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The Role of the Chinese Dollar Peg for Macroeconomic Stability in China and the World Economy

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Abstract

During the 1997/98 Asian crisis and the 2007-2010 world financial and economic crisis, China has proved to be a stabilizer for East Asia and the world. The paper stresses the crucial role of the dollar peg for macroeconomic stability in China. The paper explores the current role of China's nominal and real exchange rate stabilization as stabilizing factor for China, East Asia and the world economy. Distortions originating in real exchange rate stabilization are identified which may prove to be a risk for global long-term growth perspectives. To prevent further economic and financial turmoil the paper recommends policy coordination. The exit from unconventional low interest rate policies in the US combined with the end of real (but not nominal) exchange rate stabilization in China.

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1. Introduction

The financial and economic crisis from 2007 to 2010 has brought the US-Chinese exchange rate dispute to a new dimension. Whereas the crisis caused China to return to the pre-2005 tight dollar peg to stabilize industrial production, the Federal Reserve aggressively cut interest rates to prevent a meltdown in financial markets. As the recovery in the US continues to lag behind China, the reemergence of carry trades and the re-acceleration of Chinese reserve accumulation has added new fuel to the dispute about the Chinese dollar peg. For instance, Krugman (2010) welcomed the Chinese New Year by calling China mercantilistic and predatory. In the US congress pressure is rising to label China as a “currency manipulator” and push forward trade sanctions (The Economist 2010).

The political pressure for a nominal yuan appreciation is based on scientific investigations which find the Chinese yuan to be strongly undervalued, for instance 25% on a trade-weighted basis and 40% against the dollar (Goldstein and Lardy 2009, Cline and Williamson 2009). Bergsten (2010) stresses the leading role of the Chinese exchange rate policy for other East Asian countries, which he accuses mimicking the Chinese undervaluation strategy.

In contrast, Cheung, Chinn and Fuji (2009) have argued that the assessment concerning the misalignment of the Chinese yuan strongly depends on the underlying methodology. Reisen (2010) argues that the undervaluation of the yuan originates in the Balassa-Samuelson effect rather than mercantilistic trade policies. McKinnon and Schnabl (2009) stress – based on the Japanese experience with yen appreciation – that the US-Chinese trade-imbalance cannot be cured by the nominal appreciation of the Chinese currency. Freitag and Schnabl (2010) scrutinize the direction of causality between US monetary and Chinese exchange rate policies and conclude that Chinese current account balance cannot be delinked from the US interest rate policies.

Given the very heterogeneous opinions on the future path of the yuan/dollar rate combined with the fact that China has become a engine of global growth, the papers aims to analyze the role of China as a regional and global economic stabilizer.

2. The Dollar Peg as a Domestic Stabilizer

In both crisis and non-crisis periods China's dollar peg has fulfilled the role of a macroeconomic stabilizer. Since the tight dollar peg was introduced in 1994, it provided a robust framework for the economic catch-up process. Defying the rising international pressure to allow the yuan to float, to appreciate in a one-time step, or in a controlled gradual fashion, the fixed exchange rate has brought stability to fragile goods and underdeveloped financial markets.

a. The Peg as a Stabilizer of Chinese Goods Markets

Before 1994 China's currency was inconvertible in the strong sense. There were multiple exchange rates¹, exchange controls on both current and capital account transactions, and exports and imports had to be funneled through state trading companies. Tight capital controls insulated domestic relative prices still influenced by central planning from world markets. Without free arbitrage between domestic and foreign prices the official exchange rate was set was arbitrary and was devalued in steps from 1.5 yuan per dollar back in 1979 and to 5.8 yuan per dollar by the end of 1993 (Figure 1). Tight capital controls prevented "hot" money flows.

Starting from 1994 Chinese authorities abolished exchange controls on current-account transactions (exporting, importing, interest and dividends) and unified the exchange rate at 8.7 yuan per dollar in 1994. The substantial devaluation of the official rate from 5.8 yuan per dollar was followed by rising inflation, which rendered real depreciation minimal. By 1995, the nominal exchange rate had settled down to about 8.28 yuan per dollar and became for about 10 years a stabilizing moment for the Chinese economy.

During the phase of currency inconvertibility China had suffered from a bumpy ride in real growth and inflation—peaking out with the high inflation of 1993-95 (Figure 2). With a very small domestic capital market the Peoples Bank of China had faced problems in anchoring the overall price level. With the unification of the exchange rate regime in

¹ An official rate and floating swap rates for exports of manufactures in different parts of the country.

1994, the move to full current account convertibility by 1996 presented an opportunity to stabilize expectations. Pegging the exchange was equivalent to stabilizing the domestic price level. As shown in Figure 2 inflation and growth stabilized.

The stabilization of the macroeconomic performance laid the foundation for increasing investment and buoyant trade, which became the backbone of the Chinese growth miracle. After the steady expansion during the 1990s, the speed of trade expansion accelerated after the turn of the millennium. Overall dollar exports mushroomed from 200 billion dollars in 2000 to 1.4 trillion dollars in 2008. The expansion of exports was backed by an increase of investment from 34.5% of GDP in 1994 up to 42% of GDP in 2008. Given the fast growth of industrial production, employment in the manufacturing sector soared together with productivity and wages, thereby boosting the wealth of the Chinese working and new middle class.

Because of the success of the Chinese export industry, in particular in US markets, conflicts about the Chinese current account surplus and the dollar peg emerged. Dooley, Folkerts-Landau and Garber (2004) created the notion of economic success, which was based on a mercantilist trade strategy. Cline (2005) argued that the Chinese yuan was substantially undervalued and called for a new Plaza Agreement to correct the global imbalances. China resisted international pressure to appreciate the yuan as it regarded the dollar peg as the pillar of economic and political stability. Despite an impressive growth performance, China's GDP per capita remains low. Faltering industrial production is likely to cause political discontent among migrant workers and the rural population.

b. The Peg as a Stabilizer of Chinese Financial Markets

Although goods markets remain in the focus of controversies on global imbalances and the Chinese dollar peg, financial markets have assumed a crucial motivation for pegging the yuan to the dollar. Based on persistent current account surpluses (Figure 4). China has accumulated a rising stock of foreign assets, which transformed China into an immature creditor country. While the stock of international assets gradually increased, Chinese

creditors remained unable to internationally lend in yuan to finance persistent current account surpluses.

There are two possible reasons for the inability to lend in its own currency (McKinnon and Schnabl 2009). First, because (as in the case of China) domestic financial markets are shallow and fragmented and the currency is not convertible it is not accepted for international lending. Second, (as in the case of Japan) international capital markets have been pre-empted by major currencies from areas with highly developed financial markets due to network externalities. Aside from relatively illiquid foreign direct investment outflows, an immature creditor economy continually accumulates liquid claims on foreigners denominated in international currencies such as the dollar or the euro.

The resulting currency mismatch makes monetary management and securing portfolio equilibrium in domestic financial markets more difficult. If the exchange rate (potentially) fluctuates, private financial intermediaries face currency risk. With China's large saving surplus being invested in dollar claims on foreigners, in the balance sheets of private financial institutions these dollar assets can be large relative to domestic liabilities denominated in yuan. Then, large exchange rate appreciations can wipe out the net worth of well-capitalized banks or enterprises.

The currency mismatch and the problems of risk management within an immature creditor country are further aggravated if foreigners exert pressure to have the creditor country's currency appreciate – as most recently with Krugman's (2010) and Bergsten's (2010) "China bashing". Such complaints lead to what McKinnon and Schnabl (2004) call the syndrome of *conflicted virtue*. Countries that are "virtuous" by having a high saving rate (like China, Japan and Germany, but unlike the US) tend to run surpluses in the current account, i.e. lend to foreigners.

As the foreign claims are denominated largely in dollars with the passage of time two things happen. First, as the *stock* of liquid dollar claims cumulates, domestic holders of dollar assets worry about an appreciation of the domestic currency. Second, foreigners start complaining that the country's ongoing *flow* of trade surpluses is unfair and threaten

trade sanctions unless the currency is appreciated. Because of the destabilizing properties of open-ended currency appreciation, the virtuous country becomes “conflicted”.²

Thus, stabilizing the exchange rate is equivalent to stabilizing the financial sector, which holds dollar assets. Given the fact that world and Chinese interest rates have reached historical lows, Chinese interest rates are prevented from falling towards zero, as long as the exchange rate is stabilized. Otherwise, from the principle of open interest rate parity sustained appreciation expectations would depress interest rates below the interest rate of the anchor country thereby pushing China (like before Japan) into a near-zero interest liquidity trap (Goyal and McKinnon 2003).

Despite the recent global financial turmoil and its contractionary effect on international trade, the Chinese current account surplus has shown few signs of reversal. On international goods markets, during crisis the sharp decline of Chinese exports was accompanied by shrinking import demand (Figure 3) for intermediate and investment goods thereby preventing a stronger correction of the current account surplus (Figure 4). Thus as long as China’s saving and investment habits are fundamentally unchanged, China’s role as an immature creditor economy is very likely to persist.

c. The Destabilizing Effect of an Upward Crawling Peg

Given the stabilizing role of dollar peg for an immature creditor economy any move away from the peg will cause turmoil for the Chinese economy. This was experienced during China’s upward crawling peg from July 2005 to August 2008, when one-way bets on the Chinese yuan led to an acceleration of speculative capital inflows and extensive sterilization operations by the Chinese central bank. Today, as unprecedented and unconventional low interest rate policies in the large industrial countries have created a quasi-unlimited amount of global liquidity, the potential to bet on the appreciation of the yuan has become even larger (McKinnon and Schnabl 2009).

² In contrast to Germany, Japan is also an immature international creditor. Japan still runs large current account surpluses but does not lend much abroad in yen, although its overseas direct investment finances a substantial part of its current account surplus.

China reigned in to international pressure and released its fixed rate anchor on July 21, 2005 (Figure 1), allowing for one time revaluation of 2.1% and a controlled nominal appreciation of about 6% per year. During this period, despite monetary tightening in the US between 2004 and 2007, Chinese foreign reserves soared from 415 billion dollars in 2004 to 1,884 billion dollars in 2008 (Figure 5). At a first glance the tremendous increase in Chinese foreign reserves is simply linked to the drastically expanding current account surplus from 3.5% of GDP in 2004 to 9.9% in 2008. Short-term capital inflows as well as errors and omissions (as a proxy for unrecorded capital flows) remain small and negative suggesting net capital outflows rather than inflows during the gradual appreciation period (Figure 6).

The official balance of payments statistics may, however, provide an incomplete picture of hot money inflows, as Chinas' international capital market transactions remain subject to tight capital controls (Ma and McCauley 2007).³ Bouvatier (2006), who indentifies US interest rates and exchange rate expectations as main determinants of Chinese hot money flows argues that they may be hidden in “other investments” of the financial account or in “errors and omissions”. Martin and Morrison (2008) trace hot money inflows on the asset side of the Chinese balance of payments statistics, as speculators circumvent Chinese legislation by over-reported or false foreign direct investment, under-reported import values and overvalued exports. “Underground money exchangers”, employee compensation and transfers (labeled as remittances) are identified as channels of speculative capital inflows.

Indeed, from 2004 to 2008 both net FDI inflows and the current account surplus increased substantially. Net foreign direct investment rose from 53 billion dollars in 2004 to 94 billion dollars in 2008 by about 80%. The trade surplus increased from 58 billion in 2004 dollars to 360 billion dollars in 2008. Net transfers doubled from 23 billion dollars in 2004 to 46 billion dollars in 2008. Net income surged from -3 billion in 2004 to 31

³ Ma and McCauley (2007) see substantial gaps between onshore and offshore yuan yields as indication for capital account restraints.

billion in 2008. Martin and Morrison (2008) the sum of quantify hot money inflows from 2004 to the first half of 2008 to 500 billion dollars up to 1.75 trillion dollars.

During the period of 2004 to 2008 the surge of speculative capital inflows in form of FDI, transfers and rising reported trade surpluses had to be financed by the build up of official exchange reserves as shown in Figure 6. Because the accelerating speed of reserve accumulation would have led to excessive monetary expansion, the Peoples Bank of China (PBC) was forced to sterilize the immediate impact on the monetary base. The liability side of the Peoples Bank of China's balance sheet (Figure 7) shows—with negative signs—sterilization instruments such as central bank bonds, required reserves and government deposits at the central bank.

As long as the sales of central bank bonds occurred at market rates, the monetary tightening threatened to drive interest rates upwards, in particular as the underdeveloped Chinese capital market could only absorb a limited amount of central bank bonds. Therefore, when interest rates started to rise after 2005, to contain sterilization costs an increasing proportion of the rapidly accumulating foreign reserves was sterilized by required reserves at a substantially lower rate than the central bank bills (Figure 7 and 8).

Figure 9 shows as a proxy for the international portfolio balance the deviation from the uncovered interest rate parity, i.e. the percent deviation of the US-Chinese interest rate differential from yuan/dollar exchange rate changes.⁴ Before mid 2004, there was no substantial deviation of the interest differential from exchange rate changes, because the yuan/dollar rate was expected to remain stable. By mid 2004 Chinese interest rates started falling relative to US interest rates as if the market was anticipating the revaluations, which started in July 2005. The interest differential became negative in early 2005 when the Federal Funds Rate climbed. By the end of 2006, Chinese interest rates were as much as 4 percentage points less than in the US, but were matched – in line with UIP – by a respective yuan appreciation.

⁴ Annualized overnight money market rates are used as proxy for interest rate levels because they can be assumed to be widely determined by market forces in both the US and China.

However, when the US federal funds rate fell sharply from 5.25 percent in August 2007 to 2 percent by August 2008, the US-Chinese interest rate differential was shrunk. To further aggravate the situation, the PBC began to increase some interest rates on yuan assets to steer against inflation (Figure 8). The continuing yuan appreciation opened the door for one-way bets on yuan appreciation. Hot money inflows into China accelerated. The result was a “corner” solution: no internal private holdings of dollar assets unless subsidized by the government (McKinnon and Schnabl 2009). The international portfolio balance – defined as UIP – was lost (Figure 9). Excessive hot money inflows turned China from a deflationary force on the world economy into an inflationary one until the subprime crisis hit.

3. The Chinese Dollar Peg as an International Stabilizer

The large size of the Chinese economy combined with its dynamic growth performance have transformed China into a stabilizer for East Asia and the world economy during crisis events.

a. China and East Asia

The economic weight of China in East Asia has grown steadily, taking over Japan’s role as dominating economic power in the region.⁵ In 1990, when the Japanese bubble burst, Japan made up roughly 70% percent of East Asian GDP, whereas China accounted only for roughly 10%. Due the lasting stagnation of Japan and the dynamic expansion of China by 2009 both countries accounted for roughly 38% percent of East Asian GDP (upper panel of Figure 10). During the same time period the weight of the smaller East Asian (East Asia 8) economies – namely Indonesia, Hong Kong, South Korea, Malaysia, Philippines, Singapore, Taiwan and Thailand – remained widely constant at around 24%.

⁵ East Asia is defined as Japan and China plus eight smaller East Asian (Hong Kong, Indonesia, Malaysia, Philippines, Singapore, South Korea, Taiwan, Thailand) economies. The weights are calculated based on US dollars.

The rise of China as an economic power in East Asia was accompanied by an impressive increase in intra-East Asian trade volumes, with China becoming the hub of the value chains of the intra-regional production network. China's buoyant industrial sector assumed the role of an export platform to the industrial countries (in particular to the US) that links Japanese production technologies (imported in form of FDI) with inputs from the smaller East Asian economies. The lower panel of Figure 10 shows that between 1990 and 2009 the share of Chinese exports as percent of total East Asian intra-regional exports increased from 17% to 30%. During the same period, the share of Japan's intra-regional exports declined from 30% to 18%. The share of the smaller East Asian countries on intra-East Asian trade remained widely constant at slightly above 50%.

Given its high and robust trade and growth performance China assumed the role of the East Asian growth engine. As shown in upper panel of Figure 11, China has by far the highest growth performance in the region. In crisis periods China proved to be more resilient to global and regional shocks. The exchange rate peg as well as decisive anti-cyclical macroeconomic policies played a crucial role in stabilizing China and its neighbors.

During the 1997/98 Asian crisis sharp devaluations by the crisis countries (Indonesia, Malaysia, Philippines, South Korea and Thailand) as well as by Japan, Taiwan, and Singapore imposed strong deflationary pressure on China. China ignored advice to let the yuan become more "flexible" and depreciate in turn. By keeping the yuan tightly pegged to the dollar China – other than Japan – did not add further momentum to the competitive depreciations in the region. China stabilized regional growth by keeping the yuan stable against the dollar at the cost of declining growth (Figure 11). In addition, China engaged in a one trillion dollar fiscal expansion program, which allowed its neighbors to recover faster.

Whereas during the Asian crisis the depreciating Japanese yen aggravated the economic turmoil in East Asia, China's policy of fixing the nominal yuan exchange rate at 8.28 per dollar, within a narrow daily band of $\pm 0.3\%$, gained credibility. Because the East Asian

countries (except Japan) pegged their currencies to the dollar – the fluctuations of the yen against the dollar were a major source of business cycle fluctuations in East Asia (McKinnon and Schnabl 2003). For instance, when the yen depreciated against the dollar since the mid 1990s, while – the other East Asian currencies remained pegged against the dollar – growth in Japan's small neighboring countries declined. As the smaller East Asian countries such as South Korea, Taiwan, Hong Kong and Singapore lost market share in Japan and third markets – with the US being the most important one – current account deficits increased. The resulting loss of confidence in the East Asian tiger miracle culminated into the Asian crisis.

Whereas, the floating yen has been a major source of business cycle fluctuations in East Asia as long as the economic weight of Japan in East Asia was high, the Chinese dollar peg became stabilizing factor for the informal East Asian dollar standard (McKinnon 2005). Before the crisis intra-regional exchange rates were stabilized by pegging commonly informally against the dollar. The floating yen was an important outlier and the Chinese yuan did not have a privileged role within the East Asian informal dollar standard. Yet gradually, while pegging to the dollar persists (McKinnon and Schnabl 2004), the Chinese yuan has assumed the role of an informal internal anchor beside the dollar as the external one.

In Figure 12 the East Asian exchange rates are indexed at 100 in January 1994 when China unified its multiple exchange rate and pegged it tightly to the dollar. The Chinese yuan exhibits – beside the Hong Kong dollar – the highest degree of exchange rate stability. Whereas the yuan remains stable in both crisis and non-crisis periods, the East Asian currencies (including the Japanese yen) seem to pursue a “dual exchange rate target” against the dollar and the yuan. In contrast to a currency basket – as a monetary framework, which allows targeting more than one currency with specific weights – the dual target is more a sequential one. First, the smaller East Asian countries observe the move of yuan against the dollar. Then, they decide about the degree of exchange rate stabilization against the dollar.

The dollar remains the intervention and reserve currency, because the dollar markets are liquid and dollar reserves can be invested in the highly developed US financial markets. In contrast, the Chinese yuan is inconvertible and Chinese financial markets are shallow and fragmented, which makes exchange rate stabilization against the yuan impossible or costly. Therefore, mimicking the exchange rate path of the yuan against the dollar is the best way to stabilize intra-regional exchange rates. Figure 11 shows that when the yuan embarked on its appreciation path from July 2005, many East Asian countries followed – to a more or less stronger extent – the appreciation of the yuan against the dollar. As a result intra-East Asian exchange rate stability, defined as average exchange rate stability against the Chinese yuan has remained widely stable despite rising flexibility of most East Asian currencies against the dollar.

By choosing flexibly the parities against the dollar, while the yuan remained tightly pegged to the dollar, the smaller East Asian economies including Japan⁶ could stabilize their growth performance by deciding upon the degree of depreciation against the Chinese yuan. Figure 12 shows that during the Asian crisis (1997/98), the crisis in the semiconductor sector (2001) and the US subprime crisis (2007/08) the smaller East Asian countries including Japan allowed for significant depreciations against dollar and yuan to stabilize growth. Since 1994 all East Asian countries including Japan have kept their exchange rates on the depreciation side of the yuan against the dollar.

If, as desired in the US, the Chinese yuan would be floated against the dollar the informal dollar standard would fall apart and the intra-East Asian production network would suffer from detrimental fluctuations of intra-regional competitiveness. In contrast to the European countries – which floated their currencies against the dollar in early 1970s – it would be more difficult to find an internal East Asian anchor for two reasons. First, the Chinese yuan does not fulfill the structural pre-requisites of an anchor currency in from of currency convertibility and developed financial markets. Second, the Japanese yen

⁶ Note that although Japan stopped active foreign exchange intervention in 2004 Japan can influence the level of the yen against the dollar via monetary expansion based on (unconventional) monetary policy measures.

fulfills the structural criteria of convertibility and developed financial markets, but does not qualify as long as the zero-interest rate policy persists.

b. From a Regional to a Global Stabilizer

Whereas during the Asian crisis China fulfilled the role of a regional stabilizer, the subprime rooted global financial and economic slump made China to become the global stability hub. Rising shares of Chinese exports and GDP as percent of world exports and world GDP combined with the highly dynamic growth have transformed China into a global player. China's share of world GDP has risen from 2% in 1980 to more 13% in 2010. Average yearly real growth between 1994 and 2010 was close to 10% compared to 0.8% in Japan, 2% in European Union and 2.6% in the US. Whereas during the crisis year 2009 growth slumped to -4.2% in the European Union, -5.4% in Japan and -2.8% in US, China proudly reported a robust growth of 8.5% (lower panel of Figure 11). As the zero interest policies and fiscal stimulus failed to jumpstart the economies of the industrial countries, the Chinese growth locomotive gained further speed.

By mid 2008 the US credit crunch had become a global problem. The crisis reached China via the export channel. From August 2008 to February 2009 nominal Chinese exports dramatically declined from 134 billion dollars to 64 billion dollars (Figure 3).⁷ Chinese real growth declined from 13% in 2007 to 9% in 2008 (Figure 2). As unemployment among Chinese migrant workers rose, the Chinese government took decisive policy action to stabilize production, with the exchange rate peg being in the center of the stabilization measures.

By July 2008 the global instability provoked a worldwide run into dollars. As pre-crisis carry trades unwinded, the dollar appreciated strongly, with the yuan remaining tied to the dollar. The Peoples Bank of China terminated the gradual appreciation and re-pegged

⁷ As outlined above the dramatic decline in Chinese trade is likely to reflect a decline in trade during the global recession, shrinking trade credit during the financial crisis or the reversal of hot money inflows.

the yuan to the dollar at a rate of 6.83. Hot money inflows into China stopped for two reasons. First, within an environment of global financial instability US financial markets and US treasuries were regarded as a safe haven. Second, Chinese dollar assets were not any more threatened by revaluations losses. Hot money flows were redirected towards the US and helped financing the persistent current account surplus and FDI inflows. China was spared of speculative attacks and losses of foreign reserves as observed in many other emerging market economies.

Between August 2008 and February 2009 Chinese reserve accumulation was interrupted and the uncovered interest rate parity was restored (Figure 9). As reserve accumulation stopped, the Peoples Bank of China was able to engineer a powerful credit expansion by moving from sterilization to desterilization. Shadowing the monetary expansion in the US, reserve requirements on commercial banks were reduced and other credit constraints were loosened (Figure 7). Bank lending rates, deposits rates and the remuneration rate of required reserves were cut (Figure 8). As shown in the upper panel of Figure 13, from November 2008 bank lending increased significantly with a focus on loans to non-financial corporations. To sustain bank profitability the lending rate remained about three percentage points above the deposit rate.

The monetary stimulus was accompanied by a fiscal stimulus. In November 2008 the Chinese government announced a four trillion yuan stimulus package for the years 2008/09 combined with an industrial policy program for promoting key sectors such as automobile, steel, machinery and textile. The return to the tight dollar peg served as a backbone of this macroeconomic stimulus program (McKinnon and Schnabl 2009). As suggested by the seminal Mundell-Flemming open macroeconomics model, an isolated credit financed fiscal expansion would have been ineffective. Rising domestic interest rates would have triggered an appreciation of yuan, with both effects crowding out the fiscal expansion. This crowding out effect was prevented by the monetary expansion with the exchange rate peg acting a coordinating mechanism for the monetary and fiscal stimulus. Soon, the Chinese growth engine started over.

4. Distortions and Fragility

As unemployment in the US remains high, the Federal Reserve is expected to keep interest rates close to zero until 2011 or 2012. In contrast, the success of the Chinese fiscal, monetary and exchange rate stabilization measures have strengthened expectations that China will continue its dynamic catch-up path. The IMF expects a real growth rate of about 10% for the years 2010 and 2011, which makes China an attractive target of a new wave of carry trades (Roubini 2010, McKinnon et al. 2009). Hot money inflows resumed as indicated by newly accelerating reserve accumulation. At the latest the June 2010 the announcement that the yuan will become more flexible has put the scenario back to the period before 2008. Reserve accumulation combined with sterilization is likely to further aggravate distortions in the Chinese and world economy.

a. Global Surplus Liquidity and Overinvestment

From a global perspective the current Chinese boom with growth rates well above eight percent may be unsustainable, because it has to be seen in the context of the gradual decline of global nominal and real interest rates that has contributed to a wave of wandering bubbles (Schnabl and Hoffmann 2008). The new hot spot could be China, because post-crisis expectations have strengthened in favor of an early East Asian recovery. The business cycle theories of Knut Wicksell (1898) and Friedrich August von Hayek (1929) help to understand the risks, which are linked to interest rates close to zero in the US (and other large industrial countries) combined with buoyant inflows of FDI and hot money into China.

To model boom-and-bust cycles Wicksell (1898) and Hayek (1929) distinguished between “good” investment – which yields returns above a “natural” equilibrium interest rate⁸ – and low return (speculative) investment – which is induced by an interest rate below the equilibrium ($I > S$). Overinvestment is triggered when the central bank

⁸ At the equilibrium interest rate, saving is equal to investment: $S=I$.

(Wicksell 1898) or the banking sector (Hayek 1929) keep interest rates below the natural interest rate during the economic upswing. Whereas the monetary overinvestment theories were modelled for closed economies, in today's liberalized international capital markets interest rates in emerging markets can decline "below the natural interest rate" due to buoyant capital inflows from highly liquid, low yield developed capital markets.

Because growth in the US, Japan and the euro area remains sluggish, the Federal Reserve, the Bank of Japan and the European Central Bank keep interest rates exceptionally low (Hoffmann and Schnabl 2009). The resulting surplus liquidity is more likely to feed carry trades because of a double incentive to borrow short-term in dollars and invest in higher yield foreign currency assets, which can be expected to appreciate. If, for instance, that a carry trader can borrow for close to zero in the US and earn a return of 5% in buoyant China. Assuming that the yuan will appreciate by 3% per year, the net return would be 8%, if a way is found to circumvent Chinese capital controls.

Overinvestment in China may be induced, because (in the sense of Wickell 1898) the large central banks have cut policy rates to unprecedented lows levels and (in the sense of Hayek 1929) private capital inflows have brought the Chinese interest rate to a level, which is uncommonly low for emerging markets. Note that – given the uncovered interest rate parity – appreciation expectations would depress the Chinese interest rate towards (Goyal and McKinnon 2003). Moral hazard in financing low speculative investment may occur when – in face of crisis – financial institutions anticipate a bailout via monetary and fiscal expansion (Hoffman and Schnabl 2009).

In the models of Wicksell (1898) and Hayek (1929) the upswing continues as – how currently observed in China – the demand for investment goods rises. Capacity reserves are activated. Wages and consumption increase. The positive economic expectations can be transmitted to asset markets where speculation may set in (Schumpeter 1912).⁹ With credit growth becoming speculative, productivity increases slowdown. Consumer price inflation accelerates which conveys a signal supportive of building up additional

⁹ A speculative mania may emerge, in which speculative price projections and "the symptoms of prosperity themselves finally become, in the well known manner, a factor of prosperity" (Schumpeter 1912, 226).

capacities and increasing wages further. Finally, the central bank has to tighten money supply to contain inflation. Alternatively capital markets withdraw their credit when they regard the upswing as unsustainable.

Figure 14 shows a wave of wandering bubbles as described by Schnabl and Hoffmann (2008), augmented with Chinese exports. The wandering bubbles set in the mid 1980s when Japan cut interest rates to contain the post-Plaza yen appreciation. The substantial acceleration of credit growth led to a boom in real estate and stocks markets, the well-known bubble economy. The burst of the Japanese bubble in December 1989 marked the starting point of two lost decades in Japan. Attempts to revive the Japanese economy by further interest rate cuts triggered the first wave of carry trades to the East Asian tiger countries, where a boom and bust cycle culminated with the 1997/98 Asian crisis.

The Asian crisis was followed by a flight to the safe haven of the large financial markets, where the dotcom bubbles emerged. The Federal Reserve's decision to counteract the sharp decline in US stocks market in the early 2000s is widely seen as the reason for the US subprime boom and the second wave of carry trades to East Asia, Central and Eastern Europe and the raw material markets. The subprime crisis triggered the advent of the current (close to) zero interest-rate policies on a global level and therefore the third – and up to now largest – wave of carry trades (Roubini 2009). The Chinese export sector could be an important target of these capital flows, as market sentiment is favourable to China. Allowing the yuan to gradually appreciate would attract even more capital inflows and possibly even more investment in the Chinese export sector as shown below.

b. Administrative Capital Allocation and Structural Distortions

Despite the general notion of an export-led economy, investment rather than net exports has been the major driver of Chinese growth and employment. Figure 15 shows that by 2008 investment (plus inventory changes) accounted for about 42% of GDP thereby constituting the most important GDP expenditure component. In contrast, net exports

only accounted for 8% of GDP by expenditure in 2008.¹⁰ Therefore, Chinese economic policies have been keen to sustain investment of Chinese enterprises in both boom and crisis periods. The system of Chinese investment promotion hinges on two pillars, which are linked by the Peoples Bank of China's sterilization policies: real exchange rate stabilization to clear Chinese industrial production on world markets and subsidized capital allocation via the state owned banking sector (to clear domestic capital markets). The outcome is structural distortions in the Chinese (and US) economy, which may become the trigger for an economic turn-around.

On goods markets the structural distortions originate in real exchange rate stabilization. Nominal exchange rate stabilization – as for instance criticized by Cline (2005), Bergsten (2010) and the US public (Economist 2010) – cannot be distorting, as fixed exchange rates do not cause balance of payments misalignments themselves. Whereas with a floating exchange rate the monetary policy is determined by the central bank and the exchange rate is left to the market, a credible peg targets the exchange rate and leaves money supply to market forces. Both systems allow for a market driven international adjustment. Economies with underdeveloped goods and capital markets have been using pegs ever since to import macroeconomic stability and financial stability (McKinnon and Schnabl 2004).

The problem emerges as the Peoples Bank of China is forced to target both the exchange rate and money supply to avoid rising inflation and to contain asset market bubbles. As the huge foreign reserve accumulation expands the money supply beyond what is tolerable for domestic price and financial stability, the Peoples Bank of China has to mop up surplus liquidity by increasing (inter alia) reserve requirements at lower than market rates. The resulting real exchange rate stabilization distorts international goods markets as the price of Chinese goods in international goods markets is artificially held low (as criticized for instance by Dooley, Folkerts-Landau and Garber 2004). The economic structure is biased towards the production of export goods.

¹⁰ This does not exclude that substantial investment was made in the export sector.

Through real exchange rate targeting the expenditure switching from traded to non-traded goods via real appreciation is disturbed. If, for instance, the Peoples Bank of China would not sterilize foreign currency purchases the monetary base would grow and prices are likely to increase. The resulting real appreciation would raise domestic (non-traded) goods prices relative to traded goods prices thereby shifting the demand to foreign (imported) goods. This process is impeded by sterilization. Figure 16 compares the real exchange rate of the Chinese yuan (with the dollar as reference currency) with the real exchange rate of the Estonian kroon (with the euro as reference currency) since 1994. Whereas Estonia experienced a gradual real appreciation of the kroon and a sustained current account deficit, the real exchange of the Chinese yuan has remained widely unchanged despite substantial productivity increases. The current account surplus of China– whatever the balance corrected by hot money inflows is – has increased.

On the demand side, as the real appreciation of the Chinese currency has been slowed down, a real wealth effect¹¹ of Chinese consumers, which would promote imports and domestic consumption, is prevented. Instead, the revenues (and savings) of export enterprises increase, which are reinvested. Indeed, as shown in Figure 15, since the start of extensive real exchange rate stabilization in the year 2001 (Figure 7), consumption as percent of Chinese GDP gradually declined. Investment and net exports gradually increased up to the year 2008, when the global crisis allowed for an interruption of Chinese sterilization policies.

In capital markets, nominal exchange rate stabilization in combination with sterilization policies contributed to financial repression for two reasons. First, public reserve accumulation absorbed a tremendous amount of liquidity from Chinese capital markets thereby impeding capital market development. Second and even more important, non-market based sterilization opened the door for state controlled capital allocation. Since

¹¹ Such a real wealth effect was observed after the post-Plaza appreciation of the Japanese yen. After the Japanese yen had appreciated by about 50% and the Bank of Japan had cut interest rates to slow down this appreciation, a consumption and import boom emerged, which reduced the Japanese trade surplus.

the year 2001 and with accelerated speed since 2005 the Peoples Bank of China had to absorb large amounts of liquidity to safeguard short-term price and financial market stability, but pushing forward financial fragmentation.

This opens the door to public allocation of capital via a dependent central bank and a state controlled private banking sector. As sterilization was widely non-market based – with required reserves being remunerated at around 2% – the general interest rate level was kept low. For a high growth economy such as China the overnight money market rate remained between 1% and 3% (Figure 8) inducing a high demand for capital. At the same time the Peoples Bank of China aimed to contain credit growth via sterilization and informal measures. The resulting surplus demand for capital puts the government into the position of directing cheap capital to sectors, which are regarded as crucial for economic development.

Due the high political preference for an export-led growth model, the export sector is likely to be the prime beneficiary. The lower panel of Figure 13 shows the uses of funds of the Chinese banking sector. The shares of non-financial corporations and the resident sector are widely constant, which indicates a centrally planned capital allocation. The share of loans to non-financial corporations dominates with roughly 65%, while the share of loans to the resident sector remains small at around 15%. Given the bias of capital allocation in favor of the enterprise sector, when the scope of sterilization measures started to increase at the turn of the millennium, the share of gross fixed capital formation and inventory changes as well as the share of net exports grew strongly at the expense of household consumption (Figure 15).

Thus, the overinvestment in China is likely to take place in the export sector, even more than in stock or real estate markets. As capital inflows have to be converted from dollars into yuan via the central bank, the government has the possibility to direct the use of funds. It first decides about the degree of sterilization and then about the allocation of the remaining funds. This gives the central bank the possibility to contain bubbles in stock and real estate markets via direct credit controls. For the export sector the constraints can

be expected to be less tight, because buoyant exports are in the very interest of the government.

From an international perspective, the distortion of the Chinese economy towards the industrial production matches the decline of the industrial sector in the US. In addition, the US-Chinese distortions in the goods markets are matched by distortions in the financial markets, which seem inflated in the US and underdeveloped in China. This implies that at the core of mutual US-Chinese market distortions are low interest rate policies in the US and real exchange rate stabilization in China. As the Federal Reserve keeps interest rates artificially low, the US financial sector mushrooms and is further stimulated by Chinese purchases of US treasuries. The US industrial sector suffers from cheap exports from China, because of real exchange rate targeting. In China, the Peoples Bank is forced to target both the exchange rate and money supply to contain inflation and asset price bubbles. This stimulates the export sector, while non-market based sterilization constitutes an impediment for financial development.

Because artificially very interest rates in the US, have pushed this “Ricardian partition of labor” between the two countries beyond what is sustainable without harsh government intervention in form of zero interest rate policies and giant public expenditure programs, coordinated policy action is necessary to balance the Chinese and US economy.

5. Economic Policy Implications

Based on an impressive economic catch-up process, China has gained a prominent role for world growth dynamics. The large size in terms of population has given China a significant weight in the world economy. But because of underdeveloped goods and financial markets the Chinese economy will for quite a while remain dependent on a stable nominal exchange rate against the dollar. It has been shown, that by keeping the yuan fixed to the dollar, China is stabilized and acts as a stabilizer for East Asia and the world. From this point of view, it should be in the interest of both countries to stabilize expectations towards a fixed parity of the yuan to the dollar.

It has been argued, however, that exceptionally low interest rates in the US combined with real exchange rate stabilization in China are the reasons for distortions in the Chinese and US economy. In the US the industrial sector shrinks due to fierce Chinese competition, whereas the financial sector thrives because of buoyant public capital injections from China. In China, the export sector is oversized because of plenty export opportunities to US, while sterilization contributes to further fragmentation of the Chinese financial market.

The observed distortions in the Chinese (and US) economy can be the breeding ground for new global crisis and instability. These can be triggered by several reasons such as a tightening of credit growth in China, a shift towards flexible exchange rates or interest rate increases in the US. Because Chinese real exchange rate stabilization cannot end without a more restrictive monetary policy in the US, a coordinated approach is necessary. The US government has to stop pressure to appreciate the yuan to contain destabilizing carry trades. The Federal Reserve has to return to an inflation neutral policy stance to dry out the (potential) source of hot money inflows into China.

China has to bring an end to real exchange rate stabilization, i.e. non-market based sterilization to terminate the subsidies for the export sector. But instead of aiming at a cooperative exit to correct global imbalances, the US pushes for confrontation via economic sanctions. This explains the recent minor concessions of China in form of yuan appreciations, but does not solve the problem of two economies whose economic faith is inescapably intertwined.

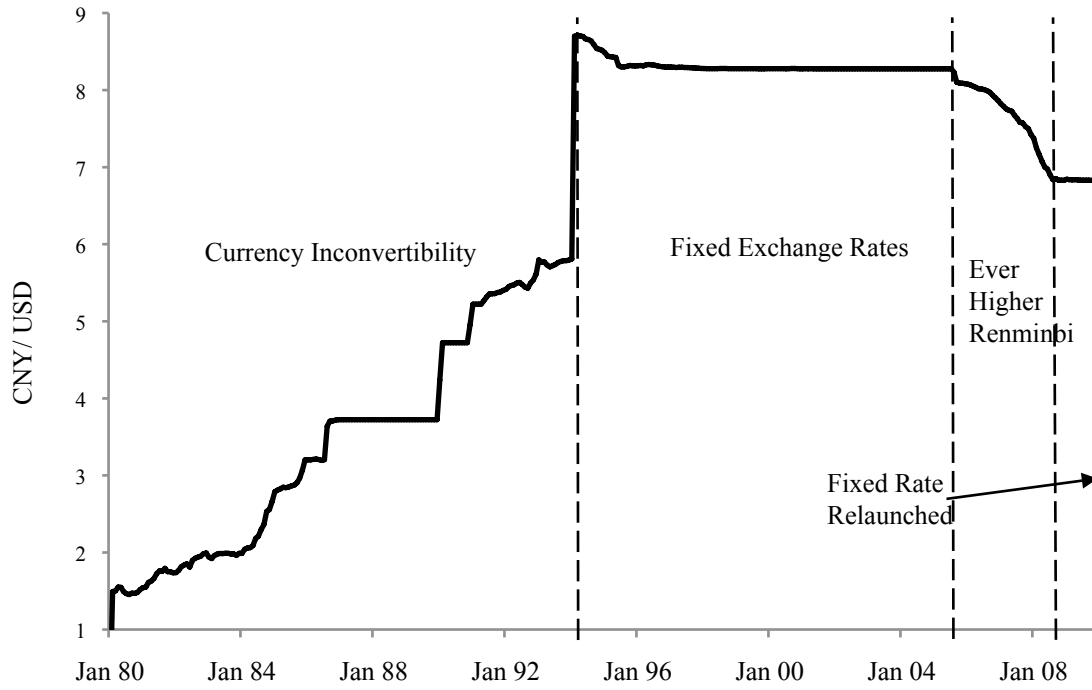
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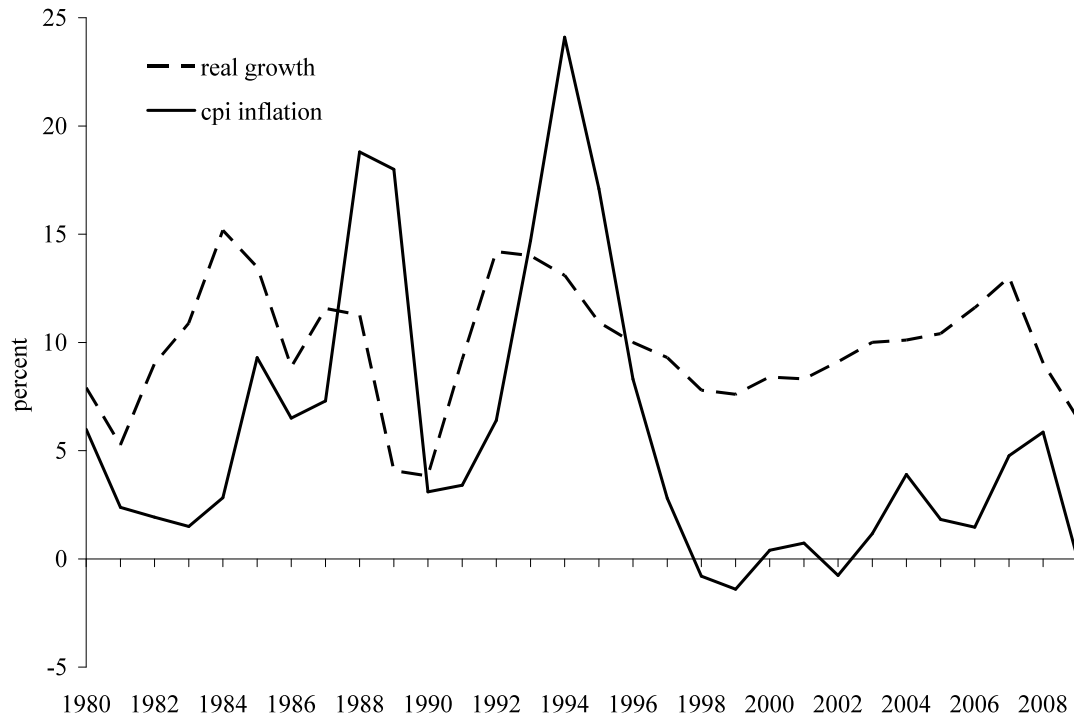
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Figure 1: The Yuan-Dollar Exchange Rate, 1980-2010



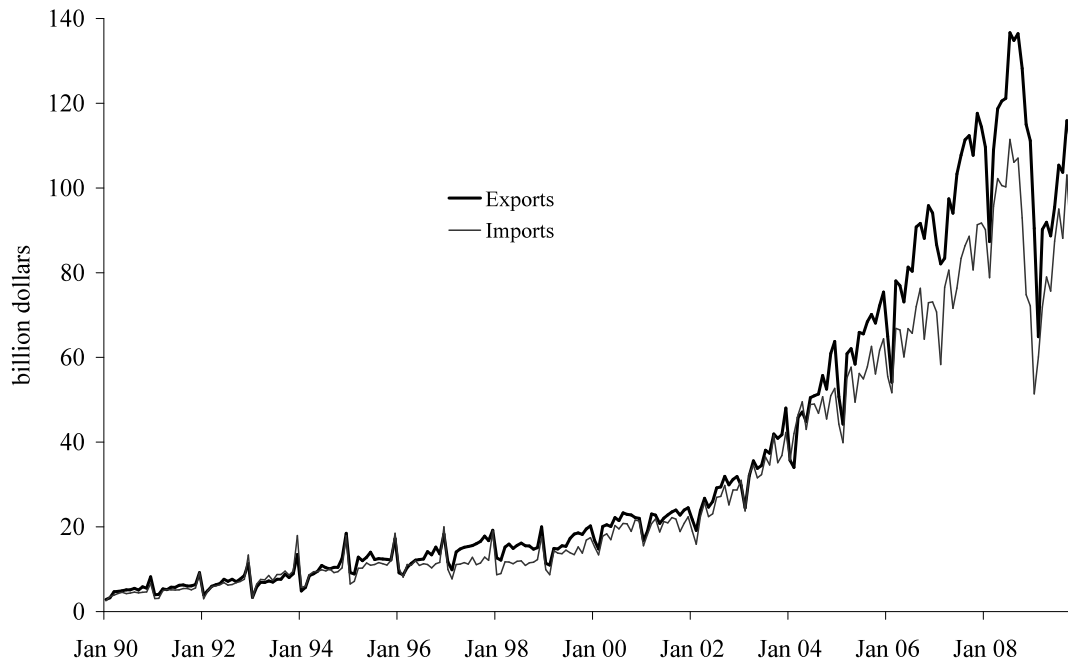
Source: IMF.

Figure 2: Real GDP Growth and Consumer Price Inflation, China, 1980-2009



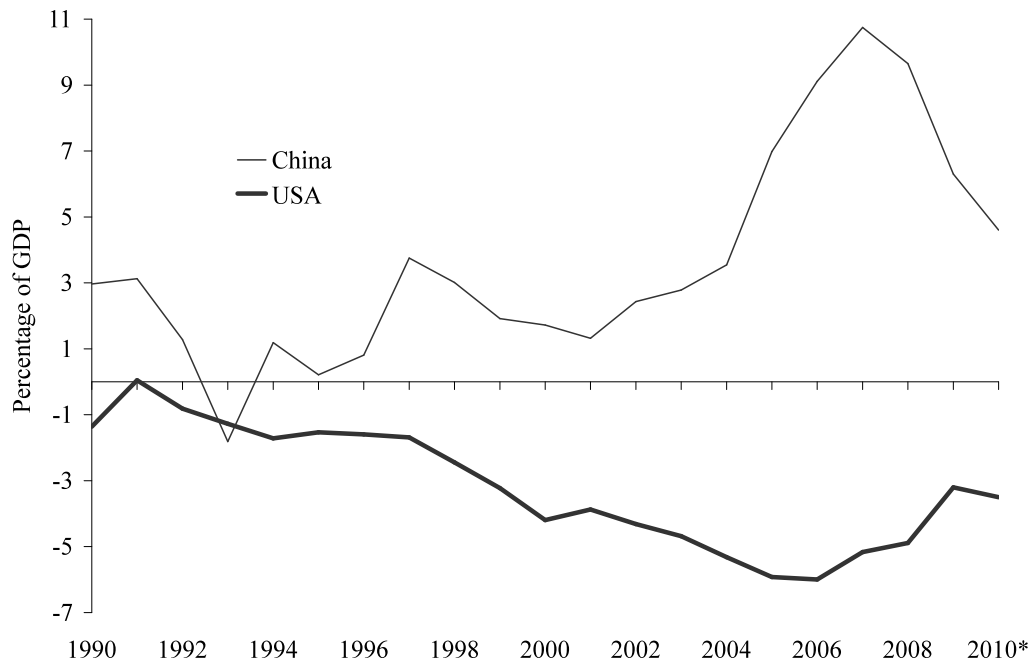
Source: IMF.

Figure 3: Chinese Exports and Imports



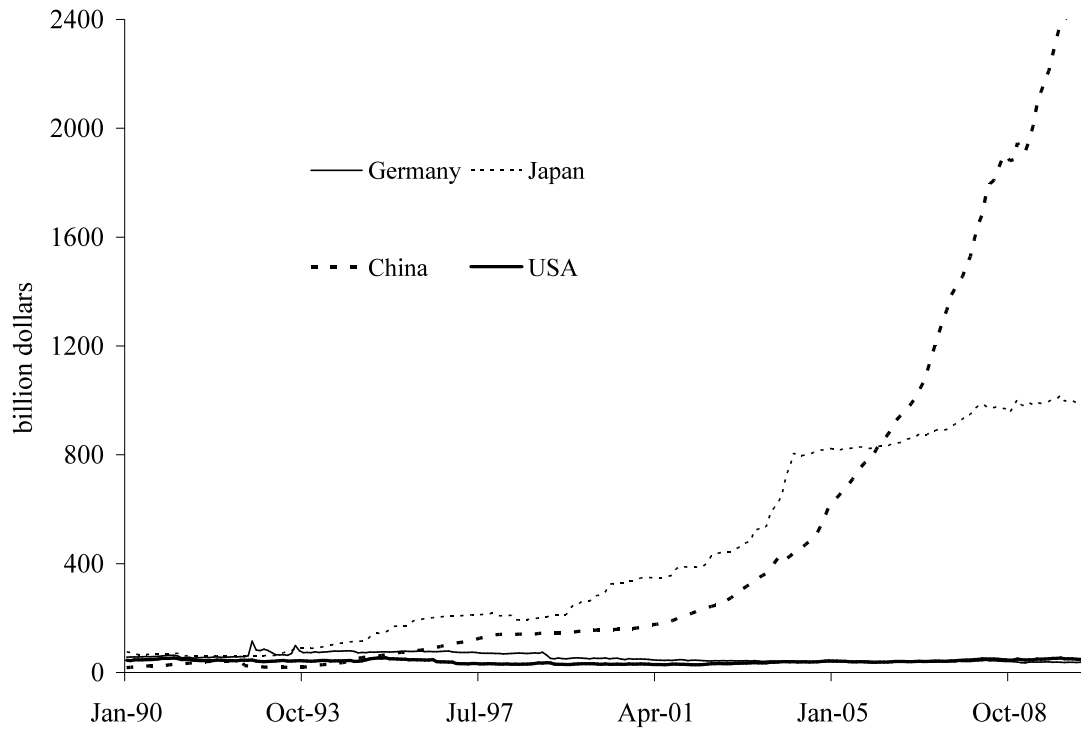
Source: IMF.

Figure 4: Chinese and US Current Account Balances



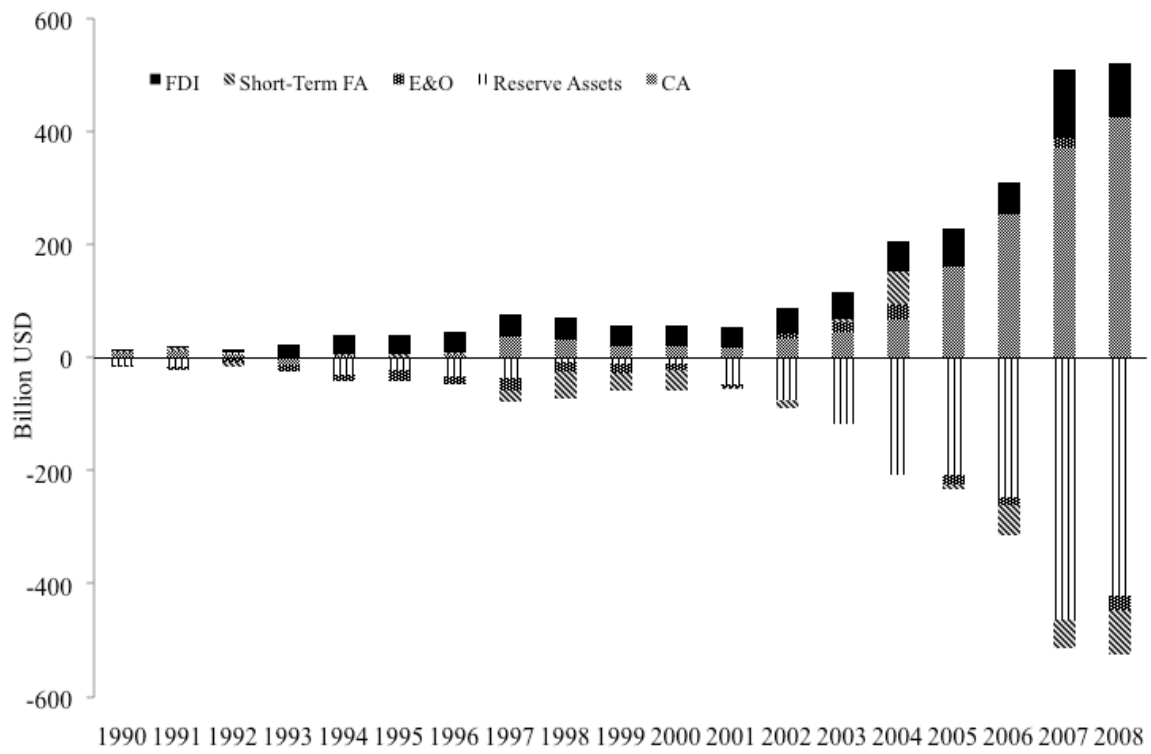
Source: IMF. Data for 2010 are based on IMF staff estimates.

Figure 5: Foreign Reserves, China, Japan, US, 1990-2010



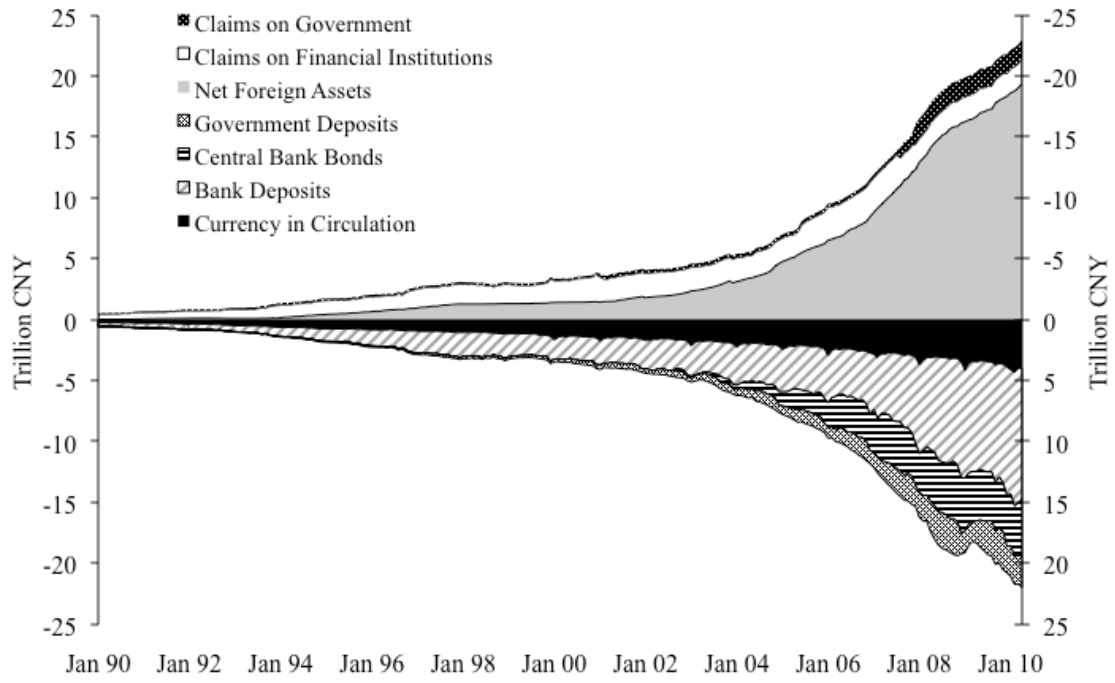
Source: IMF and Peoples Bank of China.

Figure 6: Chinese Balance of Payment



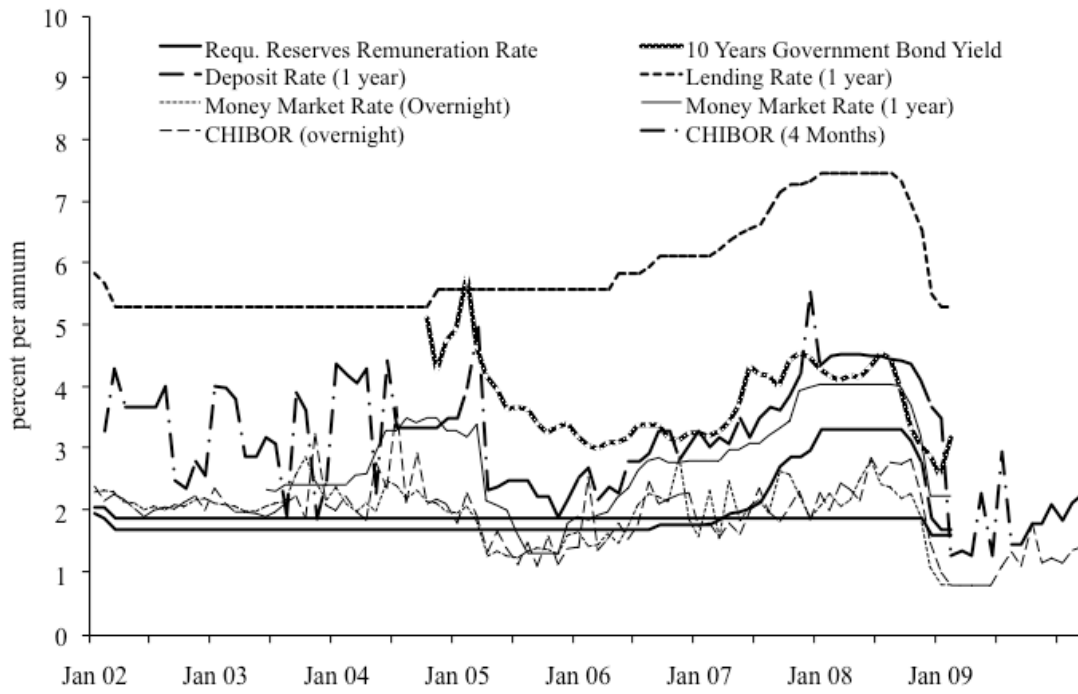
Source: IMF.

Figure 7: Peoples Bank of China Balance Sheet



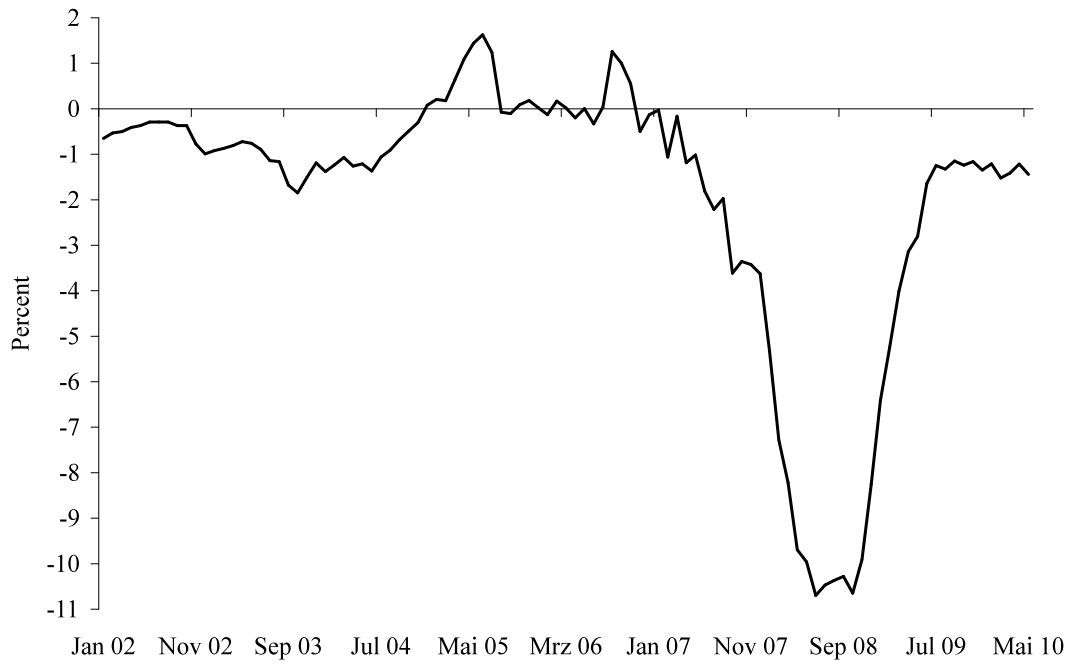
Source: IMF.

Figure 8: The Fragmented Structure of Chinese Interest Rates, 2002-2009



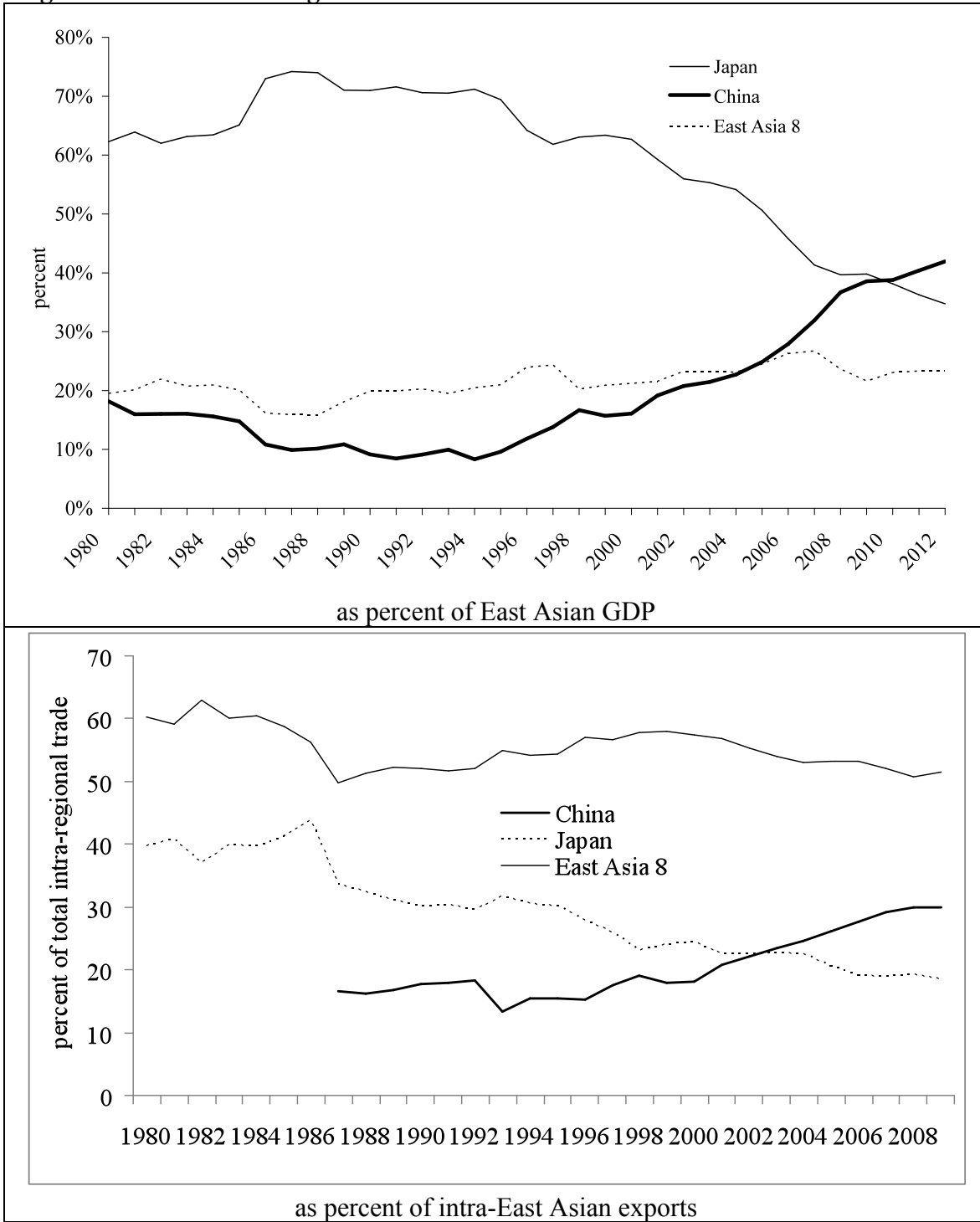
Source: Datastream.

Figure 9: China: Deviations form Uncovered Interest Rate Parity, 2002-2010



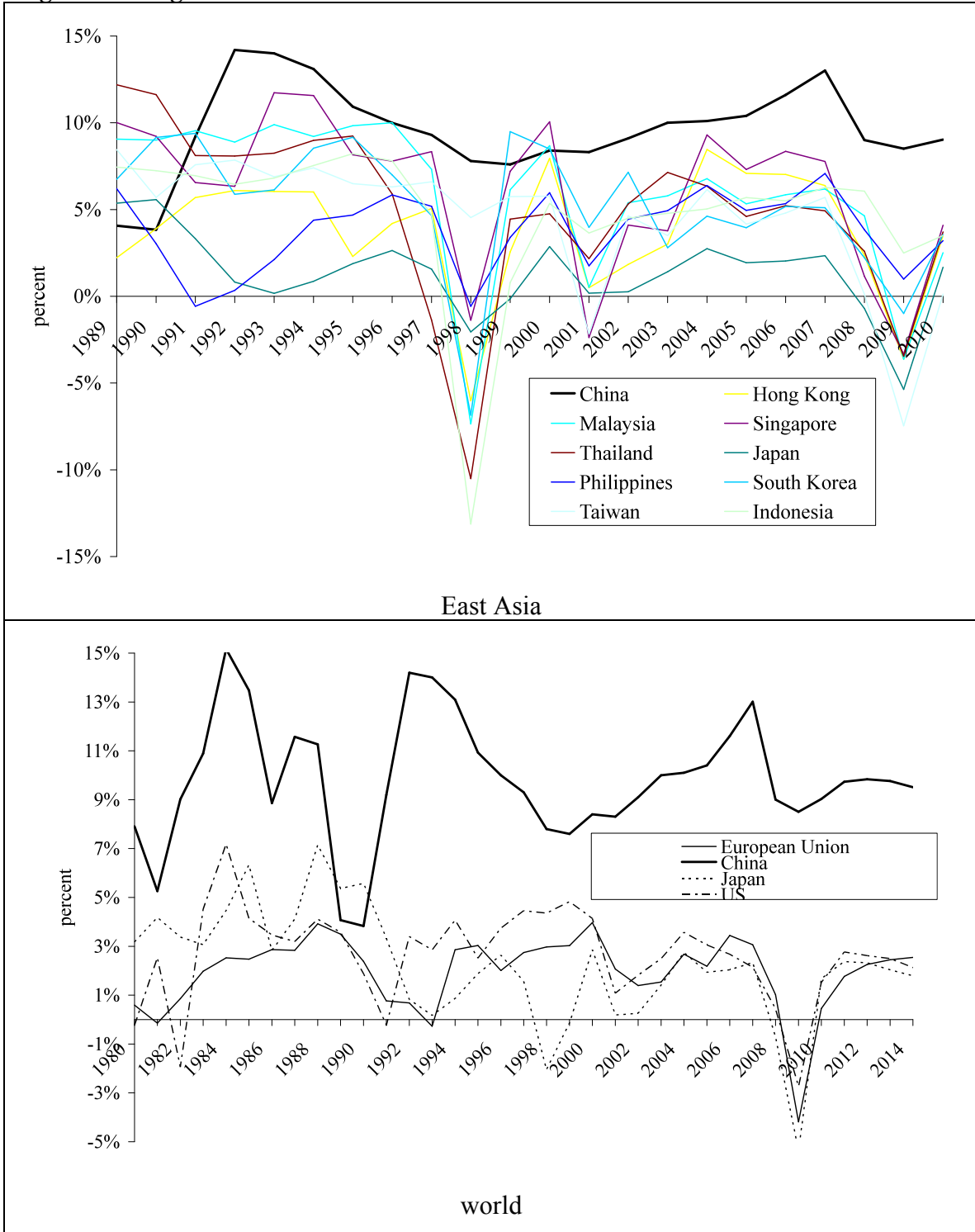
Source: Datastream.

Figure 10: Economic Weights in East Asia



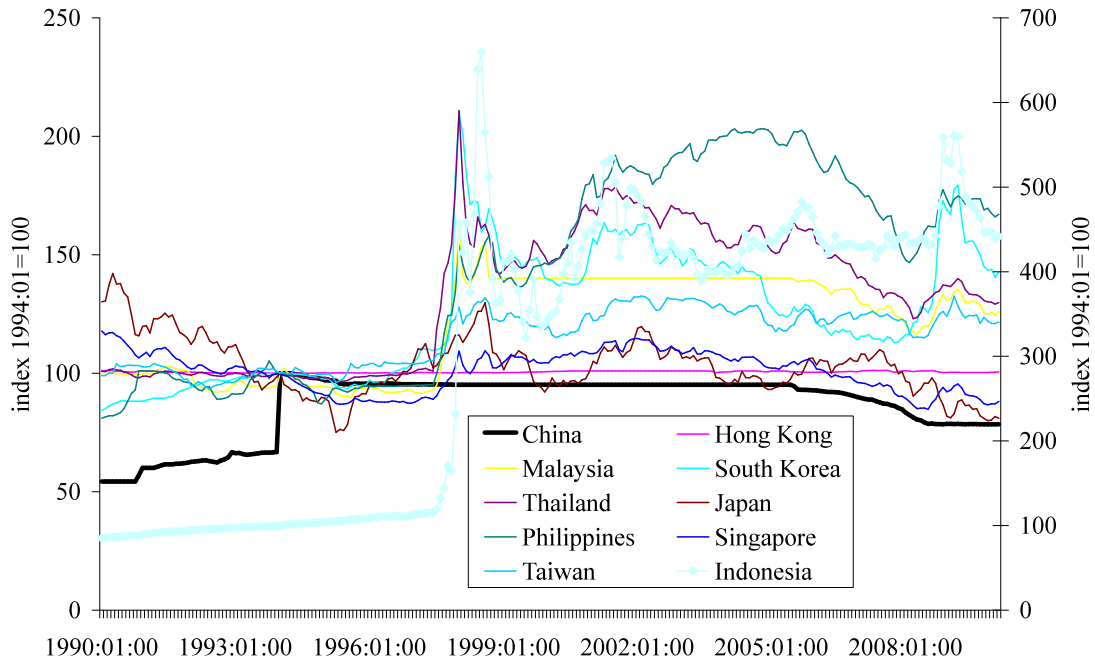
Source: IMF.

Figure 11: Regional and Global Growth Performance



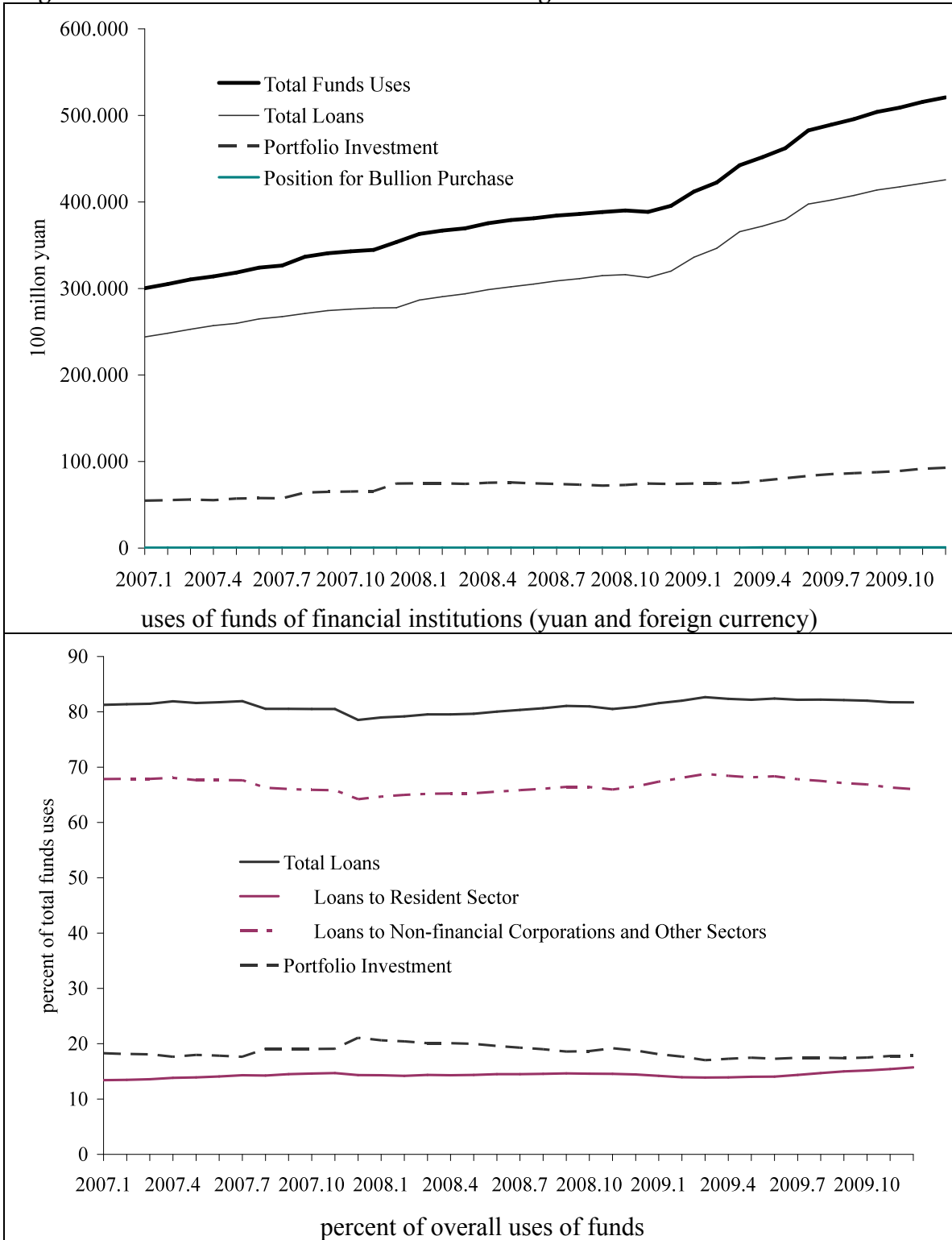
Source: IMF.

Figure 12: East Asian Exchange Rates against the Dollar



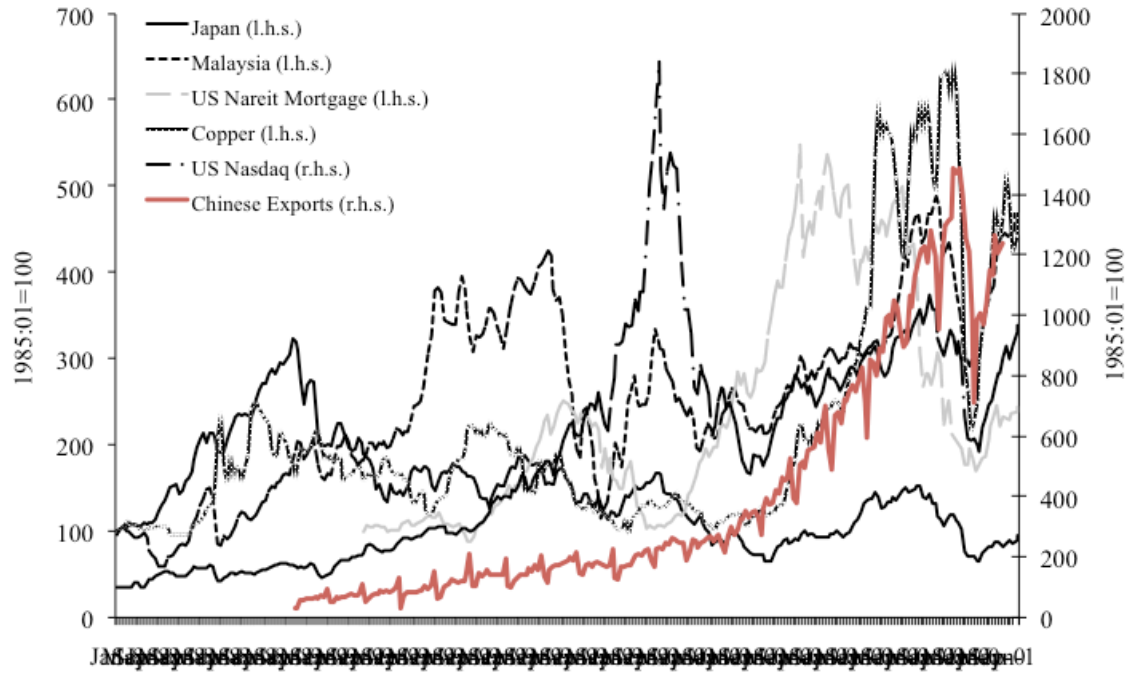
Source: IMF.

Figure 13: Uses of Funds of the Chinese Banking Sector



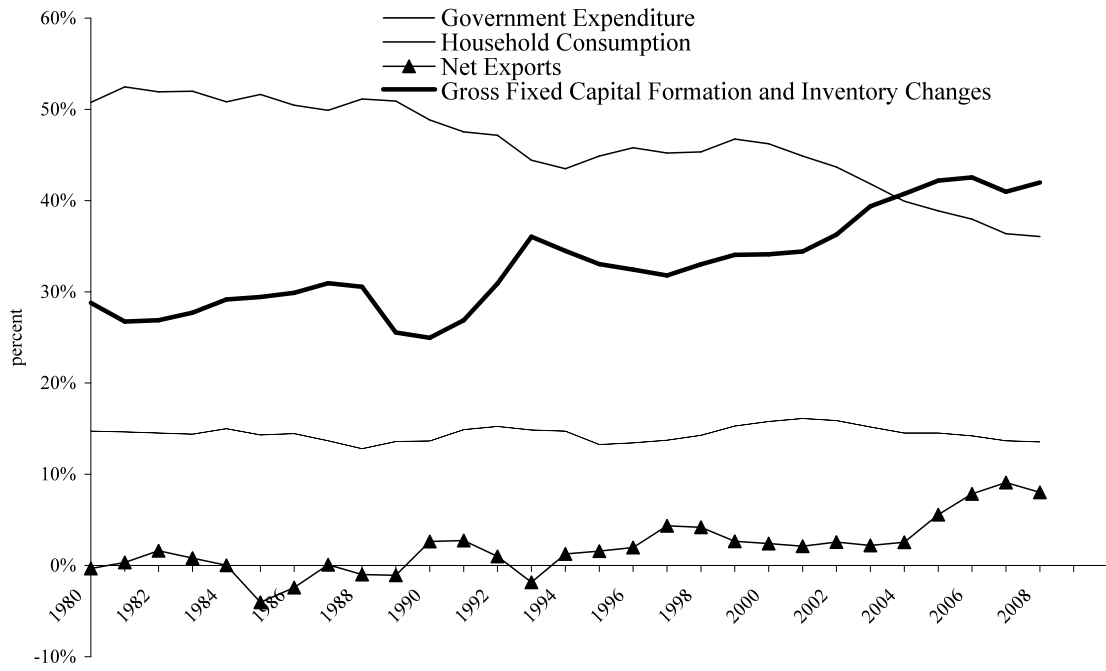
Source: Peoples Bank of China.

Figure 14: Wandering Bubbles



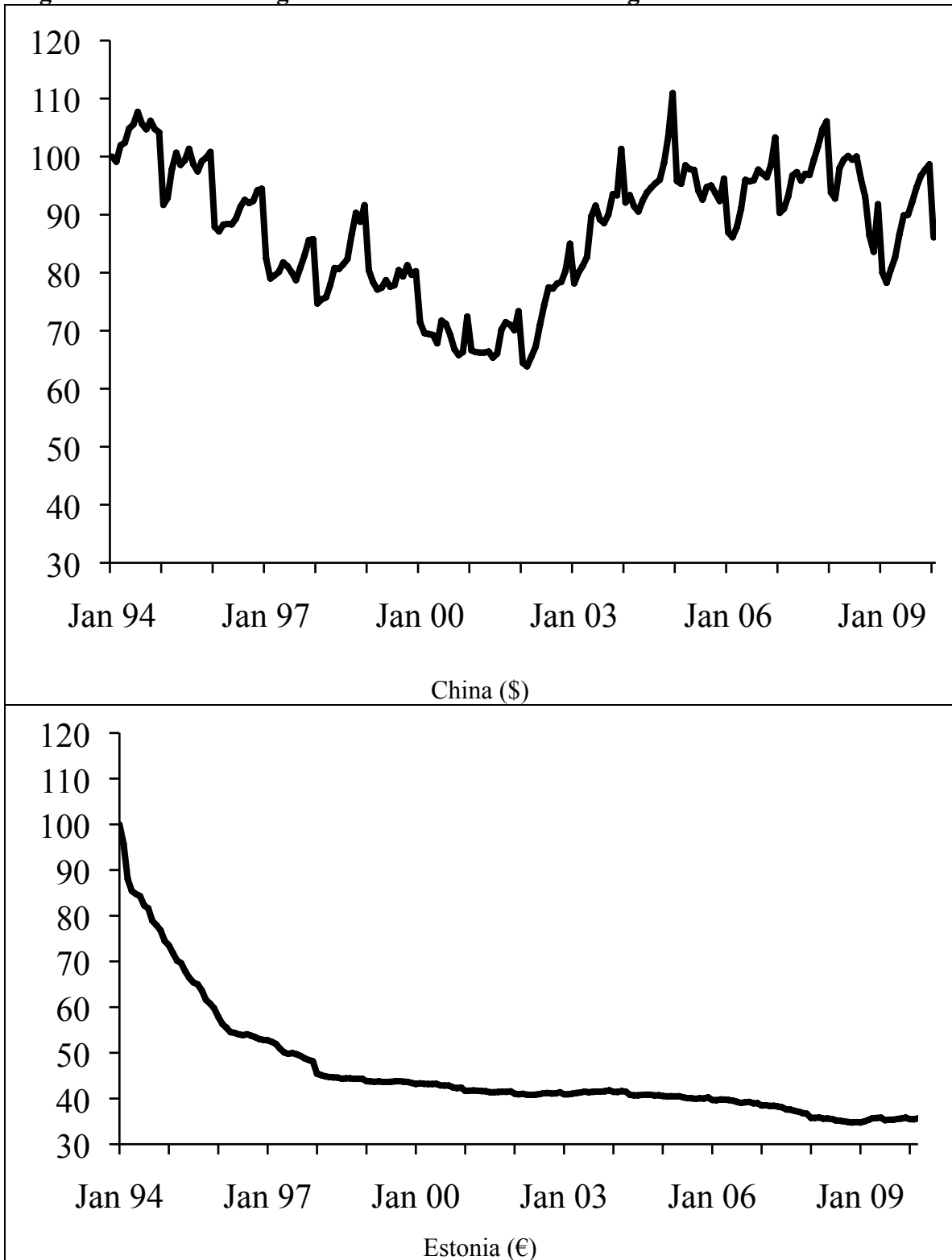
Source: IMF.

Figure 15: Chinese GDP by Expenditure



Source: IMF.

Figure 16: Real Exchange Rates of China and Estonia against Anchor Currencies



Source: IMF.