

Discussion Outline: Possible RMB Clearing Operating Models

The purpose of this note is to introduce possible RMB clearing operating models based on existing market precedents to aid the consideration of options that may be pursued in the United States. General information on the process of transferring RMB from onshore Mainland China to offshore is set forth as Attachment 1 to this note.

Correspondent Banking Model

Summary Description

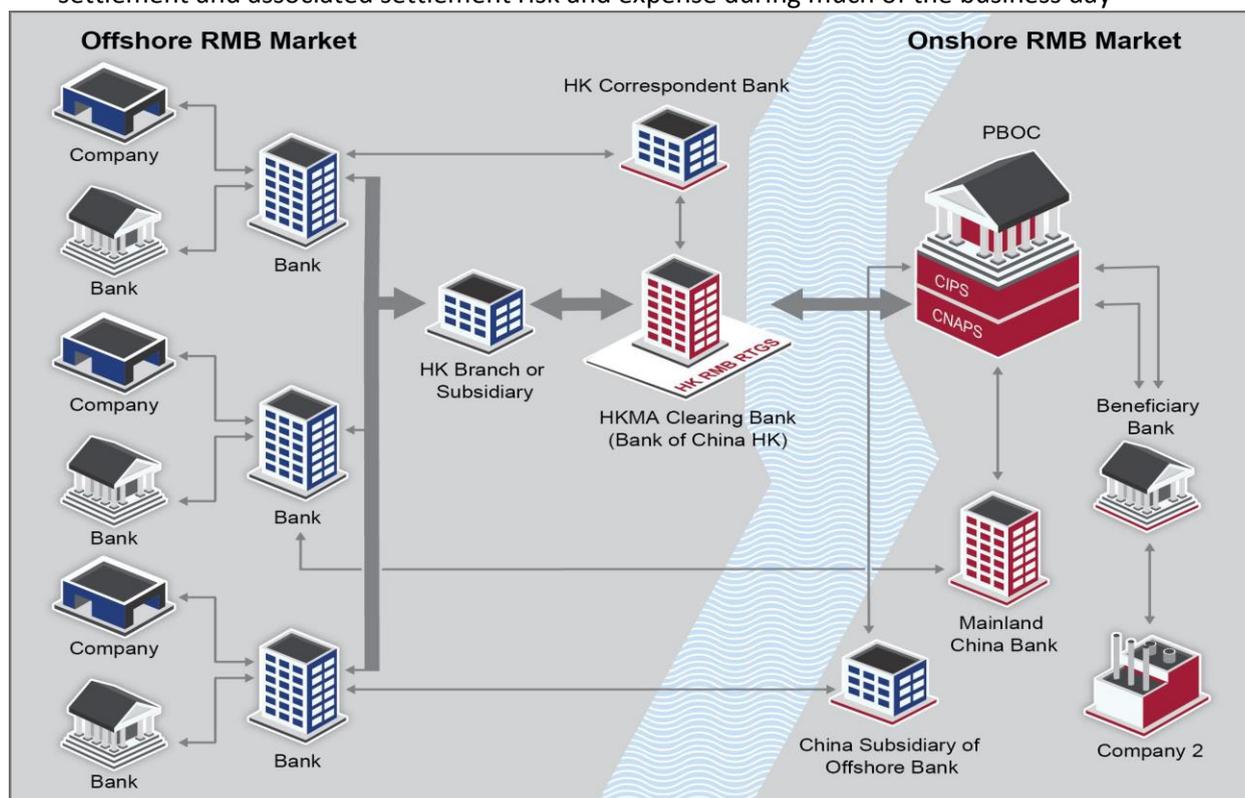
- Banks use one or more correspondent banks with RMB access in China or Hong Kong as offshore centers for RMB transactions when settling payments in RMB on behalf of customers.
- Banks with multinational operations have the option of opening RMB denominated accounts and establishing branches in Hong Kong, and settling payments in RMB via the RMB CHATS Real-Time Gross Settlement (RTGS) system run by the Hong Kong Monetary Authority (HKMA).
- The largest clearing banks have also established subsidiaries and branches in Mainland China to manage accounts for other branches and third-party banks and processing payments directly via the systems (CNAPS and CIPS) operated by the People’s Bank of China (PBOC).

Advantages

- Well established processes; no need for new infrastructure
- Open concept – institutions may choose most appropriate correspondent bank solution
- Free entry – additional correspondent banks may enter the market to meet demand

Disadvantages

- Duplicative costs - no efficiency gains from having a common national solution for the United States
- No competitive advantages for the United States compared to other jurisdictions
- Decentralized approach may constrain development of certain financial products
- Limited overlap of RMB settlement operating hours with U.S. market hours results in sequential settlement and associated settlement risk and expense during much of the business day



Clearing Bank/Hub Model

Summary Description

- A clearing bank offers RMB accounts for banks in the United States as common agent. Banks using the services of the RMB clearing bank have the status of account-holders.
- The balances in these accounts are covered by corresponding RMB deposits at the PBOC. Accordingly, the RMB clearing bank must have appropriate approvals and supervision in both the United States and China.
- The RMB clearing bank is a member of the Federal Reserve System, participates in the Hong Kong RMB CHATS system, and participates in CNAPS to facilitate completion of cross-border payments between the United States and China.
- The RMB clearing bank processes credit transfers between individual accounts, provides the required infrastructure needed and takes responsibility for the entire payment process as required by U.S. and Chinese regulations. Management of the RMB clearing bank is responsible for the governance and control of its business activities.
- RMB clearing services are provided subject to the general terms and conditions (fees) of the RMB clearing bank. Account holders have access to RMB liquidity via the RMB clearing bank, for example:
 - Incoming and outgoing RMB payments (customer payments, liquidity transfers between accounts); and
 - RMB credit lines established with the RMB clearing bank.
- Numerous banks in the United States have the functional capabilities and infrastructure necessary to carry out the RMB clearing bank function.

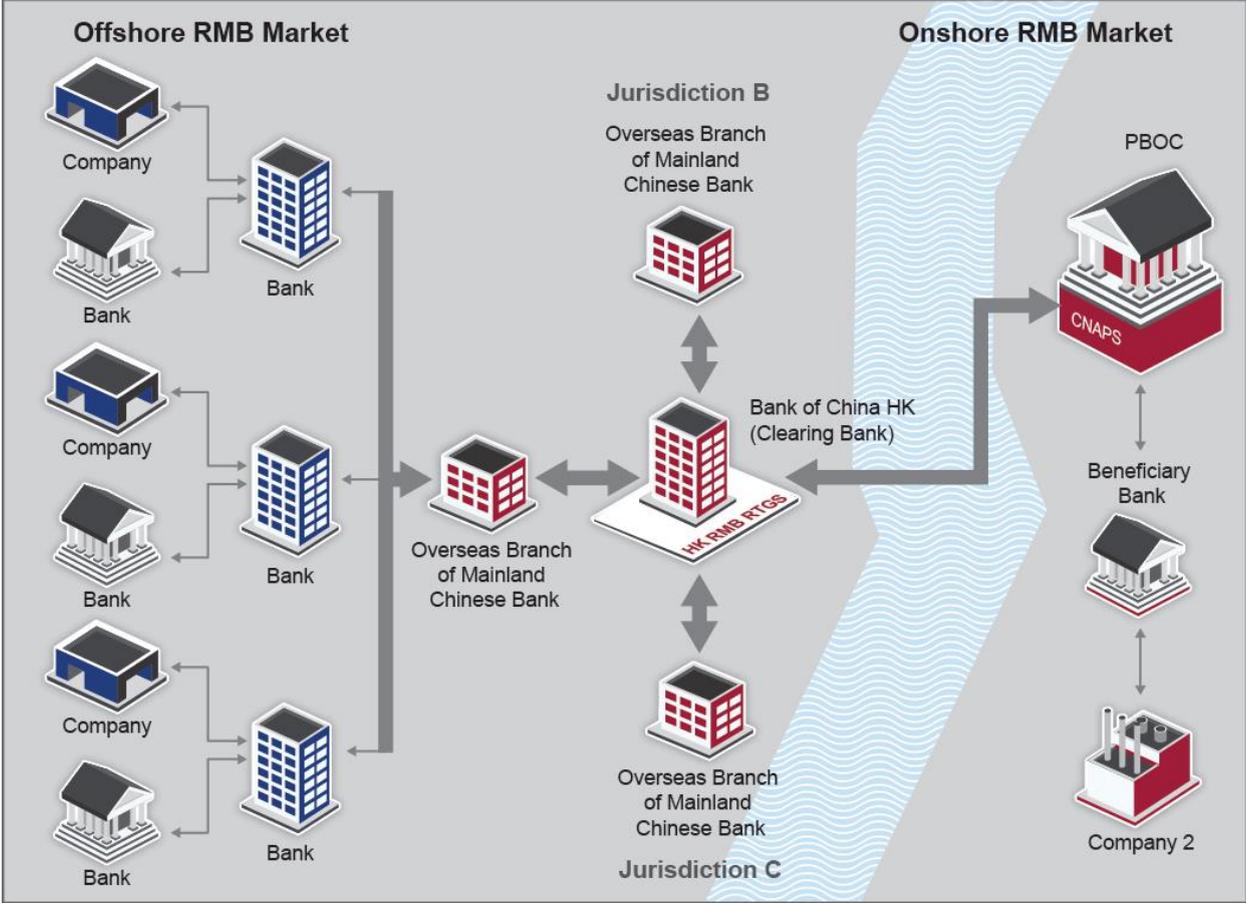
Advantages

- Market based solution provides real-time finality of payments and other improved capabilities during U.S. market hours not corresponding with RMB settlement operating hours
- Improved RMB payment processing and liquidity management from a single source, matches functionality now established in other jurisdictions
- Services offered centrally by the RMB clearing bank may reduce duplicative operational burdens and costs of participants in the system
- Use of established infrastructure and processes aids business, risk management and regulatory reviews allowing relatively quick time to market

Disadvantages

- Duplicates solutions available in some jurisdictions; fails to match service levels available in others
- Correspondent bank processes continue to be used, limiting cost savings/efficiency gains
- Selection of a single RMB clearing bank is not competitively neutral
- Fails to fully support development of RMB-based financial market products and markets
- Arrangements must be established to ensure sufficient liquidity is available from private markets sources to complete RMB settlement with a high degree of confidence at all times

Clearing Bank/Hub Model (cont.)



Clearing House Model

Summary Description

- A clearing house is identified or established in the United States to clear RMB payments. The clearing house model enhances the clearing bank approach by incorporating common governance practices and operational processes.
- The clearing house is either owned by, or subject to the significant involvement of, its members, who are simultaneously responsible for its financing. Banks using the option are not just account holders but also members with a say in business policy and clearing requirements.
- The clearing house determines its own rules, in compliance with applicable requirements and expectations of the responsible regulatory bodies and the central banks concerned. Services are offered to members of the clearing house and to direct and indirect participants.
- The clearing house uses one or more RMB clearing banks, which maintain the participants' RMB accounts. The RMB clearing bank has a U.S. banking license and fulfills all relevant legal requirements, including all required U.S. and Chinese approvals and the necessary technical infrastructure.
- Under the clearing house model, the necessary RMB liquidity is provided and used by the participating banks through their accounts held at the RMB clearing bank(s) (incoming and outgoing payments, credit lines, credits and debits arising from USD-RMB FX spot transactions). Backup liquidity lines may also be obtained by the clearing house directly.
- The balances in these accounts are covered by corresponding RMB deposits at the PBOC. Accordingly, the RMB clearing bank must have appropriate approvals and supervision in both the United States and China.
- The RMB clearing bank maintains an account with the Federal Reserve, participates in the Hong Kong RMB CHATS system and participates in CNAPS to facilitate completion of cross-border payments between the United States and China.

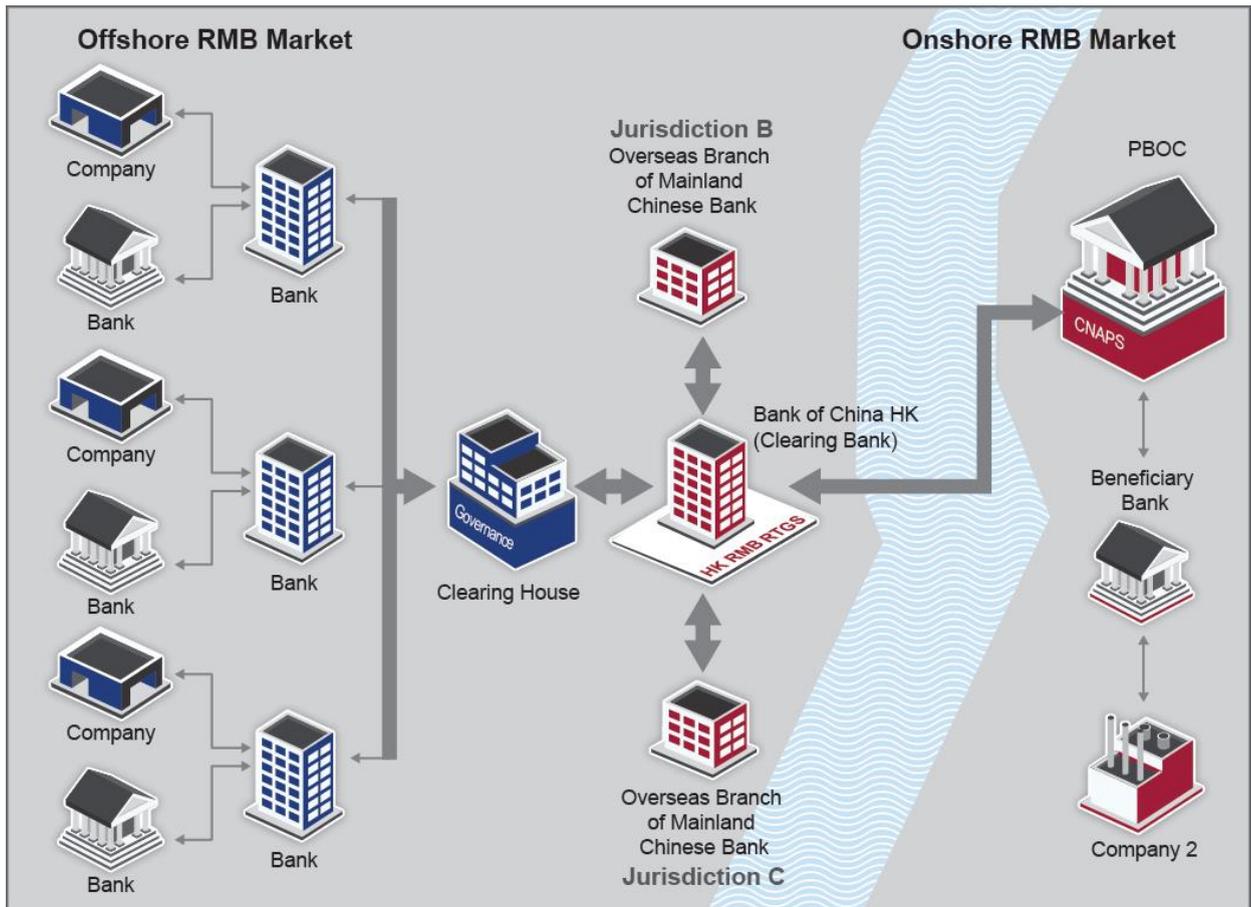
Advantages

- More complete solution than the clearing bank/hub solution offering greater potential to support future volume growth and possible operational improvements and cost savings
- Retains advantages of "pure" clearing bank solution (e.g., credit line, interest on credit account balances, payment processing and liquidity management from one source)
- More fully supports development of RMB-based financial market transactions and products, and expectations for depth and liquidity in U.S. markets
- As members and possibly owners of the clearing house, participating banks have greater influence over the design and further development of the clearing house solution and may share in profits

Disadvantages

- Financing, governance, establishment and implementation make this a more complex and expensive alternative to pursue compared with other two options
- Arrangements must be established to ensure sufficient liquidity is available from private markets sources to complete RMB settlement with a high degree of confidence at all times
- Successful implementation likely requires a high degree of coordination and cooperation between central banks in the United States, China and Hong Kong, including harmonization of certain relevant central bank policies and sharing of confidential information

Clearing House Model (cont.)



Common Considerations

Each of the service options set forth above would also be subject to the following seven broad policy considerations, in addition to the service specific considerations noted above:¹

1. The effect on ***monetary policy implementation***: monetary policy implementation could be affected by the impact of the service on the ability of the central bank to control the supply of and to forecast the demand for reserve balances, and by the impact on open market operations, central bank lending and other operating procedures. This might affect interest rates and exchange rates.
2. The adequacy of ***private sector sources of liquidity*** to support settlement in each currency: this could be influenced by the availability during settlement of deep and liquid money markets, of final transfers into settlement accounts and of collateral to support funding transactions.
3. The impact on ***systemic risk***: this could depend on the effect of the service on private sector motivation to design new methods to reduce settlement risks, on the ability and incentive of the public and private sectors to manage credit and liquidity risks, and on the degree of reliance on public and private sector credit and liquidity.
4. The ***well-founded legal basis*** of settlement arrangements and entities: this would depend in part on the legal status of settlements in each country and on the legal implications of the location and corporate form of settlement entities.
5. The likely ***competitive effects*** in private financial markets: this would depend on the markets to be served, on the participants and entities that would benefit from access to new foreign currency services and on likely changes to correspondent banking relationships.
6. The ***cost-effectiveness*** of the service from the private sector perspective: this would reflect initial investment costs and the implementation timetable, the ongoing operating costs relative to the status quo and the costs of any required idle balances that might arise as a result of prefunding of debits or delayed access to credits.
7. The ***acceptability of the service from an individual central bank perspective***: this would reflect initial investment costs (e.g., the cost of new technology) and the implementation timetable; ongoing operating costs; required legislative and policy changes; implications for central bank supervision or oversight; implications for the role of the central bank as liquidity provider; likely shifts in the location of financial activity; and the required degree of coordination, cooperation and sharing of confidential information.

¹ See "Central Bank Payment and Settlement Systems with Respect to Cross-Border and Multi-Currency Transactions," Report of the Committee on Payment and Settlement Systems, Bank for International Settlements (September 1993).

Attachment 1: Transfers of CNY in Mainland China to CNH in Hong Kong

Background

- Market convention is to denote renminbi (RMB) deliverable onshore in Mainland China as CNY and RMB deliverable outside of Mainland China as CNH. Trading has been completely liberalized between CNH and foreign currencies (including Hong Kong dollars) but restrictions remain on transactions between CNY and foreign currencies and on transactions between CNH and CNY.
- Trading between CNY and other currencies, including CNH, is limited to payments associated with imports and exports, approved inward and outward foreign direct investments, and inward and outward portfolio investments – subject to specified limits. In such cases appropriate regulatory approvals are needed before transfers may take place between CNY and CNH.
- All transactions between CNY and CNH occur at par. However, restrictions on these transactions sometimes lead to differences in the values of CNH and CNY in terms of foreign currencies.²

Mechanics

- When a Mainland Chinese importer pays for imports denominated in RMB through Hong Kong, it transfers CNY funds from its Mainland bank to the exporter's offshore bank. Settlement of the transaction in the RMB account of the foreign exporter in Hong Kong or elsewhere results in the creation of more CNH.
 - Onshore transfers of CNY on behalf of the Chinese exporter are currently completed via the China National Advanced Payment System (CNAPS), a Chinese domestic RMB payment system with a high value RTGS system and a low value net payment system.
 - CNAPS requires participating banks to have a settlement account at a branch of the People's Bank of China (PBOC). RMB transactions are then settled between participants' accounts using central bank money.
 - Offshore transfers of CNY resulting in the creation of CNH may currently be completed via the RMB RTGS system in Hong Kong, via one of several offshore RMB currency hubs in locations such as London and Toronto, via the recently established Chinese Cross-border Interbank Payment System (CIPS) or via traditional correspondent banking arrangements³:

Hong Kong

- Hong Kong's RMB RTGS system (also known as RMB CHATS) uses the Bank of China (Hong Kong) Limited (BOCHK) as its Clearing Bank. BOCHK maintains a settlement account with the People's Bank of China and is a member of CNAPS. The Hong Kong Monetary Authority considers the RMB RTGS system in Hong Kong to be a technical extension of CNAPS in Mainland China, but governed by Hong Kong laws.⁴

² Joseph E. Gagnon and Kent Troutman, "Internationalization of the RMB: The Role of Trade Settlement", Peterson Institute of International Economics Policy Brief, May 2014.

³ An equivalent process holds true for the reverse situation, where the transaction originates offshore with final destination of funds to be onshore.

⁴ See: <http://www.hkma.gov.hk/eng/key-functions/international-financial-centre/infrastructure/payment-systems.shtml>.

- Banks in Hong Kong and elsewhere can join the system directly by opening RMB settlement accounts with BOCHK as Clearing Bank. Non-local banks and financial institutions can also choose to join the system indirectly by settling their payments through direct members in Hong Kong. While banks in Hong Kong can apply to BOCHK for direct access to the system, participation of other financial institutions has to be approved by the HKMA and BOCHK on a case-by-case basis.
- Exchanges within CNAPS that result in CNY balances being credited to the BOCHK account associated with the Hong Kong RMB CHATS system result in the creation of CNH. Such balances may be credited to any financial institution participating in RMB CHATS, directly or indirectly, as well as their customers' accounts. Equivalently, debits to the BOCHK account in CNAPS for the Hong Kong RMB CHATS system that credit the accounts of other financial institutions in the CNAPS system result in the creation of CNY.

Currency Hubs

- Currency hubs designate a financial institution to act as the RMB clearing bank for banks operating within that jurisdiction. Each participant establishes an RMB settlement account with the clearing bank to facilitate settlement of RMB transactions in that jurisdiction through the accounts at the clearing bank.
- The clearing bank for a clearing hub is also a participant in the Hong Kong RMB CHATS system, and maintains an account at BOCHK reflecting the RMB balance for the institutions participating as members of the clearing hub in that jurisdiction. Accordingly, exchanges within the Hong Kong RMB CHATS system that result in CNY balances being credited to the BOCHK account associated with the clearing bank for a particular currency hub also result in those balances being available to the financial institutions participating in the currency hub for credit to the appropriate customer accounts.

CIPS

- The recently introduced Cross-border Interbank Payment System (CIPS) allows for direct cross-border transfers of RMB without utilizing offshore clearing banks in currency hubs, such as London and Toronto, and without settlement in a currency center such as Hong Kong.
 - CIPS began operating in October 2015 in Shanghai with 19 participant banks including both domestic Chinese banks and Chinese subsidiaries of eight foreign banks (including Citibank China). It is currently administered by the People's Bank of China (PBOC) separately from the CNAPS system with operating hours between 9.00am and 8.00pm local time.
 - Each CIPS participant funds the CIPS account with the PBOC via CNAPS on a daily basis and the balance is used to settle payment orders throughout the day via the CIPS system. Participants may transfer funds between CNAPS and CIPS at any time during the transaction processing window (9:00am to 7:30pm local time).
 - The CIPS system is currently limited to cross-border transactions, so each transaction within CIPS results in an exchange of CNY for CNH, or vice versa, with the net result for each participating institution and the system as a whole being the aggregate balance of transactions conducted during a given trading day.
 - CIPS automatically transfers balances remaining in participants' accounts back to participants at the end of each trading day via CNAPS (8:00pm to 8:30pm local time).

Correspondent Banking

- RMB accounts may also be established maintained in jurisdictions that have neither currency hubs nor other connections to Hong Kong. In those cases:
 - Traditional correspondent banking arrangements between Mainland Chinese banks and international banks utilizing *nostro* accounts allow for RMB to be paid or received on the books of those institutions on agreed terms.
 - When a Chinese exporter enters a contract to buy CNH and sell CNY, for example, its bank will credit its CNY *nostro* account and debit its CNH *nostro* account. The bank's counterparty will credit its *CNH nostro* account and debit its CNY *nostro* account.
 - Both banks will initiate a money transfer to pay their respective counterparties, making use of CNY and CNH payment systems.