

The Institutional and Structural Problems of China's Foreign Exchange Market & Implication for the New Exchange Rate Regime

ZHANG Jikang and LIANG Yuanyuan

Zhang Jikang (jkzhang@fudan.edu.cn) is professor of Financial Markets and International Business, Fudan University, Shanghai. He is also a Senior Adviser to the China Foreign Exchange Trade System and National Inter-Bank Funding Center (China's foreign exchange and money markets, respectively).

Liang Yuanyuan (yuaner_liang@yahoo.com.cn) is Research Assistant at the Center for European Studies, Fudan University. She has a Masters degree in Economics. Her main research interests are financial markets and corporate finance.

Abstract

After briefly reviewing the historical development of China's foreign exchange market, we focus on the structural characteristics of the inter-bank market, describe its current structural problems as well as institutional constraints and explore the delicate relationship between foreign exchange market structure improvement and the reform of RMB exchange rate regime. We find the inter-bank market characterized by lack of market depth, limited transaction types, restricted participation with trading highly concentrated. The compulsory foreign exchange purchase and sale system distorts market supply and demand, and the rigid exchange rate regime reduces the Central Bank role to one of passive intervention.

Two months after China's foreign exchange market added eight foreign exchange pair to its inter-bank trading family, China's central bank announced a reform of RMB exchange rate regime featuring a 2% appreciation of RMB against US dollar and basket peg¹. Regulator's intention to diverge attention away from speculation on its exchange rate level and focus on improvement of exchange rate formation mechanism seems to have resulted in not infrequent moves to overhaul China's foreign exchange market. The relationship between market structural improvement and reform of the exchange rate regime has

¹ A more precise expression should be: determine the exchange rate level "with reference to" a basket of currencies. The relatively stable performance of RMB/USD exchange rate since the July revaluation offers some hints that the central bank haven't carried out a full basket peg yet and US dollar still dominates the determination of RMB exchange rate.

become increasingly important to China on its way to a more flexible exchange rate regime.

A substantial literature has taken shape in China on the foreign exchange (FX) market itself² or in connection with issues such as the convertibility of the RMB and the liberalisation of current and capital accounts³. In-depth analyses of foreign exchange market's structural characteristics were, however, rarely seen in the literature. Chen Haiwei (2001) estimated China's foreign exchange market concentration and attributed the high concentration to FX control measures, limited convertibility of RMB, market entry restrictions⁴ and historical institutional arrangements. He characterized FX market structure as monopoly and closed. In recent years, some descriptive analyses of market structures have been noted in the literature. Ma et. al. (2004) compared China's FX market with major world markets and found the Chinese market to be small, segmented and concentrated in US dollar trading with a nascent market for forwards and a missing swap market. Wang Xin (2003, 2004) identified several structural problems such as the small trading volume, high market concentration, poor liquidity, limited transaction instruments and significant settlement risk. He traced the problems back to a "super stable" RMB/US dollar exchange rate and pointed out that in China, for flexibility of the exchange rate to increase, the FX market must expand considerably from its current depth and scope. While observers outside China have complained about the misalignment of RMB exchange rate level and have called for a more radical approach to achieving exchange rate flexibility, domestic scholars and policy makers have preferred to exercise caution. Zhang Jikang (2004) argued that China's FX market should be developed gradually, controllably and optimally under the premise of stability. Ba Shusong (2004) suggested a reform of the FX market with respect to its operations, transaction platform, competition rules, market entities and targeted functions.

This paper goes further than previous work by relying on quantitative data for the ten-year period since the current exchange rate system was established in 1994 to systematically analyze the structure of China's FX market and assess its performance⁵. The premises that motivate the analysis are as follows:

² Research in this direction can be seen in Zhu Jie (2003) on foreign exchange market pressure and central bank's intervention, Yang Shenggang and Lu Xiangqian (2003) on foreign exchange market efficiency and Chen Haiwei (2001) on foreign exchange market concentration.

³ See, for example, Zhang Zhichao (2004).

⁴ Especially restrictions on foreign participation.

⁵ The scope of the analysis of market structures and problems in this paper mainly falls in the 1994-2004 period. It's worth noting that China's foreign exchange market together with exchange rate regime is undergoing constant transformations. Significant reform measures have been introduced in 2005 to address some of the structural problems, yet it's unrealistic to expect any instant effects on the market structure features and the real effects of these policies remain to be observed in the next few years.

- (1) China's FX market has developed under an institutional framework⁶ involving compulsory FX purchase and sale system, a de facto pegged exchange rate and inconvertibility of the RMB under the capital account. Because these institutions cannot be changed quickly, the Chinese government has moved gradually to reform the FX market at a pace commensurate with economic reform more broadly.
- (2) While the broader institutional framework governs development of the FX market, the state of the FX market in turn influences external institutions. International experiences have shown that while exchange rate rigidity hinders development of FX market, a deep and liquid FX market plays an essential role in paving the way to achieve more flexible exchange rate arrangement⁷. The July reform is a signal that institutional restrictions such as rigid exchange rate and other FX regulations will gradually phase out and China's FX market will be given more latitude to gain momentum in its growth. Meanwhile, China's move to a more flexible exchange rate formation mechanism needs a sound FX market as its foundation. The current structural problems in this market will hazard or delay future exchange rate reforms.
- (3) The current FX market was designed to serve the policy purpose of compulsory FX purchase and sale system and a de facto pegged exchange rate. It has mainly been used by the central bank as a platform to achieve desired exchange rate level and thus has been a pro forma market with non-market operations and non-market exchange rate formation mechanism. It has to be admitted that this market served its purpose well and such a non-market mechanism went quite well with broader institutional environment such as state-owned enterprises (SOE) and banking sector. But with current SOE reform, banking reform and most importantly a more flexible exchange rate regime as well as liberation of capital account on the way, the standard of judging the effectiveness of China's FX market should also be changed to whether not the market adopts a market operation and whether or not the exchange rate is determined by a market mechanism that establishes reasonable balance in the country's international payments and provides a stable platform for gradual liberalisation of the capital account.

⁶ The following three institutional arrangements are the most important and direct ones governing the development of China's FX market, however, other institutional roots that have a connection with problems in this market such as ownership nature of enterprises, the status quo of the domestic banking sector and the lack of exchange rate risk management skills and tools should also be duly recognized.

⁷ See Cem Karacadag , Rupa Duttagupta , Gilda Fernandez and Shogo Ishii , "From fixed to float: fear no more" , Finance & Development December 2004, page 20-21

Historical Development of China's Foreign Exchange Market (1st font)

(1) Pre-1979: Strict Central Control

Before 1979, China had a highly centralised regime governing the supply, demand and allocation of foreign exchange. All FX earnings (mainly export proceeds) had to be surrendered to the state-owned banks and the central bank, the People's Bank of China (PBOC). All FX expenditures (i.e., for imports or non-trade purposes) had to be approved under the confines of the national FX plan which leaned toward the state sector.⁸ There was no market element in the formation of the exchange rate which was fixed to the British pound from 1952, then to a basket of international currencies from 1973.

Six rounds of devaluation

(2) 1979-1993: FX Retention and Swap

Liberalisation of FX use began in 1979 with an earnings retention scheme designed to encourage exports. Under this scheme, exporters were entitled to retain a share of their FX earnings, initially with respect to exports above some quota but from 1998 according to the full measure of exports. From 1981 to 1984, exchange rates were set differentially for trade and non-trade activities⁹.

The first sign of an actual FX market in China appeared in October 1980 when retained FX claims became transferable, first through the swap service launched by the PBOC, then in provincial swap centres, and finally in an integrated nationwide swap market.¹⁰ The late 1980s saw the expansion of FX swap activity with the number of market participants increasing and swap exchange rates becoming more flexible. By the end of 1993, there were 108 local swap centres and 18 markets joined to the nationwide system. A mechanism for forming a market exchange rate had thereby been established in coexistence with an official pegged rate.

The development of the swap market with its diversity of swap rates had its own problems, including discrimination, rent-seeking and unauthorized actions. Nevertheless, it acted as a transitional device to lay a foundation for the emergence of a true FX market in China. The 1979-1994 period also saw frequent adjustments of official exchange rate¹¹ with a trend devaluation of RMB against US dollar. After the gradual devaluations of official rate, the central

⁸ The FX plan was formulated by the State Planning Commission in consultation with the Ministries of Trade and Finance and the PBOC. (See Zhang Zhichao, "Harmonious Development of Foreign Exchange Market and Liberalisation of Capital Controls in China", International seminar on China's FX market development, December 2003)

⁹ The exchange rate for trade activities was set at 2.8 RMB/USD with official rate still stood at 1.5 RMB/USD. This practice was abolished since January 1, 1985.

¹⁰ Despite the name, the swap market provided spot transactions only.

¹¹ These adjustments were frequent, small and slow with mixed appreciation and depreciations but on the whole, RMB had been devalued against US dollar from early 1979 level of 1.50 RMB/USD to 5.72 RMB/USD at the end of 1993. Six large official devaluations took place in 1981, 1984, 1985, 1986, 1989 and 1990.

bank was well prepared to unify the exchange rates and reform the exchange rate regime.

(3) 1994 and Post-1994: Compulsory Settlement on a Centralised Platform

The year 1994 was a turning point in China's FX reform. In that year, the system of FX retention and submission that had existed for 15 years was replaced with a compulsory settlement system under which foreign exchange earners were obligated to sell their FX to state banks while foreign exchange users could buy it subject to conditions. The "single managed floating exchange rate regime based on market supply and demand" was adopted. On 4 April 1994, the China Foreign Exchange Trading System (CFETS) began operation, signifying the launch of a unified national inter-bank FX market. The government's FX management method was also adjusted to rely more on systematic economic and legal measures in contrast with the former command approach. New rules governing the purchase of FX by individuals for overseas visits, study or other personal needs took effect on 1 April. These rules have been relaxed gradually over time with the upper limit on individual purchases raised to \$8000¹² from an initial \$600 per person/visit. The success of the 1994 reform enabled conditional convertibility of the RMB under the current account and brought a real FX market into existence.

Reform continued under the basic framework of the FX purchase and sale system after 1994. In 1995, China ended the circulation of foreign exchange certificates. In July 1996, the FX transactions of Foreign Invested Enterprises (FIEs) were integrated into the FX purchase and sale system, allowing FIEs to buy foreign currency freely on the inter-bank market. On 27 November 1996, China formally notified the International Monetary Fund of the RMB's convertibility on the current account. Qualified Chinese companies were allowed to open FX settlement accounts to retain a proportion of FX earnings from current account transactions in 1997. Yen trading was added in 1995. The PBOC's forward FX purchase and sale experiment was launched in 1997.

The Asian financial crisis interrupted China's aggressive reform timetable. A series of regulations were enacted and clarified by the PBOC to strengthen the responsibilities of the State Administration of Foreign Exchange (SAFE) with respect to falsely obtaining FX, failing to surrender FX, illegal arbitrage and so on. The swap centres were closed on 1 December 1998, with all FX transactions thereafter integrated into the FX purchase and sale system.

In 2001, trading in dollar-denominated B shares on China's stock market was opened to Chinese nationals (having formerly been limited to foreign passport holders) with necessary currency exchange supported by CFETS. Trading in euros was introduced in April 2002. Then in October 2002, all

¹² As of August, 2005

enterprises that qualified for conducting international business or had regular FX incomes from current account transactions, were allowed to open foreign currency accounts for holding up to 20 percent of their previous year's FX income. Two-way trading was permitted from October 2003 with trading hours extended from half to full day. 2005 is another landmark in the development of China's FX market abundant with policy initiatives. Eight foreign currency pairs started trading in the inter-bank market in May 2005. RMB was revalued with a 2% appreciation against US dollar and the peg to the single US dollar was replaced with a reference to a basket of currencies in July 2005. The July reform was followed by successive reform measures in August¹³ to enlarge the scope of forward FX purchase and sale and swap between RMB and foreign currencies¹⁴, to invite non-financial enterprises and non-bank financial institutions to participate in the inter-bank market, to add RFQ (Request for Quote) trading mode into the current auction market and to introduce inter-bank FX forward and swap trading as well as Market making system. In addition, a long expected market maker system for USD/RMB trade was finally introduced in November 2005 based on CFETS platform¹⁵.

Current Foreign Exchange Institutions (1st font)

(1) Market composition

China's FX market is composed of two parts: the inter-bank or wholesale market and the retail market (see Figure 1). Major parties involved in the FX market are: a) CFETS which functions as the trading platform for the inter-bank market and is responsible for clearing the market and for providing the supervisory authorities with market information; b) PBOC and SAFE as regulatory authorities: the PBOC authorized SAFE to regulate the inter-bank spot and forward markets and regulate the retail market through SAFE; c) designated FX banks and other non-bank financial institutions and non-financial enterprises¹⁶ authorized by SAFE to engage in foreign exchange business; d) enterprises that earn and spend FX¹⁷; and e) individuals who have FX trading needs. The nature of the current inter-bank FX market is for designated FX

¹³ Details of these policies can be seen in the "Notice of the People's Bank of China on Accelerating the Development of the Foreign Exchange Market" which came out on August 8, 2005 on the central bank's website: www.pbc.gov.cn

¹⁴ In the retail market between banks and their customers.

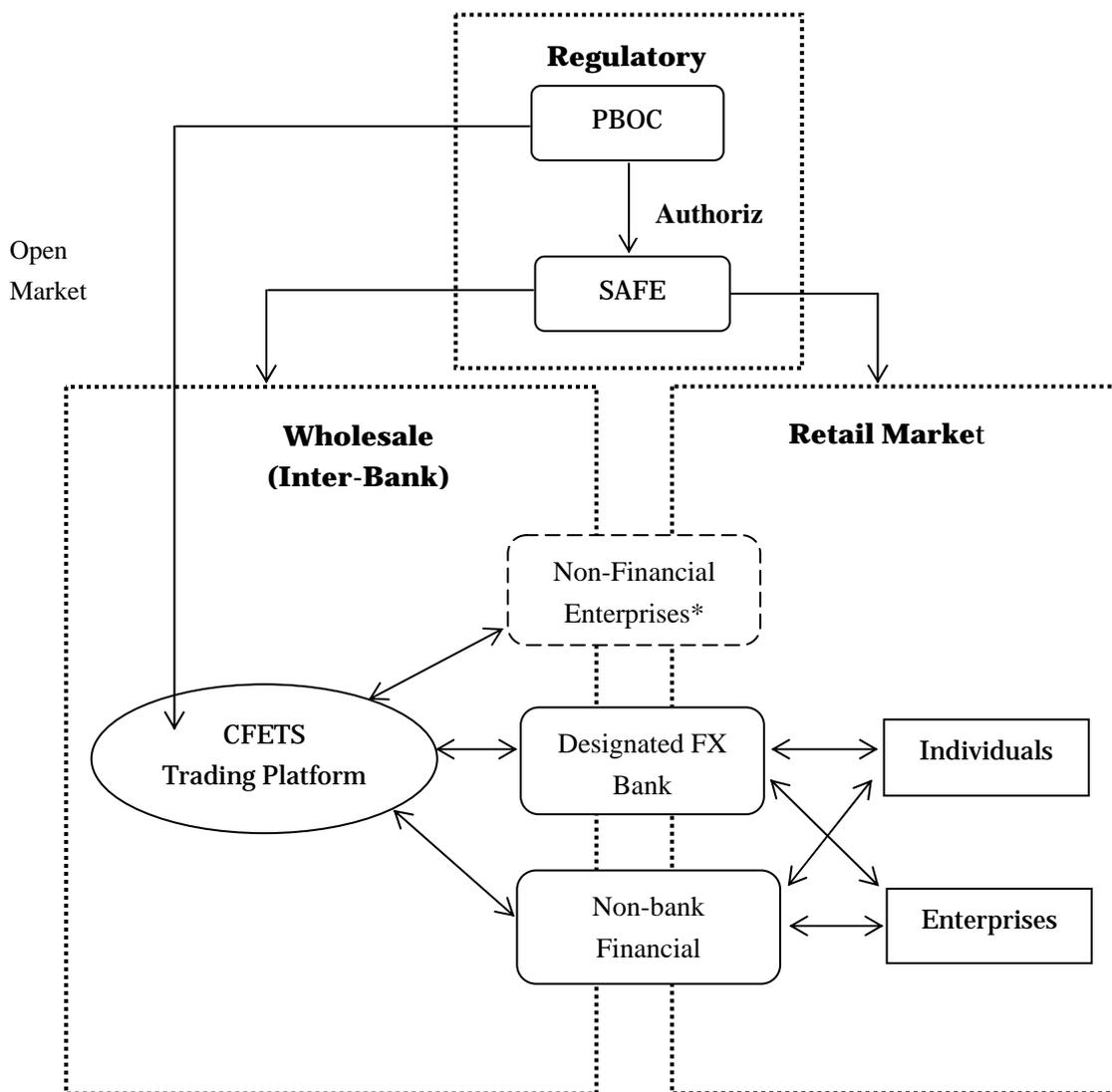
¹⁵ Details can be found on the State Administration of Foreign Exchange's website: www.safe.gov.cn

¹⁶ Currently, major participants in the inter-bank market are still designated FX banks but the market entry rules have been relaxed to encourage the participation of non-bank financial institutions and non-financial enterprises by the August 2005 reform measures.

¹⁷ d) and e) are participants in the retail market.

banks to square their FX positions derived from retail FX business after maintaining an allowable FX working position¹⁸. The inter-bank market makes use of organized exchange trading with orders matched by an electronic trading platform while retail transactions between banks and their customers are carried out in an over-the-counter (OTC) market. The market structure part of this paper focuses primarily on the inter-bank market.

Figure 1: Organization of China's Foreign Exchange Market



* Currently there are no non-financial enterprises trading in the inter-bank FX market yet¹⁹, however, this group is granted market entry permission by the August 2005 policy.

¹⁸ This allowable FX working position has to be verified and approved by SAFE.

¹⁹ As of November 2005.

(2) The Trading Platform: Should CFETS be transformed?

CFETS is a membership-based exchange with a nationwide real-time electronic trading system. With an “auction market” trading mechanism similar to an electronic broker, members make back-to-back (anonymous) quotes on the trading platform through either on-site or distant trading terminals.²⁰ The electronic trading platform automatically enables real-time matching of orders. The clearing function is integrated into the CFETS platform, providing members with centralised, two-way, netting/clearing of RMB and foreign currencies.

This market infrastructure was originally put in place to serve the needs of compulsory FX settlement and facilitate the PBOC’s absolute control of the market. The financial institutions served by the inter-bank market have long been required to square their FX positions from retail trade on a daily basis, subject to an approved level of working balances. But now it seems inevitable that voluntary FX settlement will be adopted, and the necessity for CFETS to clear excess supply or demand will no longer exist. Thus the question is whether or not this inefficient non-market-oriented trading platform should be retained once there is no longer a need for centralised and compulsory settlement of foreign exchange. Or, should China return to a conventional OTC market?

The pros and cons must be considered in order to make the decision. A trading platform such as CFETS had its justifications in connection with a developing and fragile financial system. Risk management and pricing is not well-developed in China. The exchange model and automated trading system provided by CFETS substitutes a centralized credit system for bilateral credit lines to overcome the risk pricing problem²¹. With adoption of an OTC market organization, bank fragility would pose problems for market operation.

The standard OTC dealer market based on RFQ (Request for Quote) enables freedom in choosing counter-parties, broad market access and continuous trading, all generally believed to bring about fairness and consistency in pricing. But advances in telecommunications and information technology have already led to a large share of trading being snapped up by electronic brokers such as [Electronic Broking Services Ltd.\(EBS\)](#) and Reuters offering lower transaction costs and tighter dealer spreads through the use of STP (Straight-Through-Processing) and CLS (Continuous Linked Settlement) as well as greater transparency in pricing. According to the Bank for International Settlements (BIS) 2001 Survey, up to 70 per cent of spot FX trading in the major currencies was being traded on electronic broking systems. The CFETS platform functions similarly to electronic brokers and may fit the future trend in

²⁰ Distance connections can be realized through Digital Divide Network, frame-relay or dial-up.

²¹ Benefits from such a centralized credit system are however subdued by the fact that current market participants are mostly large banking institutions for which credit risk or transaction risk concerns are low.

global FX markets. However as an administrative unit of the PBOC, CFETS suffers from inefficiencies born of monopoly and a non-market orientation. CFETS is used by the central bank to control the market and is exposed to neither competition nor supervision by its members.

In summary, recent policy moves offered a clue that the central bank wouldn't easily let go of CFETS as the trading platform in the inter-bank FX market. The existence of such a platform will ensure further reforms in the FX market be carried out under central bank's scrutinization and control. In the meantime, CFETS must undergo major transformation with respect to market-orientation, services offered, technology, efficiency, and risk management. The possible direction of reform will lean towards boosting volume by enriching transaction types and incorporating elements of the dealer market such as RFQ or market-maker into current CFETS platform so that China's inter-bank market will become indeed a mixed market with a centralized auction market and a parallel dealer market for certain transactions. There's a large chance that CFETS will continue to function as a transaction and information platform for the FX market but it should become a more independent market platform in the sense that its current supervision function required by the Central Bank should be spinned off with its intimacy with the Central Bank phasing out in the future.

FX Market Activity (1st font)

(1) Market Turnover: a shallow and narrow market

Average daily turnover in China's inter-bank FX market is very low compared to that on the world's major markets (see Table 1). But China's market is growing fast with daily turnover up by 177 per cent in 2004 relative to 2001 and by nearly half in 2001 relative to 1998. By contrast, all major markets except Japan experienced a decline in turnover between 1998 and 2001²², with recovery then following in 2004.

The small scale of China's FX market is attributable in part to institutional factors. Restrictions on FX holdings for both commercial banks and the public figure significantly in limiting the development of the market. So too does concentration of FX trading among a few large banks that balance trades internally, turning to the inter-bank market just once a day to re-establish their reserves at the allowable level. Indeed, until October 2003, buying and selling during the same trading session was prohibited. Market development is also inhibited by controls on capital account transactions, approval requirements for financial institutions to engage in FX business, and the limited scope of products

²² According to the BIS, the main factors driving the fall in turnover were the introduction of the euro, the growing share of electronic broking in the spot inter-bank market, consolidation in the banking industry and global concentration in the corporate sector.

and currencies.

Table 1: Foreign Exchange Market Daily Average Turnover in Selected Markets, 1995-2004

(USD billion/day)

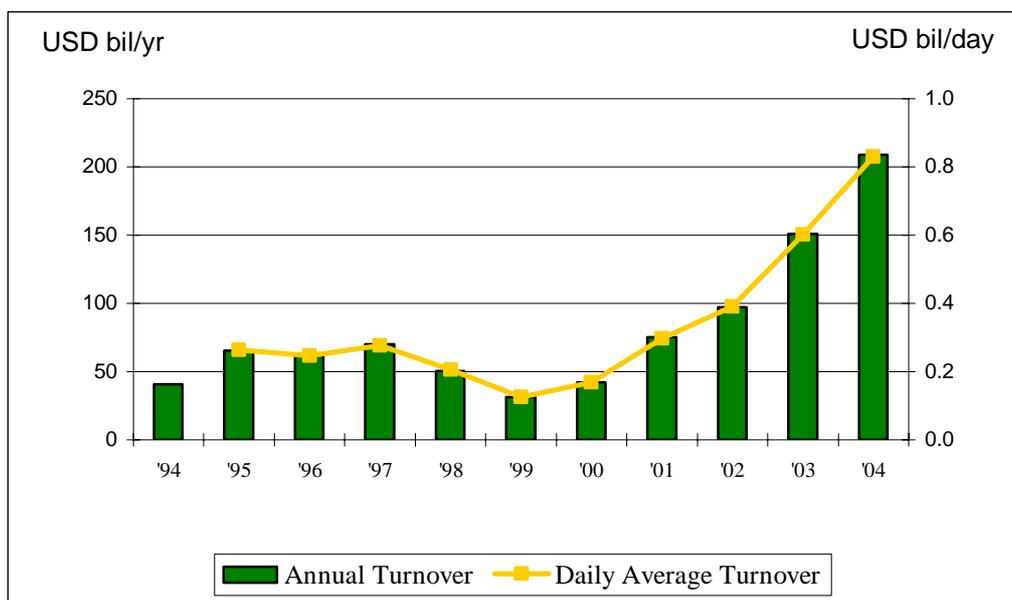
	1995	1998	2001	2004
China	0.26	0.21	0.30	0.83
Hong Kong	90	79	67	102
Japan	161	136	147	199
Singapore	105	139	101	125
United Kingdom	464	637	504	753
United States	244	351	254	461

Source: CFETS, BIS Triennial Survey.

Note: For markets other than China's, daily averages are for the month of April and cover spot, forward and swap transactions. For China, volume is based on the entire year and pertains only to inter-bank spot transactions.

The recent dramatic growth in China's inter-bank market follows a sluggish start in the 1990s (see Figure 2). The years 1997 to 1999 actually showed a downturn from which the market did not re-emerge until 2001. This downturn is attributable in part to the adverse impact of the Asian financial crisis but also to a broad-based inspection campaign carried out by SAFE to ferret out purchase of FX under false pretences and other illegal market activity. With recovery of economic growth domestically, China's admission to WTO and improvement in the foreign trade and investment balance, the market picked up momentum entering a period of fast growth from 2001 to 2004 with an average growth rate of 50.32%. Market turnover reached a new height of USD209 billion in 2004 with a daily average of USD830 million. Besides the economic fundamentals, this sharp increase in market turnover was also driven by short-term factors on the supply side including faster settlement of export revenues due to the 3 per cent reduction in the export tax rebate in 2004; speculation on RMB appreciation; banks reducing their FX working positions to relieve the RMB demand pressure; overseas listed companies repatriating capital raised in stock listings; and Qualified Foreign Institutional Investors (QFIIs) converting foreign funds for investment in China's stock market.

Figure 2: Annual and Daily Average Turnover in China's FX Market, 1994-2004

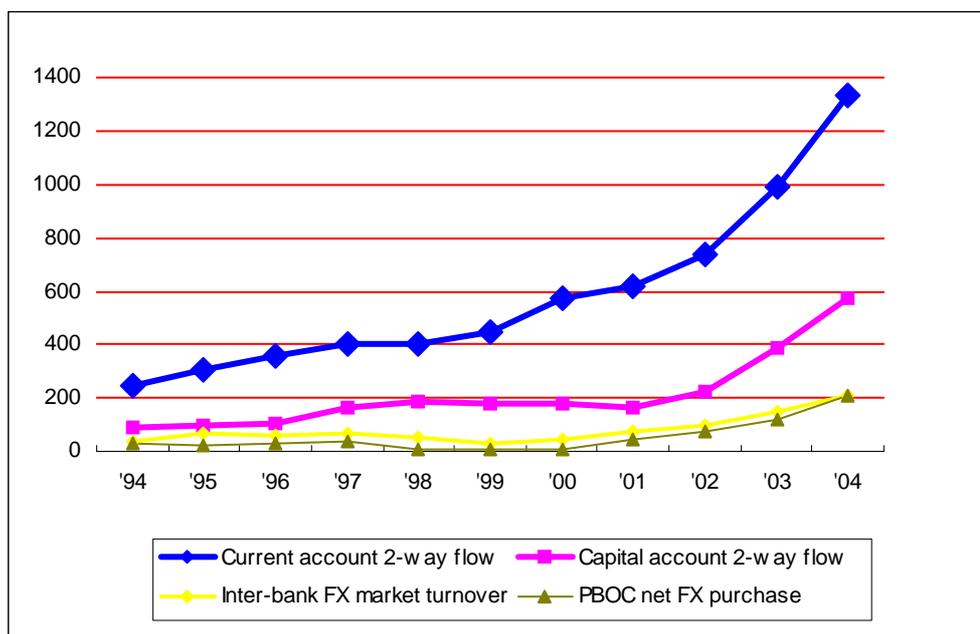


Source: *China Money*, www.chinamoney.com.cn.

The rising turnover on China's inter-bank market coincided with rapid growth in balance of payments flows (see Figure 3). Under the compulsory FX purchase and sale system, the inter-bank market functions solely for banks to net out FX positions derived from retail trade. This retail trade is in turn driven by bank customer activity captured on the current and capital accounts. In recent years, short-term capital inflows have played a major role in feeding the increase in supply on the FX market.

The July 2005 reform heralded reforms in the RMB exchange rate regime. With more flexibility in the exchange rate formation mechanism being introduced in the future, China will be expecting larger variations in its FX market. A small and shallow market is certainly no boon to smoothing exchange rate variations. This may add to authorities' concern to allow further flexibility in the exchange rate regime and cause delay in the reform timetable; on the other hand, without a more flexible rate, a truly deep market is hard to be achieved.

Figure 3: FX Market Activity & Balance of Payments Flows, 1994-2004
(USD billion)



Note: PBOC net purchase of FX is measured by the change in official reserves assets.

Source: CFETS, *PBOC Quarterly Statistical Bulletin*.

(2) Market Scope: mainly a spot market dominated by RMB/USD trading

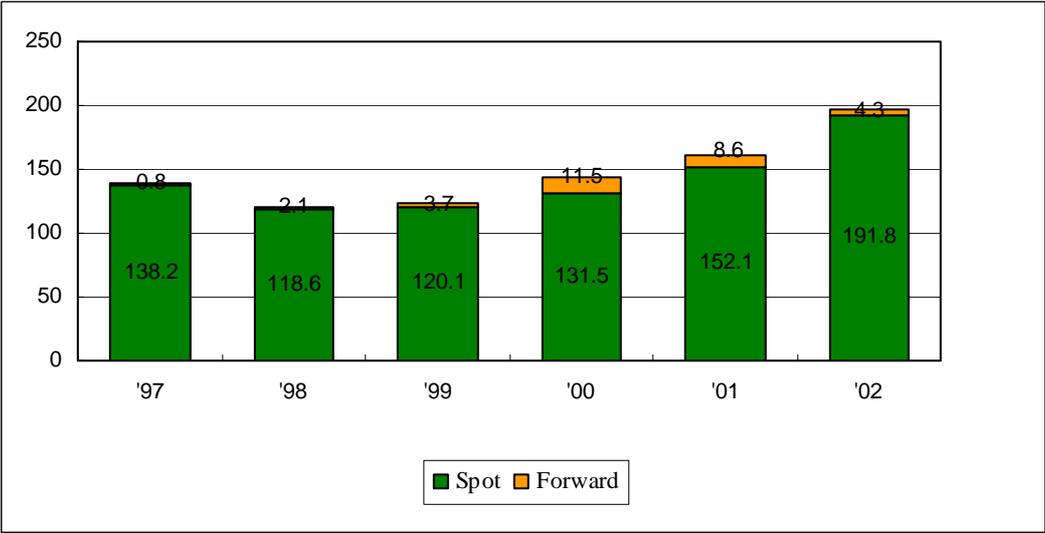
China's FX market is limited in product scope mainly to spot trading in US dollars. For a long time since its establishment, the inter-bank market offered spot transactions only until August 2005 when inter-bank forward and swap were introduced. In the retail market, the Bank of China (BOC) was allowed to offer forwards beginning in 1997, with the other banks following suit after 2002. Presently, forwards exist in eight currencies (US dollar, Hong Kong dollar, euro, yen, pound, Swiss franc, Australian dollar and Canadian dollar) and 14 different terms from seven days to 12 months. FX swaps in the retail market wasn't allowed until August 2005.²³

From the inception of forward transactions in 1997, the Bank of China's trading volume rose to a peak of USD11.5 billion in 2000 (see Figure 4). This growth reflected a need for businesses to hedge against currency risk during a period when the RMB was under pressure to depreciate in the wake of the Asian financial crisis. Rather than devalue though, the PBOC responded to the crisis

²³ Details of the new regulations can be found in "Notice on Issues Regarding Expanding Designated Banks' Forward Sale and Purchase of Foreign Exchange Business to Customers and Launching RMB Swaps against Foreign Currencies" on the central bank's website: www.pbc.gov.cn

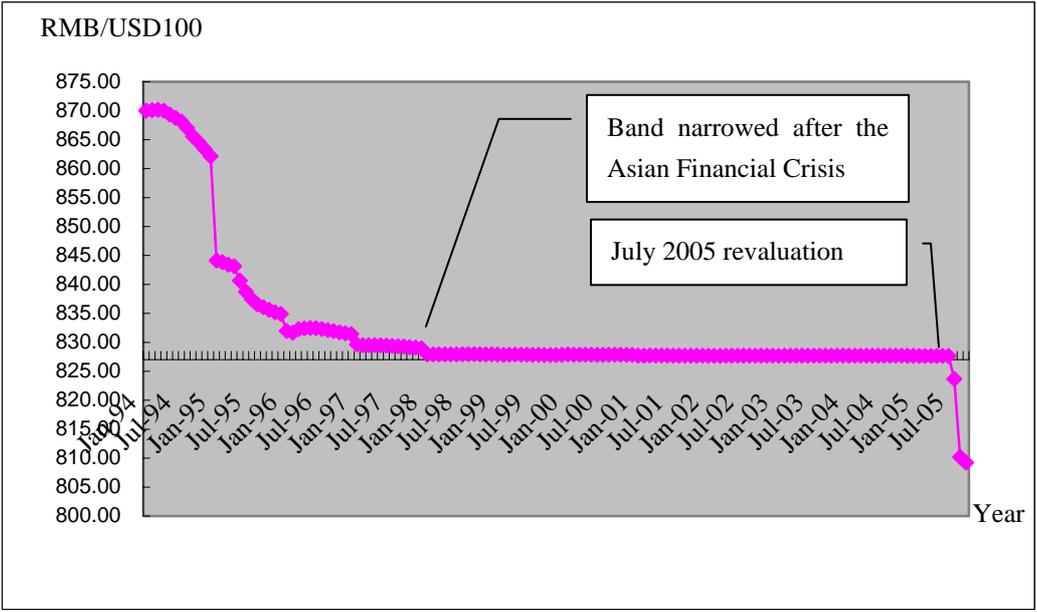
by tightening the floating band. This led to a highly stable relationship between the RMB and the US dollar. (see figure 5) Under such conditions, the need to hedge risk diminished and the forward market contracted. The BOC's forward trading volume declined by about two-thirds from its peak to USD4.9 billion in 2002.

Figure 4: Bank of China Spot & Forward FX Trading, 1997-2002
(USD billion)



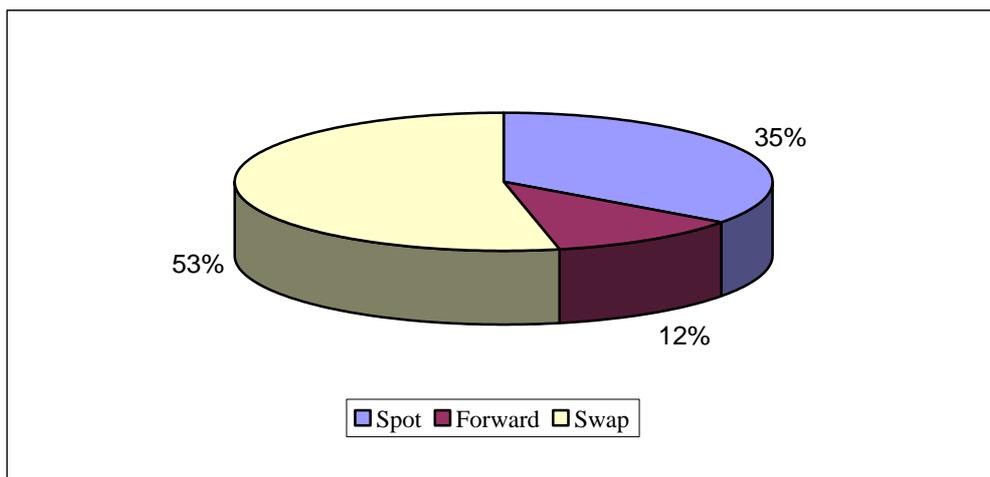
Source: Bank of China Annual Reports.

Figure 5: RMB/USD Exchange Rate, 1994-Sep. 2005



The offshore market in RMB trading shows a much higher share of trading in forwards (including non-deliverable forwards), indicating a demand for hedging instruments China's domestic market is not able to serve. Compared with the global FX market (see figure 6), the lack of product range in the Chinese market restricts overall growth in market turnover and limits the functions of the market, especially the risk-hedging function.

Figure 6: Shares of FX Trading by Transaction Type in global FX Markets, 2004



Source: *BIS triennial central bank survey of FX and derivatives market activity in 2004*

China's FX market is limited, too, by its trading concentration in the US dollar. When the inter-bank market was established in 1994, only the US dollar and Hong Kong dollar were traded. The yen was added in 1995 and the euro in 2002. Eight foreign currency pairs started spot trading in May 2005²⁴. The US dollar, however, remains the overwhelmingly dominant currency, accounting for 97.78% of total turnover in 2004.

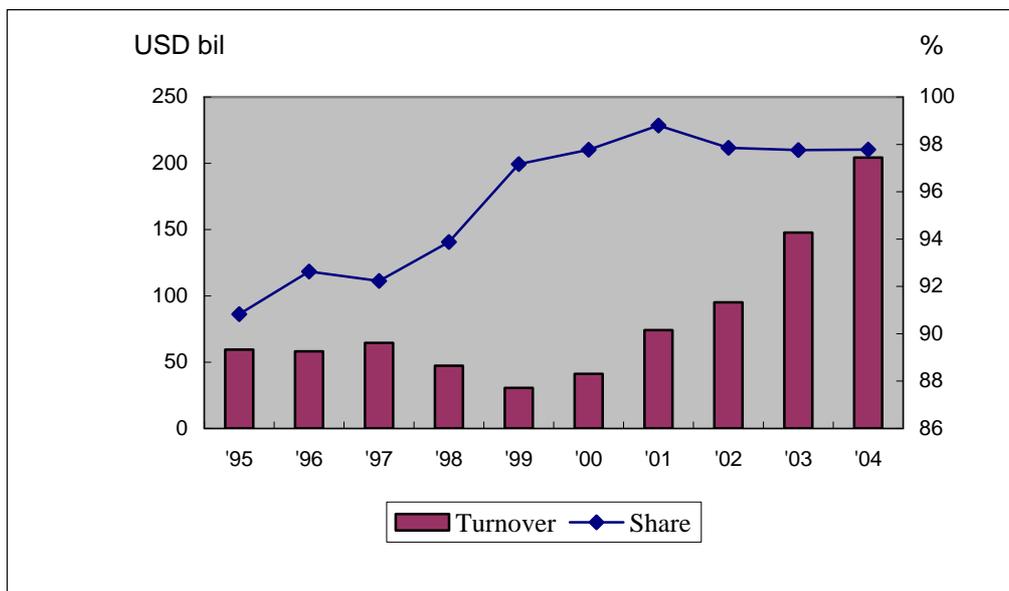
The dominance of the US dollar actually strengthened during the late 1990s, and was little influenced by the introduction of the euro in 2002 (see Figure 7). The high concentration in US dollar trading is not inconsistent with the important role the dollar plays in global trade and investment as vehicle currency (see Figure 8). Further, given the highly stable RMB/USD exchange rate, conducting their affairs in dollars allows those engaged in international business to minimise exchange risk. Having come to take stability of the exchange rate for granted, market participants do not net out their open positions immediately, but rather minimize transaction costs by netting out positions internally. Therefore, US dollar domination of the FX market is also a factor in the low level of overall market activity.

²⁴ The eight foreign currency pairs include EUR/USD, AUD/USD, GBP/USD, USD/CHF, USD/HKD, USD/CAD, USD/JPY and EUR/JPY.

Great expectations had been attached to the introduction of new currency pairs, especially the euro/RMB pair. In fact, however, the euro has not come to play an important role in China's FX market either in terms of increasing market turnover or in terms of influencing the formation mechanism of the RMB/USD rate. The reason is that the RMB/euro rate is determined indirectly by the euro/USD rate vis a vis the stable RMB/USD rate. Since banks in China can obtain a better euro/USD rate in the international market, if they have open euro/RMB positions they first convert euros to dollars in the international market, then trade the RMB/USD position in the domestic inter-bank market instead of directly trading euro/RMB positions.

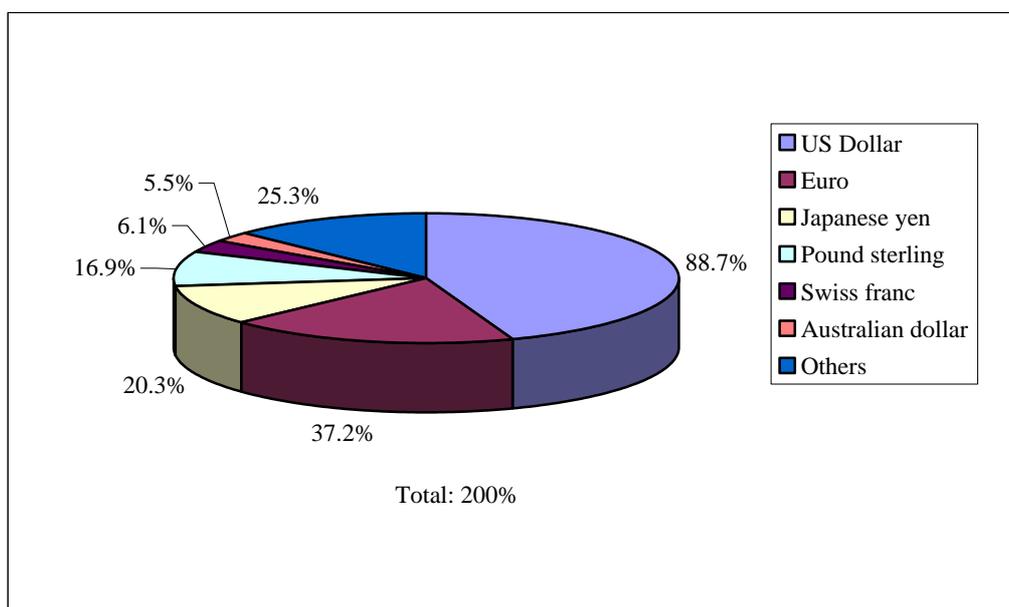
The US dollar domination in China's FX market reflects market participants' dependence on the central bank to clear the market under the rigid exchange rate regime. Lack of motivation to hedge two-way exchange risks also prevented participants from building up professional skills in FX risk management and retarded the development of FX derivatives. This may turn out to be one of the most important fragilities when exit from the current peg brings in more variations in the rates.

Figure 7: Turnover & Share of the US Dollar in the Inter-Bank Market, 1995-2004



Source: Different issues of *China Money*

Figure 8: Currency composition in the Global FX market, 2004²⁵



Source: BIS triennial central bank survey of FX and derivatives market activity in 2004

Source: SAFE website, RMB exchange rate section.

Note: Data are monthly averages.

To sum up, China's inter-bank FX market is currently mainly a spot market. Forward and swap just emerged with trivial volume so far. Even with the introduction of eight foreign currency pairs in 2005, the domination of RMB/USD trading is unlikely to be changed in the near future. The lack of diversity with respect to transaction types restrains market turnover and limits liquidity.

(3) Market Participants and Concentration: restricted market entry and high concentration

Though membership in CFETS reached 366 by June 2005, market activity remained highly concentrated among a small number of members. Only designated banks licensed by the PBOC and SAFE to conduct retail FX trade are eligible to become members in CFETS. The only non-bank financial institutions that belong to CFETS are two trust and investment companies (see Table 2). This contrasts with the diverse body of market participants in the global FX market which includes dealers and non-financial entities as well as banks and non-bank financial institutions. The global FX market has seen an increasing share of turnover being seized by trading between banks and other

²⁵ Since each currency pair involves two currencies, the total sums up to 200%.

financial institutions which stood at 33% in 2004²⁶.

Table 2: CFETS Members by Institutional Type, Jan. 2003 & Jun. 2005

	January 2003	June 2005
Wholly state-owned bank	4	4
Joint stock commercial bank	10	11
Policy bank	3	3
Urban commercial bank	22	39
Branch of commercial bank	108	109
Foreign bank	164	179
Trust & investment company	2	2
Rural credit cooperative	9	19
Total	322	366

Source: Different issues in China Money

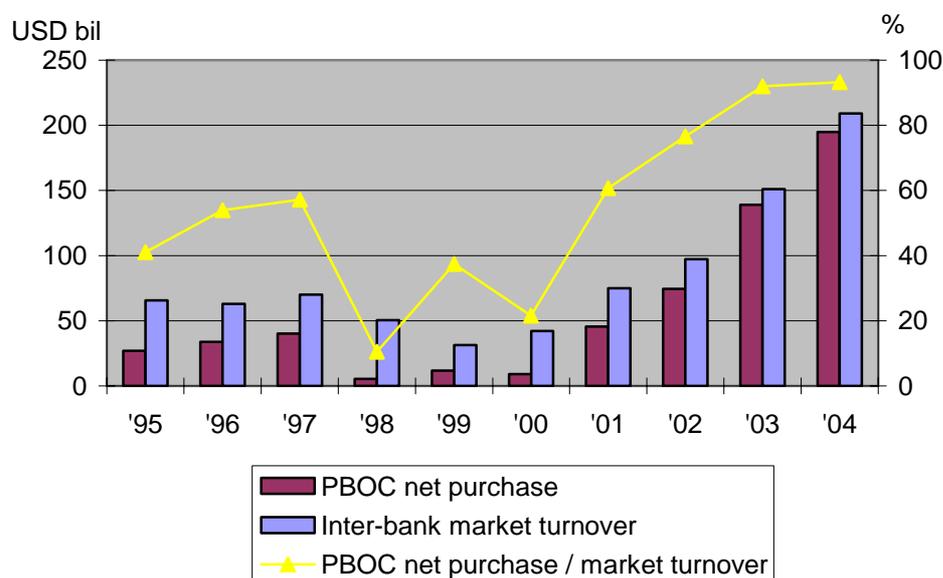
China's FX market is characterized by approaching monopoly especially on the buy side. Although nearly half of CFETS's 366 members are foreign banks, their trading volume amounts to only a small portion of the total. In 2004, domestic banks' net sale of FX reached USD 155.1 Billion, 9 times that of foreign banks²⁷. Trading is dominated by the Big Four state-owned banks plus the China International Trust & Investment Corporation (CITIC). These large banks are usually net seller in the market with the rest participants as net buyers. The Bank of China itself is estimated to account for more than half of net FX selling in 2002²⁸. On the buy side, in the period from 1995 to 2004, PBOC's net purchase of FX accounted for 68 per cent of the total inter-bank market turnover. (Calculated from figure 9)

²⁶ Source: BIS "Triennial Central Bank Survey of Foreign exchange and derivatives market activity in 2004".

²⁷ Source: "Inter-bank market activity report, 2004", China Money, Issue 2, 2004

²⁸ Source: Wang Xin, "Problems in China's FX market", *International Economic Review*, 2003.11-12

Figure 9: PBOC Net Purchase of FX & Inter-Bank Market Turnover, 1995-2004



Source: Shu Youdong, “The Appreciation Pressure on RMB and the Releasing Measures”, *China Money*, Nov. 2001, from CFETS website, www.chinamoney.com.cn; Ernest H. Preeg, “Statement before the U.S.-China Economic and Security Review Commission”, 25 Sep. 2003; “Central Bank Spends More Keeping Yuan Stable”, www.chinaview.cn [Mar. 2005].

In recent years, the PBOC has been obliged to undertake massive buying in the face of heavy supply pressure brought on by speculation on RMB appreciation and a relatively high interest rate paid on RMB deposits. The result has been an increase in official reserve assets to USD610 billion at the end of 2004, up USD324 billion in just two years.

Broadening market access to a wider range of institutions would increase turnover and diversify influences on supply and demand. This would aid the market clearing process and support the formation of a meaningful exchange rate, reducing the role of the PBOC. It would also spread the fixed costs of the trading platform among more members thereby lowering transactions costs. The expansion of CFETS membership to include more foreign banks and small domestic banks as well as the recent official permission to include non-bank financial institutions and non-financial enterprises in the inter-bank market showed a trend in the right direction.

Problems in China’s Foreign Exchange Market (1st font)

(1) Distorted Market Supply and Demand

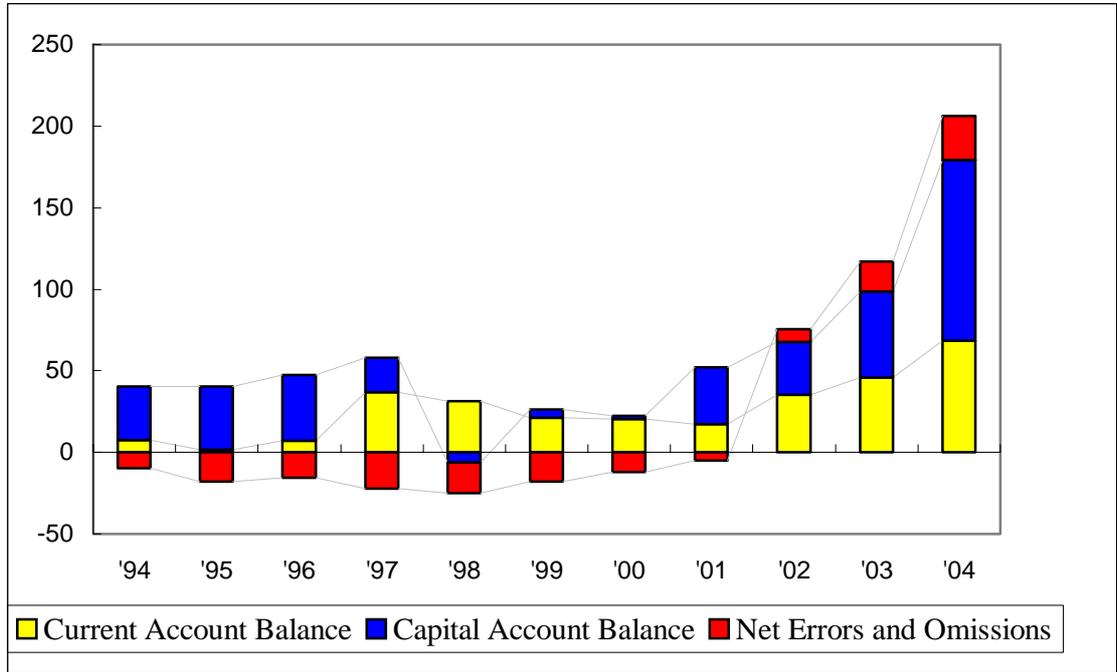
Foreign exchange market institutions and choice of exchange rate regime bear integrally on one another. A more flexible exchange rate regime for China

capable of generating an exchange rate consistent with balance of payments fundamentals cannot be achieved without a foreign exchange market in which supply and demand represent the true preferences of market actors. On the other hand, China's trouble-ridden exchange rate regime is itself to blame for many structural problems in the FX market. Thus, to start by fixing the cracks in market supply and demand would not only help tackle many structural deficiencies in the FX market, but would also be a crucial step toward disentangling the Gordian knot of the RMB exchange rate regime.

Three main problems exist with the market supply and demand for foreign exchange in China. First, supply and demand do not express the will of market participants, but rather follow from their compliance with regulations. Under the FX purchase and sale system, exporters and foreign investors must surrender at least 75 per cent of their FX earnings to the designated FX banks, and these banks in turn must sell their foreign currency receipts on the inter-bank FX market subject to an allowable working position. On the supply side then, neither the ultimate suppliers, i.e., exporters and investors, nor the designated banks that enter the inter-bank market have the freedom to choose their preferred levels of FX holdings. On the demand side, capital controls impede Chinese investment overseas and restrict FX use by businesses and individuals.

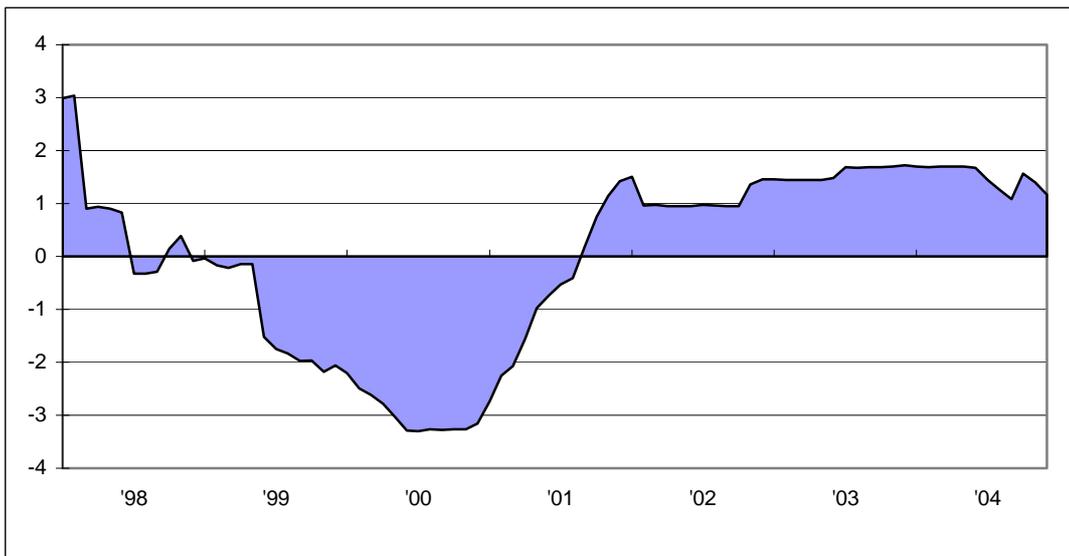
Second, in recent years a pronounced excess supply has emerged on China's FX market. This excess supply follows from mounting surpluses on both current and capital accounts (see Figure 10). The surplus on the current account has risen fairly moderately from a trough in 2001. Meanwhile, the surplus on the capital account has ballooned, fueled by a continued strong inflow of foreign direct investment coupled with explosive growth in short term capital flows. In addition, the balancing item "net errors and omissions" has become a positive and growing force in the excess supply of foreign currency that must be absorbed by the PBOC. The imbalance in China's FX market is aggravated by the compulsory supply and impeded demand that is the product of the regulatory system. With trends of a rising trade surplus, stable FDI inflows, and strengthening short-term capital inflows powered in part by speculation on RMB appreciation and in part by higher interest rates on RMB deposits (see Figure 11), the gap between supply and demand is being driven ever wider.

Figure 10: China's Balance of Payments Components, 1994-2004
(USD billion)



Source: SAFE.

Figure 11: Gap between RMB Bank Deposit Rate over US Federal Funds Rate, 1998-2004
(percentage points)



Source: Federal Reserve Bank of St. Louis, IFS.

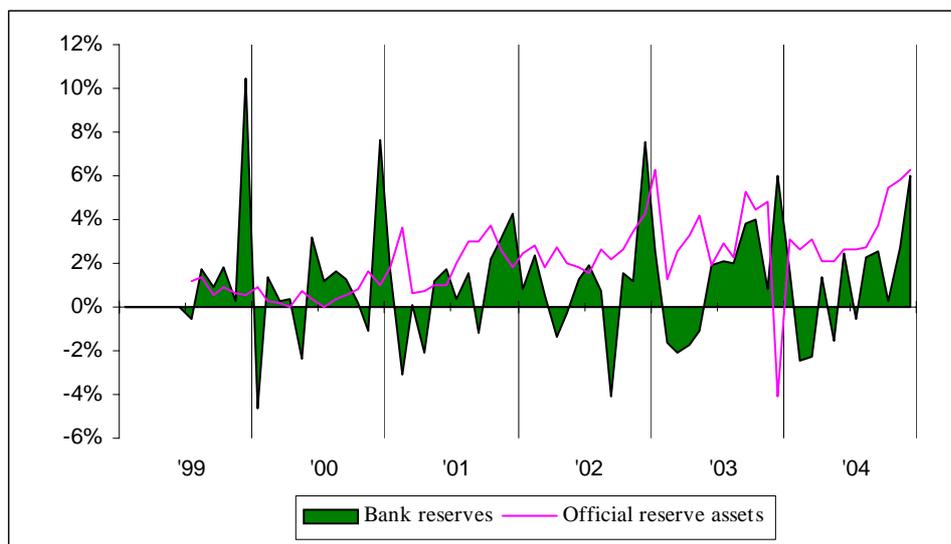
Third, the supply and demand for FX are not fully reflected in the inter-bank market on the CFETS platform. This is because the large Chinese banks transfer a part of their position-squaring operations to Hong Kong or to the black market. Therefore, the excess supply of foreign exchange on the inter-bank market is not reflective of overall market conditions.

All in all, the distorted market supply and demand compromises the market's ability to yield a meaningful value for the exchange rate.

(2) Passive Intervention of the PBOC

Surging excess supply in the FX market has put pressure on the RMB to appreciate. In order to maintain the pegged RMB/USD rate, the PBOC has had to intervene by purchasing large quantities of US dollars and has then sterilized these purchases through the issuance of central bank bills to control the money supply. PBOC was forced to play the super market-maker role in the FX market. So far, the PBOC has been quite successful in keeping a tight rein on money supply growth through its sterilisation operations and in draining liquidity from the banking system (see Figure 12). Yet the PBOC's passive intervention could lead to problems.

Figure 12: Growth in China's Bank Reserves & Official Reserve Assets, 7/1999-2004
(monthly rate of change)



Source: SAFE, IFS.

First, supply and demand imbalances under a compulsory FX settlement system leave no leeway for the PBOC which must absorb the appreciation

pressure. Second, the commitment to maintain stability in the RMB/USD rate results in high US dollar concentration in the FX market. Third, constant intervention in the FX market imposes high monitoring and administrative costs, rendering the PBOC unable to free itself from frequent operations in the FX market. Finally, PBOC sterilisation operations could lead to a vicious cycle pushing interest rates higher only to attract greater speculative inflows that must be purchased by the PBOC and in turn sterilized. As Figure 11 shows, the interest rate on RMB deposits has already been pushed above the US Federal Funds rate. The downside of this kind of passive intervention is that the PBOC loses independence in conducting monetary policy.

One way to go in relaxing the constraints on the PBOC would be to delegate the role of market maker to one of the state-owned commercial banks. Any one of the Big Four could be considered for the role. This step could help provide liquidity in the market and ease the pressure on the PBOC.

China has been aided in maintaining its currency peg in the face of sizeable balance of payments surpluses by its use of capital controls. These controls have helped protect against the kind of large-scale capital movements that forced many Asian countries off their pegs during the Asian financial crisis. With the gradual easing of capital controls in China, not only does the currency face greater danger of “one way bet” speculative attacks, but independent monetary policy becomes more difficult to pursue.²⁹ In the past few years, expansionary fiscal policy has been the preferred approach to averting economic slowdown, but with the Chinese economy’s continued robust growth cycle and a looming threat of inflation, monetary policy could be vital to achieving a soft landing.

Conclusion

To sum up, from the market activities from 1994 to 2004, we can conclude that China’s FX market has the following structural features:

1. low turnover;
2. heavy concentration in spot trading, with shrinking trade in retail market forwards and trivial volume of inter-bank forwards and swap transactions;
3. US dollar dominance, with the Hong dollar, yen, euro and other foreign currencies accounting for minuscule market shares;

²⁹ The “impossible trinity” holds that with free capital mobility, a fixed exchange rate and independent monetary policy cannot be realised simultaneously.

4. a membership-based exchange trading platform evolving towards a mixed trading mode including some features from dealer market, with banks as prevailing type of participants;
5. a high degree of market concentration on both the sellers' side by the Bank of China and the buyers' side by the PBOC;
6. simple function as the place for designated FX banks to net out open positions with no capacity to serve investment or risk-hedging needs of FX users.

The recent policy initiatives especially those of August 2005 addressed some of the structural problems in the FX market and will be expected to fasten the development of the inter-bank market in the long term, yet the current structural features won't be significantly changed in the near future. The two institutional factors that most seriously constrain development of China's FX market are the compulsory FX settlement system and the rigid exchange rate regime. The dilemma for moving forward is that these institutional constraints and the structures in the FX market are inter-related and liberalizing on one front is difficult as long as the status quo maintains on the other. Specifically, the rigidity in exchange rate imposes limits on the growth and diversification of the FX market. But at the same time, allowing more flexibility in the exchange rate requires a broader, more diversified, competitive and efficient market platform on which the forces of supply and demand can determine the RMB value of foreign currency. A profound change in one institutional pillar or the other is required to break loose from the status quo.

In our view, development of the FX market provides the needed foundation for any move toward greater exchange rate flexibility. Key elements of FX market development must include: a) supply and demand deriving from the economic choices of market actors; b) the trading platform functioning in an efficient market-oriented way; and c) convertibility of the RMB on the capital account being realised.

Reference

1. Bank for International Settlements (BIS), Triennial Central Bank Survey of FX and derivatives market activity in 2004 <www.bis.org>
2. Chen Haiwei, "Market concentration of China's foreign exchange market", *Cai Jing*

Yan Jiu (The Study of Finance and Economics), Vol. 27, issue 8, 2001

3. CFETS and Fudan University, “The Proposal of Developing China’s Inter-bank Foreign Exchange Market”, Inside Working Report, Dec. 2003
4. Diao Feng, “An empirical analysis of central bank’s intervention target in China’s foreign exchange market”, *Nan Kai Jing Ji Yan Jiu (Nankai Economic Studies)*, issue 6, 2001
5. Guan Tao, Wang Xin & Lin Yanhong, “RMB convertibility and the developing strategy of China’s foreign exchange market”, *Zhong Guo Huo Bi Shi Chang (China Money)*, issue 4, 2004
6. Guobo Huang and Clement Yuk-Pang Wong, “Unification of China's Foreign Exchange Rates”, *Contemporary Economic Policy*, 1996, vol. 14, issue 4, pages 42-57
7. Henry Ho Wang, “New Trends and Characteristics in Global Forex Market Development: An Electronic Broker’s Perspective”, (EBS, 2003)
8. Herve Ferhani and Jorge Ivan Canales-Kriljenko, “Foreign Exchange Market Development and Currency Convertibility: Potential and Risks”(IMF working paper Nov. 2003)
9. James J. McNulty, “New Trends and Characteristics of the Global Foreign Exchange Market”, (CME, 2003)
10. James H. Lau, “Forex Market Development and Financial Stability”, HK Monetary

Authority 2003

11. Kate Phylaktis, Eric Girardin , “Foreign exchange markets in transition economies: China”, *Journal of Development Economics*, Volume 64, Issue 1 , February 2001, Pages 215-235
12. Li Yu, “The current development and reform suggestions for China’s foreign exchange market”, *Guo Ji Jin Rong Yan Jiu (International Finance Studies)*, Issue 11, 2002
13. Luo Kelong, “The rise of electronic trading and the reform in foreign exchange trading mode”, *Zhong Guo Huo Bi Shi Chang (China Money)*, April 2004
14. M. Lu and Z. Zhang, “Parallel Exchange Market as a Transition Mechanism for Foreign Exchange Reform: China's Experiment”, Working Papers from University of Southampton - Department of Economics
15. Ma Guonan, “China’s Foreign Exchange Market: An International Perspective”, (BIS Nov. 2003);
16. Ma Guonan, Corrinni Ho and Robert N. Mccauley, “The Market for Non-deliverable Forwards in Asian Currencies”, BIS Quarterly Review, June 2004.
17. Masaru Yoshitomi and Sayuri Shirai, “Designing a Financial Market Structure in Post-Crisis Asia”, ADB Institute Tokyo 2001
18. Michael Spencer, “Options for Developing the Chinese Foreign Exchange Market”, (DB Asia 2003)

19. Mikio Kajikawa, "Japanese Experiences from Foreign Exchange Liberation", MOF Japan, 2003
20. Sayuri Shirai, "Searching for New Regulatory Frameworks for the Intermediate Financial Market Structure in Post-Crisis Asia", ADB Institute Tokyo 2001
21. Shu Youdong, "The appreciation pressure on RMB and the Releasing Measures", *Zhong Guo Huo Bi Shi Chang (China Money)*, November 2001
22. T. C. Mills and G. E. Wood, "Capital flows and the excess burden of the exchange rate regime", In V. N. Balasubramanyam and David Sapsford edited, *The Economics of International Investment*, Edward Elgar 1994
23. Wang Xin, "Problems and countermeasures in China's foreign exchange market", *China & World Economy*, Vol.12, issue 1, 2004, page 62-74
24. Wu Ge, Jiang Boke, Tang Jianwei, "The institutional characteristic of foreign exchange market from a micro-structure perspective", *Xin Jin Rong (New Finance)*, Issue 8, 2002
25. Yang Shengang, Lu Xiangqian, "Noise trading, H exponent and the efficiency of foreign exchange market in China", *Hu Nan Da Xue Xue Bao (Journal of Hunan University)*, Vol.17, issue 2, March 2003
26. Yin, Jason Z. & Stoeber, William A., "Testing the causes of discontinuities in the black market exchange rate in China," *World Development, Elsevier*, vol. 22(9), pages 1413-1424, 9.

27. Zhang Jikang, "Gradual Developing Chinese Foreign Exchange Market under Stable and Controlable", *Zhong Guo Huo Bi Shi Chang (China Money)*, Feb. 2004
28. Zhang Weiyong, *Game theory and Information Economics*, Shanghai People's Publishing House 1996
29. Zhang Zhichao, Dphil Oxon, "Harmonious Development of Foreign Exchange Market and Liberalisation of Capital Controls in China", Seminar on developing China's foreign exchange market
30. Zhu Jie, "China's foreign exchange market pressure and the central bank intervention: An empirical analysis", *Shi Jie Jing Ji (World Economy)*, issue 6, 2003
31. State Administration of Foreign Exchange website <<http://www.safe.gov.cn/>>, statistics section
32. PBOC quarterly statistical bulletin and PBOC website <<http://www.pbc.gov.cn/>>, statistics section
33. Federal Reserve Bank of St.Louis website <<http://research.stlouisfed.org/>>, data section FRED® II
34. International Financial Statistics Online website <<http://ifs.apdi.net/imf/logon.aspx>>
35. China Money website (website for China Foreign Exchange Trade System) <www.chinamoney.com.cn>