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The challenge of choosing
an optimal exchange rate regime
for China



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Tuuli Koivu

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Abstract

China's renminbi exchange rate has closely tracked the US dollar for over a decade. Although the peg has served the Chinese economy well, the recent depreciation of the US dollar and China's rapid economic development have increased discussion of other possible exchange regime options for China. In this paper, we contribute to the discussion by considering some of the options available to China in the light of recent theoretical and empirical work on exchange rates.

Keywords: China, monetary policy, exchange rate regime

1 Introduction

China's exchange rate regime has been widely researched. Most recent papers focus on estimating the deviation of the renminbi (RMB) exchange rate from the calculated equilibrium exchange rate. We here discuss China's exchange rate regime in the light of recent general literature on exchange rates. Since the duality of the China's economy, its vulnerable financial sector and restrictions on capital flows make exchange rate policy decisions exceptionally challenging, we try to take into account these specific characteristics of the Chinese economy while considering the optimal exchange rate regime for China.

Officially, China's exchange rate regime is a managed float. In practice, the renminbi has been pegged to the US dollar since 1994 and allowed to vary only within a narrow range. The peg has worked as an important anchor to China's economic policies and has served the economy well. In the mid-1990s, China managed to bring down its inflation rate significantly. China also escaped much of the turmoil during the Asian crisis in 1997–1998 and successfully maintained its peg.

An active discussion on China's exchange rate started in summer 2003. The dollar's decline, which started in spring 2002, was one of the factors that ignited the international debate on China's exchange rate regime. The discussion was initially quite political, with China's main trade partners (mainly the US, but also the EU and Japan) claiming the renminbi was seriously undervalued and that China's exporters were taking unfair advantage of this situation and destabilising the world economy. This discussion spawned a large body of analytical research and gradually it shifted emphasis from bilateral trade imbalances to China's rising capital inflows. The top concern recently has been the potential overheating of the Chinese economy due to rapid investment growth and accelerated inflation.

At the time of this writing (January 2005), investment growth and inflation are showing signs of slightly slowing, but the booming economic growth and strong capital inflows continue. On the other hand, China's current account surpluses are quite modest. Some analysts argue China needs to let its currency appreciate in order to cool the economy. China's government, on the other hand, has refused to abandon its de facto peg to dollar. While China is committed in principle to a more flexible exchange rate, the authorities have not announced a timetable for such reform.

This paper is organised as followed. Section 2 describes China's current exchange rate regime and recent economic development. We then shortly discuss some of the specific features of the Chinese economy. In section 4, we assess the views of recent studies on how much the renminbi is undervalued. In section 5, we give a short overview on the recent general discussion on the exchange rate policies. Possible monetary policy options for China are considered in section 6. Finally, we summarise the discussion and conclude in section 7.

2 China's exchange rate policy and recent economic development

Prior to 1994, China had a dual-exchange rate system with an official foreign exchange rate and a market exchange rate (or more specifically, many market exchange rates due to the imperfect arbitrage between the swap centers in special economic zones where Chinese and foreign enterprises could legitimately trade foreign exchange among themselves). Eventually the widening gap between official and market rates, increasing volatility in the market and overall deficiencies in the exchange rate mechanism encouraged to further reform the exchange rate system. As a part of a comprehensive reform package to establish a socialist market economy, China's exchange rate regime was reformed at the beginning of 1994. Official and swap market rates were unified (RMB 8.7 = USD 1) and an interbank market created (Huang and Wang, 2004; Lin and Schramm, 2003).

Under the new regime, the exchange rate was market-driven and free to move within a band of $\pm 0.25\%$ of the previous day's reference rate. As soon as the reform was introduced, the renminbi started to appreciate in response to the balance-of-payments surplus. It reached 8.3 to the dollar in May 1995 and 8.28 in October 1997. Partly in response to the Asian financial crisis, the trading band was narrowed in October 1997 and the 8.28 rate was essentially etched in stone (Huang and Wang 2004). Thereafter, China's exchange rate has closely tracked the US dollar in spite of the fact that China still officially describes its exchange rate regime as a "managed float."

China's central bank, the People's Bank of China (PBoC), possesses potent monetary tools for supporting the exchange rate system and maintaining its exchange rate target. The interbank market can be characterised as a bilateral monopoly. The largest buyer of foreign exchange by far is the PBoC and the state-owned Bank of China controls the majority of foreign exchange sales (Lin and Scramm, 2003). Exporting companies have to sell a major part of their foreign exchange receipts to designated banks within a deadline, while importers can buy foreign exchange only through designated banks upon presentation of valid documents (Lu, 2004). Overall, capital flows are quite restricted and nearly all transactions require permission from the authorities. As a result of all these regulations, the central bank can control exchange rate fluctuations either through open-market operations or by manipulating supply and demand in the foreign exchange market.

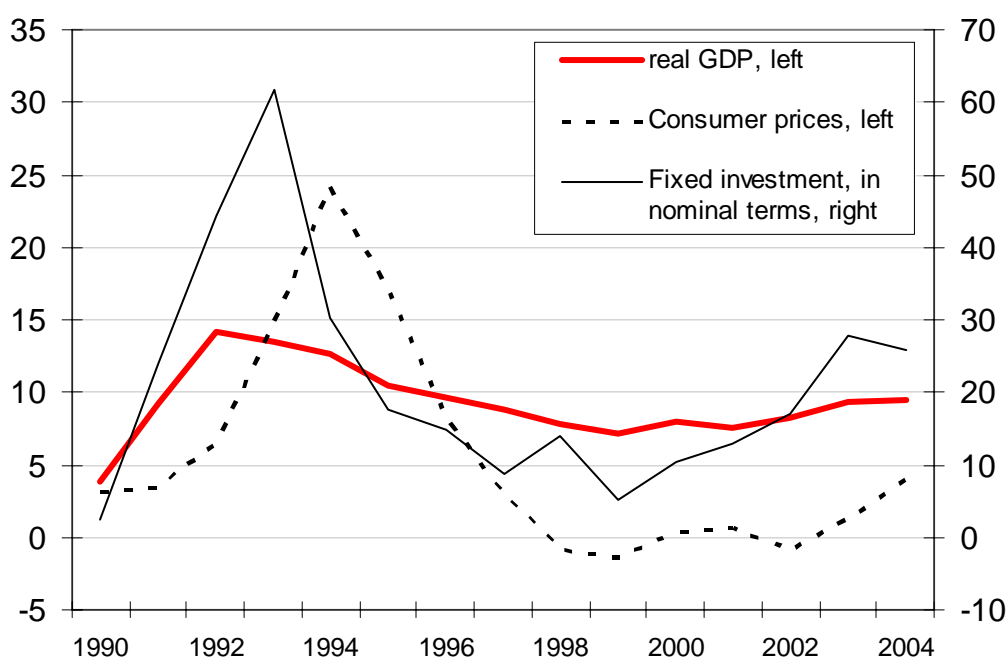
The PBoC claims the main objective of its monetary policy is to maintain the stability of the renminbi and thereby promote economic growth.¹ Over the past ten years, the de facto peg has served the PBoC and the Chinese economy well. In mid-1990s, China experienced a period of fairly rapid inflation resulting mainly from explosive investment growth. Annual inflation peaked at 24% in 1994. By 1997, inflation was successfully reined in. In fact, during brief periods in 1998–1999 and 2002, China experienced modest deflation. As other Asian currencies were forced to depreciate substantially in 1997, China kept its peg. Also the aim of fast economic growth has been achieved. In 1994–2003, the average annual growth rate of real GDP was nearly 9% (Figure 1).

Recent economic developments, however, have signalled that the current regime may also cause some imbalances to the economy. China's strong economic growth together with the dollar's decline suggest that the renminbi may have become substantially undervalued. Moreover, despite the fact that China's current account surpluses have been modest in recent years, belief that the renminbi is undervalued has fuelled revaluation

¹ www.pboc.gov.cn/english/

expectations and attracted huge capital inflows into China since 2003 (Figure 2). China's tenacious efforts to hold the dollar peg intact have forced the PBoC to buy huge amounts of foreign currency from the market. As a result, China's foreign exchange reserves swelled from USD 286 billion at the end of 2002 to USD 610 billion (nearly 40 % of GDP) by the end of 2004.² Only about a third of the rise in reserves was justified by current account surplus.³ The more important factor was foreign direct investment, which accounted for over 40 % of the increase in the reserves. The remaining third of the rise reflected other financial flows into China and a record-high positive net errors and omissions item in the 2003 balance of payments (Figure 2).

Figure 1. Inflation, investment and GDP growth in China, 1990–2003, % change, y-o-y



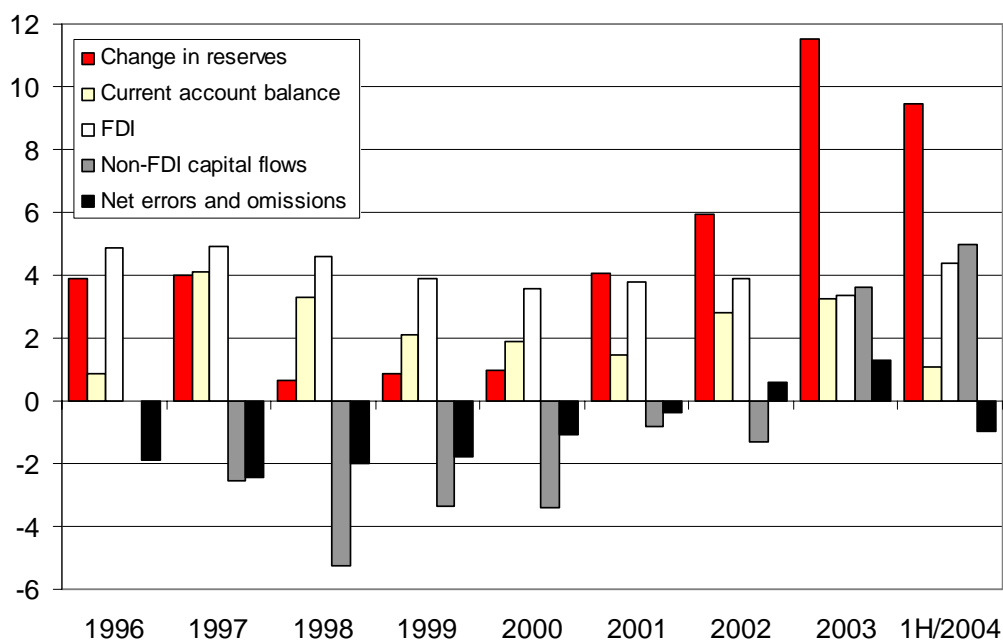
Source: National Bureau of Statistics

Increased capital inflows accelerated money supply growth slightly in the second half of 2003 and at the beginning of 2004 (Figure 3). Increased liquidity and certain policy factors also bolstered credit growth. Resulted investment growth hit an annual rate of 43 % in the first quarter of 2004. This investment boom led to an excess demand for raw materials and transport services. Rising producer prices aroused fears of an acceleration in consumer price inflation and possible overheating in certain sectors.

² If some of the reserves were not used to recapitalise two of China's four major state-owned banks at the end of 2003, the increase of the reserves would have been USD 45 billion higher.

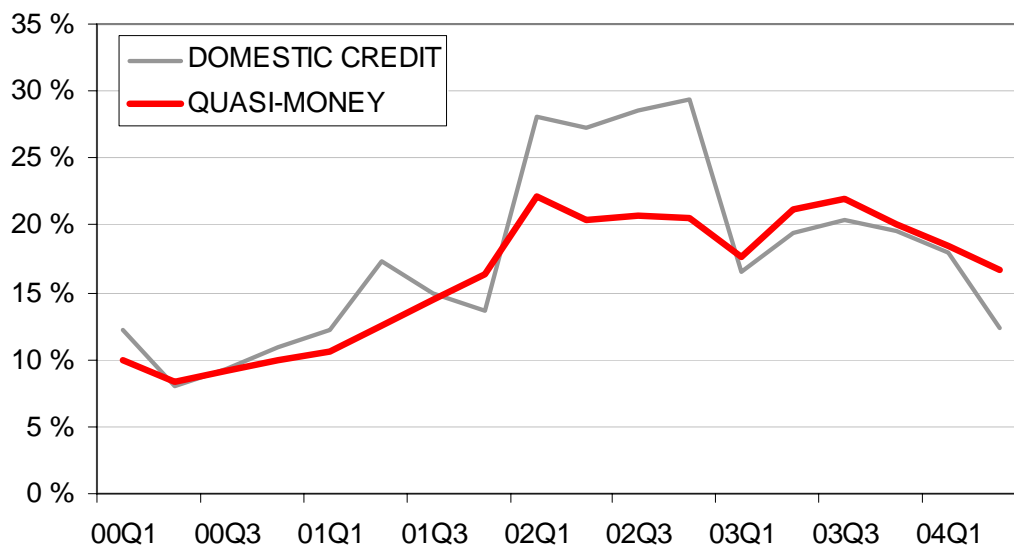
³ The current account surplus amounted to USD 46 billion, or 3.2 % of GDP, in 2003 and USD 7.5 billion, or 1 % of GDP, in the first half of 2004. The figure for the whole 2004 has not been released, yet.

Figure 2. Selected balance-of-payments items, % of GDP



Source: PBoC

Figure 3. Money supply and credit growth in China, 1Q/1991–2Q/2004



Source: IFS

The Chinese authorities responded with restrictions on credit growth, essentially ordering investors, banks and local authorities to slow investment growth. Although banks' reserve requirements were lifted, most of the new restrictions were issued in the form of guidelines. Market-oriented tools were not used intensively and the major benchmark

interest rates were only adjusted upwards slightly at the end of October 2004. Other cooling measures included attempts to decrease capital inflows to China. The government encouraged local officials to enforce capital account restrictions more strictly and promoted certain types of capital outflows. The central bank began sterilising a large share of capital inflows from the market by selling central bank bills to commercial banks in the spring 2004.⁴ Although the central bank repeatedly reported that it could not sell the amount of bills it wanted in spring 2004, it has had no problem finding buyers in recent months. The yield on central bank bills remains fairly low. For example, the yield on 12-month bills issued last November was only around 3.5%.⁵ Of course, the costs of the sterilisation could potentially be much higher if commercial banks were not willing to buy central bank bills. In China, however, the state-owned banks seem to act in line with the central bank defending the dollar peg and buying central bank bills despite the relatively low interest rates. As the banking sector reforms advance and stakes from the banks are sold to private investors, this kind of cooperation can be expected to vanish.

The preliminary effects of the cooling measures have generally been positive. Since mid-2004, credit and money supply growth, as well as consumer price inflation, have slowed significantly. The threat of economic overheating, however, is far from vanquished – investment growth remains at a very high level.⁶ Producer price inflation is still at high level, surpassing 7 % in December.

3 Specific features of Chinese economy

Discussions of China's exchange rate often overlook the fact that there are still many features that distinguish the Chinese economy from a market economy. We suggest these features are central to any discussion of China's exchange rate policy. In the following, we concentrate on three issues that we find particularly interesting from this perspective, i.e. capital account restrictions, China's vulnerable financial sector and the duality of the economy.

Capital flow controls

China still imposes tough restrictions on capital flows, although some minor outflows have been liberalised recently. Basically, transfers related to the current account and foreign direct investments are liberalised, while all the other flows remain subject to strict, complex regulations. Obviously, capital controls never function perfectly. It has also been suggested that in the case of China, restrictions are not watertight. For example, Gunter (2004) estimates that annual capital flight from China should have exceeded USD 100 billion in 1997–2000. Gunter further claims that a considerable amount of capital flight occurred through misinvoicing in foreign trade (i.e. underreporting exports and over-reporting imports). However, we find no supporting evidence for this claim in the most recent data. Using Gunter's measure, capital flight should have continued strong in 2003

⁴ At the end of September 2004, outstanding central bank bills amounted to USD 75 billion. China's foreign exchange reserves rose by USD 88 billion between end-February 2004 and end-September 2004.

⁵ Benchmark rate for one-year credit is 5.58 %.

⁶ In 2004, fixed investment was up 26 % y-o-y.

and first half of 2004.⁷ In fact, since summer 2003, speculative capital flows (sum of non-FDI capital flows and net error and omission term) have turned towards China. Moreover it is highly unlikely that large capital outflows would have simultaneously continued via misinvoicing. Thus, discrepancies in the trade statistics do not seem to reflect only hidden capital flows, but more likely reflect also other statistical weaknesses.

By comparing China's balance of payments statistics to other countries, one can find evidence of functioning of the capital controls in China. If we compare China to other emerging markets, China's average flows of portfolio and other investment are small (Table 1). At the same time, there has been no spectacular rise in the error and omission term in the balance-of-payments data. China's external debt is also moderate, around 14 % of GDP (IMF, 2004). Due to China's exceptionally high savings rate, the country is a net exporter of capital.

Table 1. Magnitude of capital flows of selected emerging markets, absolute average % of GDP

	Portfolio investment liabilities		Other investment liabilities		Net error and omission term	
	1995-1999	2000-2003	1995-1999	2000-2003	1995-1999	2000-2003
China	0.3 %	0.4 %	0.7 %	0.6 %	2.1 %	0.8 %
Argentina	3.1 %	4.3 %	1.7 %	4.1 %	0.4 %	1.1 %
Mexico	2.2 %	0.4 %	0.8 %	0.3 %	0.5 %	0.2 %
Russia	1.8 %	1.7 %	1.3 %	2.2 %	3.0 %	2.6 %
Indonesia	1.7 %	0.8 %	2.3 %	1.6 %	1.3 %	1.4 %
Korea	2.3 %	2.4 %	2.9 %	0.9 %	0.8 %	0.2 %
Philippines	4.2 %	1.5 %	5.9 %	12.4 %	3.1 %	2.3 %
Thailand	1.6 %	0.5 %	11.6 %	6.5 %	1.4 %	0.5 %

Note: Averages calculated on absolute values to illustrate flow sizes. Otherwise, the volatility of flows (inflows and outflows) would partly compensate each other and caused an underestimation of flow size.
Source: IFS

Vulnerable financial sector

China's financial sector is dominated by a large banking sector. The total assets of the sector exceed 200 % of GDP, while stock markets and bond markets are relatively small compared to most emerging markets.⁸ The banking sector is still largely owned by the state and expertise in modern financial techniques (e.g. risk management) is still inadequate. Indeed, until quite recently credit decisions were based entirely on political aims and market mechanisms in the banking sector were stifled. The legacy of these bad credit policies, i.e. the amount of non-performing loans (NPLs) of China's financial system

⁷ Gunter (2004) estimates misvoicing by comparing trade statistics from China against 22 industrial countries. He finds that on average in 1997–2001, China's trade surplus calculated using trade partners' statistics was USD 70 billion larger than using China's statistics. By using the same method and statistics, misinvoicing amounted nearly to USD 150 billion in 2003 (IMF Direction of Trade Statistics, 2004).

⁸ To illustrate the large size of China's banking sector, the amount of banks' total assets as a percentage of GDP are e.g. around 60 % in the US, around 160 % in Japan and 20–80 % in most middle-income countries.

(including the asset management companies into which a part of NPLs have been transferred) officially corresponds to around 25 % of GDP.⁹ The estimates of several international agencies are considerably higher.

In recent years, the government has sped up reform of the banking sector. Under its WTO membership commitments, China must open up its banking sector to foreign banks by December 2006. To date, foreign banks' operations in China remain highly restricted and their share of banking sector total assets is only 1 %. Looking ahead, the presence of foreign banks is expected to increase and domestic banks will have to be reformed to be competitive in the new business environment.

When considering China's possible decisions on its exchange rate regime, it is important to bear in mind that interest rates play only a moderate role for the banking sector. Interest rates have traditionally been strictly regulated and the central bank still defines the lower limit for credit rates and the upper limit for deposit rates. In addition, as we saw in 2004, the authorities are still able to guide the commercial banks by giving regulations to the banks. As the owner of the biggest banks, the state can control the banks' activities much more than in many other countries. Another specific feature of the banking sector is that most of the credit is denominated in domestic currency. Only 6 % of loans and 5 % of deposits of the Chinese banks are denominated in a foreign currency. Banks' foreign assets cover foreign-currency-denominated deposits. Banks' foreign liabilities, however, are much smaller than domestic loans denominated in foreign currencies.

Dual economy

The Chinese economy has developed unevenly. Side by side with an efficient export sector is a huge inefficient domestic economy. The ability of these two sectors to compete in international markets varies considerably. For example, the expected effects of the WTO membership on agriculture are mainly negative while the membership should have a positive effect on the large subcontracting sector and China's exports.

The inefficient part of the economy is much broader than the export sector and most Chinese earn their living in this sector. In cities, the inefficient economy is synonymous with the state-owned enterprises (SOEs), many of which are unprofitable and in need of profound reform. Although a few SOEs accumulated huge profits in 2004, the profitable firms are a minority of all enterprises. Only a small share of SOEs has been reformed or allowed to go bankrupt.¹⁰ Nearly 70 million people are currently working in SOEs. In addition, half of the Chinese labour force still works in agriculture. This sector is inefficient and constitutes a huge structural challenge for Chinese decision-makers.

4 Is the renminbi undervalued and, if so, by how much?

Over the last year, there have been several papers discussing the possible undervaluation of the renminbi, many of them trying to calculate by how much the renminbi actually is undervalued. We summarise several papers in Table 2. The meta-conclusion of these papers is that the renminbi was overvalued earlier, but as market reforms advanced in the

⁹ Own calculations based on PBoC figures.

¹⁰ Some estimates put the number of SOEs at around 150,000 (EIU Viewswire "SOE reform is better than nothing, but privatisation is best," February 3, 2004).

1990s, the misalignment vanished. All the recent papers conclude that currently, the renminbi is undervalued.

In August 2003, Lardy and Goldstein suggested the renminbi should be revalued 15–25 %. In November 2004, they decreased their estimation on undervaluation to the lower end of that range (Goldstein and Lardy, 2004). In Goldstein's paper (2004), these calculations are more profoundly illuminated. Goldstein's estimates of the size of the undervaluation are based on China's balance of payments data and on the perspectives of global payments imbalances. Goldstein estimates that current account surplus needs to deteriorate by 4 % of GDP to get the Chinese economy into equilibrium. Goldstein estimates that this would demand a revaluation of renminbi of 15–30 %. The results are almost the same (15–25 %) using the global payments approach.

Funke and Rahn (2004) apply a Johansen multivariate cointegration framework to calculate the size of the undervaluation. Their results reveal an undervaluation of 12 %. However, the data ends in April 2002, just when the nominal depreciation of the US dollar against the yen and euro got underway. In addition, economic growth in China has continued strong since spring 2002. Thus, using the same calculations, the undervaluation could be currently larger than Funke and Rahn show.

Frankel (2004) estimates the undervaluation of the renminbi using PPP data from 2000 and running a cross-country regression for 118 countries to find out the coefficient by which the price level is determined as a function of real per capita income. Frankel estimates that the renminbi was undervalued as much as 36 % in 2000. The undervaluation would thus have increased only slightly from 1990 as Frankel's estimate for the undervaluation in 1990 is 34 %. The author assumes that the undervaluation may have widened since 2000. Reasons for this include deflation, rapid productivity growth and strong increase of foreign trade.

Zhang and Pan (2004) estimate the long-run nominal renminbi exchange rate without government intervention. They model the renminbi's actual exchange rate as a function of inflation, real exchange rate and government intervention. They estimate that the exchange rate of the renminbi against the US dollar would have appreciated 15–22 % from 1996 to 2003 without government intervention.

All recent studies thus estimate that the renminbi is undervalued but estimations of the undervaluation vary from around 10 % to 40 %. Overall, equilibrium exchange rates are notoriously difficult to estimate even for developed countries. For China, the task is even more complicated, e.g. due to lags, poor data quality and restrictions on capital flows. It is also evident that there are many underlying factors in the current account even when in principle major restrictions have been lifted. China's trade figures are surprisingly different from the statistics of its trading partners. In addition, China still has a lot of restrictions on certain imports and exports and foreign trade is administered by tax policies. For example, until the recent changes in foreign trade law, it was strictly proscribed that individuals could not engage in foreign trade. In the service sector, most restrictions are expected to be loosened in coming years as China meets its WTO commitments. We can thus conclude that although the renminbi very likely is undervalued, it is almost impossible to calculate the exact the magnitude of the misalignment.

Table 2. Selected papers on China's exchange rate.

Authors	Year	Method	Data from	Result
Chou and Shih	1998	1) PPP model (Johansen cointegration tests) 2) The shadow price of foreign exchange (SPFE) model	1978-1994	1) In the beginning of the period, overvaluation. Since 1990, mainly undervaluation in 1994, undervaluation of 8% 2) Overvaluation for the whole period. In 1994, overvaluation 2–9%.
Bu and Tiers	2001	A counterfactual analysis	1986-1998	Without intervention, the exchange rate would have appreciated 5–12%.
Zhang	2001	BEER approach	1954-1997	During the pre-reform period(1957–1977), the exchange rate was overvalued. Since 1978, exchange rate fluctuated closely around the BEER.
Xiaopu	2002	BEER and ERER models	1978-1999	Periods of under- and overvaluation, for the last years of research period overvaluation.
Se-Eun and Mazier	2003	FEER approach	1982-2000	For most years, the renminbi was undervalued. The undervaluation became more apparent in the second half of 1990s. In 2000, undervaluation was 32%.
Funke and Rahn	2004	Johansen cointegration framework	1/1985-4/2002	Undervaluation of 12%.
Goldstein	2004	authors' own calculations		Undervaluation of 15–30%.
Frankel	2004	PPP model	2000	Undervaluation of 36%.
Zhang and Pan	2004	Calculation the effects of government intervention	1996-2003	Without intervention, the long-run exchange rate would have appreciated by 15–22%.

5 Short overview on recent exchange rate regime discussion

The discussion of exchange rates came alive in the wake of the numerous financial and currency crises in 1990s. After the Asian crisis in 1997–1998, many authors anticipated that countries would move to corner solutions – either to a hard peg or to a freely floating exchange rate regime. However, the strict division has not taken place and most countries' regimes are still somewhere between the two corners (Rogoff et al., 2004; Calvo and Reinhart, 2002). In general, hard pegs are more common in developing countries than in emerging-market or advanced countries (if the euro countries are eliminated from the classification). Free floating regimes are essentially nonexistent in developing countries and emerging markets (Rogoff et al., 2004).

The theoretical literature identifies preconditions for a successful hard peg (Eichengreen, 2002; Larrain and Velasco, 2001). For example, a hard peg is a natural choice for a small country with strong links to a larger neighbour so that the main criteria of an optimum currency area are fulfilled. The more intensive the trade and financial links between the countries and the more symmetric the real shocks they experience, the more successful the fixed peg should be. In addition, a country choosing a peg should have flexible labour market as in a case of shock, nominal wages and prices have to adjust when the exchange rate is fixed.

At bottom, the decision to adopt a hard peg goes to credibility of monetary policy. Although theories suggest that a country with fixed exchange rate should have high-quality institutions and well-capitalized financial sector to make a hard peg sustainable, countries pegging their currencies to another currency often have weak institutions and/or chronic budget deficits that weaken the abilities of authorities to give credibility to their low inflation policies. A weak financial sector can also be a factor behind a fixed peg for the same reason. In these cases, a fixed peg can work as an important policy anchor, and, in particular, it can build credibility for a country's monetary policy by fixing the exchange rate to a hard-money country and thus import credibility.

Does a hard peg then provide credibility and help lower inflation? Larrain and Velasco (2001) summarise empirical studies at the nexus of exchange rate regime and inflation. Although a number of studies suggest that fixed exchange rate regimes tend to lower inflation, Larrain and Velasco conclude that fixed rates have not been a necessary condition for dealing with inflation. In fact, there appear to be many other factors that help confer low inflation. The authors give special attention to the role of independent central banks.

The recent theoretical papers have emphasized the role that the financial structure plays on exchange rate theory (Larrain and Velasco, 2001). Increased international capital flows have made defending a fixed peg more challenging and pegs have fallen from favour. The "impossible trinity" of monetary policy states that a country can only choose two of the three macroeconomic targets: liberalised capital movements, fixed exchange rate or independent monetary policy to attain domestic policy goals (Obstfeld and Taylor, 2001). There is also empirical evidence against pegs as a number of crises have occurred in emerging markets with tightly managed exchange rate regimes.

Partly due to the recent discussion on the disadvantages of fixed pegs, an increasing number of countries have a floating regime under de jure classifications. Of course, most of these countries do not allow their currencies to float as much as one might infer from their declared policy. The "fear of floating" is well reflected in the growing reserves of many emerging market countries. Many factors underlie a fear of floating (Calvo and Reinhart, 2002). First, there can be a large amount of liabilities in foreign currency and as a result, the country does not want to have much variation in its exchange rate. Second, exchange rate fluctuation can cause an output cost. Lack of credibility, lack of access to international capital markets and fear of inflation can also induce a fear of floating. Countries that depend on export earnings from one or a few commodities may also fear Dutch disease, i.e. excessive appreciation of their currency due to a discovery of natural resource or rise in commodity prices.

A relatively large country which trade and financial links are diversified would probably benefit from a flexible exchange rate. However, to be able to build credibility on their monetary policy, political and fiscal institutions should be stable and efficient, financial sectors well-regulated and central banks independent. Larrain and Velasco (2001) summarise the discussion over the benefits of flexible exchange rate regime. In theory,

having a flexible exchange rate provides these countries with a faster and less costly channel of adjustment in a case of a shock. However, there is recent empirical evidence that – particularly for developing economies – a flexible regime provides little monetary policy autonomy.

Countries with floating exchange rate regimes usually choose an alternative strategy for conducting monetary policy. Most common strategy is inflation targeting. Eichengreen (2002) lists requirements for a successful inflation targeting. First, institutions must commit to price stability as the primary goal of monetary policy and the central bank has to have the necessary tools to attain this target. The inflation target must also be publicly announced and the central bank should explicitly give reasons for its decisions. Most important, the central bank has to be independent to make its commitment to price stability credible. In addition, sound fiscal policy and banking system would partly be preconditions for the central bank independence as well as for the bank to be able to hold price stability as its primary goal.

A paper by Rogoff et al. (2004) tests empirically how different exchange rate regimes have served national economic development. In developing countries, fixed exchange rates seem to work well (Rogoff et al., 2004) by increasing policy credibility and helping to lower inflation. Moreover, these benefits have been achieved without paying much in terms of lower GDP growth, increased volatility or higher susceptibility to crises. For emerging markets with larger capital movements, however, rigid regimes can be counterproductive. In such cases, rigid regimes are often linked with banking crises and balance of payment turbulence. In addition, rigid regimes did not seem to promote lower inflation or higher economic growth. For advanced countries, the benefits of a free float are obvious. The dynamic behind the results can be linked to increased capital flows. Rogoff et al. note that “emerging markets are more exposed to international capital flows than are other developing economies, but compared to advanced industrialized economies, emerging markets have fragile financial sectors.

Rogoff et al. (2004) classify China as an emerging market country. Their classification system is based on Morgan Stanley Capital International Index (MSCI) and in principle reflects the exposure of a listed country to capital flows. The placing of China in the group of emerging market, however, is somewhat inappropriate given China’s strict capital controls. On the other hand, new EU members Estonia, Latvia and Lithuania are classified as developing countries, although their only restrictions on capital flows concern ownership of land. Thus, the MSCI seems to divide countries to emerging markets or developing countries according to their size and absolute investment possibilities. Supporting our argument, China drops out as an outlier from the emerging market sample when the authors do robustness checking for their results.

6 What are China’s options?

As we have seen, the recent discussion on exchange rate regimes generally distinguishes the best options for developed countries and emerging markets. Recently, more emphasis has been put on capital account liberalisation and increased capital flows which may harm monetary policy autonomy. Capital movements and currency mismatch nowadays play important roles in considering the options for an exchange rate regime. It is also widely agreed that each country’s specific characteristics have to be taken into account when determining an exchange rate regime.

China seems likely to move to a more flexible exchange rate regime in the future. This is the government's long-term target and it is in the interest of China's future economic development. However, the roadmap and timetable from the current de facto fixed peg to a flexible regime is still to be decided. In this section, we discuss China's options moving forward.

When considering China's future options, one has to bear in mind that the current regime has served China well and the peg has enjoyed wide credibility. Many specific features of the Chinese economy seem to support China's current peg regime. Ironically, the weak position of the PBoC supports the choice of fixed regime. Central bank independence becomes critical, however, the moment China abandons its fixed peg and starts targeting the inflation rate. The government presently approves all important monetary policy decisions and the PBoC's independence is quite restricted. Without serious changes to confer independence, inflation targeting could easily lose its effectiveness if price stability is not consistently pursued. For this reason, inflation targeting may not work as the main objective of China's monetary policy. As a practical matter, China lacks accurate data on inflation. It does not have valid seasonally adjusted month-to-month time series and the quality of annual figures is often questionable. China still interferes with market pricing mechanisms by restricting participants in the market and by regulating prices, yet officially the share of regulated prices in the CPI is only 3 %.

The choice of fixed rate is also supported by China's strict limitations on capital flows. Recalling the impossible trinity, capital controls imply that China should be able to have both a fixed exchange rate and independent monetary policy targeted for domestic political aims. As we have seen, the flow of non-FDI investment liabilities to China has been moderate when compared to many other emerging markets. Actually, the China is a net exporter of capital and as such, the probability for a balance of payments crisis in China is relatively low. In addition, China's huge foreign exchange reserve increases the credibility of a fixed regime.

However, brisk economic development in China at the same time with a significant depreciation of the US dollar has led to a situation where the renminbi appears to be significantly undervalued. The resulting revaluation expectations have increased capital flows into China. So far, China has been able to limit monetary growth by selling central bank bills. In addition, the authorities have restrained credit growth by giving guidelines to largely state-owned banks. Although these measures seem to have been rather successful, the PBoC cannot continue such operations endlessly. After the banks are privatised, their co-operation on the exchange rate target is not anymore guaranteed.

One option, of course, is a one-time revaluation after which the peg to the US dollar would remain in place. The most difficult problem here, however, is that the size of the undervaluation is difficult to estimate. As we have seen, estimates on current undervaluation vary from a few per cent to 40 %. That makes the option of a one-time revaluation less appealing. As it is difficult to tell the exact size of the undervaluation, it is almost impossible to designate a one-time revaluation that is both large enough to decrease capital inflows yet small enough not to harm foreign trade dramatically or soak up foreign capital too quickly from e.g. the real estate sector. A too-small revaluation could even increase capital inflows if investors expect a second revaluation. In addition, a one-time revaluation would decrease the real value of China's foreign exchange reserves. For example, a 20 % revaluation would decrease the value of foreign exchange reserves from 38 % of GDP to around 30 % of GDP. Moreover, a one-time revaluation may not be an optimal solution from the medium-term perspective. Currently, the pressure coming from the financial market to revalue the renminbi is strong. However, it has been predicted that

after the capital controls are removed, the pressure on the renminbi could reverse once household confidence in vulnerable domestic banks is shaken and people start moving their savings abroad.

The conundrum here is that China no longer fulfils the above-mentioned criteria that justify a fixed regime. It is a large economy with relatively dispersed trade flows. Its large credit stock is almost totally in domestic currency and it is not financially dependent on other regions. Thus, basic theoretical models do not suggest China to retain the current pegged regime. Moreover, pegging to the US dollar carries risks when considering the current economic position of the US. Continuous public deficit and current account deficit may harm the development of the US dollar even further in coming years, while the Chinese economy is expected to continue growing. This might mean that a one-time revaluation now would only correct the situation for a while. In addition, liberalisation of capital flows would change the situation considerably. Despite a broad consensus among economists that China should not hurry to liberalise capital flows, it might be quite valuable for the monetary authorities to get familiar with exchange rate flexibility as soon as possible.

China also does not fulfil the criteria that justify a floating exchange rate. Its banking sector is quite weak and China lacks developed financial markets for currency-risk management (i.e. hedging instruments and forward markets are non-existent). As a result, a floating exchange rate regime could be quite problematic for Chinese banks and enterprises. On the other hand, a more flexible exchange rate should increase the independency of China's monetary policy. It could decrease speculative capital inflows to China and thus curtail overheating of the economy. China's relatively small foreign debt and near complete lack of currency mismatch imply that the consequences of exchange rate fluctuations on the Chinese economy would remain moderate and come mainly from foreign trade. Even those effects are likely to be modest as most of the Chinese exports come from the largely foreign-owned subcontracting sector and the actual value-added staying in China is small. As long as most of the components and parts for China's export sector are imported to China, movements in China's exchange rate would have a limited effect on China's export prices. Thus, a relatively small (10–20 %) revaluation of renminbi probably would not significantly affect China's trade balance or limit the growth of Chinese exports to e.g. the US and the EU. Empirical evidence from 1980-1997 also approves that the link between exchange rate and trade flows has been weak (Xu 2000).

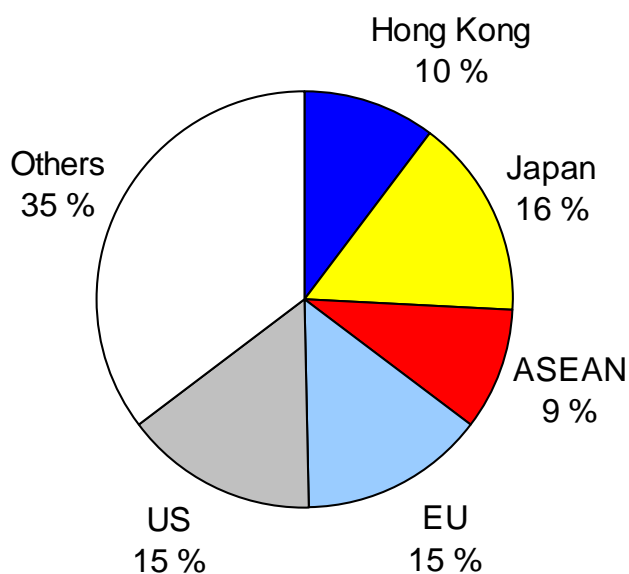
Officially, of course, the renminbi already floats and its value is determined by market supply and demand. Nevertheless, the renminbi's exchange rate has tracked the dollar closely for over a decade. It is very likely that China, due to its large size, uneven development and fear of losing social stability, remains gripped by a fear of floating like many other countries. Calvo and Reinhart (2002) have shown that over recent years an increasing number of emerging market countries tries to soften exchange rate movements by using interest rates. Interest rate policy seems to have partly replaced foreign exchange interventions as a monetary policy tool. In this respect, China's possibilities of using interest rates are quite limited. As discussed earlier, China's financial sector, although relatively large, is still underdeveloped from a market economy perspective. Thus, foreign exchange interventions remain China's most potent monetary policy tool for smoothing exchange rate fluctuations.

As neither of the corner solutions seems to be a perfect solution for China, a viable option could lie somewhere between the two above-mentioned solutions. Both widening the fluctuation band and a crawling peg have been mentioned as alternatives. China's large foreign exchange reserve could in principle also be used to limit exchange rate

fluctuations. Adjustable or crawling pegs, however, are famously difficult to sustain in the presence of a weak financial sector or large capital flows (Larrain and Velasco, 2001). As discussed, China restricts capital flows, but its financial sector is vulnerable and opening of the banking sector to foreign banks could increase uncertainty in the sector.

One widely discussed solution is pegging the renminbi to a basket of currencies. In the current environment, this appears a viable option for China. In a medium term, it could also protect China from sudden movements of the US dollar against other currencies. China's trade is diversified, but in the current situation, most trade is in US dollars as many Asian countries have de facto pegged their currencies to the dollar (Figure 4). For example, Hong Kong has pegged its currency to the dollar using a currency board arrangement. In addition, China imports large amounts of raw materials that are typically priced in dollars. Thus, the real short-term effects of the basket might remain moderate. In addition, the administration and transparency of the peg could be more complicated than the current peg to US dollar.

Figure 4. China's main foreign trade partners in 2003 (exports and imports combined)



Source: China's Statistical Yearbook 2003.

China's decision on its exchange rate regime will not occur in a vacuum. Trade among Asian countries has increased rapidly over the past decade and much of that trade is invoiced in US dollars, which argues for retaining a dollar peg (McKinnon, 2004). Moreover, most of the real effects of an appreciation of the renminbi on China's exports depend on other Asian countries' monetary policies. In most export sectors, China does not compete so much with producers in the US or the EU, but rather with other Asian economies from which China imports components and parts for its export sector. If China alone lets its currency appreciate against the US dollar, China's export sector could well lose competitiveness in relation to other Asian countries. On the other hand, the appreciation of the renminbi would only slightly raise the ultimate price of Chinese export products as the value-added of these products that stays in China is moderate. If most

Asian currencies appreciate in respect to the US dollar and other currencies, ultimate prices would change much more.

7 Conclusions

During the past ten years, China's renminbi has been de facto pegged to the US dollar. Although the peg has served the Chinese economy well, the recent decline of the dollar has set off a discussion in China and among its major trading partners on the appropriateness of the current exchange rate regime. This discussion has been further fuelled by China's favourable economic development. The resulting revaluation expectations have boosted capital inflows into China and increased the likelihood of overheating in certain sectors by augmenting liquidity in the financial markets.

This paper considers China's exchange-rate policy options in light of recent general discussion on exchange rate regimes and some of the special features of the Chinese economy. China is officially committed to increasing flexibility of its exchange rate in a long term – a worthwhile goal that will become particularly timely when China starts dismantling its capital controls. However, China's weak institutions and particularly the lack of central bank independence could hinder China's move to a monetary policy based on inflation targeting. The role of interest rates in the Chinese economy is currently quite small and there are no modern financial instruments available for Chinese banks and enterprises to protect themselves from the exchange rate movements. The duality of the Chinese economy, i.e. its relatively efficient export sector and inefficient domestic sector, also militates against policies that allow for considerable exchange rate fluctuations. Thus, many economists have recommended China to peg the renminbi to a basket of currencies. This could smooth fluctuations of the US dollar against other currencies, while decreasing pressure on the renminbi. The basket might, however, decrease transparency of the China's monetary policy and make the administration of the peg more complicated.

China is special – there is no simple answer on how to proceed to a more flexible exchange rate regime. Recent theoretical work and empirical general papers on exchange rate regimes suggest several exchange rate regime options might be appropriate for China. Yet it is also frustratingly difficult to determine which option might be the most suitable and would serve the economy best. Whatever the choice of regime, however, it will likely take time before credibility of the exchange rate policy is established. China's exceptionally large foreign exchange reserves may ease this task and China's decisions are likely to be made with consideration of the international implications. In particular, China can be expected to pay close attention to what happens with other Asian currency regimes.

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