



Evolution of Exchange Rate Management in China

MONETARY AND CAPITAL MARKETS DEPARTMENT

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- *China has adopted a more flexible approach in managing its exchange rate, from a de jure dollar peg in 2005 to a managed float against the dollar and currently, against a basket of currencies.*
- *Managing RMB stability in recent years has involved direct intervention in the spot and forward markets, as well as indirect measures such as changing the supply of offshore CNH liquidity to affect speculative CNH positions. More recently, authorities have tended to use the countercyclical adjustment factor to adjust market expectations about the currency.*

The RMB¹ has gained renewed market attention in recent weeks amid escalating trade tensions between the US and China. Increased US tariffs on Chinese exports, coupled with threats of further increases that could dramatically raise the price of Chinese exports, have weighed on the RMB. Since May 6, when US-China trade tensions re-ignited unexpectedly, the offshore CNH has depreciated by 2.1% and the onshore CNY weakened by 1.9%, underperforming regional peers. In recent days, while trade tensions continue to simmer, RMB volatility and depreciation pressure have receded somewhat. Market observers note that although there were few signs of direct official intervention, the authorities have used indirect measures to help contain market volatility.

The RMB is managed more actively than other major currencies, in part because of its role in China's monetary policy. The law governing the People's Bank of China stipulates that one of the mandates of China's monetary policy is to maintain currency stability. Maintaining currency stability has two pillars: price stability internally and a stable RMB exchange rate at an "adaptive and equilibrium level" externally, both of which facilitate economic growth.²

The note is produced by Sally Chen (MCMGA) and Kevin Chow (HK Resident Representative Office). The views and estimates are those of authors and do not necessarily represent the views of the IMF, its Board or Management.

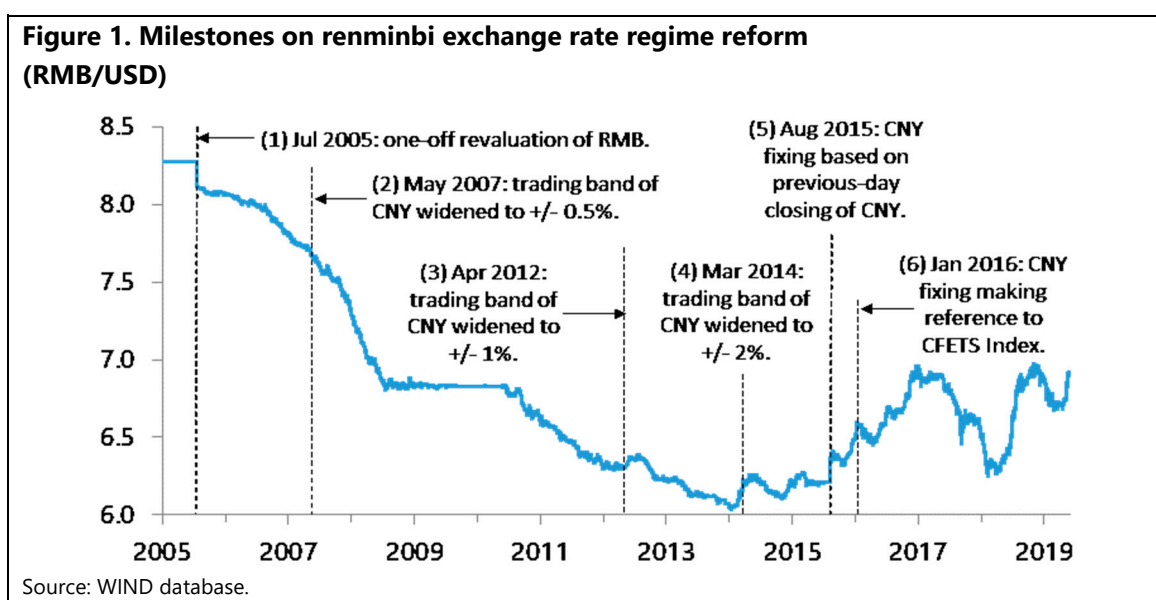
¹ RMB is the abbreviation for renminbi and is used to refer to the Chinese currency more generically. Due to existing restrictions on trading activities onshore, including eligibility of foreign participants and capital controls in place, there are two markets – and two rates – for the RMB. The currency is known as CNY when it is traded onshore, and CNH when it is traded in off-shore markets such as Hong Kong, Singapore and London.

² Yi Gang, "China's monetary policy framework – supporting the real economy and striking a balance between internal and external equilibrium" (speech, Chinese Economist 50 Forum, December 13, 2018).

RMB regime evolution: From dollar peg to managed float against the dollar, and more recently against a basket of currencies

As China's economy has evolved, so has RMB exchange rate policy. Broadly speaking, China's FX regime can be demarcated by a series of measures to gradually liberalize RMB trading:³

- **A one-off revaluation of the RMB in July 2005 followed by a gradual widening of the daily trading band.** The authorities revalued the RMB at a stronger level against the US dollar from 8.2765 to 8.1100 on July 21, 2005. They also relaxed the RMB's fixing – a daily reference rate from which the RMB is to be priced – relative to the dollar, widening its trading band, ending the RMB's dollar peg on a *de jure* basis.⁴ Since then, the People's Bank of China (PBC) widened the RMB's daily trading band further, from $\pm 0.3\%$ to $\pm 0.5\%$ in May 2007, $\pm 1\%$ in April 2012 and $\pm 2\%$ in March 2014, making the RMB regime a managed float (Figure 1).



- **Adjustments to the RMB's fixing mechanism:**
 - In August 2015, the PBC adjusted the formulation of the RMB fixing; clarifications to this change came in January 2016. Previously, the RMB fixing was determined by quotes submitted by designated market makers; this was to reflect supply and demand conditions as well as to some

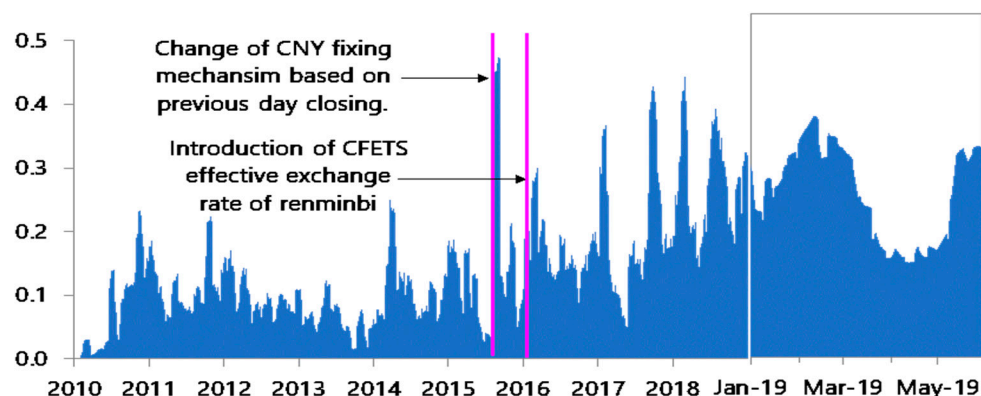
³ For more information, please see Das, Sonali, 2019, "China's Evolving Exchange Rate Regime," *IMF Working Paper*, WP/19/50.

⁴ The official classification of China's exchange rate regime, from the IMF's Annual Report on Exchange Arrangements and Exchange Restrictions, has changed several times since 2005. The classification is a *de facto* classification based on actual exchange rate movements. Although the flexibility of the RMB exchange rate increased somewhat from end-July 2005, its movement remained (well) within a ± 2 percent band so the official classification remained a conventional fixed peg arrangement until August 1, 2006. Please see Das (2019).

extent discretion from the PBC. The new fixing, while still determined by quotes submitted by the designated market-making banks, also references the previous day's CNY-USD closing, as well as changes in the RMB against a basket of currencies in the China Foreign Exchange Trade System (CFETS) index.

- The CFETS index was introduced by the authorities in December 2015 after the RMB's inclusion in the SDR in November; it is the official effective exchange rate index of RMB, or otherwise known as the China Foreign Exchange Trade System (CFETS) index.
- The number of currencies in the CFETS basket expanded from 13 initially to 24 in January 2017 – generally tracking the BIS effective RMB exchange rate. Daily volatility increased as a result, though it is still well within the +/- 2% trading band (Figure 2).

**Figure 2. Standard deviation of CNY daily return
(% 20-day rolling window)**



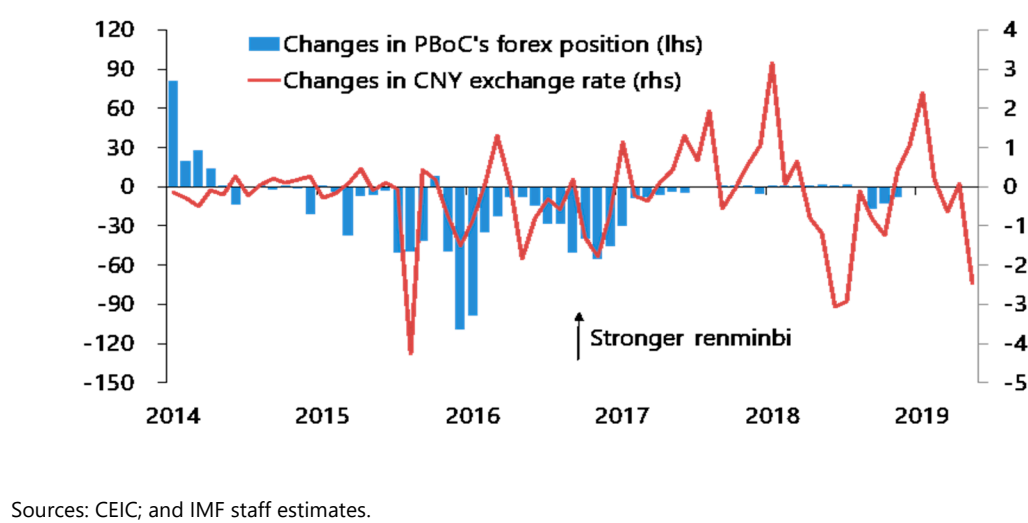
Sources: Bloomberg Finance L.P.; and IMF staff estimates.

FX management: Direct interventions in cash and forward markets

The PBC has reportedly relied on different measures to ensure RMB stability and that the currency trades close to its “adaptive and equilibrium” level. Official data on the PBC’s market transactions are limited – though the PBC does publish data on its derivatives book – leaving market participants to infer interventions based on trading volume and pricing information in the cash and forward markets.

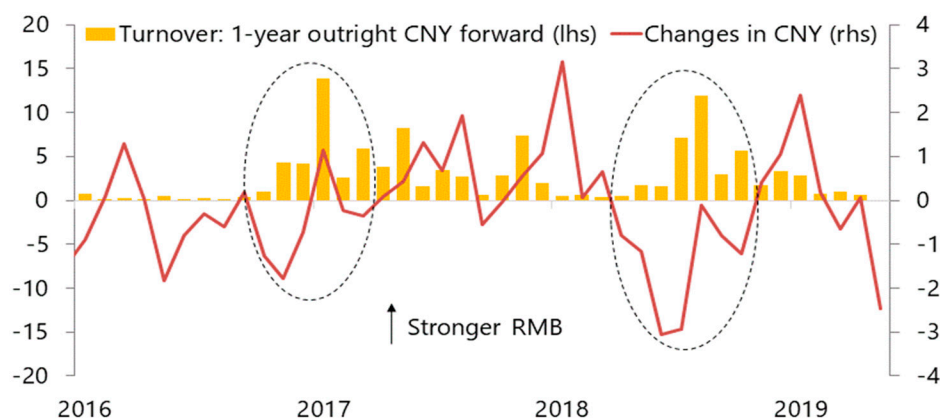
- **RMB purchases and USD sales in the spot market.** One gauge of central bank intervention used by market analysts is the change in the PBC’s foreign exchange position. In 2015, the PBC’s foreign exchange position shrank by US\$0.35 trillion and in 2016 it declined by US\$0.44 trillion. Both of these events were interpreted as the PBC buying RMB against the dollar in the cash market (Figure 3). These reported interventions were meant to dampen the pace of RMB depreciation—the RMB depreciated by 4.5% against USD in 2015 and 6.6% in 2016.

Figure 3. Changes in CNY and PBoC's foreign exchange position
(US\$ billion, left scale; % month-on-month change, right scale)



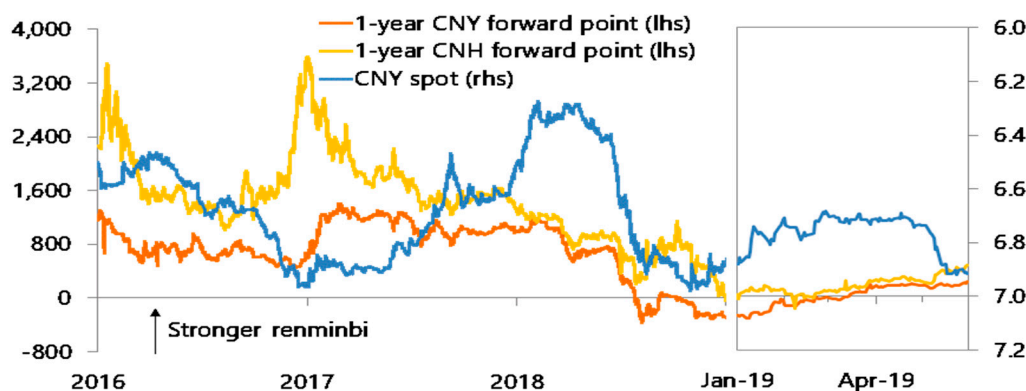
- **RMB purchases and USD sales in the forward market.** Forwards are far less costly than direct interventions in the cash market as they do not require upfront cash payments. Forward contracts specify purchases/sales at a fixed price for delivery on an agreed-upon date in the future and can be cancelled before contract maturity, with penalties and profits/losses based on the prevailing market rate. In the PBC's case, long forward positions supporting the RMB can be unwound after the RMB had stabilized, with limited impact on foreign reserves. In the absence of confirmation from the PBC, market observers turned to market turnover metrics as one possible gauge of the PBC's activity in the forward market.
 - When RMB depreciation intensified in early 2017 and again in August 2018, turnovers in the 1-year RMB forward market surged (Figure 4). During these periods, forward purchases supporting the RMB lowered the forward premium in the onshore market, forcing out investors with short RMB positions (in order for short RMB forwards to be profitable, forward points for the RMB would have to increase, implying greater discount to the RMB in the future). In August 2018, the PBC also raised the reserve requirement on FX forwards from 0% to 20%, effectively raising the costs of shorting the RMB, and thus indirectly helping to dampen depreciation pressure.
 - Reflecting the sizable RMB forward purchases onshore and the corresponding decline in CNY forward premiums, the spread between onshore and offshore RMB forward points widened, with onshore CNY forwards implying a shallower depreciation than offshore rates over these periods. Following these sizable declines in forward premiums, the CNY strengthened (Figure 5).

Figure 4. CNY and turnover in 1-year outright forward
(US\$ billion, left scale; % month-on-month change, right scale)



Sources: WIND database; CEIC; and IMF staff estimates.

Figure 5. Onshore versus offshore renminbi forward points
(Pips, left scale; RMB/USD, right scale)



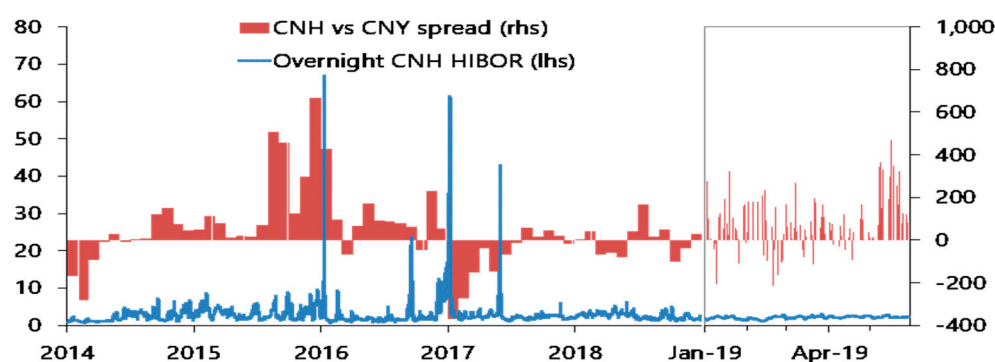
Source: Bloomberg Finance L.P.

FX management: Indirect market interventions include offshore CNH liquidity management and signaling guidance through the countercyclical adjustment factor

- **Supporting the offshore CNH by squeezing interbank liquidity and raising the level of CNH HIBOR.** The onshore and offshore RMB markets are two related but fundamentally different markets. The offshore CNH exchange rate is used more by short-term, speculative accounts to express their views on the currency.

- One way in which the CNH was supported was by reducing liquidity to the offshore market through curtailed lending and by raising required reserve requirements for offshore deposits; these measures limited banks' access to CNH liquidity. As most of the short RMB positions in the offshore market were funded by leverage and needed to be rolled over on a regular basis, raising funding costs could effectively force out existing positions and prevent investors from taking on new short positions against the RMB.
- In early 2016 and 2017, the offshore overnight CNH HIBOR interest rate rose from around 2% to 3% on average to close to 70%. In the absence of obvious drivers, market observers inferred official intervention. As short speculative positions closed, the CNH stabilized and helped adjust market expectations regarding the onshore CNY, narrowing the spread between the onshore and offshore RMBs from 400-600 pips back to the historical average of around 100 pips (Figure 6).

Figure 6. CNY HIBOR and CNH spread over CNY
(% left scale, pips, right scale)



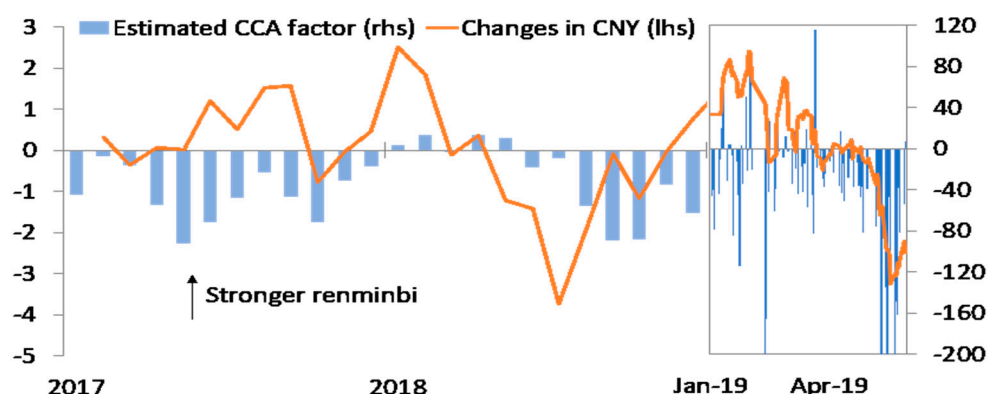
Sources: WIND database; CEIC; and IMF staff estimates.

- **Use of the countercyclical adjustment (CCA) factor to adjust RMB fixing and market expectations.**
In May 2017, the PBC introduced a counter-cyclical adjustment (CCA) factor to the daily fixings to help signal the authorities' guidance for the RMB rate. The CCA – determined by market makers – was introduced to dampen “one sided” or “overshooting” market moves driven by the previous day's CNY closing that were not seen to be justified by economic fundamentals.⁵ The exact formula for the CCA factor, however, was not disclosed. The estimated CCA factor used by many market observers – the difference between the observed CNY fixing and estimated CNY fixing based on changes in the CNY closing during the previous day and in the CFETS index – tends to turn negative when there is persistent depreciation pressure on the RMB, suggesting the use of CCA factor to nudge the RMB towards a

⁵ The PBC's Quarter 2 Monetary Policy Report (2017, pp 23-26) offered rationale behind the implementation of CCA.

stronger level (i.e. push the CNY/USD fixing lower). In recent weeks, amid sizable RMB depreciation, both the size of the estimated CCA factor as well as the frequency of its use increased (Figure 7).

Figure 7. CNY and estimated counter-cyclical adjustment factor
(% month-on-month change, left scale; pips, right scale)



Sources: Bloomberg Finance L.P. and IMF staff estimates.

FX management changes over the past decade have reduced direct market interventions from the authorities. China's exchange rate regime has shifted from a dollar peg to a managed float against the US dollar, and more recently, to a managed float against a basket of currencies. Judging by market indicators and anecdotal reports, direct market intervention has declined dramatically: the PBC's foreign exchange positions and market turnover have both stabilized, while rate differentials – both spot rates and forward points between the onshore and offshore RMB – have narrowed. Instead, CCA factors have been used more frequently to adjust market expectations, including in recent weeks to slow the pace of RMB depreciation as it approaches the potentially psychologically-important level of CNH 7/dollar for investors.