



China's exchange rate policy

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Abstract

Should or will the yuan depreciate? This is an important question widely speculated in world financial markets and intensively debated in China in the wake of the East Asian financial crisis in 1997. The present paper examines in detail the fundamentals that determine the exchange rate in China and concludes with two important findings. One is that the past two decades of economic reform has made domestic prices in China sufficiently market-determined and linked to world prices so that the exchange rate can serve as an effective nominal anchor. Exchange rate stability leads to domestic price stability. The other result is that because of the flexibility of domestic prices, a change in the exchange rate has only a modest and ephemeral effect on the terms of trade and trade flows. Therefore, exchange rate flexibility is not essential to keep the current account in balance. Such evidence suggests that China should continue the policy to maintain exchange rate stability, as it has done since 1994. © 2001 Elsevier Science Inc. All rights reserved.

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1. Introduction

Will or should the yuan depreciate? This is a question widely speculated in world financial markets and intensively debated in China. There has been keen interest in the exchange rate policy in China in the wake of the Asian financial crisis in 1997. The yuan–dollar exchange rate has been stabilized at 8.30 since 1994. Has that been a sensible exchange rate policy?

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Should China make the exchange rate more flexible and possibly let the yuan to depreciate to counter the aftermath of the Asia financial crisis?

In the debate about the need for the yuan to depreciate, most of the attention has been focused on the fact that export growth has been slowing down in China. Therefore, a depreciation of the yuan is needed to make Chinese exports more competitive. The present paper argues that now in China, the exchange rate is actually more useful as a nominal anchor than as an expenditure-switching tool. Exchange rate stability provides a firm anchor for domestic price stability that is conducive to sustained long-run economic growth. As the Chinese economy becomes more integrated with world markets and domestic prices more firmly linked with world prices, trade flows have become less responsive to the variation in the exchange rate. Therefore, it is a sensible policy to maintain exchange rate stability as long as short-term speculative capital flows remain restricted.

The paper is organized as follows. Section 2 reviews the post-1978 developments in the foreign exchange market. Then, I analyze how the exchange rate was related to the domestic price level in Section 3 and investigate how the exchange rate affected the flows in the balance of payments in Section 4. Finally, Section 5 presents the case for targeting the exchange rate as a nominal anchor, especially in the light of the Asian financial crisis.

2. The profile of the exchange rate

Let us begin with a brief look at the behavior of the exchange rate during the reform period (1978–1997). Fig. 1 plots two measures of the yuan–dollar rate. One is the exchange rate published by the Chinese statistical agency.¹ Before 1993, this was the official exchange rate, but after 1994, it became a market exchange rate. Because there were multiple exchange rates before 1994, the official exchange rate did not reflect the average exchange rate used in all foreign exchanges transactions. Therefore, Fig. 1 also plots PWT 5.6, the exchange rate provided by the Penn-World Table (Summers & Heston, 1991), which is a weighted average of the official rate and a parallel rate as explained below.

When China was a planned economy before 1979, the official exchange rate played no significant role in foreign trade, because with state monopoly in foreign trade, losses in exports resulting from an overvalued exchange rate were offset by profits from imports. Profit motive did not guide significantly foreign trade. However, the role of the exchange rate changed, after economic reform began in 1978. As foreign trade became decentralized, the overvalued official exchange rate hurt the export incentive. Therefore, an internal settlement rate closer to the average cost of earning a US dollar in exports (2.80 yuan per dollar) was used for trade transactions in place of the official exchange rate in 1978–1984. Meanwhile, the official rate depreciated steadily towards the internal settlement rate until 1985 when it was merged with the latter.

In 1985–1993, multiple exchange rates reappeared in another form. Because of the existing foreign exchange controls, foreign-funded enterprises were required to balance their

¹ The Chinese data used in the present study mostly come from the *Statistical Yearbook of China (1999)*.

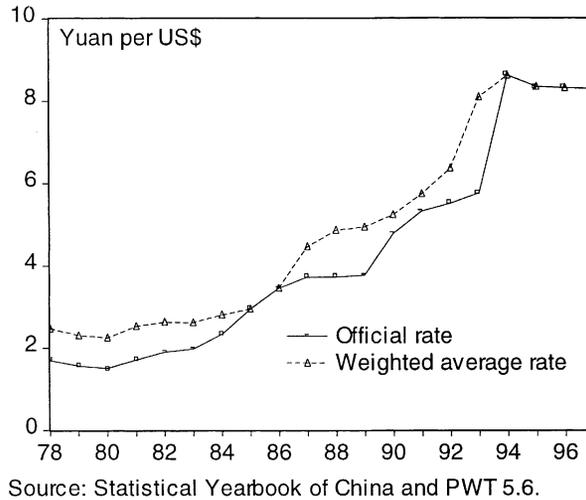


Fig. 1. Exchange rates.

own foreign exchange needs. To alleviate this constraint for foreign investors, there emerged regionally based swap markets (Mehran, Qityn, Nordman, & Laurens, 1996) called Foreign Exchanges Adjustment Centers in which foreign-funded enterprises could swap foreign exchanges among themselves. In 1988, foreign trade reform deepened with the introduction of a formal foreign exchange retention system. Local governments and state enterprises could enter swap markets to trade their retained foreign exchange quotas. Over this period, the share of foreign exchange transactions using swap market rates rose steadily. By 1993, 80% of foreign exchange transactions were conducted at swap market rates. In 1994, as an integral component of the macroeconomic reform package, a national foreign exchange market was formed by formally phasing out the official rate. By the end of 1996, the yuan became fully convertible for current-account transactions. In view of the existence of multiple exchange rates, I use, in the following analysis, the exchange rate provided in the Penn-World Table instead of the official rate for the 1978–1992 period. The weighted average exchange rate for 1993 that I use is 8.09 yuan per dollar, an estimate from Chinese sources.

As shown in Fig. 1, the official rate was below the internal settlement rate/the swap market rate for most of the time in 1978–1993, so there was constant pressure for the yuan to depreciate. Indeed, the salient feature of the exchange rate behavior is that the yuan depreciated persistently before 1994, but after that, it became stable.

3. The real exchange rate

Why did the yuan depreciated persistently before 1994? A rising domestic price is the basic cause: depreciation mirrored domestic inflation. To investigate how the exchange rate was related to the domestic price level, Fig. 2 plots two estimates of the real exchange rate both normalized to be 100 in 1985, a benchmark year in the Penn-World Table. One estimate

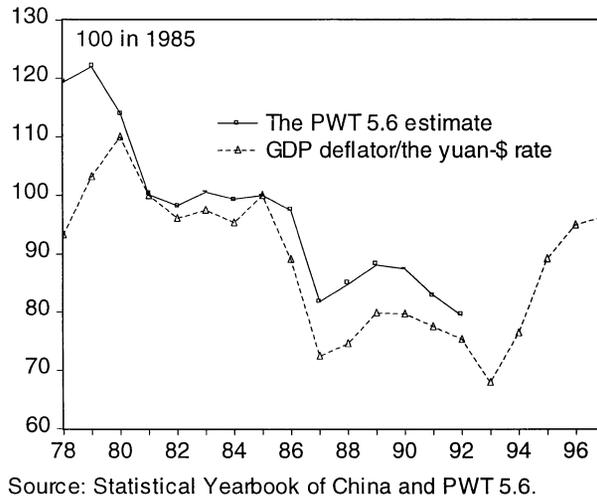


Fig. 2. Real exchange rates.

is from the Penn-World Table, defined as the ratio of the Chinese price level valued at purchasing power parity (PPP) to the US price level. This is the most accurate measure of the real exchange rate. The other estimate is the ratio of the Chinese GDP deflator to the exchange rate. Normally, the real exchange rate is defined to be the ratio of two national prices in the same currency, or algebraically, P/EP^* where E is the exchange rate, P^* the foreign price, and P the domestic price. However, I intentionally use only the P/E ratio here to highlight the merit of using the exchange rate as a nominal anchor. Fig. 2 shows that the P/E ratio is a reasonable approximation of the more accurate real exchange rate from in the Penn-World Table. Since the data on China from the Penn-World Table extends only to 1992, the real exchange rate is approximated by the ratio of the GDP deflator to the exchange rate in the following analysis.

In contrast to the nominal exchange rates, the real exchange rate was much more stable. It remained virtually constant in 1981–1985. During this period, domestic prices remained severely distorted and largely detached from world prices. The severe shortage of foreign exchanges at that time implies that the real exchange rate was overvalued. The emergence of the parallel swap market helped to effect a depreciation of about 25% in 1986–1987 and then the real exchange rate remained stable in 1988–1993. Over this period, foreign trade was substantially liberalized and the pressure of foreign exchange shortage was greatly relieved. Most domestic prices became market-determined and linked to world prices. Before 1984, the domestic prices of 80% of the imports were set at levels comparable to those of domestic substitutes (with implicit variable import tariffs), but by the end of 1980s, 90% of the imports were priced on a cost-plus basis. Finally, the real exchange rate appreciated back by 20% in 1995–1996, as the domestic price rose in the presence of a stable nominal exchange rate. Interestingly, the real exchange rate in 1996 was restored almost back to the same level in 1978.

It is clear that in China, the domestic price and the exchange rate did tend to move together in the long run. Indeed, just as the exchange rate tended to follow the domestic price level

before 1994, stability in the exchange rate helped to stabilize the domestic price level after 1994. While the exchange rate remained stable at 8.3 yuan per dollar after 1994, domestic inflation fell steadily. The inflation rate as measured by the retail price index fell from 22% in 1994, to 15% in 1995, 6% in 1996, 0.8% in 1997, and –2.6% in 1998. The steady decline in the inflation rate reflects that the domestic price level is bound to the exchange rate, though it was also effected in a macroeconomic setting in which China managed to accomplish a soft landing from the overheating in 1993–1994 and later, aggregate demand was further weakened by the Asian financial crisis in 1997–1998.

Though in China, depreciation and domestic inflation were closely linked, they reflect not just a pure monetary phenomenon, because they were accompanied by large and extensive realignments of relative domestic prices to reflect scarcity values or world prices. The process of inflation and depreciation can be regarded to have lubricated the adjustment of relative prices. It is much easier to realign relative prices by letting some prices to go up faster than other prices. A mirror image of this process is that the Chinese economy became more integrated with the world market. The ratio of total trade to GDP rose from 14% in 1978 to a peak of 46% in 1993 and 35% in 1996.²

Though the profile in Fig. 2 does not tell us whether the real exchange rate was in equilibrium, a comparison with other East Asian economies can give us some hints about the likely trend for the real exchange rate. A salient pattern revealed by the Penn-World Table is that the real exchange rate tends to rise with the level of income per capita, mainly because of a rising relative price of nontradables. The production of nontradables tends to be more labor intensive and has less scope for productivity improvement. Therefore, as the wage rate rises, the relative price of nontraded goods and services increases, so pulling up the level of the real exchange rate (Balassa, 1964; Samuelson, 1964). A useful way to predict where the real exchange rate would like to go in China is to compare it to the real exchange rates of some of China's neighbors. According to the Penn-World Table 5.6, the Chinese price level at PPP was 23.5% of the US price level in 1990. For comparison, the same price level was 35.5% for Thailand, 68.8% for Korea, and 77.9% for Taiwan. Accordingly, as long as the growth momentum in China can be maintained, there will be a long-run trend for the real exchange rate to appreciate.

4. The balance of payments

The exchange rate is not only a ratio of two national prices, but also affects the ratio of export price to import price, or the terms of trade. Indeed, a short-run concept of the equilibrium exchange rate refers to the level that is consistent with a sustainable payments balance. Therefore, it is also important to study how the exchange rate is related to the flows in the balance of payments. Let me discuss the behavior of trade flows first.

Fig. 3 plots the log differences of exports measured in the US dollar and the nominal and real (the E/P ratio) exchange rates. It can be observed that the relationship between export

² These ratios are computed with the PW5.6 exchange rate, not the official rate.

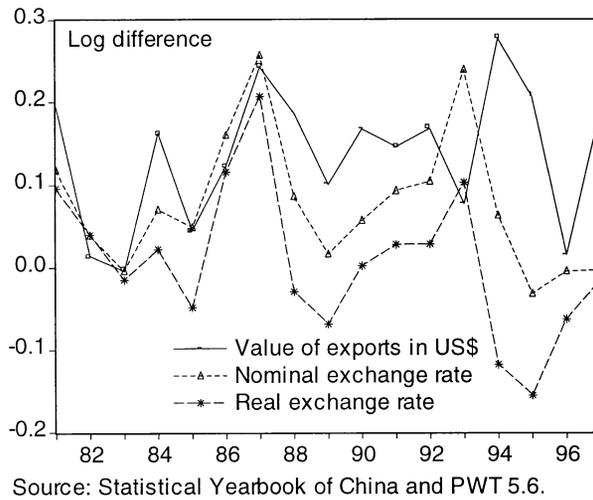
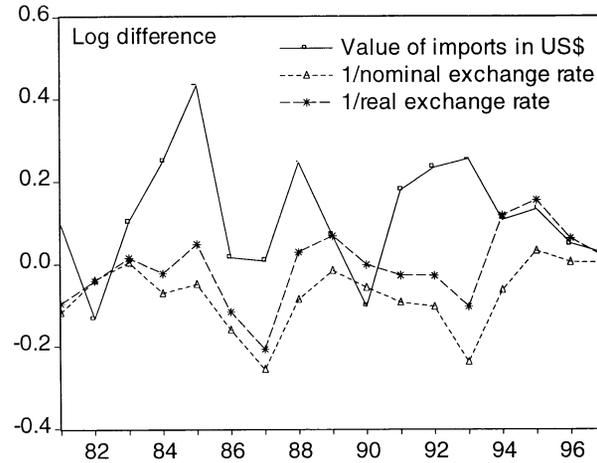


Fig. 3. Export growth and depreciation.

growth and depreciation evolved over time. In the early 1980s, that relationship was very close but became loose gradually later on. Over the 1981–1997 period, the simple correlation coefficients between export growth and depreciation of the nominal and real exchange rates were .26 and .03, respectively. Though the positive sign is as expected, i.e., depreciation stimulates export growth, but the relationship was not stable. Specifically, the correlation turned from positive to negative over time. In 1981–1987, these two correlation coefficients were .85 and .785, but in 1988–1993, they became $-.44$ and $-.33$ ($-.16$ and $-.39$ in 1988–1997). In other words, after 1988, export growth tended to be associated with appreciation instead of depreciation.

How can this perverse pattern be explained? The theoretical prediction that depreciation should stimulate exports is largely derived from the presumption that with sticky domestic prices, a change in the exchange rate brings about a parallel change in the terms of trade. As exports become more profitable than imports, exports expand and imports contract. However, if domestic prices were flexible and linked closely to world prices, the effect of a change in the exchange rate on the terms of trade would be small. The more flexible domestic prices are, the lesser a change in the exchange rate will affect trade flows through the terms of trade. Hence, a plausible explanation for the coexistence of appreciation and export expansion is that in China, domestic prices have become more flexible and more closely linked with world prices.

Of course, this may not be the only explanation. As a result of the recent appreciation of the US dollar against other major currencies, the appreciation of the effective exchange rate (the trade-weighted average exchange rate) of the yuan may be much less than the appreciation of the yuan–dollar rate. Another contributing factor may be improved export incentives such as accelerated export tax rebates introduced after 1994. Also relevant is the fact that an increasing share of exports belongs to export processing, the share of which in total exports rose from 45% in 1991 to 56.9% in 1998. Because domestic value added is only a small portion of the value of total exports, export processing is less affected by the variation



Source: Statistical Yearbook of China and PWT 5.6.

Fig. 4. Import growth and appreciation.

in the exchange rate. However, increasing flexibility of domestic prices has certainly played a fundamental role.

Turning to the behavior of imports, Fig. 4 plots the log differences of imports in the US dollar and the inverse³ of the nominal and real (the E/P ratio) exchange rates. Similarly, there is no sign of a clear and stable correlation pattern. In fact, the nature of correlation also evolved over time. For the 1981–1997 period, the two correlation coefficients for the relationship between import growth and appreciation are $-.097$ and $.18$, largely insignificant. In 1981–1987, however, these two correlation coefficients were $.281$ and $.584$. The positive sign is as usually expected: Appreciation makes imports cheaper, so the demand for imports tends to increase. In 1988–1993, however, they turned to be negative, $-.587$ and $-.403$, respectively ($-.58$ and $-.30$ for 1988–1997). Therefore, import expansion was associated with depreciation instead of appreciation.

It may be argued that simple correlation coefficients may not reflect the true nature of the elasticity of imports to the exchange rate, because other variables also affect the import demand. Indeed, the import demand was more dependent on the pressure of domestic aggregate demand than on the exchange rate in China. To obtain a more accurate estimate of the conditional elasticity of import demand with respect to the exchange rates, I estimated the following regression model:

$$\Delta \ln(\text{IM}) = \alpha_0 + \alpha_1 \Delta \ln(\text{RGDP}) + \alpha_2 \Delta \ln(\text{XR})$$

where IM is imports in the US dollar, RGDP is real GDP as a measure of the domestic aggregate demand, and XR is the real exchange rate (the E/P ratio). Though this is a rather crude regression model, it does isolate the estimate of the elasticity of imports with respect to the exchange rate from the influence of domestic absorption. Table 1 shows the

³ In reading a graph, it is much easier to spot a positive relationship between import growth and appreciation than a negative relationship between import growth and depreciation.

Table 1
The regression model for import growth

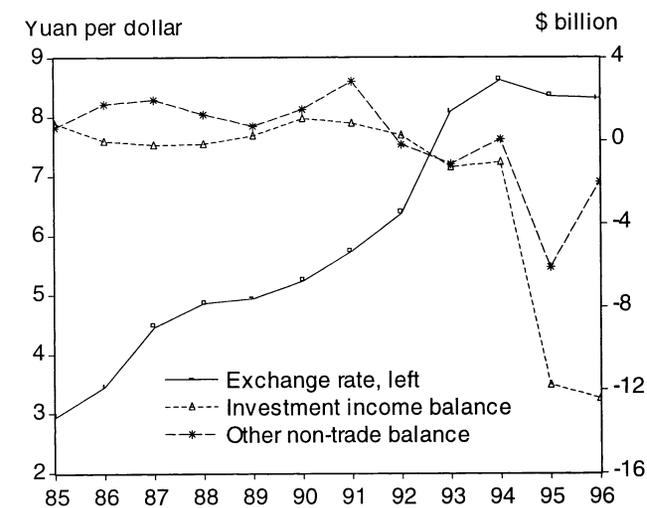
	1981–1997	1981–1987	1988–1997
$\Delta \ln(\text{RGDP})$	2.96 (0.01)	2.57 (0.34)	2.63 (0.013)
$\Delta \ln(\text{XR})$	–0.30 (0.36)	–0.92 (0.32)	0.27 (0.45)
R^2	.44	.49	.65

coefficient estimates for $\Delta \ln(\text{RGDP})$ and $\Delta \ln(\text{XR})$ and the R^2 of regression over the whole 1981–1997 period, as well as two subsample periods. The numbers in brackets are the P values for the coefficients.

As shown, the estimated elasticity of imports with respect to real GDP is fairly consistent and significant. However, the estimated elasticity of imports with respect to the real exchange rate is insignificant, and switched from a negative sign in 1981–1987 to a positive sign in 1988–1997, a result consistent with what we learn from the simple correlation coefficients.

Taken together, the evidence supports the observation that as domestic prices became more flexible, market-determined, and firmly linked to world prices, trade flows turned to be less responsive to the variation in the exchange rate. Even if the depreciation of the nominal exchange rate does stimulate exports and curtail imports in the short run, such effects are likely to be ephemeral, as domestic prices and wages would be adjusted quickly to offset the initial competitive advantage deriving from depreciation.

Turning to nontrade balance, the other component in the current account, Fig. 5 plots the two series of the balance in investment income and the rest of nontrade balance, as well as the nominal exchange rate. Before 1995, these two components of the current account were very small. The reform of the foreign exchange market in 1994 substantially relaxed foreign exchange controls for current-account transactions. As a result, the deficit in investment



Source: Statistical Yearbook of China and PW5.6.

Fig. 5. Nontrade balances.

income jumped suddenly from US\$1.037 billion in 1994 to US\$11.774 billion in 1995 and US\$12.438 billion in 1996. In view of the large existing stock of cumulative foreign investment (US\$548 billion in 1996) in China, it is likely that the deficit in investment income will remain large. However, because of surpluses in trade balance, China still enjoyed a healthy surplus in the current account, US\$1.618 billion in 1995 and US\$7.243 billion in 1996.

It is apparent that the flows in the nontrade balance were not very sensitive to the fluctuation in the exchange rate. Therefore, the above analysis of trade balance applies directly to the current-account balance. The relationship between the exchange rate and the current-account balance changed over time. In the early part of the 1980s, the exchange rate appears to have affected the current-account balance, mainly trade balance, in a normal way as predicted by economic theories. Given the fact that China attracted only a modest amount of foreign investment and possessed a very small stock of foreign exchange reserves, the balance in the current account appears to have been a binding equilibrium condition for the exchange rate. Large current-account deficits exerted pressures for the yuan to depreciate. In the last decade, however, that relationship was altered qualitatively. As the Chinese economy became more exposed to foreign trade and investment, trade flows became less sensitive to the exchange rate. At the same time, China attracted substantial inflow of foreign investment and its foreign exchange reserves rose to US\$140 billion in 1997, the second largest in the world. Therefore, the exchange rate has become less correlated with the current-account balance.

To further explore the determinants of the exchange rate, I proceed to investigate the role of capital flows. Indeed, the modern theory of the exchange rate emphasizes two fundamental equilibrium conditions for the determination of the exchange rate: PPP and interest rate parity. The latter provides an equilibrium condition under which the deficit in the current account is offset by an inflow of foreign investment.

How did capital inflows behave in China? Fig. 6 plots three major measures of capital inflow in the 1985–1997 period: the balance in the long-term (the sum of direct and portfolio investment balances) capital account, the balance in the short-term capital account, and errors and omissions. As shown, the net inflow of short-term capital was insignificant in China, largely due to the existing capital controls. It is interesting to observe that in recent years, the series of errors and omissions was not stationary with a zero mean. Rather, it increased appreciably in the 1990s and amounted to US\$15.6 billion in 1996. Therefore, it appears likely that the measure of errors and omissions captures the unsanctioned outflow of capital rather than pure measurement errors.⁴ As shown, the bulk of capital inflow were long-term in nature. The inflow of foreign capital was fairly stable in 1985–1992, averaged at a level of

⁴ There are three relevant explanations for the increasing outflow of capital as recorded by errors and omissions. First, it reflects unsanctioned capital outflow that evaded existing capital controls. There are many anecdotal evidence for such capital outflows, which usually involved state funds illegally appropriated into private hands. Second, there was the phenomenon of fake foreign direct investment with Chinese funds. In this case, Chinese funds were channeled out of the country and then returned back in the form of foreign investment in order to take advantage of the incentives available only to foreign investors. Finally, it is a prevalent practice to inflate the true value of foreign direct investment in order to benefit more from the incentives offered to foreign investors.

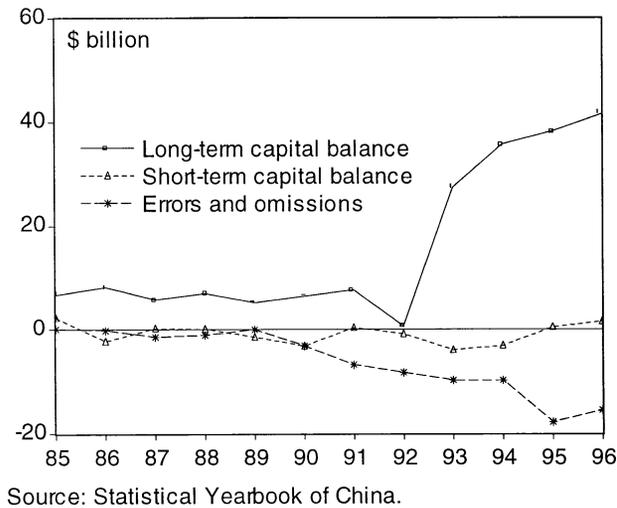


Fig. 6. Inflows of capital.

US\$6 billion a year, and then suddenly, it jumped to US\$27.4 billion in 1993, US\$35.8 billion in 1994, US\$38.2 billion in 1995, and US\$41.6 billion in 1996.

The inflow of portfolio investment was tiny in the 1980s but became significant in the 1990s. Foreign investors were permitted to buy the B-shares of locally listed Chinese companies, or the shares of Chinese companies listed in Hong Kong and New York. In 1993–1996, the inflow of portfolio investment averaged US\$3.5 billion. Interestingly, the balance of long-term borrowing, mostly from foreign governments and international financial institutions, became negative in the 1990s. Repayment of principals and interest exceeded the inflow of new loans. The most salient feature is that foreign direct investment dominated the inflow of long-term investment in China, and was mainly responsible for the surge of long-term capital inflow in 1994–1997.

How were capital flows related to the exchange rate? Table 2 shows the major components of the overall balance of payments: the current-account balance, the capital account balance, errors and omissions, and the change in foreign exchange reserves. Because the four components sum up to zero, the change in foreign exchange reserves can be related to the other three components. A qualitative difference between in the 1980s and the 1990s can be seen in the role of foreign capital inflow. In the 1985–1989, China ran persistently deficits in the current account except for a tiny surplus in 1987. Therefore, capital inflow was critical in financing the current-account deficit. However, the situation changed in the 1990s. China enjoyed surpluses in the current account in most years except in 1993, while it attracted record levels of foreign investment 1993–1996. However, the inflow of foreign capital was largely offset by a corresponding increase in the foreign exchange reserves. Had China not expanded its stock of foreign exchange reserves, the yuan would have appreciated substantially in 1994–1997.

Was the inflow of foreign capital in equilibrium in the 1990s? The relevant equilibrium condition is interest rate parity. Though uncovered interest rate parity is unobservable, the

Table 2
Flows in the balance of payments (US\$ billion)

	Change in reserves	Current account balance	Capital account balance	Errors and omissions
1985	2.352	– 11.417	8.972	0.092
1986	1.275	– 7.034	5.943	– 0.184
1987	– 4.852	0.316	6.020	– 1.466
1988	– 2.236	– 3.802	7.132	– 1.094
1989	0.613	– 4.317	3.721	– 0.017
1990	– 12.122	11.997	3.256	– 3.131
1991	– 14.512	13.272	8.032	– 6.792
1992	2.122	6.402	– 0.250	– 8.274
1993	– 1.767	– 11.902	23.472	– 9.804
1994	– 30.527	7.657	32.644	– 9.774
1995	– 22.481	1.618	38.674	– 17.810
1996	– 31.651	7.243	39.967	– 15.559
1997	– 35.857	29.718	22.978	– 16.818

Source: *Statistical Yearbook of China*.

interest rate differential⁵ between the yuan and US dollar deposits was 5.39% in 1994, 4.74% in 1995, and 1.69% in 1996. With a stable exchange rate, the actual interest rate differential favored more short-term capital inflow. Therefore, in the absence of capital-account restrictions, there would have been more capital inflow, and, hence, more intense pressure for the yuan to appreciate.

5. The case for targeting the exchange rate as the nominal anchor

To recapture the above analysis, a case has been made for China to target the exchange rate as the nominal anchor. This proposition is based on the evidence that there is a firm long-run relationship between domestic prices and the exchange rate. Before 1994, rising domestic prices led to continual depreciation of the yuan; after 1994, exchange rate stability has fostered domestic price stability. Furthermore, as the Chinese economy becomes more integrated with the rest of world through foreign trade and investment, the link through the exchange rate between domestic and world prices of tradables are being firmed up. As a result, the exchange rate is now less useful as an expenditure-switching tool, but more useful as a nominal anchor. After 1994, appreciation coexisted with sustained export expansion and influx of foreign investment.

The chief argument for a devaluation of the yuan is that China's exports have suffered extensively from the substantial devaluations in 1997 of the currencies in other East Asian economies, and without a devaluation of the yuan, the loss of competitiveness of Chinese

⁵ The Chinese interest rate is the rate on 1-year-term deposits and the US rate is the rate on 1-year-term deposits, London offer rate.

exports is not sustainable. It is certainly true that China's exports have been negatively affected by the Asian financial crisis. The growth of exports slowed markedly towards the end of 1998, and fell for 4 months from August to November in 1998, though for the whole year, exports still registered a small increase of 0.5%. Nevertheless, it is not certain that a devaluation of the yuan would revert the slowing-down trend in exports because exports were pulled down more by the collapse in aggregate demand in the East Asian region than by the loss of competitiveness resulting from the devaluations of other regional currencies. As evidenced, China's exports to North America and Europe kept vigorous growth momentum in 1998. What really dragged back China's exports was the decline in the exports to other East Asian economies. In this case, however, what matters most is the collapse in regional demand due to the recession, rather than the loss of competitive edge of the yuan in relation to other regional currencies.

Even if the need for the yuan to devalue were accepted, no one would know for sure by how much the yuan should devalue. This is a fundamental weakness of the managed floating rate system to which the Chinese exchange rate regime belongs. In practice, a managed floating rate often degenerates into a quasi-fixed peg. In theory, a managed floating rate should operate in such a way that market forces determine fundamentally the level of the exchange rate, while government interventions iron out the excessive short-term fluctuations. However, once the government intervenes extensively in the foreign exchange market, government's target for the exchange rate becomes the actual exchange rate. If the exchange rate is permitted to vary, the government has to shoot a moving target. Despite the voluminous existing literature on the equilibrium exchange rate, reliable techniques for estimating and projecting a moving equilibrium exchange rate have proven to be as elusive as ever. This is also true in China. It is precisely the inability of policy makers in China to know for sure where the equilibrium exchange rate should be that explains why the yuan was kept from appreciating in 1995–1997 and from depreciation in the post-Asian financial crisis period.

However, an inflexible exchange rate is not necessarily bad. A stable exchange rate promotes foreign trade and investment⁶ by reducing the exchange risk, though it is not easy to come up with conclusive evidence despite numerous existing studies of the impact of flexible exchange rates on trade and investment (Gagnon, 1993). It is often alleged that traders and foreign investors can reduce the exchange risk by making use of forward and futures markets. Although this is largely true in developed economies with sophisticated financial markets, this argument does not apply to China where the forward and future markets for the yuan do not yet exist. In China, the exchange rate risk does seem to matter significantly to foreign trade and investment decisions. Though it is difficult to gauging precisely the effect of the exchange rate risk, it is no coincidence that when the exchange rate was kept stable in 1994–1996,

⁶ Beside the usual negative effects of exchange rate uncertainty, Dixit (1989) points to an additional negative effect. Under exchange rate uncertainty, rational firms may delay investment decisions that should have taken place in response to the changing environment of the world economy.

China experienced vigorous export growth and record inflows of foreign direct investment. Exports grew at 27.7% in 1994, 20.1% in 1995, 1.5%⁷ in 1996, and 20.1% in 1997; the inflow of foreign direct investment averaged to be US\$37.2 billion in 1994–1996.

In the present context of the postcrisis East Asian region, a devaluation of the yuan may trigger another round of competitive devaluations in the region, eroding the confidence of international investors and plunging the region into a deeper recession. This argument has been the most frequently cited reason for China not to devalue its currency from the perspective of China's international obligations and responsibilities. Though it is difficult to quantify accurately the size of this downside risk, it is nevertheless very real in view of the volatility exhibited in the last 2 years in investors' sentiments and international capital flows.

More importantly, exchange rate stability can provide a better nominal anchor because the exchange rate has a distinct advantage over the conventional anchor of consumer price index (CPI): the target is easy to identify. In China, CPI may rise for reasons unrelated to a monetary inflation. First, there is a long-run tendency for the relative food price to increase, pulling up CPI. In the short run, CPI is predominantly influenced by a volatile food price as a result of the inelastic demand for and supply of food. Second, the appropriate cost of living has become elusive to define. Because of large state subsidies to state employees on many essential urban services such as housing and medical care, the true cost of living varies a great deal from state employees to workers employed in the nonstate sector, from permanent urban residents to migrant workers. Finally, the relative price of services will tend to rise because of not only the Balassa–Samuelson effect, but also gradual liberalization of many currently subsidized urban services. The combined effects of these three factors may pull up CPI, but such a rise in CPI does not really signify a monetary inflation. In comparison, if a stable exchange rate is used as a nominal anchor, the prices of tradables can be stabilized. In turn, an upper limit for wage growth will be set. Finally, a noninflationary wage growth will, in turn, determine the equilibrium levels of food price and the price of services, thus, ensuring a rate of change of CPI that is consistent with price stability.

The Asian financial crisis in 1997 has prompted a serious rethinking of the East Asian miracle, especially the merits of exchange rate stability, one of the hallmarks of East Asian economies. While a consensus view of what really caused the crash has yet to emerge, the nature and sequence of what happened are well exemplified by the experience of Thailand, the first economy hit by the currency crisis. By liberalizing substantially capital flows in the early 1990s (Johnston, Darbar, & Echeverria, 1997), Thailand attracted record inflows of foreign investment, a large part of which were speculative short-term capital. Because the mechanism of monetary control was not developed adequately for the new environment of large and erratic capital movements, the supply of money and credit expanded excessively. This brought about two serious consequences. On the one hand, it inflated the bubbles in

⁷ There seems to be a data inconsistency. The figure of 1.5% is based on custom-based trade data, but according to the balance of payments data, exports grew at 16.5% in 1996.

securities and real estate markets. On the other hand, it boosted domestic aggregate demand, resulting in an unsustainable deficit in the current account.⁸ When the sign of troubles became visible, currency speculators zoomed in to attack.

What kind of role did the exchange rate policy play in the Asian financial crisis? Before the crisis, these East Asian economies all maintained stable exchange rates in relation to the US dollar. Though there are many factors behind the pre-1997 economic miracle of East Asia, a stable exchange rate kept at a realistic level is certainly one of them (World Bank, 1993). Now, it has been suggested that such an exchange rate policy was partly to blame for the Asian financial crisis in 1997. According to that view, if the exchange rates had been more flexible, they would have appreciated earlier when foreign capital flowed in. The appreciation of their currencies would have played a self-equilibrating role in checking excessive speculative capital inflow, hence, the severity of the financial crisis could have been avoided or become less painful.

Though it is widely accepted that fixed exchange rates are less compatible with free capital movement in an integrated world financial markets (Isard, 1995), it is doubtful whether the policy to keep the exchange rate peg was the major culprit of the Asian financial crash. Though an early appreciation of their currencies would have slowed down the pace of foreign capital inflow in those economies, it would also hurt their exports, resulting in a well-known “Dutch disease.” In addition, an appreciation of their currencies would have made their current-account deficits even worse, just like what happened in the early 1980s in South America where financial liberalization was followed by financial crash.

From hindsight, ill-prepared and hasty liberalization of capital flows may have been a more critical causal factor. Though liberalization of the capital account is beneficial in the long run, the pace and sequence of lifting exchange controls must be planned and implemented carefully. As argued by Johnston et al. (1997), liberalization of the capital account should be carefully coordinated and integrated with and conditioned upon the reforms in the other parts of an economy. Necessary preconditions include (1) competitive and mature domestic financial markets, (2) a healthy banking sector under the effective supervision of a competent regulatory authority, (3) the capacity to conduct monetary policy effectively with indirect instruments such as interest rates and the exchange rate, and finally, (4) a sustainable payments balance, especially the current-account balance. In the case of Thailand, the process of liberalizing capital controls seems to have been too hasty and premature, judging from the fact that excessive capital inflows resulted in a loss of monetary control, inflated further the bubbles in securities and real estate markets, induced local financial institutions to undertake risky and unproductive investments, and worsened the current-account deficit.

This interpretation of the Asian financial crisis is also corroborated by the contrasting experience of China. In fact, China shared two important traits with these economies. In 1994–1996, the yuan was also more or less pegged to the US dollar and the inflow of foreign investment was at record levels. But why did China fare so differently? First, the foreign

⁸ The overborrowing syndrome is a fairly common feature of all recent financial crises in developing economies and has been insightfully analyzed by McKinnon and Pill (1996).

capital China attracted was mainly direct investment motivated mainly by China's growth potential, low labor cost, and the allure of a potentially huge domestic market, not by opportunities of interest arbitrage and currency speculation. China has not yet liberalized the controls on short-term capital movement. Otherwise, the inflow of foreign capital would have been even larger.

Second, despite record inflows of foreign investment, China maintained successfully a tight but steady monetary policy aimed at a soft landing from the overheating in 1993–1994. Compared with the other East Asian economies, domestic financial markets were not more developed and the indirect instruments of monetary policy were not more effective and flexible in China. However, the large inflow of foreign investment did not result in a loss of monetary control, largely because of the existing restrictions on short-term capital movements.

Third, through the instrument of selective credit policy, China kept strict restrictions to prevent domestic financial institutions from lending to securities and real estate markets. China had a bubble in these markets in 1992–1993 fueled by a loss of monetary control and lax financial supervision. A lesson was learned from that experience. When large amounts of financial funds were illegally funneled, for a brief period in 1997, to the stock market, generating a temporary boom, the government reacted quickly and firmly to stop it. Therefore, even with a stable exchange rate, large capital inflows, a weak financial sector burdened with significant stock of nonperforming loans, and ineffective indirect instruments of monetary policy, China could still shield itself from the onslaught of the Asian financial crisis.

6. Conclusion

In conclusion, exchange rate stability can be a sensible policy for China at present, because the exchange rate is more useful as a nominal anchor than an expenditure-switching tool to influence the balance of payments. This property reflects a fundamental fact that the after two decades of economic reform, Chinese economy has already become sufficiently marketized and open to foreign trade and investment. In addition to the arguments presented above, two other relevant considerations have also been cited against a possible depreciation of the yuan. One is that a depreciation of the yuan may trigger further competitive devaluations in other East Asian economies, thus, aggravating the economic and financial crises there. The other is that a depreciation of the yuan may also enlarge China's existing trade imbalances with her major trading partners, especially the United States, thus, exacerbating trade tensions with them. Though a case has been made in the present paper for China to pursue exchange stability at present, more exchange rate flexibility will be needed in the future, as China gradually liberalize capital controls and make the yuan convertible for the capital account as well. It is well known that under perfect capital movement, a fixed exchange rate is incompatible with an independent monetary policy that is mainly focused on domestic economic objectives, especially for large economies such as China. Nevertheless, in view of the shaky banks and immature financial markets now in China, capital account liberalization should not proceed hastily.

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