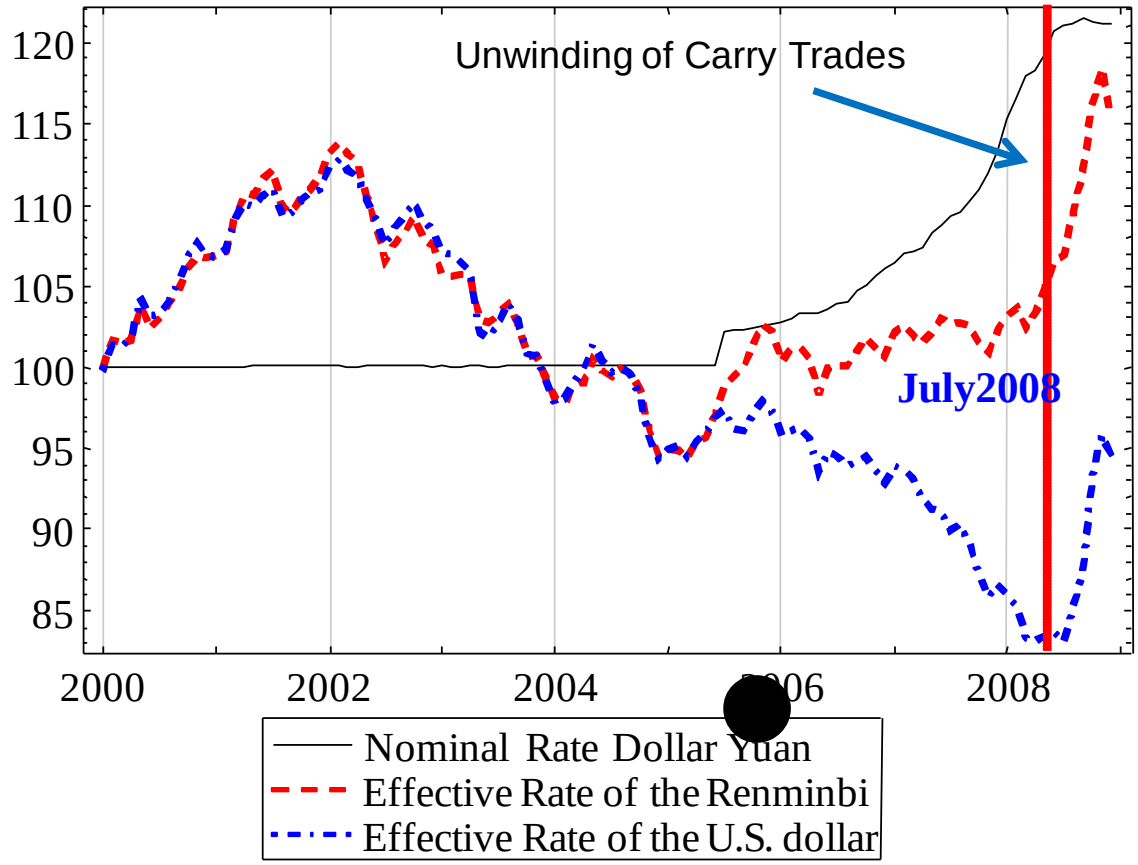
Source: IMF and The People's Bank of China

Figure 3: China's Consumer Price Indices, growth rate: % change year-over-year



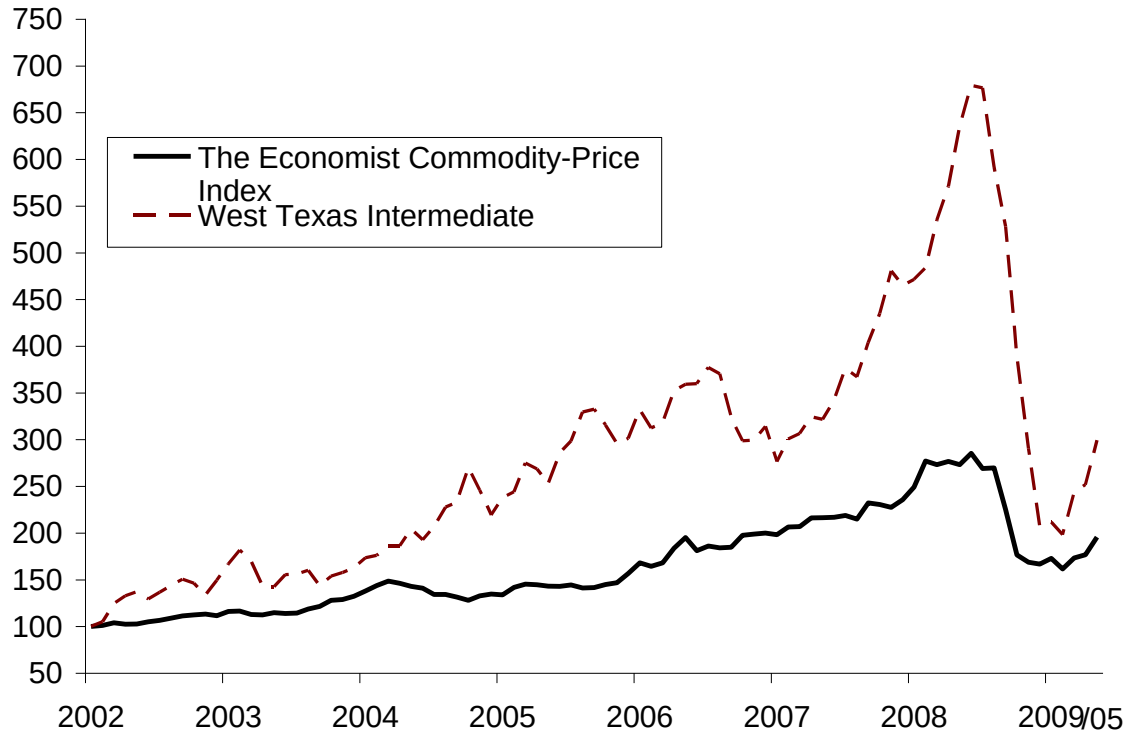
Source: EIU

Figure 4: Renminbi and Dollar Exchange Rate Movements, 2000-2008



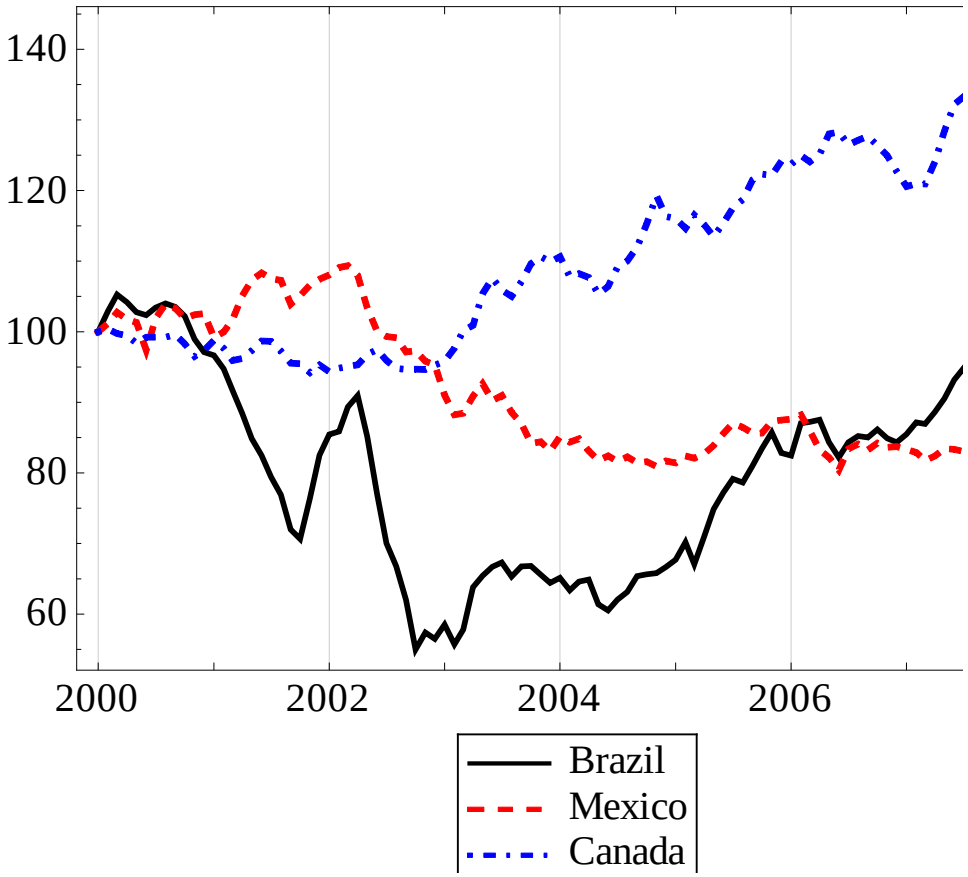
Source: IFS and BIS

Figure 5: Money Commodity Price Indices (Jan 2002 =100)



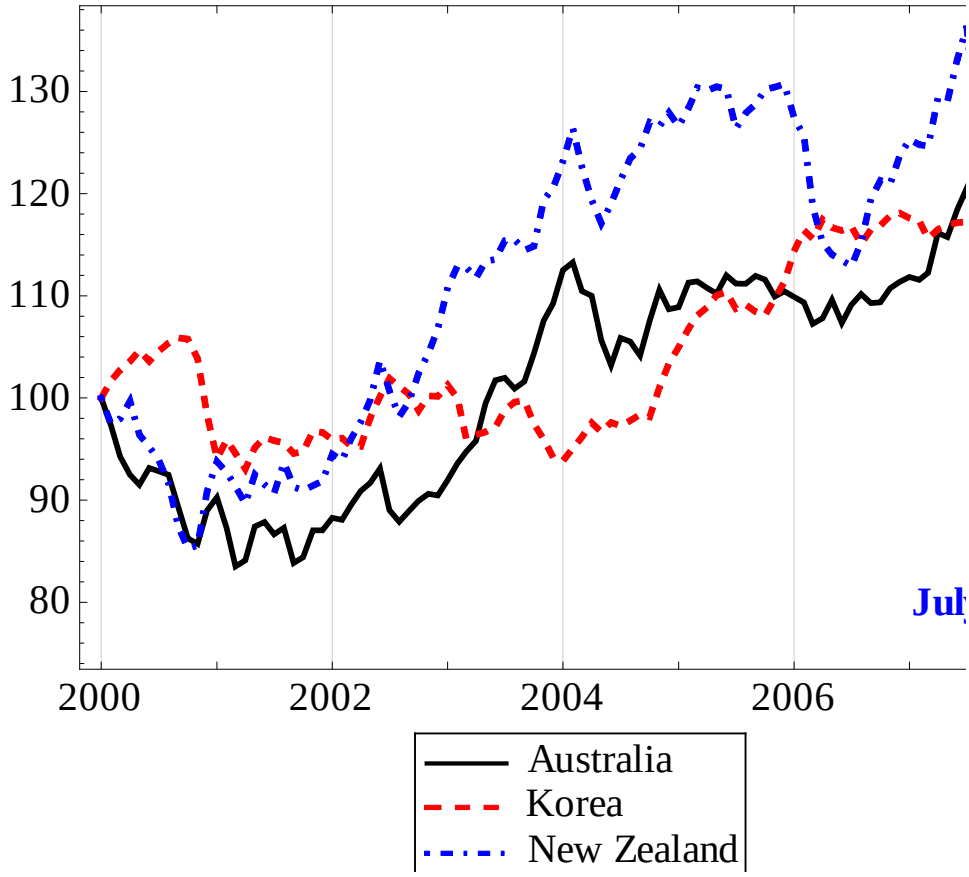
Source: globalfinancialdata.com
Note: Data The commodity price index does not contain crude oil.

Figure 6: Dollar as a financing currency: effective exchange rates for investment currencies (2000=100)



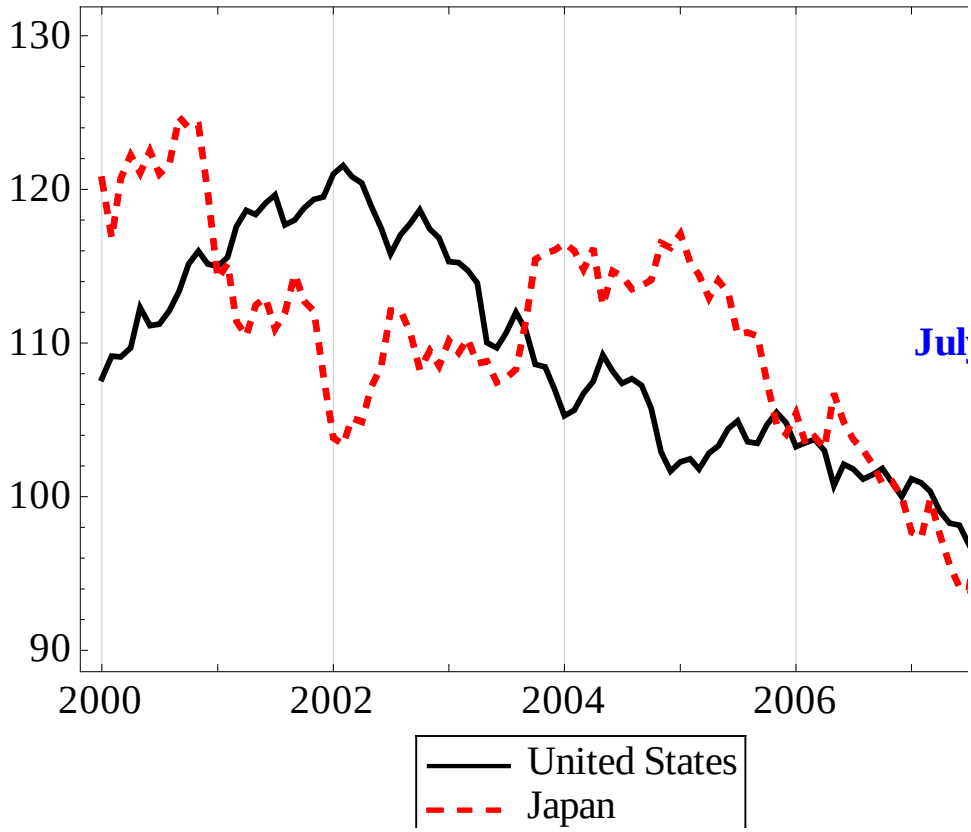
Source: BIS

Figure 7: Yen as a financing currency: effective exchange rates for investment currencies (2000=100)



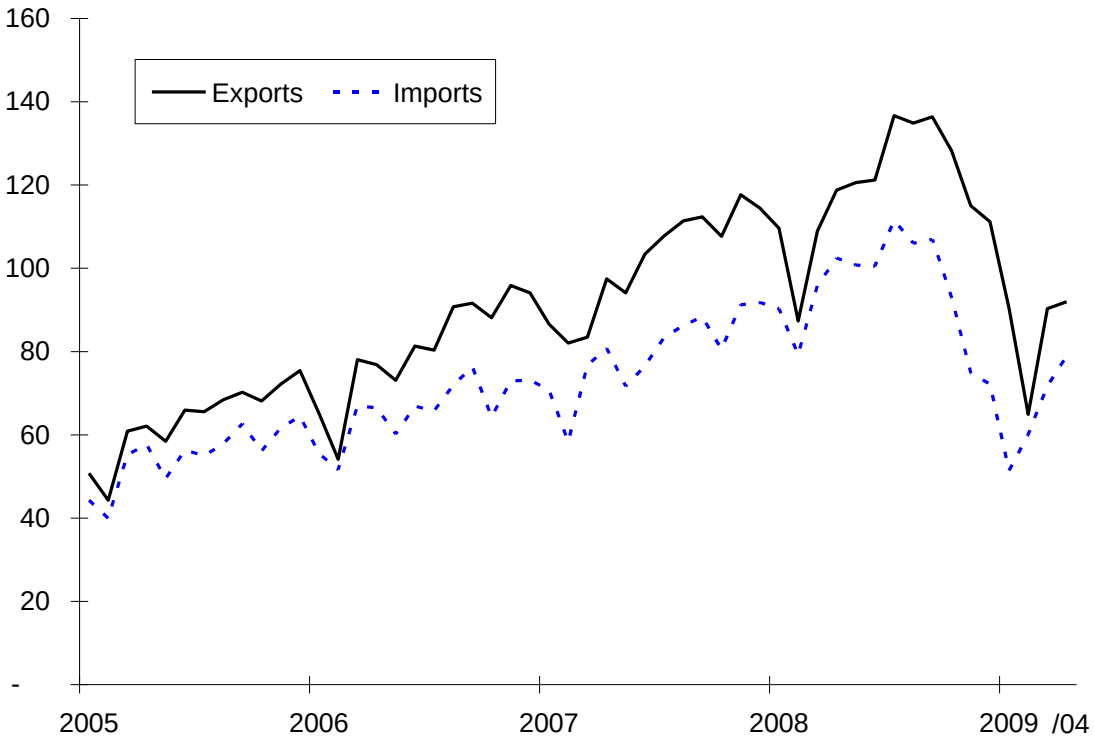
Source: BIS

Figure 8: Unwinding the yen and dollar carry trades (effective exchange rates, 2006=100)



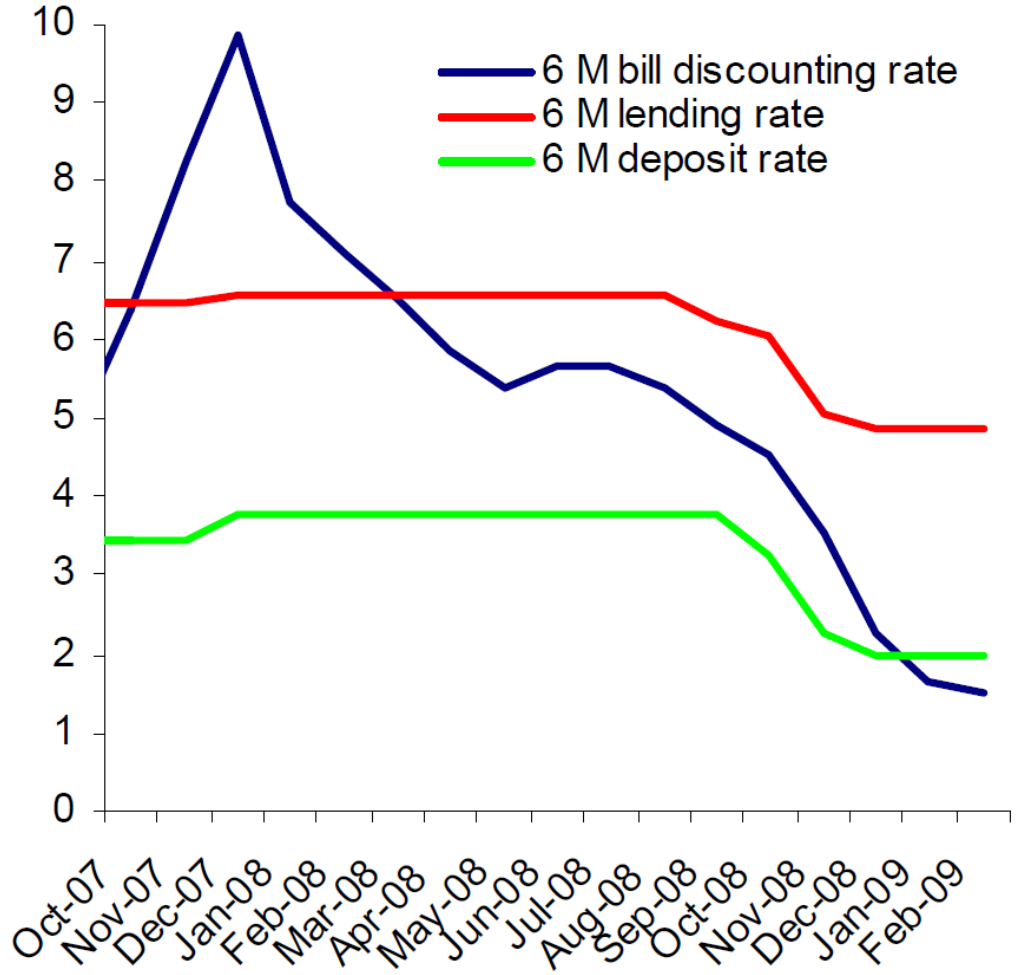
Source: BIS

Figure 9: China's Nominal Trade (in billions of U.S. dollar, monthly)



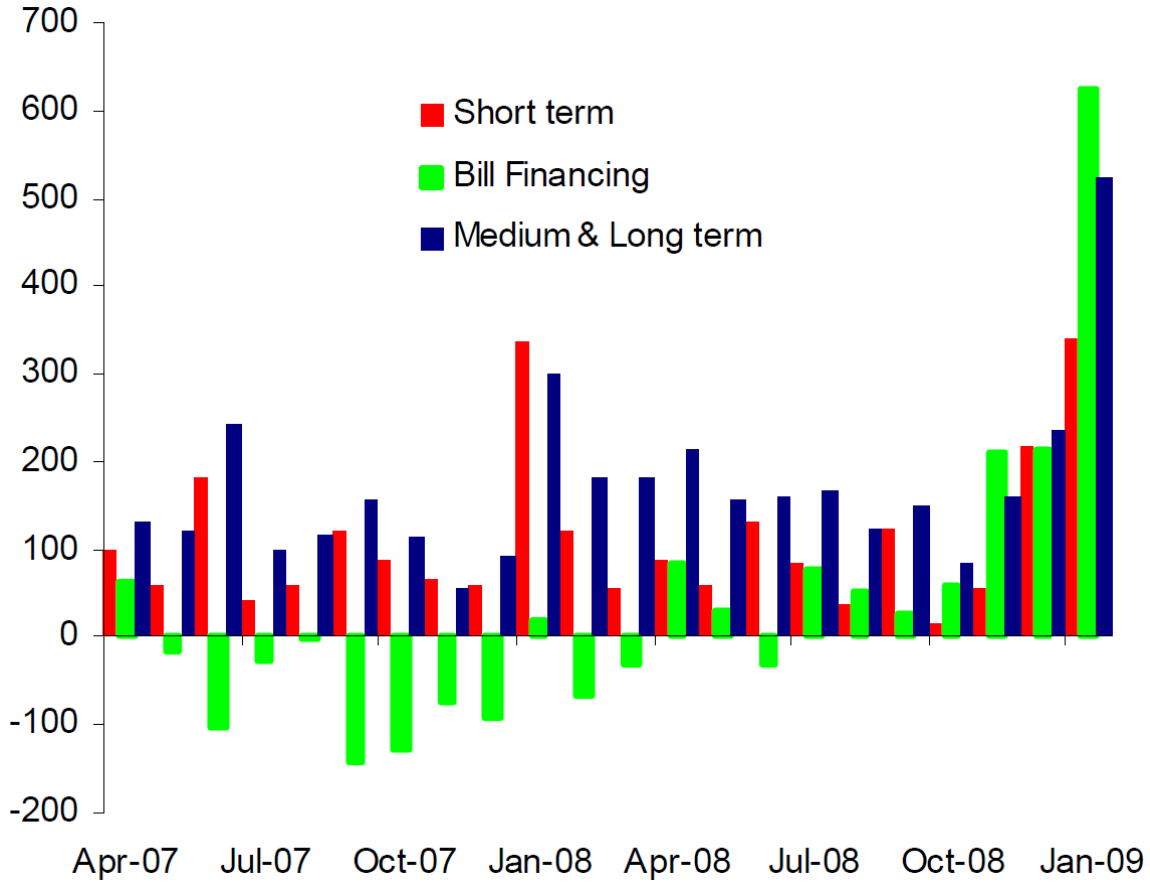
Source: IFS China Customs Statistics Information

Figure10: China's interest rates (%)



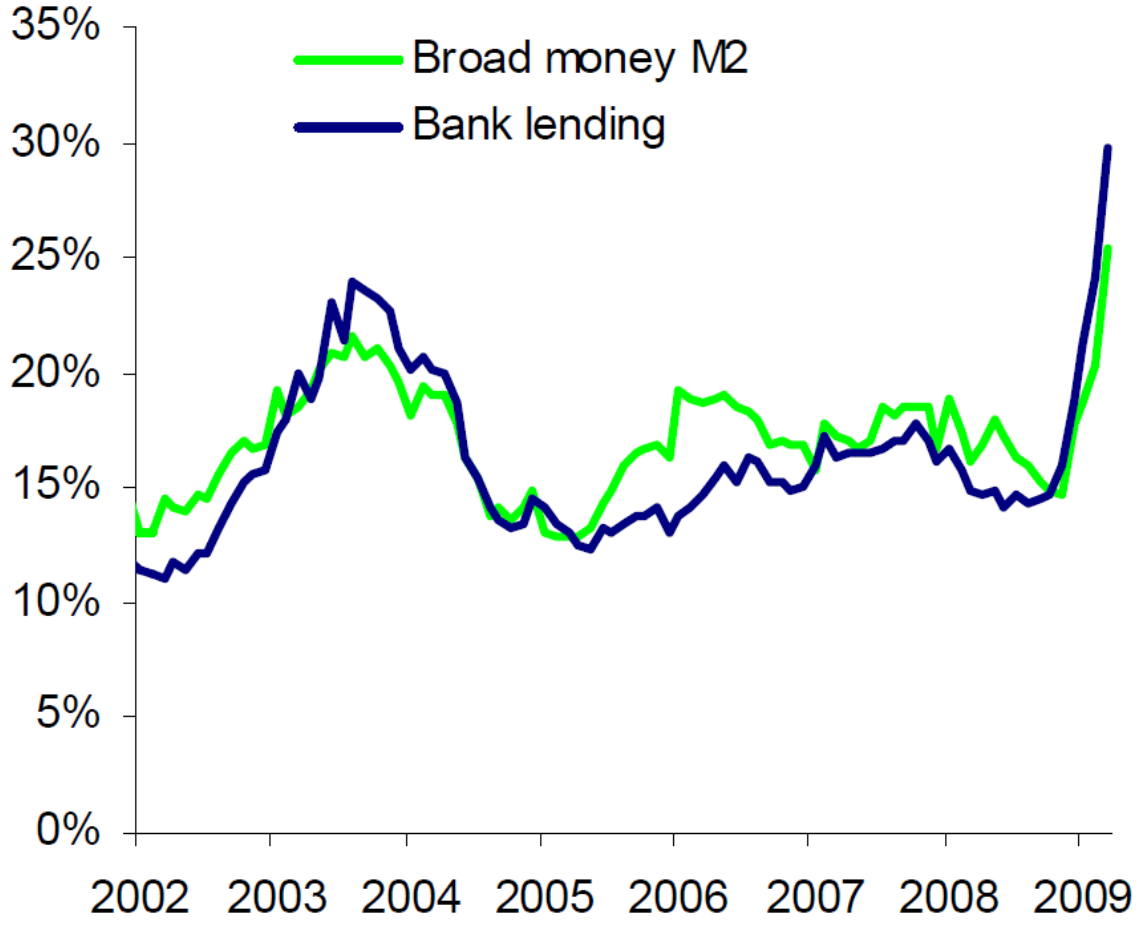
Source: UBS

Figure 11: China's New loans to non-financial institutions, RMB bn



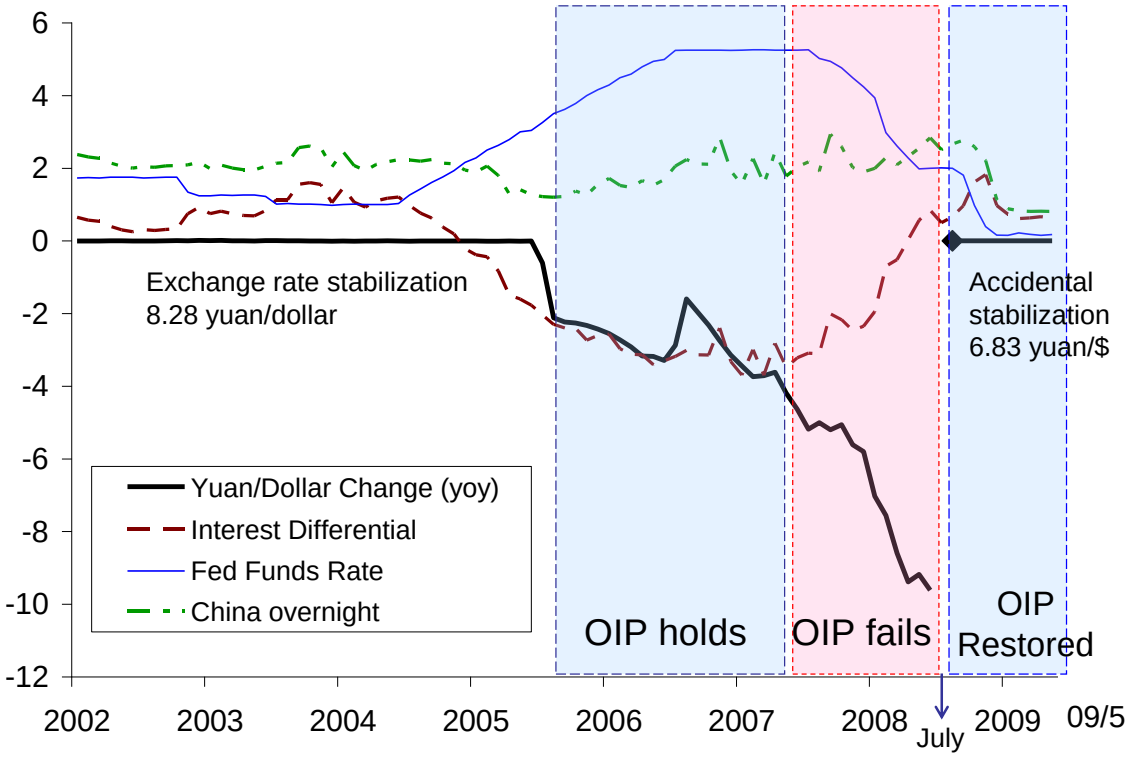
Source: UBS

Figure 12: China's M2 and Bank Lending, growth rate: % change year-over-year



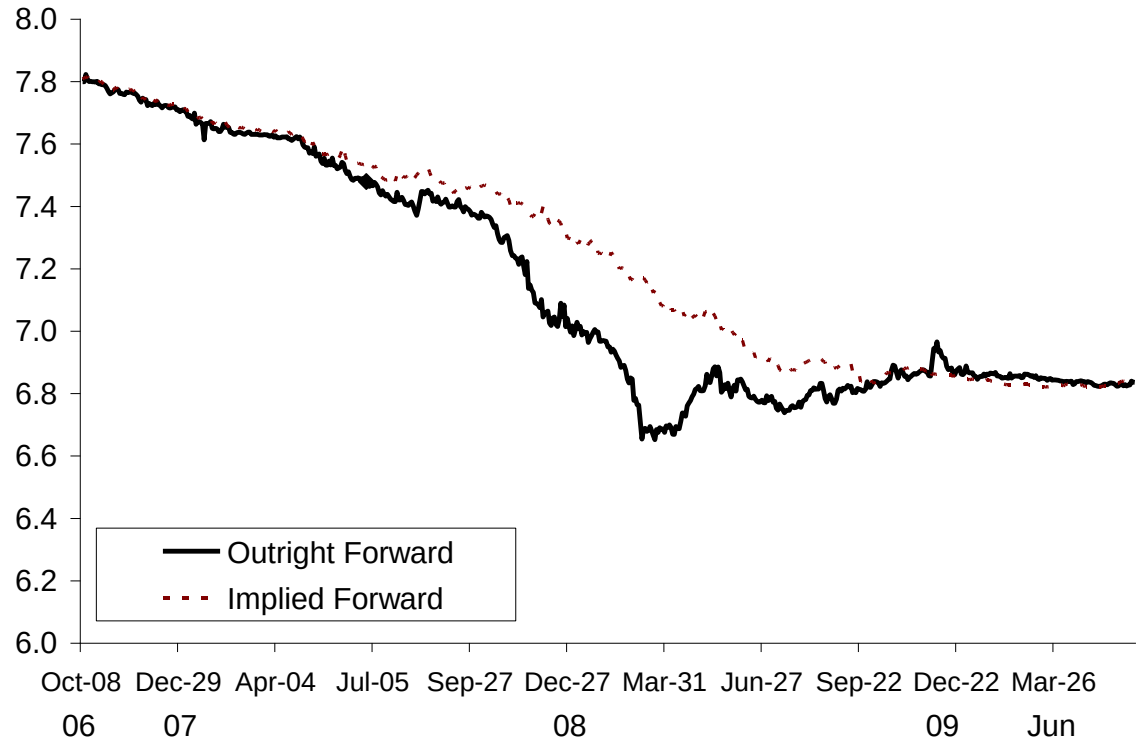
Source: UBS

Figure 13: Interest Differentials versus Percentage Changes in the Yuan/Dollar Exchange Rate, 2002-2009



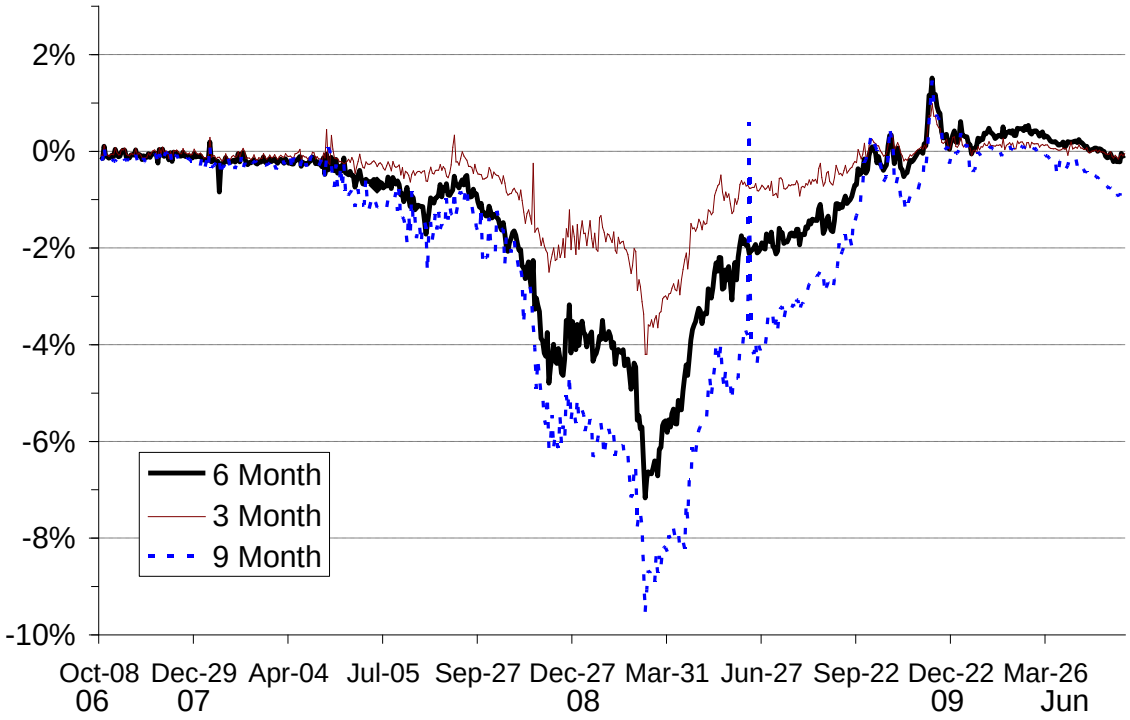
Source: Datastream
Note: OIP is Open Interest Parity.

Figure 14: Forward Rate vs. Forward Rate from Covered Interest Parity (yuan/dollar, 6 month)



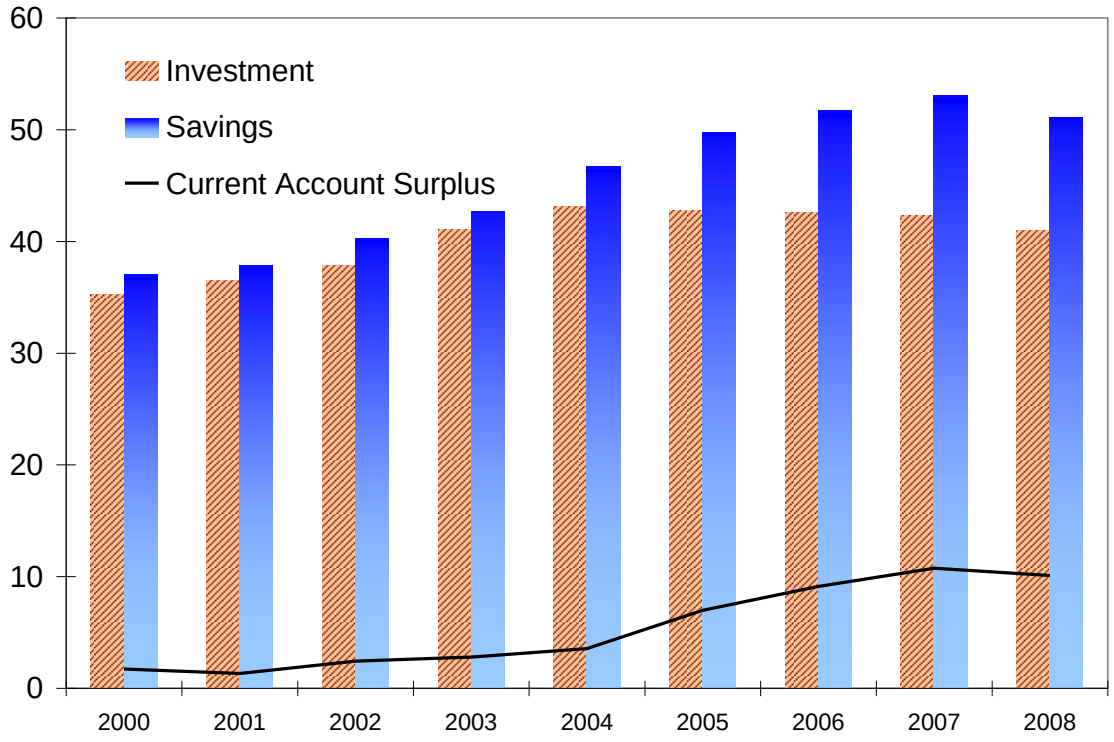
Source: Wang (2009)

Figure 15: Percentage Deviation From Covered Interest Parity (yuan/dollar, by maturity)



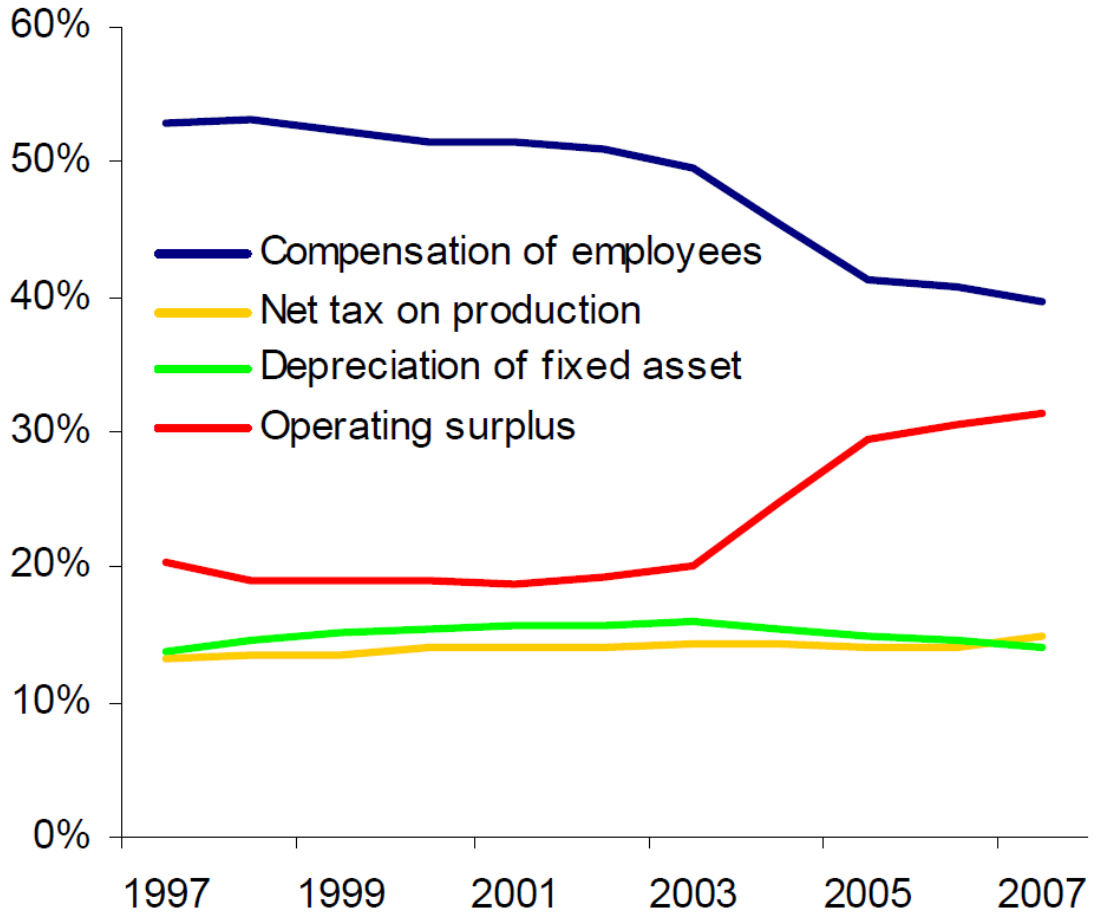
Source: Wang (2009)

Figure 16: Investment, Savings and Current Account of China (as a percent of GDP)



Source: EIU

Figure 17: China's Labor Income and Operating Surplus, Share in GDP(%)



Source: UBS

Table 1: Returns on carry trades, 2000-2007

Funding Currency	Interest rates		Returns from Appreciation	Returns of Carry trades	Unwinding in 2008: Trough to Peak Appreciations[c]
	Funding	Investment			
US Dollar	3.4	10.2 [a]	1.1 [a]	7.9 [a]	19%
Japanese Yen	0.1	5.3 [b]	5.2 [b]	10.7 [b]	44%

Source: Brian Lee (2009)
Note: (a) The value is the average of values for Brazil, Mexico, and Canada.
(b) The value is the average of values for Australia, Korea, and New Zealand.
(c) In terms of effective exchange rate. Caution: The unwinding of the carry trades in 2008 ay not fully explain these exchange rate appreciations.

Table 2: China's Economic Positions in 1997 and 2007

(Percent unless otherwise specified)		
	1997	**2007**
Govt Expenditure / GDP	11.7	20.0
Total SOE net profit as a share of GDP	(-0.5) ~ (-1)	4.30
No of Loss Making Unit: State Control	25,800	5,682
Average growth rate of bank lending in previous 5 years	23.4	15.9
NPL ratio of the banking system	40 ~ 50	6
5-year average growth of urban per capita income	5.7	9.9
5-year average growth of rural per capita income	7.0	8.1

Source: UBS