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A Look at China's New Exchange Rate Regime

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Pacific Basin Notes. *This series appears on an occasional basis. It is prepared under the auspices of the Center for Pacific Basin Studies within the FRBSF's Economic Research Department.*

On July 21, 2005, after more than a decade of strictly pegging the renminbi to the U.S. dollar at an exchange rate of 8.28, the People's Bank of China (PBOC 2005a) announced a revaluation of the currency and a reform of the exchange rate regime. The revaluation puts the renminbi at 8.11 against the dollar, which amounts to an appreciation of 2.1%. Under the reform, the PBOC will incorporate a "reference basket" of currencies when choosing its target for the renminbi.

The announcement stated that the changes were made "[w]ith a view to establish and improve the socialist market economic system in China, enable the market to fully play its role in resource allocation as well as to put in place and further strengthen the managed floating exchange rate regime based on market supply and demand." However, the announcement and subsequent clarifications leave the PBOC with considerable discretion over its renminbi target.

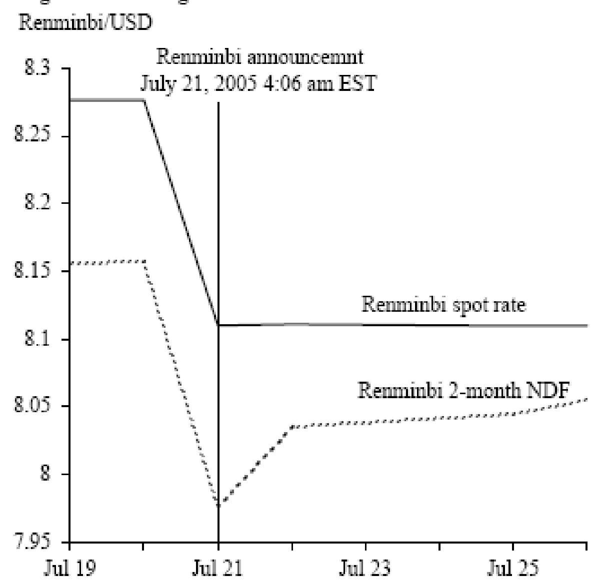
In this *Economic Letter*, I review several characteristics of the new renminbi regime. I also examine how the renminbi might have moved in the past if this regime had been in place. Because the PBOC provided only guidelines, and not specifics, about the composition and trade weights of the reference basket, I construct three likely indexes and compare their movements with each other and with the bilateral renminbi-U.S. dollar exchange rate. I find that movements in China's trade-weighted exchange rate indexes over the long term are relatively insensitive to currency composition; moreover, when viewed over the previous four to five years, all three indexes exhibit appreciation against the dollar far exceeding the initial 2.1% renminbi revaluation.

The new renminbi regime

According to the July 21 announcement, each day the PBOC will announce its target for the following working day based on that day's renminbi closing price in terms of a "central parity." For example, the target may be expressed in terms of the value of the renminbi against the dollar. The following day, the renminbi exchange rate will be allowed to fluctuate against the dollar within a band of plus or minus 0.3% around the announced central parity.

Figure 1 shows the market reaction to the announcement by graphing the daily closing values of the renminbi-dollar exchange rate and the two-month renminbi non-deliverable forward (NDF) rates around the time of the revaluation. Although these forward contracts constitute a relatively thin market, they can be considered the best indicator available of the market's beliefs about the future path of the renminbi-dollar exchange rate. At the end of July 21, the market anticipated further renminbi appreciation, as the two-month NDF renminbi-dollar exchange rates stood below 8 renminbi per dollar.

Figure 1. Exchange rate reactions to renminbi announcement



Source: Bloomberg

The apparent market anticipation of additional appreciation of the renminbi prompted the PBOC to issue a series of clarifications stating that the initial revaluation did not imply further action. The market responded again, as shown by the upward movement in the two-month NDF rate on July 22, but still stood below the current stated peg of 8.11.

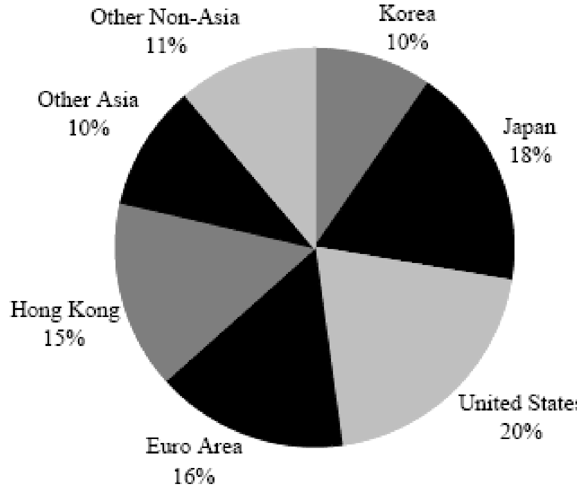
Trade-weighted renminbi reference indexes

In a speech on August 10 (PBOC 2005b), the Governor of the PBOC clarified the new exchange rate regime and the components of China's "reference basket." He stated that assigned index weights will be selected "...in line with the real situation of China's external sector development," and that "...the basket should be composed of currencies of the countries to which China has a prominent exposure in terms of foreign trade, external debt, and foreign direct investment." Clearly, then, the PBOC has not made any commitment to follow rigidly a trade-weighted currency index peg. However, the Governor did give some guidelines on the country composition of China's currency basket. Specifically, he suggested that countries whose bilateral trade with China exceeded $10 billion would receive non-negligible weights, and those exceeding $5 billion in total weight would also be considered.

Because the PBOC has not announced the relative weights to be placed on the components of the basket, nor has it made any commitment to keep these weights constant over time, it is impossible to track movements in an official Chinese trade-weighted currency index. However, using the guidelines, I can construct hypothetical but likely indexes and examine what the path of the renminbi-dollar exchange rate would have been since January 2001, if the exchange rate had been rigidly pegged to one of these indexes. According to the IMF Direction of Trade Statistics, 15 economies (excluding Hong Kong) had total trade (exports plus imports) exceeding $10 billion for the year in 2004, which accounted for 66% of China's total trade; 22 countries (again, excluding Hong Kong) had total trade exceeding $5 billion for the year in 2004, which accounted for 69% of China's total trade. I therefore construct a "narrow" trade-weighted index for China based on trade shares of the 15 countries with trade exceeding $10 billion annually, and a "broad" trade-weighted index based on trade shares of the 22 countries with total trade levels exceeding $5 billion in total trade with China. This number is similar to the 23 countries in the European Central Bank's calculation of the euro area nominal effective exchange rate index.

The Governor's speech did not discuss the inclusion or exclusion of Hong Kong in the currency index, probably because of Hong Kong's unique political relationship with the rest of China. However, the inclusion or exclusion of Hong Kong in a trade-weighted currency index for China could have important implications for two reasons: First, Hong Kong is an important trade partner for China, accounting for 11.7% of total Chinese trade in 2004; second, Hong Kong's exchange rate is closely pegged to the U.S. dollar, implying that adding the Hong Kong dollar to a trade-weighted currency index would diminish the volatility of the index relative to the U.S. dollar. Based on these considerations, I construct a third index composed of the 15 countries in the narrow index plus Hong Kong.

Figure 2. China trade weights: narrow index plus Hong Kong



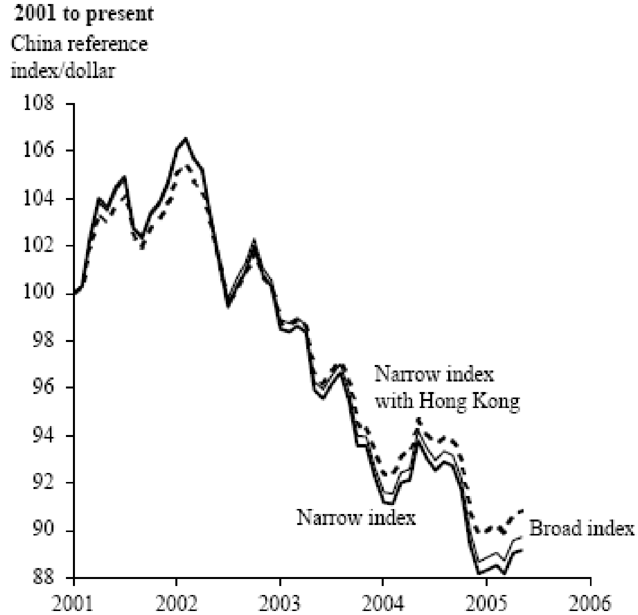
Source: IMF Direction of Trade Statistics.

Trade shares for the third index are shown in Figure 2; by construction China's main trading partners, the United States, the euro area, Japan, Korea and Hong Kong, feature prominently. In addition, 10% of the index is composed of "other Asian" countries, including India, the Philippines, Indonesia, Malaysia, and Singapore, and 11% of the index is composed of "other non-Asian" countries, including Brazil, Canada, the U.K., Russia, and Australia.

Movements in trade-weighted reference indexes since 2001

One can use the trade weights and currency baskets in the previous section to answer the following hypothetical question: If China had been rigidly pegging to a trade-weighted currency index instead of maintaining its dollar peg over the last four years, how would the renminbi have moved? The performance of the three indexes is shown in Figure 3. It is clear that while the indexes differ somewhat, over longer time horizons their values are relatively insensitive to country composition. All of the indexes show marked appreciation against the dollar since January 2001, largely attributable to the recent appreciation of the euro against the dollar: the narrow currency index has appreciated approximately 11%, the broad currency index has appreciated 10%, and the narrow index with Hong Kong added has appreciated 9%. (We ignore the March 2002 revaluation of the Iranian dinar, which has a 0.7% weight in the broad index, because most Iranian trade took place at market rates.)

Figure 3. Hypothetical movements in China reference index, 2001 to present



Source: IMF Direction of Trade Statistics, January 2001=100.

Note that adding either Hong Kong or the countries that are only in the broad index results in a reduction in appreciation for the reference currency index. The reason is that Hong Kong follows the dollar closely, as do many of the countries that are only in the broad currency index, including, Mexico, Saudi Arabia, and the United Arab Emirates. The latter two nations were pegged to the dollar over the period. Although the Mexican peso was not formally pegged to the dollar, the variance of the peso-dollar exchange rate was small relative to the other countries in the broad index. As a result, these countries' currency values did not move much during the period when the euro appreciated markedly against the dollar.

Caveats

First, the indexes generated are, at best, guesses about the reference trade-weighted currency index China may use. The PBOC has made no commitment to follow such a trade-weighted index peg rigidly, stating that other current account considerations, such as the share of major currencies in foreign debt and foreign direct investment will also be considered. As such, the movements in the currency index would not necessarily be representative of the desired path for the renminbi under China's new exchange rate regime, even if the country weights assigned to the index were appropriate.

Second, it would be inaccurate to argue that the historical movements in the trade-weighted currency index are representative of how the renminbi would have moved over its fixed exchange rate period were it following such an index. The reason is that, while China's Asian trading partners are weighted significantly in China's trade-weighted index, China is also an important trade partner for them. Therefore, Chinese exchange rate policy is likely to influence the path of many Asian exchange rates. Indeed, McKinnon (2005) has recently argued that a number of China's main Asian trading partners have smoothed their dollar exchange rates in an effort to retain competitiveness against China.

Finally, while it is clear that all of the indexes exhibited appreciation over the sample period far exceeding the 2.1% appreciation of the renminbi on July 21, this study does not imply anything about whether or not the renminbi is "undervalued." In particular, the study is silent on the relative under- or over-valuation of the renminbi on the sample starting date in 2001.

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References

McKinnon, Ronald I. 2005. *Exchange Rates under the East Asian Dollar Standard*. Cambridge, MA: MIT Press.

People's Bank of China. 2005a. "Public Announcement of the People's Bank of China on Reforming the RMB Exchange Rate Regime," July 21.

People's Bank of China. 2005b. "Speech of Governor Zhou Xiaochuan at the Inauguration Ceremony of the People's Bank of China Shanghai Head Office," August 10.

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