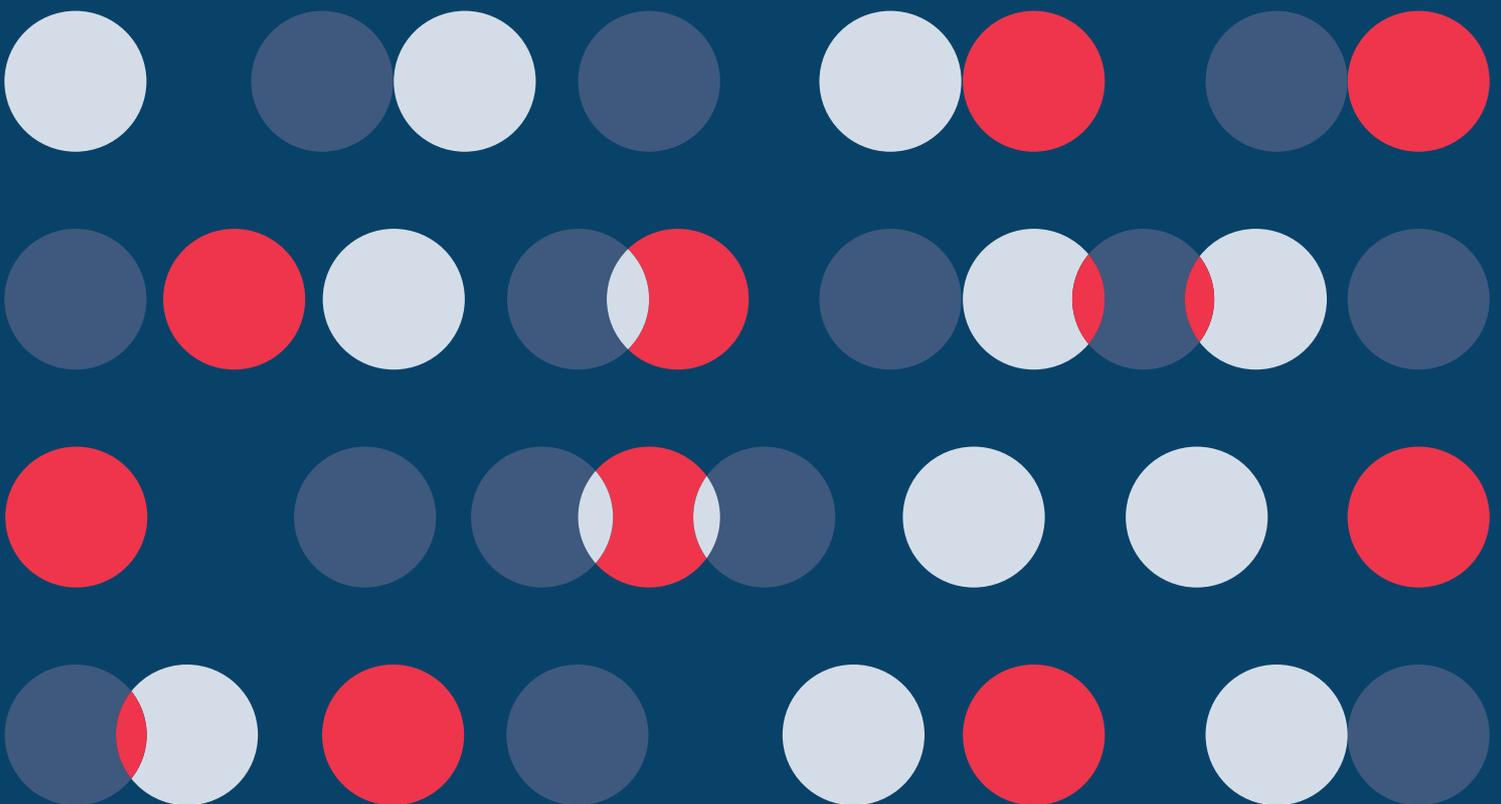


January 2017

RESEARCH REPORT

THE LIQUIDITY PROVISION MECHANISM FOR
OFFSHORE RMB MARKET — CURRENT STATUS,
IMPACT AND POSSIBLE IMPROVEMENTS



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SUMMARY

- **The liquidity provision mechanism for offshore RMB market can be basically stratified into two layers:** Long-term liquidity comes mainly from the onshore market through real economic activities (via cross-border trade settlement); while short-term liquidity is mainly provided under the scheme of currency swap agreement among monetary authorities and market financing.
- **Current status and structural issues of the offshore RMB liquidity provision mechanism:** The provision of long-term liquidity for the offshore RMB market largely relies on the channel of cross-border trade settlement which is easily susceptible to the fluctuation of the RMB exchange rate. The short-term liquidity provision lags behind the rapid market development in terms of efficiency, scale and operation time. Also, there is still room for improvement in reducing the imbalance of offshore RMB capital allocation.
- Sharp volatility in the short-term interest rate of offshore RMB market would most likely pressurize on the steady expansion of offshore bond market, increase the hedging costs of offshore entities holding RMB assets and may even trigger short-term speculative cross-border capital flows.
- Given the inclusion of RMB into the Special Drawing Rights (SDR) basket of the International Monetary Fund (IMF), the demand for RMB assets continues to grow. The sufficient offshore RMB liquidity is essential to enhance market depth and underpin the growth of cross-border trade, offshore RMB investment and financing, foreign exchange transactions and other economic activities. Continuous widening of two-way cross-border capital flows and the improvement of existing market mechanism will effectively pave the way for RMB as a fully convertible international currency and to be widely used in global investment and foreign reserves.

1. TWO LAYERS OF OFFSHORE RMB LIQUIDITY PROVISION MECHANISM

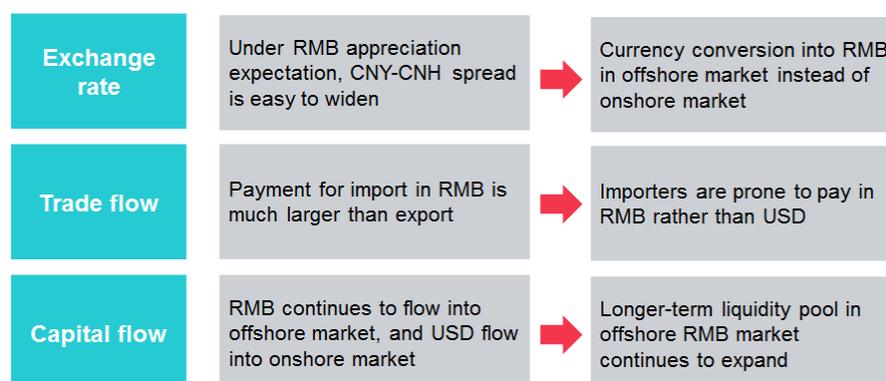
Given the unique development path of offshore RMB market, the liquidity provision for offshore RMB market can be basically classified into long-term and short-term levels.

Long-term liquidity comes mainly from the onshore market through real economic activities (via cross-border trade settlement). Since the launch of cross-border trade settlement in July 2009, the payments settled in RMB from onshore to offshore market have always exceeded the receipts, even the ratio of RMB payment over receipt has been slowly declining from 1:5 in Q1 of 2011 to 1:0.96 at the end of 2015, it was still a net RMB capital outflow. Consequently, cross-border trade settlement has become the main channel to export RMB liquidity to the offshore market. At the end of 2014, the total offshore RMB liquidity pool reached a historical high of RMB1.6 trillion, including RMB1.15 trillion (offshore RMB deposits and certificates of deposit) in Hong Kong, RMB302.2 billion deposits in Taiwan, more than RMB200 billion deposits in Singapore, most of which are channelled through cross-border trade settlement.

Within the trade-settlement process, Mainland importers and exporters facilitated the expansion of the offshore RMB liquidity pool by settling trades in RMB or USD depending on the relative exchange rate of RMB across markets. The arbitrage mechanism is that when the RMB's exchange rate was expected to appreciate, the RMB exchange rate against USD in the Hong Kong offshore market (CNH) will be much appreciated relative to the onshore RMB exchange rate against USD (CNY). The premium of CNH means that RMB is more valuable in the offshore market, offering an opportunity for enterprises to earn extra benefit if settling

imports in RMB. Therefore, the market has the incentive to pay RMB instead of USD for importing, thereby causing an outflow of RMB liquidity from onshore to offshore market¹.

Figure 1. Expansion of offshore RMB liquidity pool under cross-border arbitrage — settle cross-border trade in different locations based on the deviations between CNH and CNY



The short-term RMB liquidity is mainly provided under the scheme of currency swap agreements between monetary authorities and market financing. From the official channels, short-term liquidity provision includes one-day and one-week liquidity arrangements (T+1 settlement in both cases) and overnight liquidity arrangement (T+0 settlement) provided by the Hong Kong Monetary Authority (HKMA). In 2014, the HKMA offered an additional short-term RMB funding up to RMB10 billion per day to welcome the launch of the Shanghai-Hong Kong Stock Connect Programme, and also designated a number of banks active in the CNH market as Primary Liquidity Providers (PLPs), offering a repurchase (repo) line of RMB2 billion to each of the PLPs so as to facilitate more market-making and other business activities in the CNH market².

Table 1. Short-term liquidity provision mechanism via the official channels (as of October 2016)

Term structure	Interest rate	Scale and funding source
One-week liquidity arrangement (T+1 settlement)	By reference to prevailing market interest rates	Funding from currency swap agreements between monetary authorities
One-day liquidity arrangement (T+1 settlement)	By reference to prevailing market interest rates	Funding from currency swap agreements between monetary authorities
Overnight funding (T+0 settlement)	Average of the three most recent Treasury Markets Association (TMA) overnight CNH HIBOR fixings (inclusive of the fixing on the same day of the repo), plus 50 bps, subject to a minimum at 0.50%	Estimated not to exceed RMB10 billion in the inception of this arrangement
Intraday funding (T+0 settlement)	Average of the three most recent TMA overnight CNH HIBOR fixings (inclusive of the fixing on the same day of the repo), subject to a minimum of 0%, and to be charged based on the actual time used during the day on a per-minute basis	Not to exceed RMB10 billion
Primary Liquidity Providers (PLPs)	By reference to prevailing market interest rates	RMB18 billion in total

Source: HKMA

¹ See "A Review of RMB Internationalisation from Exchange Rate Perspective" (《從當前的人民幣匯率波動看人民幣國際化》), Issue I, 2012, International Economic Review (《國際經濟評論》).

² On 27 October 2016, the HKMA announced to expand the scheme from seven PLPs to nine PLPs with the total PLP facility increased from RMB14 billion to RMB18 billion.

In addition, the shortfall of short-term RMB liquidity in the offshore market can also be substituted via foreign exchange (FX) swap market. FX swaps refer to the purchasing of a spot FX contract and simultaneously selling a forward FX contract of the same currency, or selling a spot FX contract and simultaneously purchasing a forward FX contract of the same currency. Currently, the offshore FX swap is available to cover the tenor from intraday, overnight to one-year funding.

Apart from the above, participants in the offshore market can obtain short-term liquidity via the offshore interbank lending market and the repo facilities offered by the offshore clearing bank, which together with the funding from official channels constitute a comprehensive mechanism to provide short-term RMB liquidity to the offshore market.

2. CURRENT STATUS AND STRUCTURAL ISSUES

2.1 The long-term liquidity provision has shrank significantly (mainly relying on cross-border trade settlement) since the 811 exchange rate reform

As mentioned above, cross-border RMB settlement is the main channel to obtain long-term RMB liquidity. However, it also causes that the flow and scale of offshore long-term liquidity is so susceptible to the fluctuations of the RMB exchange rate. Since the 811 exchange-rate reform in 2015³, CNH rate in the offshore market shows more depreciation than CNY rate, leading to a reversal of the arbitrage mechanism and the flowing back of RMB capital to the onshore market. Specifically, when CNH depreciation exceeds that of CNY to a certain basis point, it implies that RMB is valued more onshore, stimulating traders to buy RMB in the offshore market and sell RMB on the onshore market, and then to repatriate RMB capital to the onshore market through cross-border trade channel so as to get the extra benefit from the exchange rate arbitrage. Meanwhile, offshore investors became less confident to hold RMB assets under the RMB depreciation expectation, thereby converting their RMB deposits back into USD or HKD assets. These effects combined led to a drop of RMB deposits in the Hong Kong market from the peak of RMB1,003.5 billion to RMB652.9 billion⁴, a decline of about 23% compared to the end of 2015.

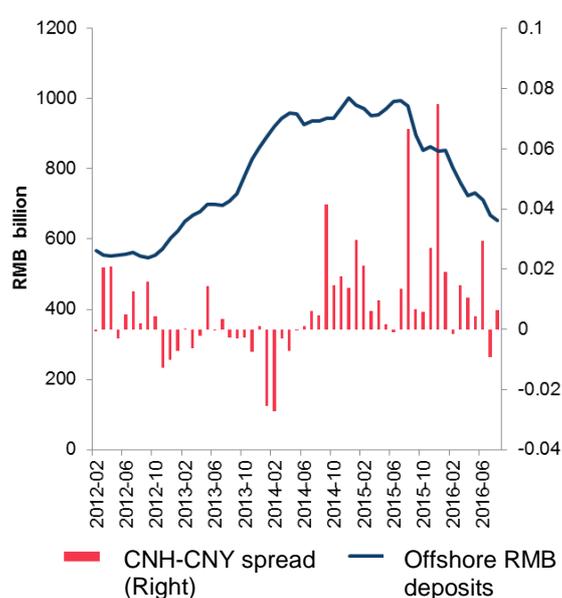
2.2 The current mechanism for short-term liquidity provision lags behind market development in terms of efficiency, scale and operation time

First, the intra-day RMB liquidity is quite limited in the offshore market. By contrast, offshore transactions have significantly increased, reaching an average daily turnover of RMB770 billion which, at times, even exceeds that of the HKD settlement volume (see Figures 2 and 3 below). According to the Triennial Survey from Bank of International Settlements (BIS) in 2016, the average daily turnover of over-the-counter (OTC) transactions in the offshore RMB market, including spot, forward and FX swap, totalled US\$202 billion, implying a strong market demand for intraday short-term liquidity.

³ On 11 August 2015, the Mainland Central Bank started to reform its daily USD/CNY mid-price fixing mechanism, which is generally regarded as an important step in RMB exchange rate liberalisation.

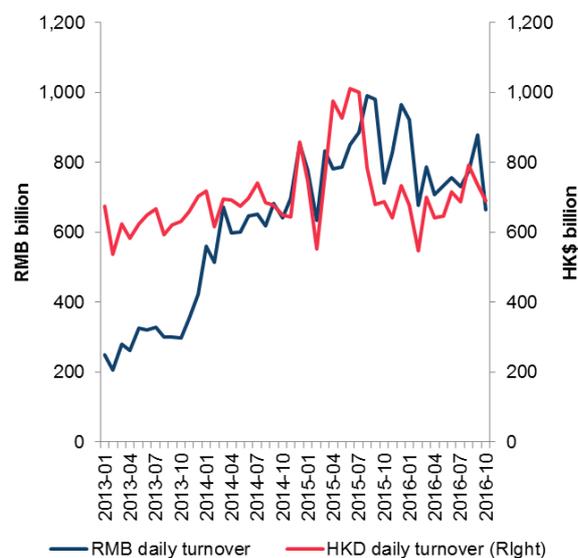
⁴ Source: HKMA, as of end-August 2016.

Figure 2. Hong Kong's offshore RMB liquidity pool shrunk since 811 exchange rate Reform (11 August 2015)



Source: Bloomberg

Figure 3. RMB's average daily turnover exceeded that of HKD during some periods after 2015 2H



Source: Hong Kong Interbank Clearing Ltd.

Second, a considerable portion of RMB short-term funding is provided under the official scheme of currency swap agreement with the Mainland central bank (the PBOC), however, the usage of which is subject to the operating hours of the Mainland's interbank market and its clearing systems as well. As a result, the offshore market is most likely to face short-term funding pressures during Mainland long holidays when the onshore clearing systems and funding facilities are suspended.

Third, the offshore RMB swap market, a major funding source for offshore short-term RMB liquidity, easily becomes volatile under global financial shocks, especially under the upcoming US dollar rate hike cycle.

The fourth issue is a lack of effective cross-border funding channel between onshore and offshore money markets. As mentioned above, the existing cross-border RMB liquidity provided to the offshore market is mainly accomplished under the current account and the mid- to long-term capital accounts, including cross-border RMB trade settlement, foreign direct investments (FDI), three types of eligible institutions in the Mainland's interbank bond market and RMB Qualified Foreign Institutional Investors (RQFII), etc., while the onshore money market is still largely closed to non-residents as the RMB is not yet fully convertible⁵. There is, so far, no direct channel linking onshore and offshore markets for short-term liquidity flows, in particular, for overnight and one-week short-term liquidity, except the currency swap arrangement.

2.3 The offshore RMB funding allocation is concentrated in domestic long-term assets, indicating a certain degree of allocation imbalance

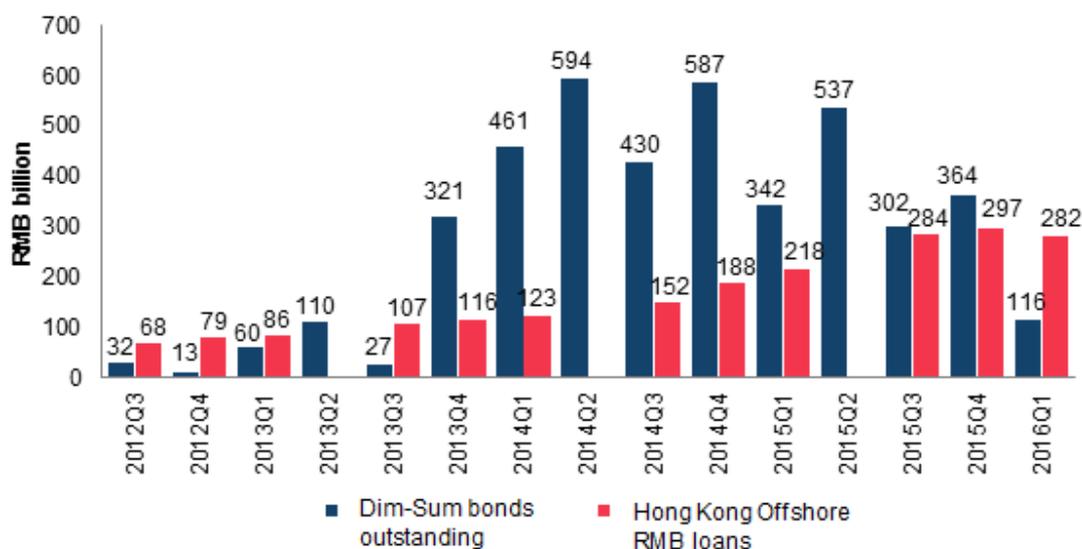
Currently, offshore RMB funds are mainly allocated in: RQFII with RMB270 billion quota; about RMB500 billion in Dim Sum Bonds; and RMB281.6 billion in cross-border RMB loans⁶. Although the RMB loans can facilitate the expansion of the offshore RMB liquidity pool due to

⁵ For details, see the article "China is Basically Ready for Further Opening Up Capital Account" (《我國加快資本賬戶開放的條件基本成熟》) in 2012, Survey and Statistics Department of People's Bank of China (《中國人民銀行調查統計司課題組報告(2012)》).

⁶ Source: HKMA, as of end of March 2016.

the multiplier effect, the above allocations have mostly used up offshore RMB capital. The allocation of offshore RMB funding is largely concentrated on long-term assets in the domestic market, which are neither actively traded nor convenient for repurchasing, making it difficult for offshore financial institutions to adjust their RMB portfolios once a sharp demand for short-term RMB money arises in the offshore market, and thereby resulting in short-term liquidity strains.

Figure 4. Offshore RMB funds are mainly allocated in the segments of Dim Sum Bonds and offshore RMB loans



Source: Bloomberg

The allocation imbalance of offshore RMB capital might be augmented owing to current contraction of overall offshore RMB liquidity pool, particularly before Mainland holidays (such as, Mid-Autumn Festival and the National Holiday, etc.) when the seasonal factor leads one-way capital flow back to onshore market ahead of the closing of the Mainland interbank market during holidays. In this context, the short-term interest rate in the offshore RMB market has experienced a sharp volatility at the end of September and early October of 2016.

3. IMPACT OF SHORT-TERM INTEREST RATES VOLATILITY ON THE OFFSHORE RMB MARKET

3.1 Imposing pressures on the steady expansion of the offshore bond market

Hong Kong has been the world's largest offshore RMB bond market and, also, the major market for overseas institutions investing in RMB bonds. However, since the 811 exchange rate reform in 2015, the contraction of overall offshore liquidity pool pushed up the offshore RMB financing costs. One-year deposit rates rose to an average of above 4% and the financing costs for three-year Dim Sum Bonds notably jumped almost 200 basis points, while the onshore market adopted a more loosening monetary policy with ample liquidity available. The gradual widening of the interest rate spreads between the onshore and offshore bond markets urged many Dim Sum Bond issuers to move back to the onshore market, leading to a significant drop in offshore bond issuance. For example, nearly 60 percent of property enterprises returned onshore to issue bonds in 2015, most of which have been active in the

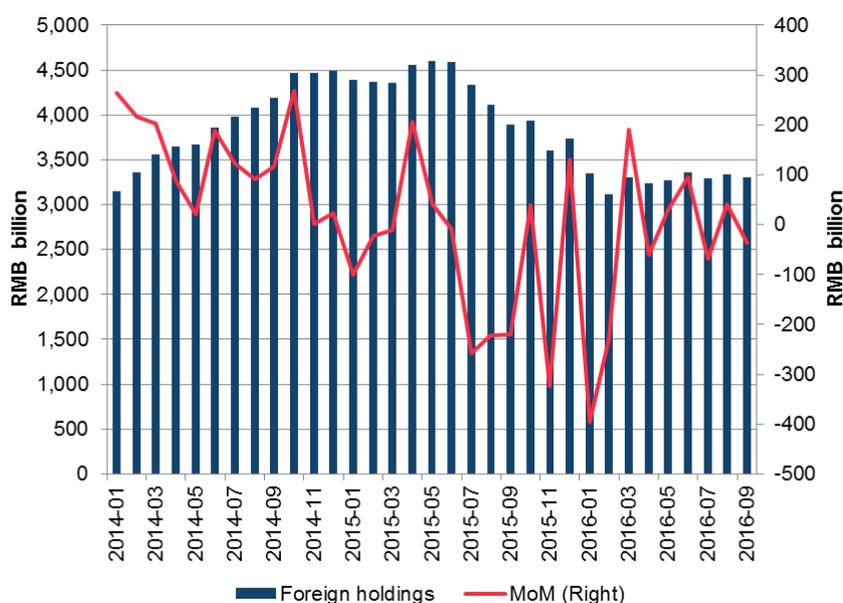
offshore bond market, causing a fall of bond issuance in the real estate sector from USD24.8 billion in 2014 to US\$9.6 billion in the offshore market⁷.

3.2 Increasing hedging difficulty for offshore entities in holding RMB assets

Given the inclusion of RMB into the SDR basket, the demand for RMB assets continues to grow when central banks and global investors consider to reallocate into RMB-denominated assets. SDR inclusion itself will not directly spur significant investment need, as SDR assets only accounts for 2.4% of international reserves. However, the achievement of SDR status increases the global acceptance of RMB as a global investment and reserve currency. If the holding share of RMB assets by global institutions or individuals could reach to a level comparable to that of the Japanese yen in global FX reserve assets, it could be expected that over RMB2 trillion would flow into relevant RMB assets.

Increasing investments result in a surging demand in risk management. Sharp volatility in offshore short-term RMB liquidity will weaken the ability of offshore entities in developing effective interest rate benchmarks for offshore RMB floating loans and appropriate pricing models for RMB assets, or introducing RMB risk management products, thereby imposing hedging difficulties on international investors. It is necessary to develop more instruments to eliminate the effect of interest rate volatility and direct market entities to adjust their FX trading strategies in order to facilitate more foreign capital to participate in the offshore market.

Figure 5. Rebound in foreign holdings of onshore RMB assets by institutions and individuals

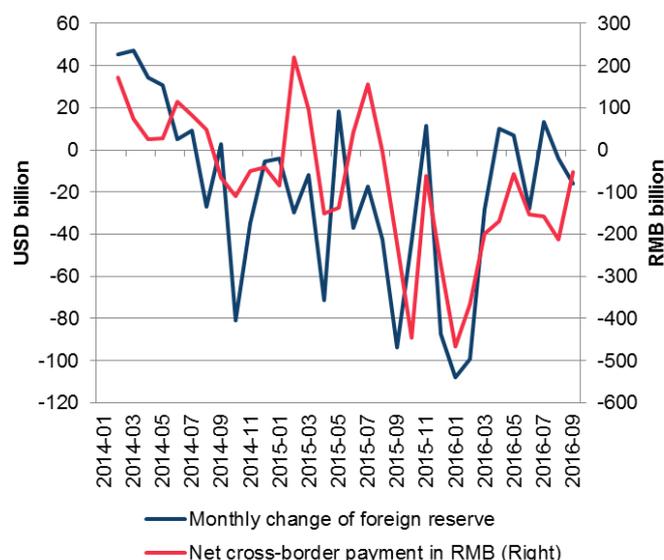


Source: Wind

3.3 The widening interest rate spreads between onshore and offshore markets may trigger short-term speculative cross-border capital flows

With successive cuts of onshore interest rates and the reserve requirement ratio, the decline in onshore RMB yield drives domestic RMB capital to look for more profitable opportunities. The widening of interest rate spreads between the onshore and offshore markets may trigger interest rate arbitrage, which has not been obvious in cross-border capital flow at present, and spur potential capital outflow via unofficial channels, aggravating liquidity pressures domestically.

⁷ See "Recent Developments of Offshore RMB Bond Market: Attributes and Trends" ("近期離岸人民幣債券市場的發展態勢、原因及趨勢"), China Money (《中國貨幣市場》), Issue 1, 2016.

Figure 6. Continuing net payments in RMB from onshore market may aggravate capital outflow pressure

Source: Wind

4. POSSIBLE IMPROVEMENTS

Given the increasing RMB transaction and investment activities in the offshore market in terms of RQFII, Shanghai Connect and Shenzhen Connect, both financial transactions and long-term financing need adequate RMB liquidity as a fundamental support. Sufficient liquidity is critical in enhancing market depth and developing of cross-border trades, investments, FX transactions and other economic activities.

It is noteworthy that although international investors can now more directly participate in domestic RMB businesses and RMB transactions have gradually shifted to the onshore market, the development experience of the US dollar and other international currencies demonstrates that currency internationalisation should be accompanied hand in hand by the development of an offshore market, which plays a key role in facilitating the RMB's circulation outside the domestic market and it being widely used in the global economy.

To further improve the offshore RMB liquidity conditions, the following potential solutions may be considered.

4.1 Steadily promoting RMB internationalisation and further opening up two-way channels for cross-border capital flows

As mentioned above, the RMB exchange rate is a major determinant in the expansion of the overall offshore RMB liquidity pool as well as its long-term liquidity provision. Previously, to support the RMB exchange rate reform, onshore market focused more on the stabilisation of the RMB exchange rate. When the market has got used to the new exchange rate pricing mechanism and the policy effects have been gradually showing up, an appropriate facilitation of onshore RMB capital flows to the offshore market and further opening up two-way cross-border flows could be considered for expanding offshore RMB liquidity pool and enhancing the development of the offshore market.

With regard to the offshore circulation channel, a bottleneck has emerged in driving the global use of the RMB via the current account and trade settlement, due to the sluggish global economy and the decline in China's foreign trade. Relying more on direct

investment under the capital account, particularly through overseas direct investment (ODI), Mainland enterprises' going overseas and Belt and Road initiatives, will enhance global acceptance of the RMB and address the stagnated development of the offshore RMB market⁸.

4.2 Further utilising existing policies to link up onshore and offshore repo markets

In 2015, the PBOC introduced a new policy related to bond repo agreements⁹, allowing offshore institutions to conduct bond repos in the Mainland interbank market in order to channel liquidity from onshore to offshore. Such a move could, to some extent, connect the onshore and offshore capital markets and ease the offshore liquidity issue.

Furthermore, setting up a Bond Connect, a cross-border platform linking the onshore and offshore bond markets could be another potential solution to further improve the convenience and efficiency. The above bond repo policy, which permits overseas institutions to acquire liquidity through bond repo transactions, only applies to onshore bonds, i.e. offshore RMB bonds cannot be used as collateral in the onshore repo market. In addition, neither can onshore RMB bonds held by RQFIIIs nor by the three types of eligible institutions be repurchased in the offshore market. Notably, the average outstanding of offshore RMB bonds has amounted to about RMB500 billion¹⁰ at present, close to the level of bonds holding by foreign participants onshore. Setting up a cross-border Bond Connect platform could facilitate foreign institutions to conduct repo transactions on offshore bond holdings and obtain RMB funding from the onshore market, which will not only increase the offshore RMB liquidity, but also improve the tradability and usability of offshore RMB assets and sustain the stability of the offshore RMB market.

4.3 Developing a market benchmark for interest rate swaps and other derivative products, thereby strengthening the pricing efficiency and risk management capabilities in the offshore RMB market

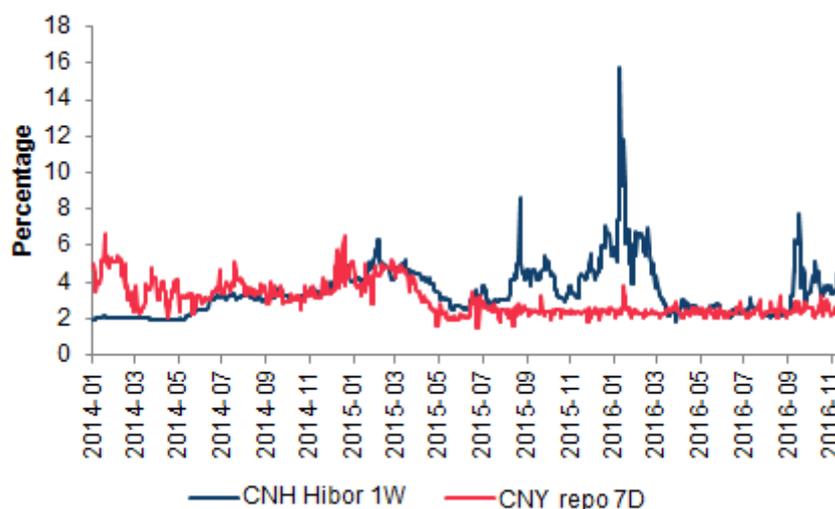
To promote interest rates marketisation, the PBOC puts greater emphasis on developing market-oriented mechanism in determining interest rates, and gradually reduces the gaps between different yield curves and maturities of interest rate, leading to an increasing correlation between onshore and offshore rates and strengthening the pricing efficiency of CNH Hibor fixing. Increased stability and efficiency of the CNH Hibor fixing will facilitate the introduction of RMB products related to both bond repos and interest rate swaps, strengthen the hedging capability of the offshore RMB market, and ultimately develop a deep market environment for offshore RMB transactions.

⁸ "Moving forward amid the restructuring of the Hong Kong offshore RMB market" ("香港离岸市场在调整中前行"), Issue 15, 2016, China Forex (《中国外汇》)

⁹ For details, see the PBOC Circular on Offshore RMB Clearing Banks, Offshore Participating Banks Transacting in Bond Repurchase Transactions on Inter-bank Bond Market 2015 (《中國人民銀行關於境外人民幣業務清算行、境外參加銀行開展銀行間債券市場債券回購交易的通知》(2015)).

¹⁰ Source: Bloomberg

Figure 7. Divergence between CNH Hibor fixing and Shibor since 2015 2H



Source: Bloomberg

4.4 Widening the scale and types of offshore RMB products and further expanding offshore RMB liquidity pool

Removing the aggregate quota for the Shanghai Connect and Shenzhen Connect Programmes and the expansion of Qualified Foreign Institutional Investors (QFII) and RQFII scheme will continue widening the range of investment channels of the offshore RMB market and encouraging large RMB circulation in the offshore markets. Furthermore, along with RMB internationalisation and the opening up of the capital account, the Mutual Market Connectivity Model could be further expanded to more segments, including bonds and commodities. This will attract more overseas investors to tap into the Mainland market through Hong Kong, inducing more RMB capital to be accumulated in the offshore market as a greater variety of instruments are available.

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