ECON4033 Money and Finance in China

Week 10: China's Exchange Rate System[1]

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[1] These lecture notes are largely based on the materials prepared by Prof. Siu Kee Wong for the same topic.

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I. An Introduction to Exchange Rate Regimes

- Fixed Exchange Rate System
  - The exchange rate of the domestic currency is pegged to a foreign currency or a precious metal (gold/silver), with a very narrow fluctuation of trading value.
  - The central bank must be ready to intervene in the foreign exchange market by buying or selling reserves or by increasing or reducing the interest rate (to affect the direction of capital flows).
- Floating (Flexible) Exchange Rate System
  - The central bank does not intervene in the foreign exchange market and allows the currency to freely appreciate or depreciate in response to changes in market demand and supply.

- Other possible regimes (IMF classifications)
  - Pegged exchange rates within horizontal bands – the value of the currency is maintained within certain margins of fluctuation around a fixed central rate
  - Crawling peg – the exchange rate is forced to follow a smooth, predetermined path and is adjusted periodically in small amounts in response to changes in selective quantitative indicators, such as inflation rate, exchange rate vis-a-vis major trading partners
  - Crawling bands – the currency is maintained within certain (wider) fluctuation margins and the central rate or margins are adjusted periodically
  - Managed floating system – the monetary authority attempts to influence the exchange rate without having a specific exchange rate path or target.

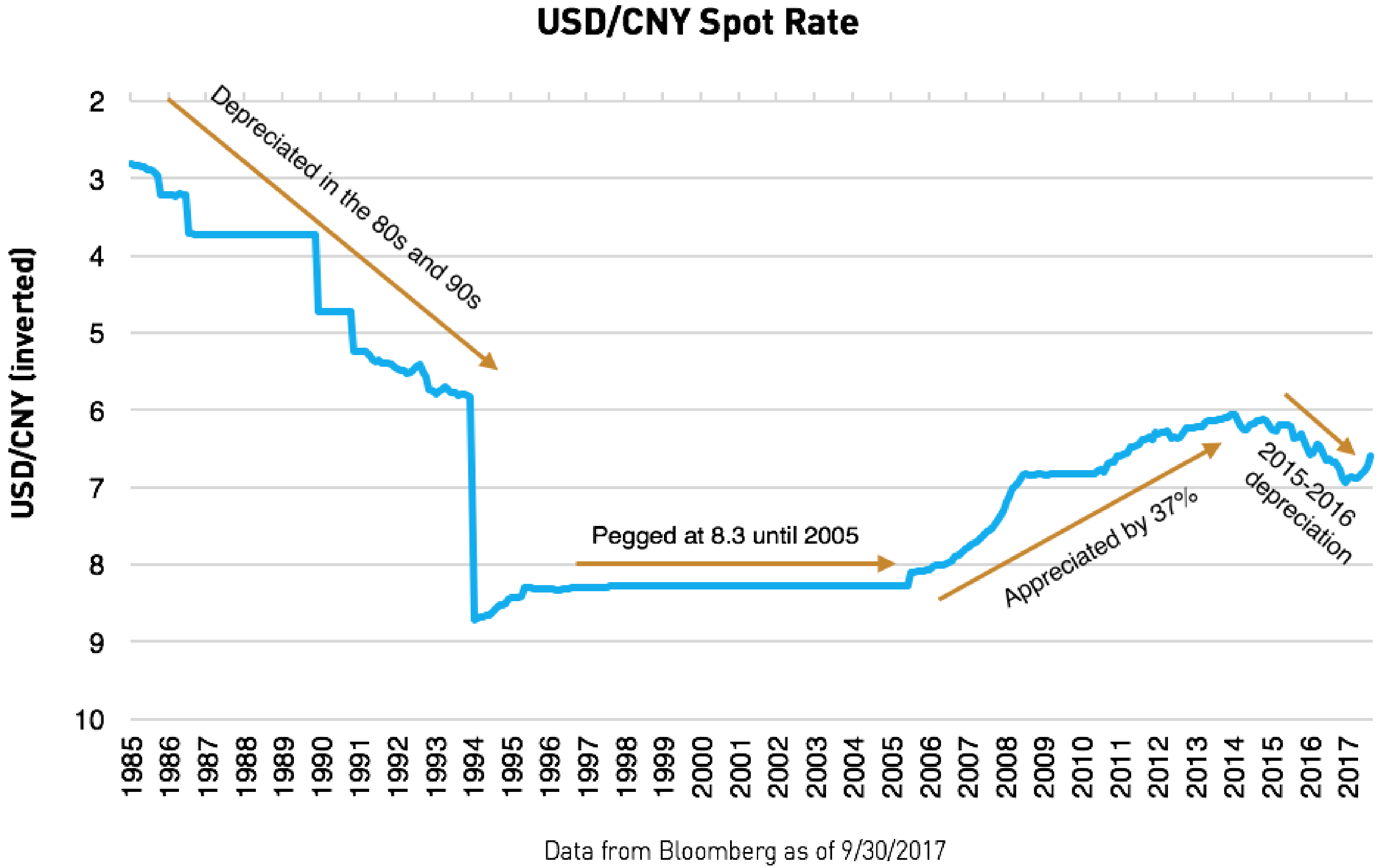
Table 1. Classification of Exchange Rate Arrangements

Type	Categories				
Hard pegs	Exchange arrangement with no separate legal tender	Currency board arrangement			
Soft pegs	Conventional pegged arrangement	Pegged exchange rate within horizontal bands	Stabilized arrangement	Crawling peg	Crawl-like arrangement
Floating regimes (market-determined rates)	Floating	Free floating			
Residual	Other managed arrangement				

Note: This methodology became effective February 2, 2009, and reflects an attempt to provide greater consistency and objectivity of exchange rate classifications across countries and to improve the transparency of the IMF's bilateral and multilateral surveillance in this area.

Source: IMF (2019) - Annual Report on Exchange Arrangements and Exchange Restrictions 2018.

Figure: Dynamics of USD/CNY Spot Rate



II. The Evolution of Exchange Rate Policy in China

A. 1979-1993 Exchange Rate Policy

- The double-track exchange rate system (匯率雙軌制)
  - An overvalued and gradually depreciating official exchange rate of Renminbi (RMB or yuan).
  - Another channel for transaction of foreign exchange at a lower RMB rate (closer to the market equilibrium).
    - The swap rate in foreign exchange (FOREX) swap centres /markets (外匯調劑中心), established in mid 1980s.
  - Essentially, this is a kind of price discrimination:
    - Goods with low price elasticity are exported at the official rate (low RMB to USD ratio). Goods with high price elasticity are exported at the lower swap rate (high RMB to USD ratio).
  - Over time, the government allowed the second track to expand.
    - As an incentive to export, more and more enterprises were allowed to trade FOREX earnings by using exchange rates equal to the swap rates.

- A currency swap, also known as a cross-currency swap, is an off-balance sheet transaction in which two parties exchange principal and interest in different currencies.
- In currency swap, on the trade date, the counter parties exchange notional amounts in the two currencies. For example, one party receives $10 million British pounds (GBP), while the other receives $14 million U.S. dollars (USD). This implies a GBP/USD exchange rate of 1.4. At the end of the agreement, they will swap again using the same exchange rate, closing out the deal.

B. Policy Changes after 1994

Reforms in 1994:

- The Chinese government unified the exchange rates by raising the official rate, (RMB 5.8/USD at the time), to the exchange rate level of in the swap market, (RMB 8.5/USD). It was a de facto devaluation of RMB.
- In April 1994, China started to establish a national market of forex based on inter-bank transactions. The foreign exchange swap markets were abolished in 1999.

C. Managed Floating

- China adopted the managed floating exchange rate system, under which the government often intervene in the forex market so that the exchange rate will not deviate too much from a level deemed desirable.
- China achieved current account convertibility (Article VIII of the IMF Charter) on 1 December 1996. China no longer controls the transactions of RMB that are related to current account items (including goods and services trade and remittance of profits by foreign invested firms, etc.), i.e., transaction of RMB for other purposes are permitted for most of the other times.

D. Fixed Exchange Rate

- During the Asian financial crisis of 1997-98, China pledged not to devaluate its exchange rate. This move had been regarded as conducive to the stabilization of the currencies of other crisis-inflicted countries.
- The China further tightened the control over the floating band of RMB, which has been so narrow that the International Monetary Fund (IMF) has classified as a fixed exchange rate system.
- Instead of devaluating RMB, China raised the rebate rate of VAT for exports to restore the competitiveness of exports in 1998.
- Under the international pressure to reevaluate the RMB in 2003, China reduced the rebate rate of VAT for exports during 2004 – 2005. In the subsequent years, the China continued to use the rebate rate to regulate exports.
- Benefits of fixed exchange rate regime:

  a) lower transaction costs

  b) increased trade and investment

  c) migration with the base or centre country, etc.

Further Discussion of Policy Trilemma:

- Holding everything else constant, when a government increases the money supply (i.e., adopt an expansionary monetary policy) under the fixed exchange rate regime, it puts depreciation pressure on the home currency (as now there are more home currency than foreign currency in the market). Anticipating this, investors in the exchange market would choose to sell home currency in exchange for foreign currency. To fixed exchange rate, home government now would need to reduce the money supply back to the original level so as to maintain the nominal exchange rate unchanged. Consequently, under fixed exchange rate regime, holding everything else constant, a government loses its monetary autonomy and hence cannot arbitrarily increase the money supply, which help in maintaining a low inflation.

- When facing capital inflows, there are more foreign currency than the domestic currency in the foreign exchange market; RMB hence is facing appreciation pressure. The government could sell home currency (RMB) and buy back the extra foreign currency in the market so as to restore the exchange rate to the original level. To prevent generated extra amount of RMB spill over to the domestic money market, the government could at the same time implement open market operations to sell government bonds and collect back extra home currency so as to simultaneously restore money supply back to the original level.

- During a large amount of capital outflows, investors are selling domestic currency (RMB) in exchange for foreign currency, leading to huge depreciation pressure on RMB. To maintain the exchange rate unchanged, the government could sell foreign reserve in exchange for domestic currency (RMB) in the market. In the case of running out of foreign reserve, the government would have to abandon fixed exchange regime and let home currency keep depreciating which leads to exchange rate crisis. Consequently, a large stock of foreign reserve would help China to maintain the fixed exchange rate regime when facing capital flights.

E. Crawling Arrangement

- In July 2005, China adopted a new exchange rate system:
  1) it was a managed floating system;
  2) the determination of the exchange rate was based on the market supply and demand;
  3) it was managed with reference to the exchange rates of a basket of currencies.
- In 2008 the financial tsunami broke out. To alleviate its negative impacts, RMB was pegged to the US dollar again and the rebate rates of VAT for exports were increased.
- In June 2010, China restarted the reform of the exchange rate regime and went back to the 2005 system. Between 2010 and 2014, RMB has appreciated by about 10% against USD.

F. Stabilized Arrangement

- Effective March 17, 2014, the floating band of the RMB exchange rate against USD was widened from 1% to 2%. That is, on each business day, the trading prices of the RMB against the U.S. dollar may fluctuate within a band of ±2% around the central parity released that day by the China Foreign Exchange Trade System (中国外汇交易中心).

- China's Exchange rate regime was classified as stabilized arrangement in 2017 (but was reclassified as crawl arrangement again in 2018) by the IMF. It is believed that China maintain a de facto exchange rate anchor to a basket of currencies.

G. Concluding Remarks

a) It can be shown that exchange rate dynamics depends on the following two differentials.

$$\underbrace{\frac{\Delta e_{H/F}}{e_{H/F}}}_{\substack{\text{Rate of depreciation of} \\ \text{the nominal exchange rate}}} = \underbrace{(\mu_H - \mu_F)}_{\substack{\text{Differential in nominal} \\ \text{money growth rates} \\ \text{between Home } (H) \text{ and} \\ \text{Foreign } (F) \text{ countries}}} - \underbrace{(g_H - g_F)}_{\substack{\text{Differential in real} \\ \text{output growth rates} \\ \text{between Home } (H) \text{ and} \\ \text{Foreign } (F) \text{ countries}}}$$

Given that China's real output growth rate is higher than the one for the U.S., if not due to the fixed exchange rate regime, RMB should have appreciated against the U.S. dollar. Current exchange rate regime hence does not reflect the fundamentals of China economy.

RMB has become more flexible over time but remain to be carefully managed. Two-way adjustment of the exchange rate is now allowed. The exchange rate is expected to be consistent with the fundamentals (economic growth) in the long run.

b) Given the impossible trinity, a country cannot adopt a fixed exchange rate and then maintain monetary autonomy (i.e., be able to control inflation) at the same time. Consequently, a country could only be able to stabilized the exchange rate or aggregate price level, but not both. China chose to stabilize the exchange rate to maintain export competitiveness in the past, i.e., China used the exchanged rate as the nominal anchor in the past to implement monetary policy. As shown by the purchasing power parity (PPP) below, this leads to imported inflation as one of the drawbacks:

$$P = e_{H/F} P^*$$

where P is the domestic price index and P^* is the foreign price index. Nominal exchange rate $e_{H/F}$ is denominated as the price of foreign currency in terms of domestic currency (i.e., how much domestic currency for 1 unit of foreign currency). If $e_{H/F}$ is fixed, an increase in P^* will cause P to increase proportionally.

As more exchange rate flexibility is allowed, an alternative monetary policy framework is needed.

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