March 2021

Use of RMB-denominated Chinese Government Bonds as Margin for Derivatives Transactions

CCDC | ISDA Safe, Efficient Markets

Contents

Message from the Chairman of the CCDC Board of Directors

Dear global investors and colleagues,

Disruptive conditions have been prevailing since the beginning of 2020. Amid growing complexity in the global market, the use of collateral increasingly stands out as an effective and indispensable tool for risk and liquidity management. As a result, global investors have been engaged in a vigorous pursuit to identify new and safe assets that can be used as collateral, and renminbi (RMB)-denominated Chinese government bonds (CGBs) have come to the fore as one promising option for this.

In light of the global implementation of margin requirements for non-cleared over-the-counter (OTC) derivatives transactions, the China Central Depository & Clearing Co., Ltd. (CCDC) and the International Swaps and Derivatives Association (ISDA) jointly present this whitepaper with a view to exploring the opportunities and challenges arising from the use of RMB-denominated CGBs as collateral in the OTC derivatives market. This paper aims to provide a comprehensive overview of the associated issues to assist effective dialogue and facilitate collaboration among market participants.

As an old Chinese saying goes, even mountains and seas cannot distance people who share common aspirations. In particular, it is our sincere hope that this whitepaper can shed new light on the use of RMB-denominated CGBs as initial margin (IM) in connection with OTC derivatives transactions. The CCDC remains willing to serve as an ardent advocate for the opening of the Chinese financial market to the world, as well as striving to be a leading innovator for collateral management services in RMB-denominated assets. With the collective efforts of all stakeholders, we will strive to open new vistas while promoting effective cooperation in the collateral space between China's domestic market and the wider international markets.

Shui Ruqing
China Central Depository & Clearing Co., Ltd

Message from CEO of ISDA

In the aftermath of the global financial crisis, governments around the world – working through the Group-of-20 (G-20) nations, the International Organization of Securities Commissions (IOSCO), the Financial Stability Board and the Basel Committee on Banking Supervision (BCBS) – agreed to a common set of regulatory reforms to make the financial system safer and more robust in the face of future crises. One of those reform measures was for non-cleared derivatives to be subject to margin, a requirement that began to phase in from 2016.

The final phases of the IM requirements are now approaching and are likely to result in a large number of financial institutions in Asia-Pacific having to comply with the rules in September 2021 and 2022. As part of their preparations, market participants will need to know which high-quality liquid assets they can post as IM and understand any regulatory or legal impediments that may affect their choice. Given the rapid increase in the size of China's bond market and its opening up to overseas investors, it is not surprising that firms are keen to understand the implications of using RMB-denominated CGBs as collateral.

Since the run-up to the first phase of implementation in September 2016, ISDA has focused on helping the derivatives industry implement the margin rules for non-cleared trades. Our various global initiatives, including the development of industry documentation and a standard initial margin model (the ISDA SIMM), have been critical to these efforts and ensured the rules can be rolled out safely and efficiently. In the Asia-Pacific region, a vital part of ISDA's work has been to explore the feasibility of posting local currency securities and assets as IM on cross-border derivatives transactions – and this paper is an important next step in that work.

Together with the CCDC, we have conducted in-depth analysis on a variety of legal, regulatory and market structure issues in order to bring greater clarity on the use of CGBs as collateral. By doing so, our intention is to increase understanding of this important market and help firms in Asia and elsewhere meet the IM requirements as effectively as possible.

Scott O'Malia
ISDA

PREFACE

Many financial institutions in Asia-Pacific are expected to be brought into scope of phases five and six of the IM requirements for non-cleared derivatives in September 2021 and September 2022. In the run-up to compliance, it is important that all market participants understand the legal and regulatory implications of using different types of securities to meet the requirements of the relevant IM rules.

To help with that analysis, the CCDC and ISDA have developed this whitepaper to analyze the issues that market participants need to consider when using CGBs as IM for derivatives trading.

Special thanks to Bank of China (BOC), the Industrial and Commercial Bank of China (ICBC) and Margin Reform[1] for their contribution to this paper. It would not have been possible without their expertise and their deep insights into this topic. We are also grateful to all the market experts who have contributed to this paper.

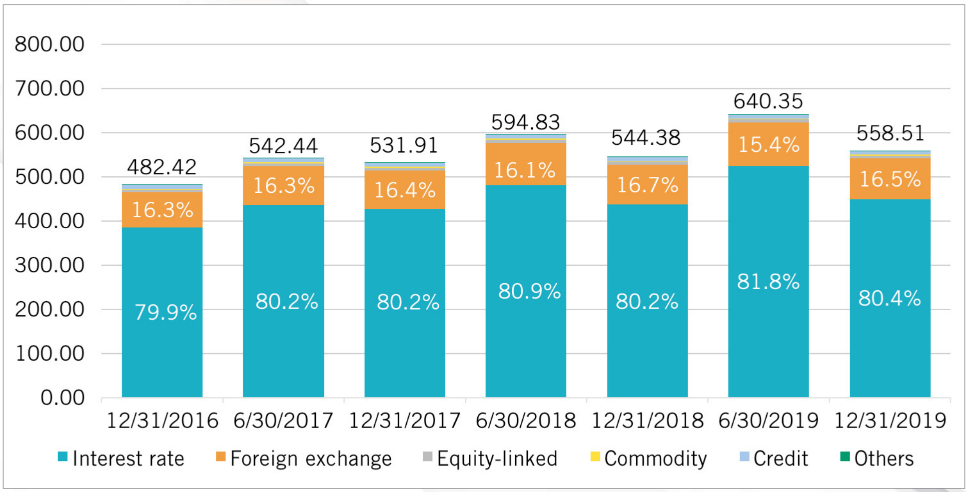
[1] For information about Margin Reform, please see the company website: www.marginreform.com/

1 OVERVIEW OF THE GLOBAL OTC DERIVATIVES MARKET AND USE OF COLLATERAL

Overview of the Global OTC Derivatives Market

Since its emergence in the 1980s, the OTC derivatives market has developed rapidly in response to diverse demands for risk management products by market participants. According to data produced by the Bank for International Settlements (BIS), outstanding notional of OTC derivatives totaled $558.5 trillion globally at the end of 2019, representing a 12.78% decrease from mid-2019 and a 2.59% increase from the end of 2018[2].

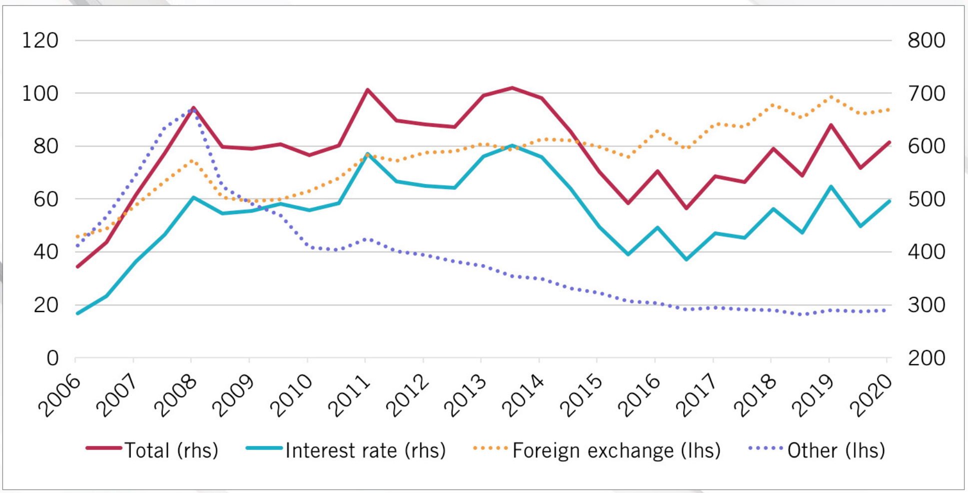
Figure 1: Outstanding Notional Amounts of Global OTC Derivatives ($ trillions)



Source: BIS

Interest rate derivatives (IRD) are the most frequently traded instruments, representing 80.4% of total OTC derivatives notional outstanding. At the end of 2019, IRD notional outstanding stood at $449 trillion, an increase of 2.8% compared to the end of 2018.

Figure 2: Notional Amounts of Global OTC Derivatives Contracts ($ trillions)



Source: BIS

[2] Based on the BIS semiannual derivatives statistics: www.bis.org/statistics/derstats.htm?m=6%7C32%7C71. According to the BIS, this increase to some extent reflects a seasonal pattern evident in the data since 2016. Specifically, notional amounts outstanding tend to decrease in the second half of a year, followed by a rebound in the next first half year: www.bis.org/publ/otc_hy1911.pdf

Gross market value – which provides a measure of the amounts at risk – totaled $11.6 trillion at the end of 2019, according to the BIS. This risk can be reduced in certain instances by the availability of close-out netting, which allows parties to compress exposure to their counterparties by consolidating and offsetting payment obligations under various OTC derivatives into a single net amount owed from one party to the other. Exposure after netting (known as gross credit exposure) reached $2.4 trillion at the end of 2019.

The posting of collateral can further reduce that exposure – and regulatory requirements are now in place requiring in-scope parties to exchange collateral on derivatives trades.

Rules for Non-cleared Derivatives

In response to the 2008/2009 global financial crisis, the G-20 nations initiated a global reform initiative for the OTC derivatives market. The reform proposed the following key measures:

- Standardized OTC derivatives should be traded on exchanges or electronic platforms, where appropriate;
- All standardized OTC derivatives should be cleared through central counterparties (CCPs);
- Derivatives trade information should be reported to designated trade repositories;
- Higher capital requirements should apply to non-cleared OTC derivatives transactions; and
- Mandatory margin requirements should be imposed for non-cleared derivatives trades.

The BCBS and IOSCO subsequently established the Working Group on Margining Requirements to formulate global standards for margin, with a phased implementation plan. Under this framework[3], margin applicable to non-cleared derivatives comprises two components: IM[4] and variation margin (VM)[5]. In addition to the daily posting of VM, counterparties are required to calculate, on a regular basis, applicable IM amounts for each relevant trading relationship and arrange for this margin to be posted to a segregated account.

[3] www.bis.org/bcbs/publ/d475.pdf

[4] The BCBS-IOSCO guidelines define initial margin (IM) as an amount that "covers potential future exposure for the expected time between the last [variation margin (VM)] exchange and the liquidation of positions on the default of a counterparty". It is further specified that the calculation of this potential future exposure "should reflect an extreme but plausible estimate of an increase in the value of the instrument that is consistent with a one-tailed 99 percent confidence interval over a 10-day horizon, based on historical data that incorporates a period of significant financial stress"

[5] VM protects the transacting parties from the current exposure that has already been incurred by one of the parties from changes in the mark-to-market value of the contract after the transaction has been executed. The amount of VM reflects the size of this current exposure. It depends on the mark-to-market value of the derivatives at any point in time, and can therefore change over time

These new margin requirements apply to financial institutions and systemically important non-financial entities that enter into non-cleared derivatives transactions after the relevant effective date of the margin rules. Exceptions apply to certain types of products (such as physically settled foreign exchange (FX) forwards and swaps, and IM for cross-currency swaps) and specific entities (such as sovereigns, central banks, multinational development banks and the BIS)[6].

In line with the BCBS/IOSCO implementation timetable, the largest market participants had to comply with the margin rules from September 1, 2016. The VM requirements were extended to all covered entities from March 2017, while the IM obligation was scheduled for rollout in annual phases through to September 2020 to relevant participants, depending on the aggregate average notional amount (AANA) of non-cleared derivatives held (and calculated at the relevant time). There have subsequently been adjustments to the regulatory timelines (as set out in more detail later in this section).

In accordance with the originally planned IM implementation timeline, phases one, two, three and four have now been completed. The applicable AANA threshold for the final phase was scheduled to drop from €750 billion to €8 billion, which would have brought many more entities with smaller trading positions into scope of the rules.

According to ISDA analysis, a lowering of the AANA threshold from €750 billion to €8 billion would have increased the number of in-scope entities from about 60 to over 1,100, equating to approximately 9,500 counterparty relationships.

To mitigate regulatory compliance risks arising from the expanded number of in-scope entities for IM requirements, the BCBS and IOSCO announced changes to the implementation schedule on July 23, 2019. Under the revised timeline, entities with an AANA of greater than €50 billion would still be subject to the new requirements starting from September 2020, while those with an AANA of greater than €8 billion (but below €50 billion) would have until September 2021 to meet the rules[7].

In response to the COVID-19 global pandemic, the BCBS and IOSCO subsequently announced on April 3, 2020 that the final two phases of the IM requirements would be postponed for an additional year to September 2021 and September 2022, respectively.

Since the release of the updated BCBS-IOSCO implementation timeline, many jurisdictions have updated their respective local margin rules for non-cleared derivatives to incorporate the changes.

[6] Additional exemptions vary across nations or regions and may include:
- Inter-affiliate transactions
- Exemption of IM between two entities ('threshold' in the credit support annex) up to €50 million (or approximate amounts denominated in currencies of different countries) calculated at the group level
- Hedging in the issuance of secured bonds
- In some countries or regions, a regulated entity doesn't need to post VM or IM when trading over-the-counter (OTC) derivatives with a counterparty registered in a non-netting jurisdiction. Even so, margin may still need to be collected from such a counterparty. As prescribed by the EU, when meeting certain conditions and belonging to a non-netting jurisdiction, a counterparty doesn't need to collect or post VM or IM, while the regulated party is subject to an exemption cap of 2.5% of its notional amount of OTC derivatives contracts

[7] www.bis.org/press/p190723.htm

According to a survey conducted by ISDA[8], 27 covered institutions[9] collected approximately $183.7 billion of IM and $944.7 billion of VM at the end of 2019. The 20 largest market participants (phase-one entities) collected $173.2 billion of IM, representing a 10% increase versus the end of 2018. Of this amount, $105.2 billion was collected from counterparties currently in scope of the regulatory IM requirements. A further $68.0 billion of IM was collected from counterparties and/or for transactions that are not in scope of the margin rules, including legacy transactions. In addition to these amounts, phase-one firms collected approximately $44.0 billion of IM for their inter-affiliate OTC derivatives transactions as of the end of 2019.

In order to satisfy the bankruptcy-remote requirement for eligible collateral under the IM regulations, most phase-one entities use government securities for IM. As of the end of 2019, 83.9% of regulatory IM collected by phase-one firms comprised government securities, with the remaining 16.1% consisting of other securities[10].

With hundreds of institutions coming into scope in phases five and six of the margin rules, demand for high-quality liquid assets is likely to increase, prompting firms to look closely at which securities are available and eligible for IM posting, and the legal and regulatory constraints associated with them.

[8] www.isda.org/2020/04/14/isda-margin-survey-year-end-2019/

[9] Including 20 phase-one firms, four phase-two firms and three phase-three firms

[10] www.isda.org/a/1F7TE/ISDA-Margin-Survey-Year-end-2019.pdf

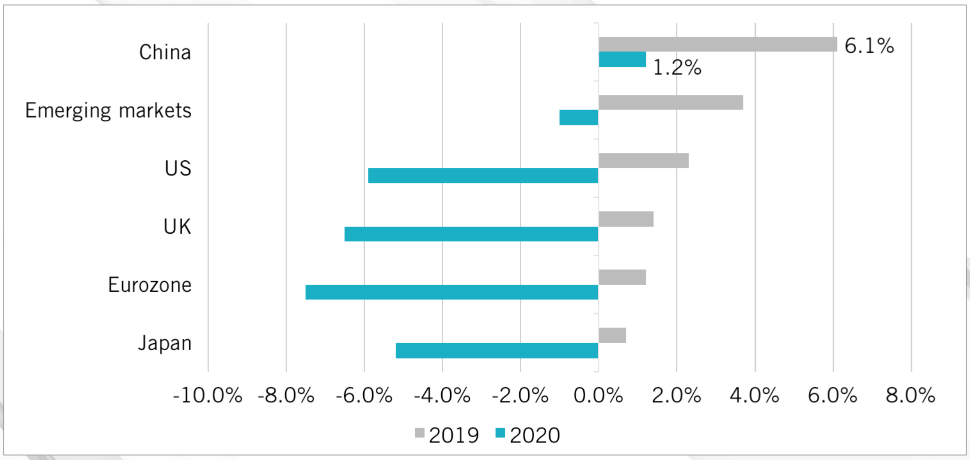
2 USE OF RMB BONDS AS COLLATERAL IN DERIVATIVES TRANSACTIONS

China's Macroeconomic Environment

Given the growth of China's economy, the internationalization of the RMB and the further opening of China's domestic financial market to overseas investors, some international firms are exploring the potential of posting CGBs as collateral in order to satisfy the IM regulations. The following section briefly summarizes developments in China's economy and financial market.

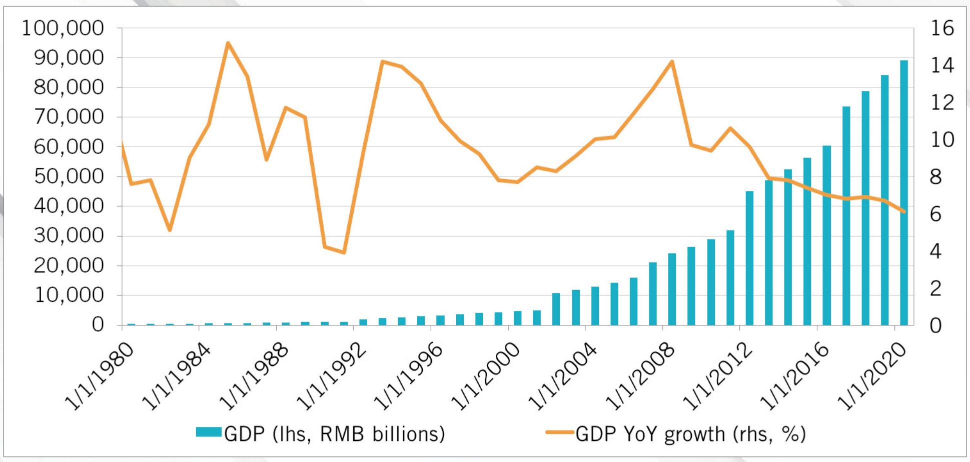
According to an estimate by the International Monetary Fund (IMF) in April 2020, the global economy is expected to experience the biggest downturn since the Great Depression in 2020 as a result of the COVID-19 pandemic[11]. However, the IMF projected 1.2% growth for China. In terms of total volume, China's gross domestic product achieved a medium-to-high growth rate in 2019, reaching RMB99 trillion ($15.2 trillion), representing a year-on-year increase of 6.1% and contributing 30% to global growth[12].

Figure 3: Prospects of Major Economies



Source: IMF, Wind

Figure 4: Economic Size and Growth Rate of China



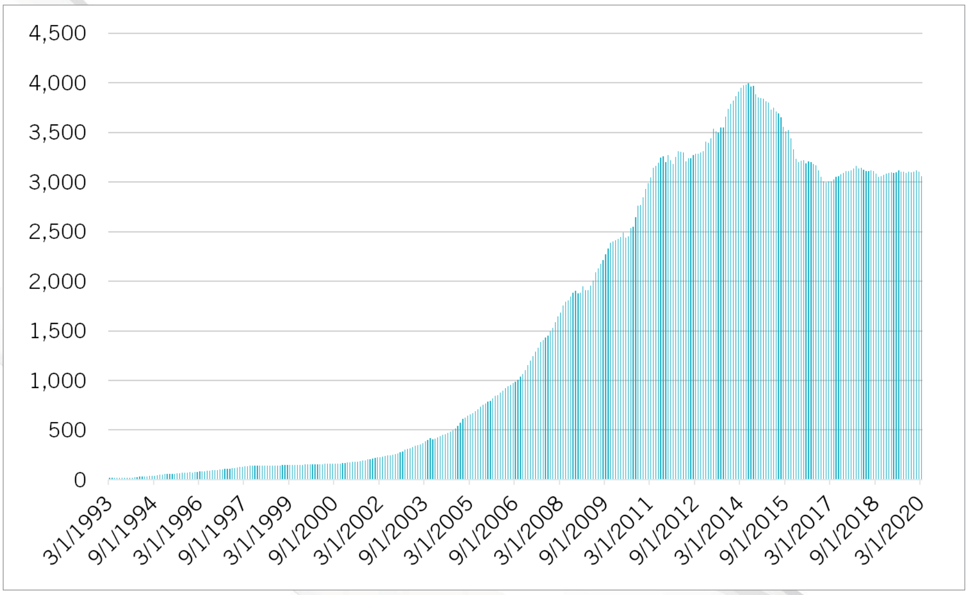
Source: IMF, Wind

[11] IMF, World Economic Outlook, April 2020

[12] National Bureau of Statistics of China

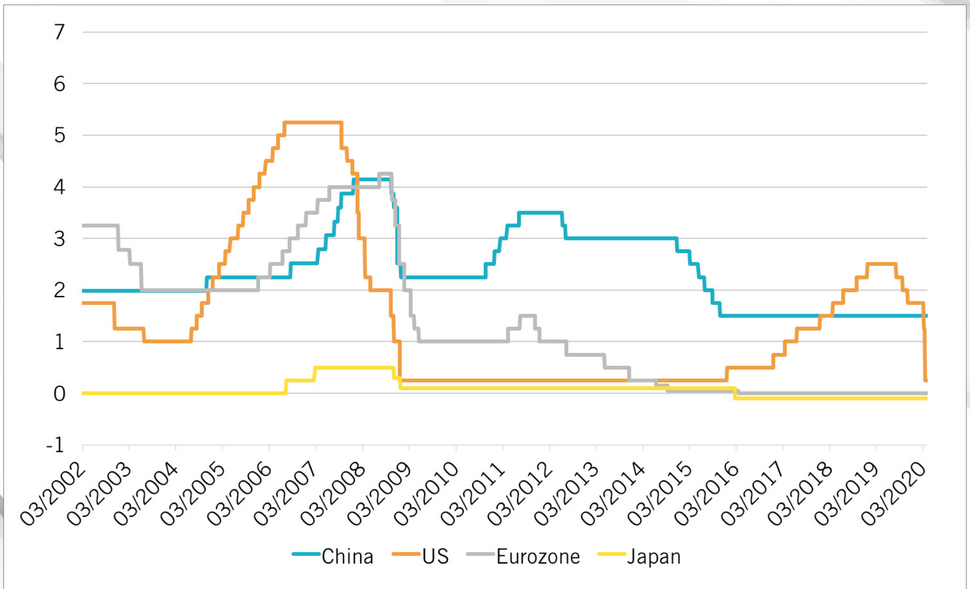
This continued growth in the Chinese economy has contributed to an inflow of capital, with China's FX reserves reaching $3.06 trillion at the end of the first quarter of 2020.

Figure 5: Size of China's FX Reserves ($ billions)



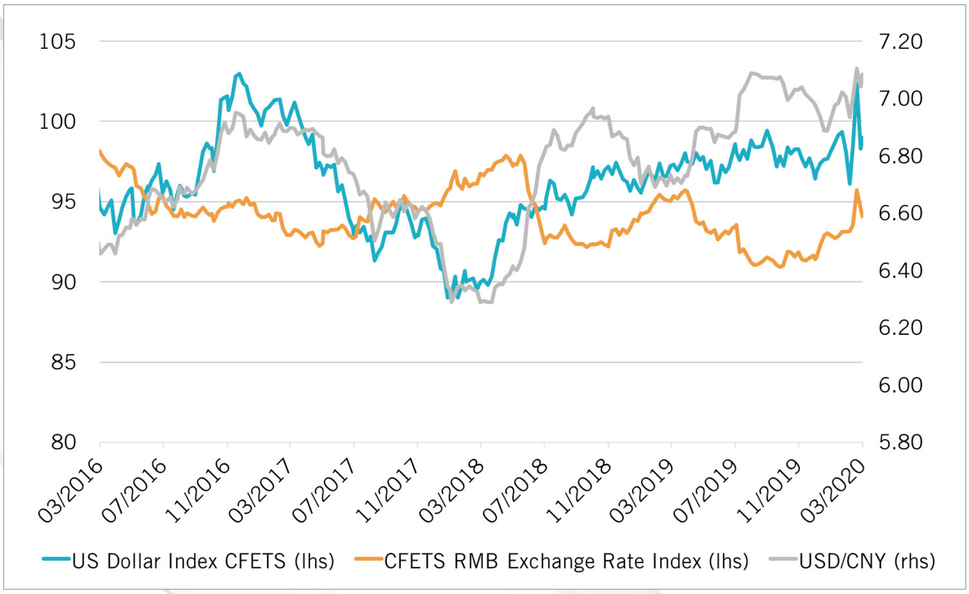
Source: Wind

Figure 6: Central Bank Interest Rates (%)



Source: Wind

Figure 7: Exchange Rate of RMB and US Dollar

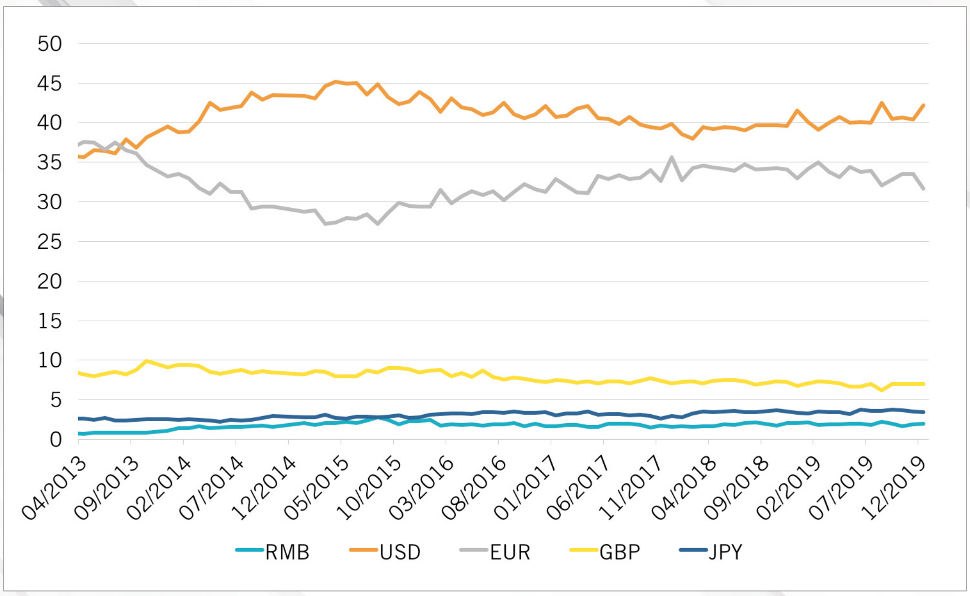


Source: Wind

Internationalization of the RMB

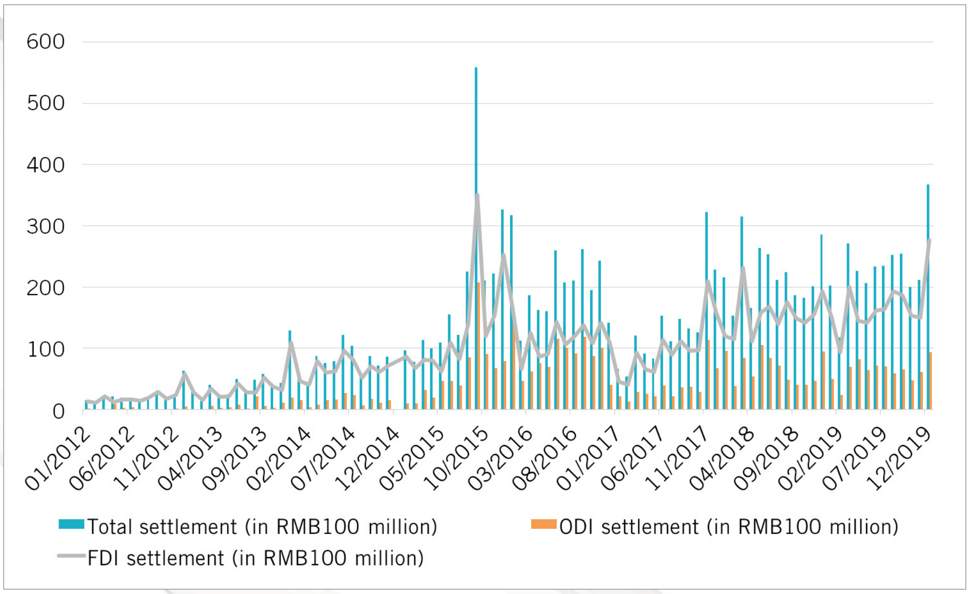
Efforts to further reform and open China's financial markets have continued in recent years, and internationalization of the RMB has resulted in the currency increasingly being used to facilitate cross-border trade settlement, investment and financing activities. The RMB is now the world's fifth largest settlement currency, while outward direct investments and foreign direct investments also continue to rise.

Figure 8: Share of International Payments (%)



Source: Wind

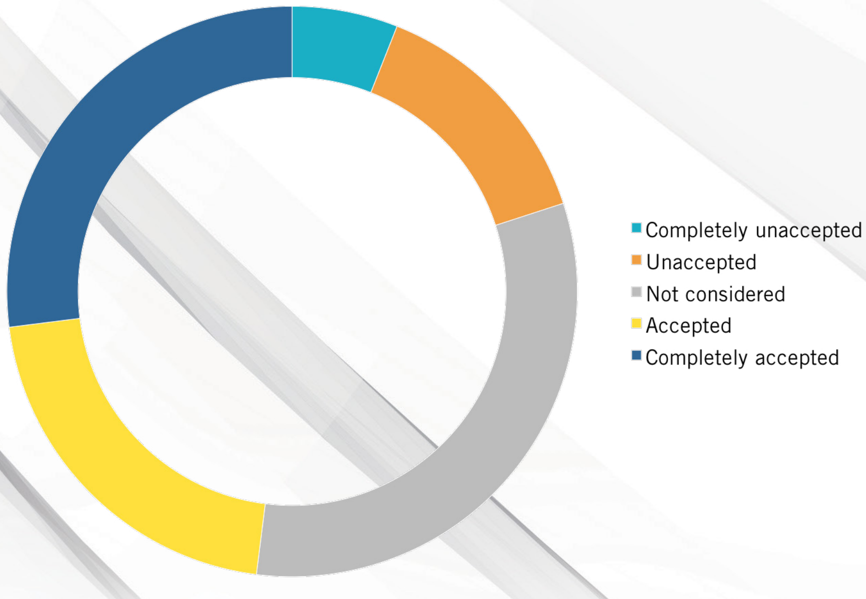
Figure 9: Settlement of RMB Direct Investments (RMB billions)



Source: Wind

According to a survey conducted by the BOC[13], nearly half of the participating Chinese firms reported that their offshore counterparties are open to accepting RMB as their settlement currency.

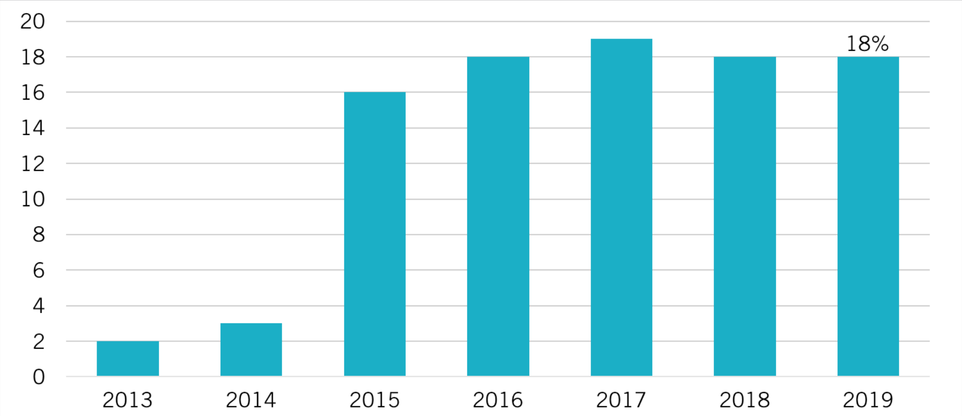
Figure 10: Extent RMB-denominated Contracts are Accepted by Overseas Counterparties



Source: BOC

[13] BOC, whitepaper on RMB internationalization for 2019

Figure 11: Percentage of Overseas Investors Accepting RMB Denomination Amid Exchange Rate Fluctuation (%)

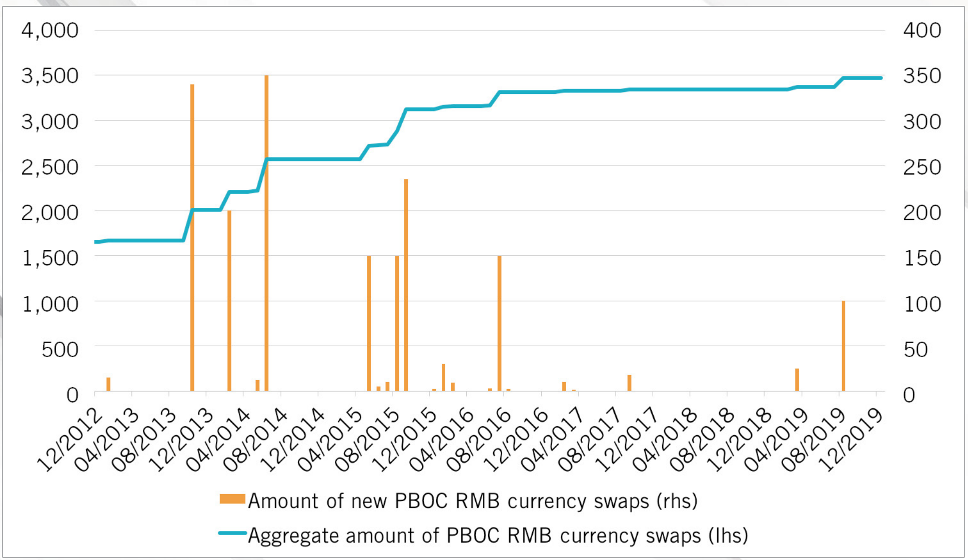


Source: BOC

The inclusion of the RMB into the IMF's special drawing rights in 2016 reflects increased use of the currency for international transactions. According to statistics published by the People's Bank of China (PBOC), the RMB had been included in FX reserves by more than 60 foreign central banks or monetary authorities at the end of 2019, and China entered into currency swap agreements with more than 40 countries for a total value of RMB3.7 trillion[14].

In addition, foreign institutions are increasingly willing to hold RMB-denominated financial assets. RMB-denominated equity, bonds, loans and deposits held by foreign institutions increased from RMB2.88 trillion in 2013 to RMB6.41 trillion at the end of 2019, with RMB-denominated bonds increasing from 13.85% to 35.29%[15] of those RMB-denominated financial assets.

Figure 12: Amount of RMB Currency Swaps (RMB billions)

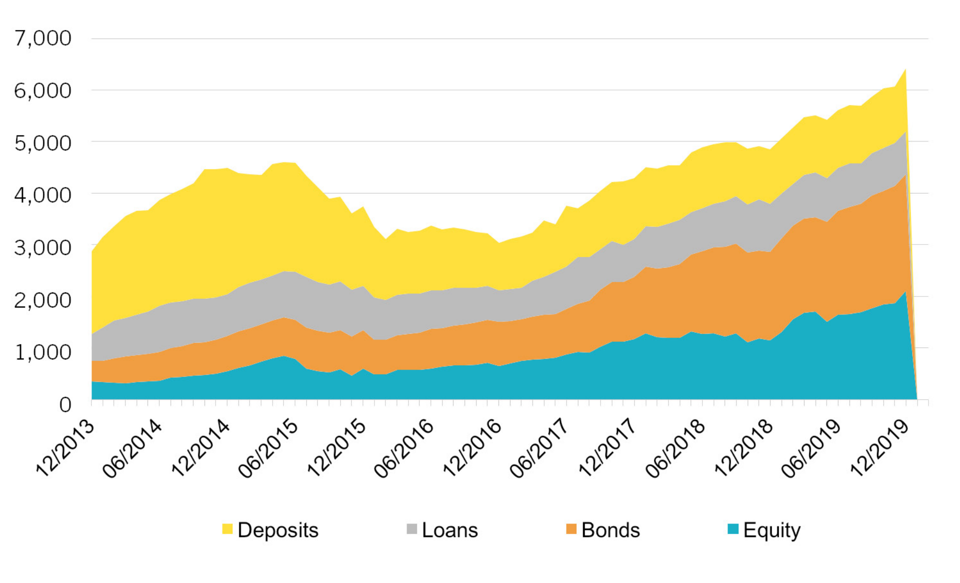


Source: BOC

[14] BOC, whitepaper on RMB internationalization for 2019

[15] Development proposals for foreign investors to increase RMB assets holding (November 2019), BOC

Figure 13: RMB Financial Assets Held by Overseas Institutions and Individuals (RMB billions)



Source: BOC

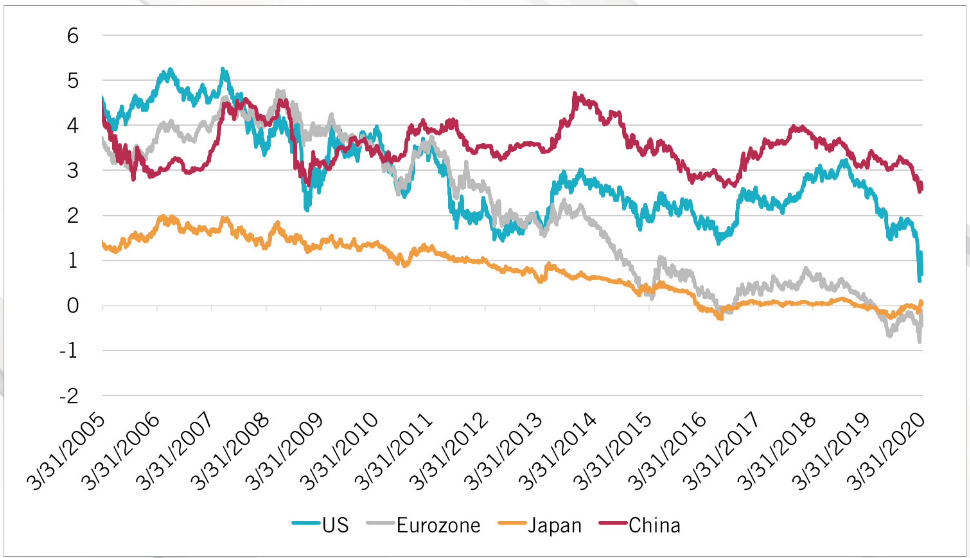
China's Bond Market

As of the end of 2019, the Chinese bond market reached $14.7 trillion, a year-on-year increase of 14.09%[16]. In 2019, the total value of bonds issued reached RMB27.04 trillion, representing a year-on-year increase of 19.65%. Since 2018, the turnover of bonds that have been active in the market, such as 10-year and seven-year CGBs and China Development Bank bonds, increased by 30%. The intraday bid-ask spread was below 2 basis points (bp) on average, and the spread dropped below 0.05bp when liquidity peaked.

In recognition of the changes made to open China's capital markets, CGBs and policy bank bonds were included in the Bloomberg Barclays Global Aggregate Index from April 1, 2019. Since February 28, 2020, highly liquid CGBs were also included in the JPMorgan Government Bond Index-Emerging Markets indices. Inclusion in the indices is expected to encourage further participation by international investors in China's bond market.

[16] www.bis.org/statistics/secstats.htm?m=6%7C33%7C615

Figure 14: Sovereign Bond Yield Curves (three month and 10 year, %)



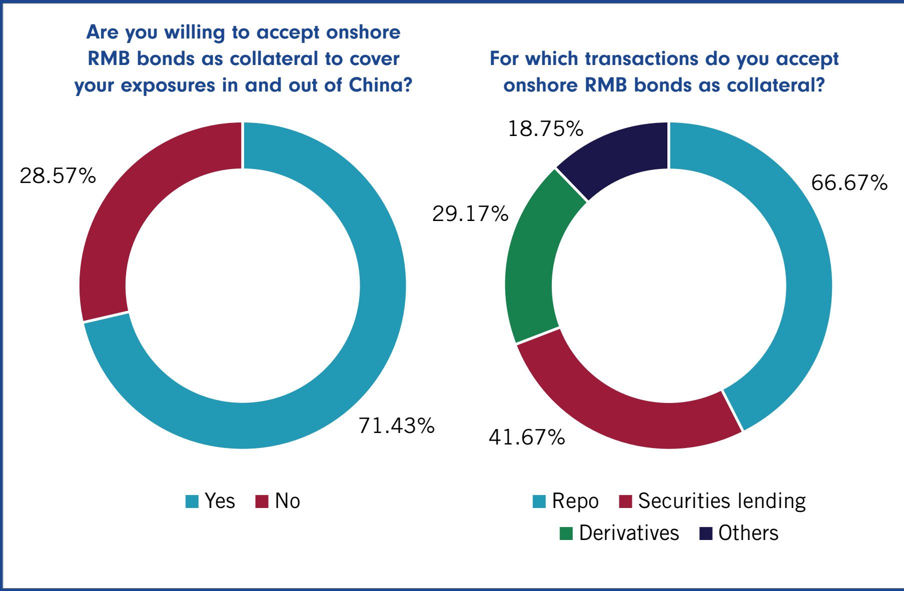
Source: Wind

Survey of Overseas Investors

In August 2018, the CCDC surveyed foreign investors about their willingness to invest in the Chinese bond market. Eighty-six financial institutions around the world responded to the survey, including large custodian banks (28%), private banks (14%), central banks and sovereign institutions (13%) and asset managers (3%).

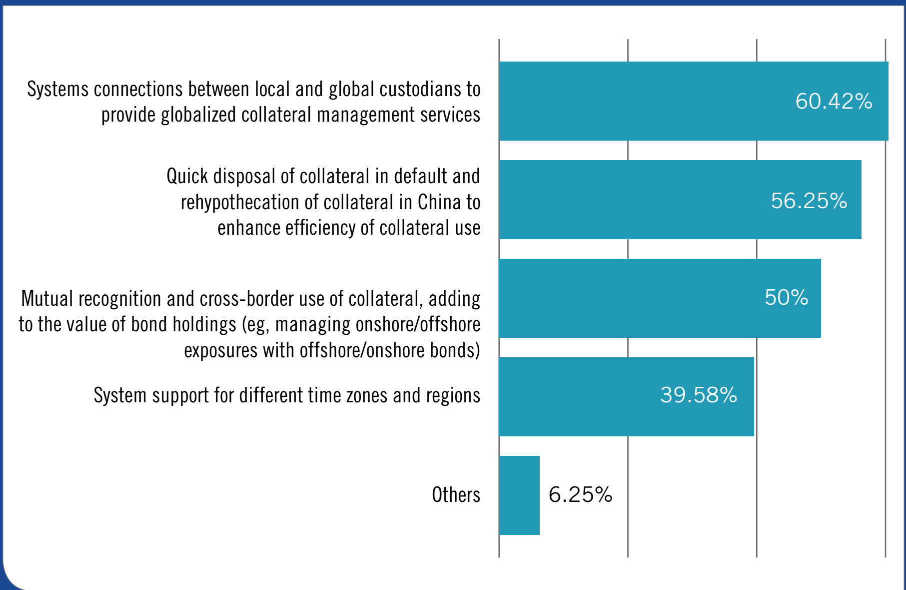
According to the survey, 71.43% of respondents were willing to accept onshore CGBs as collateral in their transactions and 68.75% would use offshore bonds (non-RMB collateral) as margin for onshore trading activities. In terms of specific transaction types, 66.67%, 41.67%, and 29.17% of respondents indicated a willingness to accept CGBs as collateral for repos, securities lending and derivatives trading, respectively.

Figure 15: Survey on Acceptance of Offshore CGBs as Collateral



In choosing collateral for cross-border trades, the main issues identified by respondents included connectivity between local and global custodians in order to provide a global solution for collateral management involving RMB bonds (60.42% of respondents), and mutual recognition and cross-border use of collateral to maximize the value of RMB bond holdings – eg, the ability to use offshore bonds to collateralize onshore transactions and RMB bonds to collateralize offshore transactions (56.25% of respondents). In addition, participants would like to see a robust collateral enforcement regime and a system enabling efficient rehypothecation of collateral in China (50% of respondents).

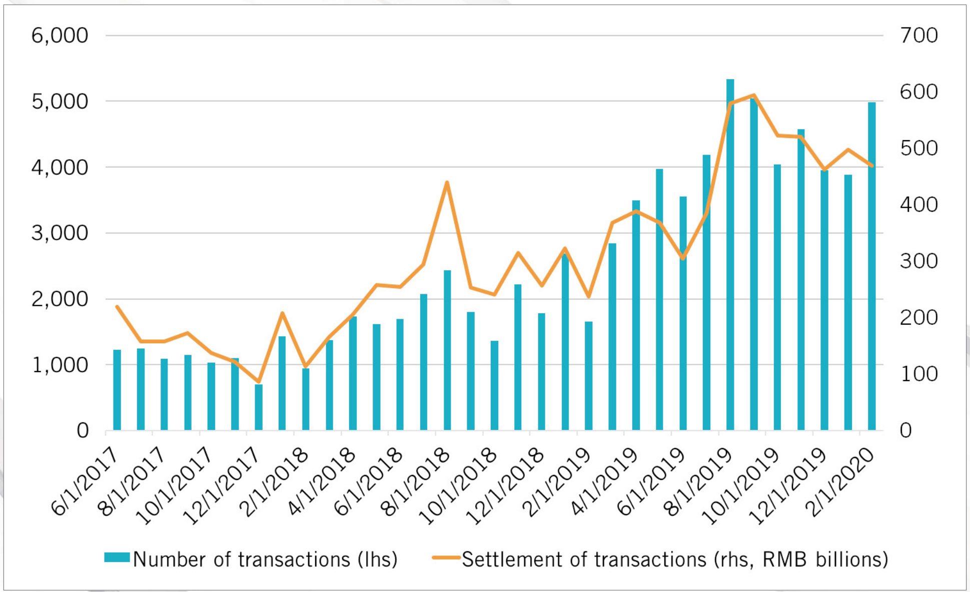
Figure 16: Anticipated Steps to Promote Cross-border Use of Collateral



Further initiatives are under way to open the Chinese bond market to overseas investors. From a market access perspective, Chinese regulators have, in recent years, continued to streamline the application and approval procedures for overseas investors to enter the market, as well as relaxing regulatory controls on investment quotas and use of funds, thereby reducing investors' access costs.

From a transaction settlement perspective, China's bond trading platform is now connected to international platforms like Bloomberg and Tradeweb, increasing flexibility in the settlement cycle. These developments have reduced the transaction costs of participating in CGBs. There has also been a diversification of transaction types and an increase in the investment quota – overseas investors can now participate in the trading of cash bonds, repos, OTC interest rate/exchange rate derivatives, exchange-traded financial futures and commodity futures.

Figure 17: Participation of Overseas Investors in China's Bond Market

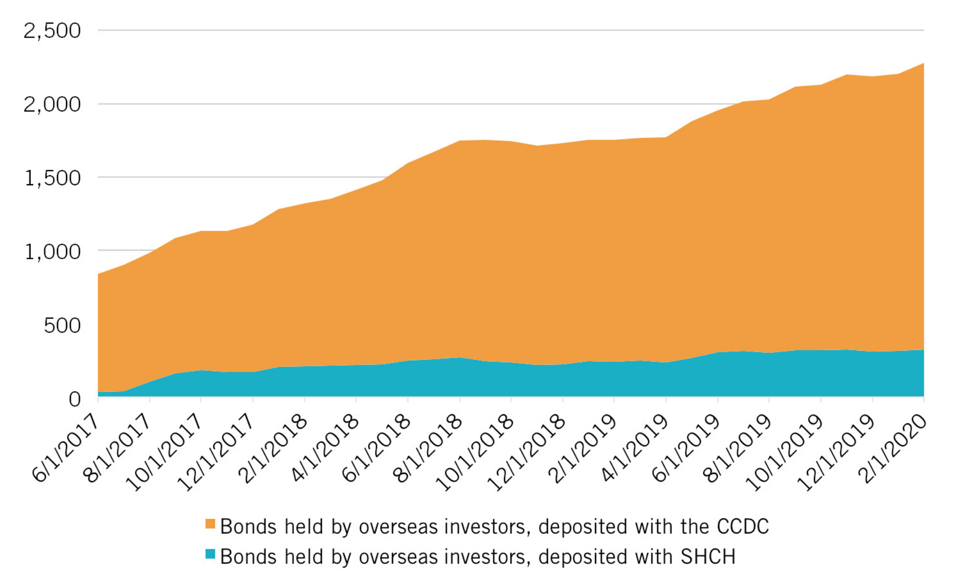


Source: CCDC

In recent years, the number of foreign institutions participating in China's interbank bond market (CIBM) has increased, resulting in a rise in foreign holdings of CGBs. At the end of 2019, the number of overseas institutions accessing the CIBM via the CCDC exceeded 1,600.

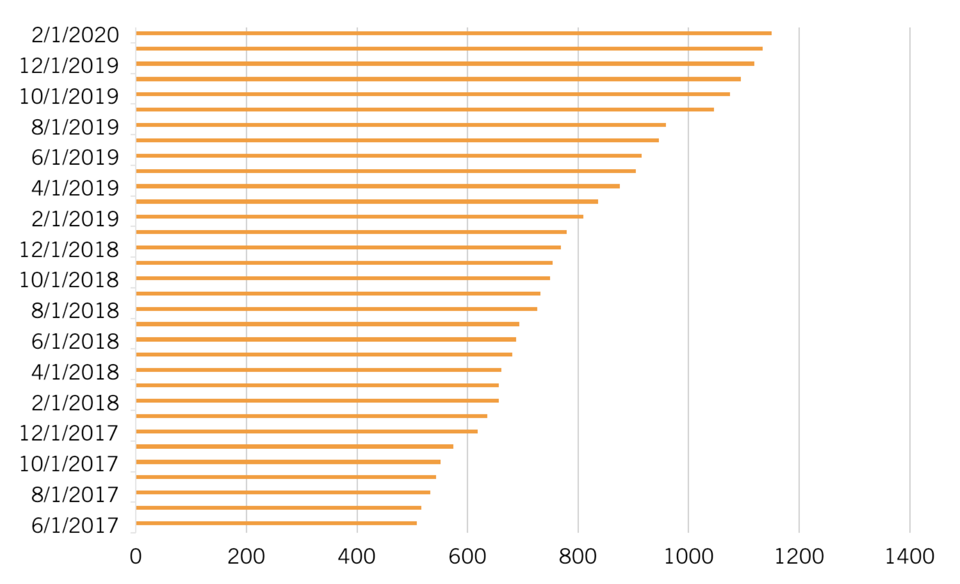
In addition, the total amount of foreign holdings of CGBs reached RMB2.2 trillion, representing a year-on-year increase of 26.46% (RMB1.87 trillion, or 85%, was deposited with the CCDC). Foreign investors have remained active – the monthly average bond trading volume of foreign institutions in 2019 exceeded RMB410 billion, with the monthly peak hitting RMB594.1 billion.

Figure 18: Holdings of CGBs by Overseas Investors (RMB billions)



Source: CCDC, SHCH

Figure 19: Number of Accounts Held by Overseas Investors at the CCDC



Source: CCDC, SHCH

In addition to the initiatives to further open China's capital markets, reforms on bond issuance, trading, settlement and investor protection have been implemented. From a risk mitigation perspective, the CIBM officially established a collateral default mechanism in June 2019 to standardize the procedures and rules governing the disposal and liquidation of collateral upon default. In December 2019, the PBOC issued rules on enforcement following default of a bond issuer, providing more certainty for credit risk management in China's bond market. In addition, tax policies have been clarified to specify that foreign investors' bond interest income is temporarily exempted from corporate income tax and value-added tax.

Establishment of Enforcement Rules in China's Bond Market

Default disposal is an indispensable part of collateral management. In June 2019, the PBOC issued a notice regulating bond default disposal in repos. The CCDC, Shanghai Clearing House (SCH) and China Foreign Exchange Trading System (CFETS) have since issued implementing rules and guidelines to support an efficient collateral enforcement regime.

For example, the CCDC has further extended the scope of the default disposal mechanism to cover defaults in bond repos, bilateral collateral and cross-border collateral arrangements through a pre-authorization granted in favor of the CCDC. This has brought China's collateral enforcement rules closer to the self-help remedy commonly seen in some European jurisdictions and the US, and more in line with international practice.

According to the guidelines on disposal of collateral upon default released by the CCDC, disposal of collateral may be conducted via auction, private sale/transfer or conversion into value, depending on investors' needs. As of the end of 2019, the CCDC had organized multiple auctions and sales, and is continuing to refine the relevant operational procedures. In addition, pre-authorization has been used in an increasing number of contracts to provide a basis for collateral disposal upon default. All these developments are intended to strengthen the foundation for CGBs to be used as eligible collateral.

Financial Market Infrastructure Changes

According to the level-one self-assessment report released by the Committee on Payments and Market Infrastructures and IOSCO in January 2019[17], China complies with the 24 principles and five regulatory responsibilities set out in the *Principles for Financial Market Infrastructures*.

In order to use bonds as margin, collateral management systems need to be in place to enable the margin to meet risk control requirements, such as marking to market and making margin calls. Although bond collateral management in China began later than in other markets, a system with broad functionality has developed in recent years through the introduction of various new mechanisms.

In 1994, China began to use bonds as collateral in repos on exchange-traded markets. Since then, bonds have been used as collateral as part of macro-level policy implementation and in financial transactions, reflecting the development of China's bond market. The CCDC began offering collateral management services in China in 2011, and has provided support to monetary policy, fiscal policy, FX management, payment systems and the social security system. It also facilitates repos, lending, forwards and other bilateral transactions.

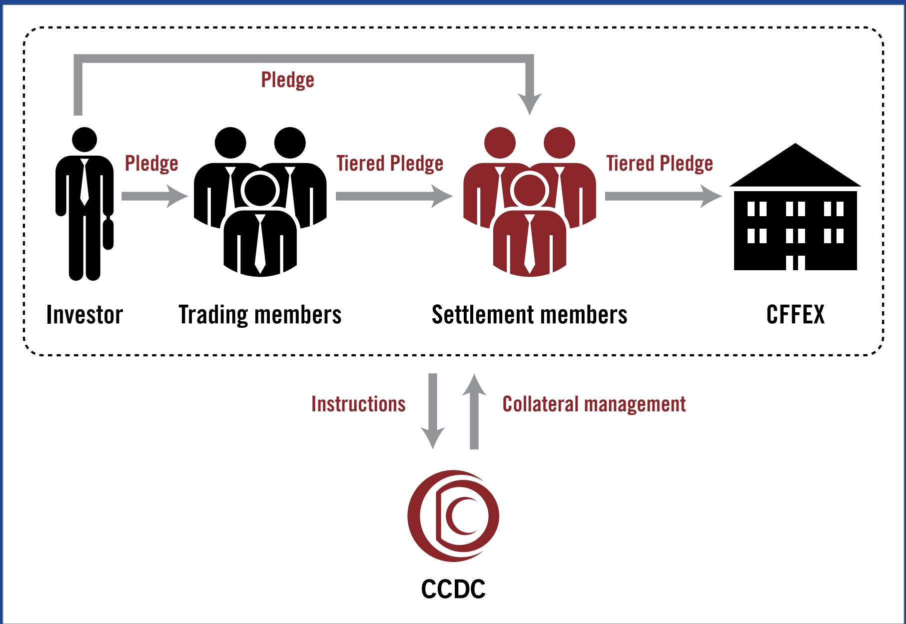
[17] www.bis.org/cpmi/level1_status_report.htm

In 2015, following approval by the China Securities Regulatory Commission (CSRC), the Ministry of Finance and the PBOC, the CCDC and China Financial Futures Exchange (CFFEX) published rules allowing bonds to be used as margin for financial derivatives. Initially, bonds could only be used as collateral in CGB futures contracts but are now eligible for all types of financial and commodity futures contracts. Another critical development is an efficient bond disposal mechanism, which has been established following a joint effort by regulators and financial market infrastructures (FMIs).

Using Bonds as Margin for Futures Contracts in China's Market

In 2015, CFFEX and the CCDC launched a pilot program allowing the use of bonds as margin for CGB futures contracts to improve efficiency and promote the development of the CGB futures market. The use of bonds as margin for futures contracts is now supported by an electronic system, significantly improving operational efficiency. Since 2019, over RMB10 billion of bonds have been posted as margin for futures contracts, representing a year-on-year increase of over 40 times.

Figure 20: Process for Using Bonds as Margin



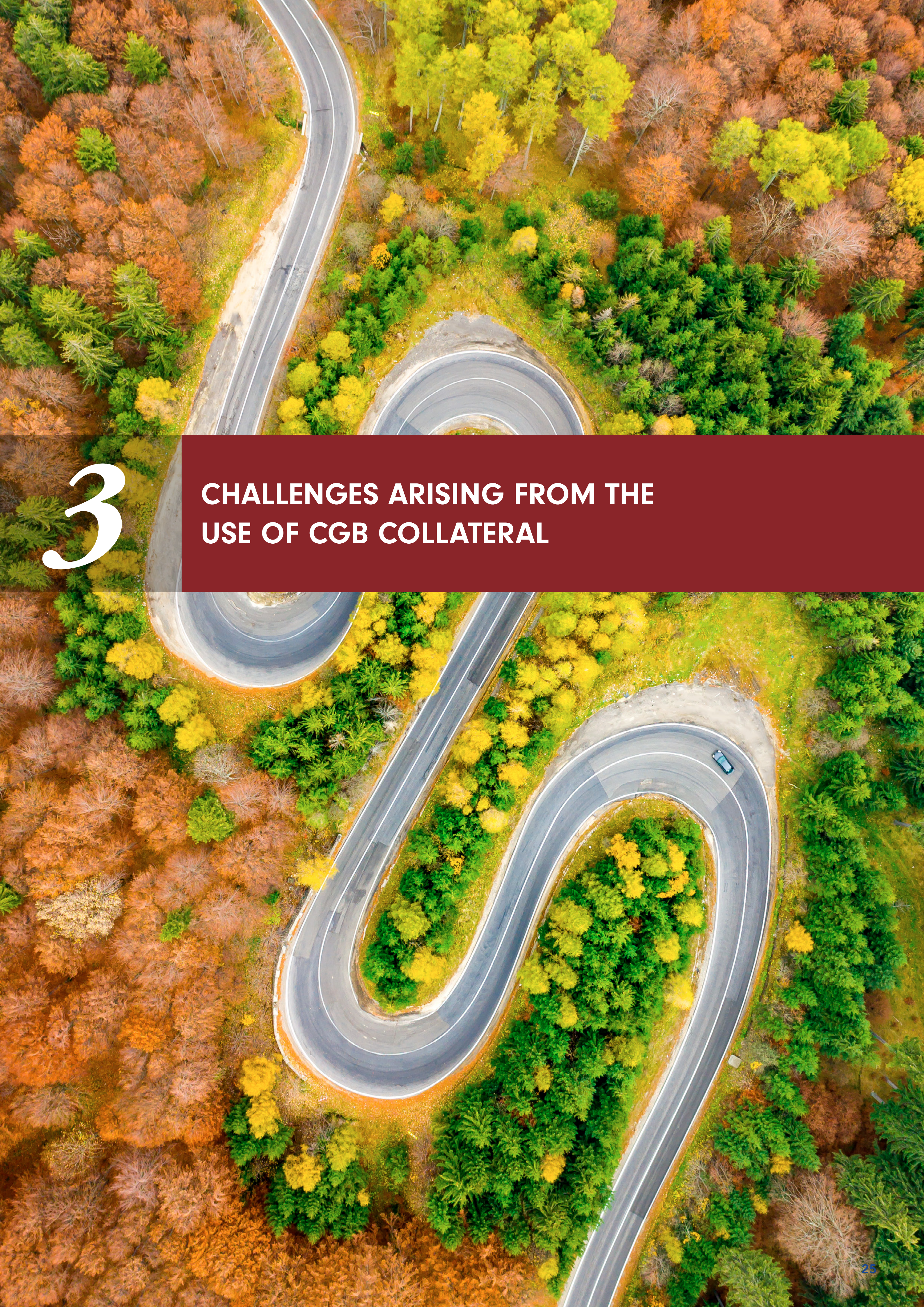
Bonds are currently accepted as margin for all types of financial futures contracts, and the scope of investors has also been expanded to include qualified foreign institutional investors (QFIIs). In April 2019, CGBs were used by the first foreign investor (a QFII) as margin for a stock index futures contract to meet its asset allocation demand and risk management requirements.

In November 2019, a memorandum of understanding was signed by the CCDC, CFFEX, the Shanghai Commodity Futures Exchange, the Dalian Commodity Futures Exchange, the Zhengzhou Commodity Exchange and other future exchanges to allow the use of bonds as margin in the entire futures market.

- Following the completion of the project to introduce bonds as margin at commodity exchanges, global investors will also be able to use CGBs as margin in their trading of crude oil futures and Rubber TSR20 contracts (on the Shanghai Commodity Futures Exchange), iron ore futures (on the Dalian Commodity Futures Exchange), and PTA futures (on the Zhengzhou Commodity Futures Exchange). As the bond and futures markets continue to open up, the use of CGBs as margin in derivatives contracts globally will likely continue to grow.

Cross-currency Swap Example

In October 2016, a Chinese commercial bank conducted a cross-currency swap with a foreign central bank. The target currency and local currency were swapped on the trade date and the principal will be swapped back at the end of the contract, with interest payments made during the term of the trade. In this transaction, the foreign central bank used bonds held in custody by the CCDC as performance guarantees.



3 CHALLENGES ARISING FROM THE USE OF CGB COLLATERAL

China has been developing its policies, macroeconomic environment and technological framework to support the further opening of inbound and outbound access to China's financial market. There are both opportunities and challenges in internationalizing RMB bond collateral, and it will require a long-term commitment to fully align the Chinese bond market with its international counterparts.

Enforceability of Close-out Netting

Close-out netting refers to a process of terminating obligations under a contract with a defaulting party and combining the positive and negative replacement values into a single net payable or receivable. Close-out netting enables parties to mitigate the credit risk associated with derivatives and means a default is less likely to be disruptive to the financial system. It also enables more efficient use of capital by financial institutions. Most developed markets globally have introduced netting legislation to provide legal certainty for the enforceability of close-out netting in derivatives transactions[18].

Although Chinese judicial authorities and regulators have expressed their support for close-out netting in principle on various occasions, many international market participants consider China a non-netting jurisdiction, as there is no netting legislation addressing the following issues:

- Chinese law currently does not expressly recognize the concept of 'single agreement' or offer statutory recognition of close-out netting in the event a Chinse counterparty enters into bankruptcy proceedings. As a result, there is a residual legal risk that a non-defaulting party's early termination right may be suspended or deemed unenforceable against an administrator's cherry-picking rights, and the administrator may dispute the non-defaulting counterparty's insolvency set-off rights in bankruptcy proceedings.

- Implementing rules that apply the Enterprise Bankruptcy Law to Chinese financial institutions have not so far been enacted. In addition, there are uncertainties about how close-out netting will be protected and enforced under a bank resolution regime.

- The application of close-out netting in related capital rules is yet to be clarified.

Due to these legal uncertainties, some foreign investors question whether Chinese financial institutions can be accepted as clearing members of overseas CCPs and whether regulatory margin should be exchanged with Chinese financial institutions. Those Chinese financial institutions that have entered into collateral agreements with overseas counterparties have typically been asked to post margin on a gross basis (rather than a net basis). This has substantially increased Chinese financial institutions' transaction costs in their derivatives transactions and, to a certain degree, restricted the use of onshore CGBs as IM in global derivatives markets.

[18] For a list of jurisdictions that have enacted netting legislation, please visit www.isda.org/2020/07/03/status-of-netting-legislation/

Views on Close-out Netting

The Supreme People's Court (SPC)

- In 2013, the SPC clarified in *Several Issues Concerning the Application of the Enterprise Bankruptcy Law of the People's Republic of China (II)* that insolvency set-off takes effect when an administrator receives a set-off demand notice from a creditor claiming set-off, without the need to obtain consent from the administrator.

- In 2016, the SPC provided clarification in the *Notice on the Relevant Issues Concerning Case Filing and Acceptance of the Bankruptcy Case* on procedural issues relating to filing and the acceptance of bankruptcy petitions.

The China Banking and Insurance Regulatory Commission (CBIRC)

- On May 11, 2017, the China Banking Regulatory Commission (CBRC)[19] expressed a positive view on close-out netting in a reply to the National People's Congress on proposals for close-out netting legislation. In its reply, the CBRC stated that China's bankruptcy law does not conflict with close-out netting in principle. Rather, China's bankruptcy law gives the judiciary a right to review transactions that are terminated as part of close-out netting, and to set aside any termination where the right to close out netting has been exercised in bad faith. It added that these rights of the judiciary do not conflict with the relevant provisions of the ISDA Master Agreement.

- The CBRC also stated it was working on draft rules on the resolution of commercial banks and would give adequate consideration to the suspension of the right to close-out netting in respect of financial contracts governed by an ISDA Master Agreement during a resolution procedure.

- In addition, the CBRC acknowledged the effect of netting in capital measurement and other areas. For example, in accordance with Appendix 6 of the *Measures for Administration of Capital of Commercial Banks (Trial Implementation)*, netting may be adopted as a capital risk mitigation measure when the internal rating method is used.

- On January 16, 2018, rules on counterparty default risk capital measurement for derivatives trading set out the role of netting and margin agreements, and the steps and formulas for replacement cost and potential risk exposure.

- In accordance with the outcomes of the ninth China-UK Economic and Financial Dialogue, the CBIRC took the lead in establishing a China-UK Netting Work Group in early 2018 to study how to clarify the enforceability of close-out netting.

[19] The CBIRC was established in April 2018 through a merger of China's banking and insurance regulators, the CBRC and the China Insurance Regulatory Commission (CIRC)

The CSRC

In November 2019, several provisions on netting and settlement finality were added to the *Administrative Measures for Futures Exchanges (Consultation Draft)*: (a) netting should be applied to intraday settlement; and (b) in the event of any member/client's bankruptcy, margin or other settlement funds provided by the defaulted member/client should first be used to meet settlement and delivery obligations under the futures contracts.

Improvements to Collateral Enforcement Rules

A key consideration of whether to use CGBs as eligible collateral relates to the collateral enforcement regime. This enables the non-defaulting party to enforce its collateral in a timely manner when the IM provider is in default.

In accordance with the relevant provisions under the *Contract Law* and the *Law on Choice of Law for Foreign-related Civil Relationships in China*, parties to derivatives transactions involving cross-border and foreign elements (referred to as foreign-related contracts) can choose a foreign law as the applicable law to govern their contracts, except in specific circumstances[20].

A foreign-related contract under an ISDA Master Agreement and related IM arrangements should not fall under these special circumstances. Parties to foreign-related OTC derivatives contracts can therefore choose a foreign law as the governing law. As such, the choice of English law under the IM credit support deed or New York law under the IM credit support annex (CSA) will be recognized under Chinese conflict of laws.

However, the governing law of an agreement is not necessarily the applicable law that determines property rights under China's conflict of laws. In other words, the governing law of the IM documents (eg, English law for the IM credit support deed and New York law for the IM CSA) may be different to the law that is applicable to the proprietary aspect of a security interest created over the collateral. This is a key issue in determining whether the current default disposal mechanism under Chinese regulations can be applied to a foreign-related derivatives contract governed by a foreign law.

Furthermore, Article 75 of the Enterprise Bankruptcy Law states that enforcement of a security over the properties of a bankrupt debtor will be stayed during bankruptcy reorganization proceedings. This creates uncertainty over whether a pledgee could enforce collateral in a timely manner, even if a third-party collateral manager has been pre-authorized to dispose of the collateral following a default. This uncertainty could affect the pledgee's exercise of its rights and realization of the collateral in the event of the pledgor's bankruptcy.

[20] Such circumstances include where the Chinese law clearly prohibits the choice of foreign law, and where Chinese law has mandatory provisions for a certain foreign-related civil relationship – in which case, the mandatory provisions of the Chinese law shall be applied, regardless of whether the contracting parties have chosen the law applicable to the contract

Collateral Enforcement in Bankruptcy Circumstances

Article 219 of the Property Law of China allows a pledgee to enforce the pledge either by taking title to the pledged property with the consent of the pledgor or otherwise by selling the pledged property by auction or private sale.

As all bonds traded through the interbank bond market need to be held in a custodian account with a depository and clearing institution (the CCDC or SCH), the key to exercising any self-help remedy (such as conversion into value, auction and sale) is to register the change of ownership of the pledged bonds upon enforcement of the collateral, otherwise the disposal of the pledged bonds cannot be completed. However, the registration and transfer procedure requires cooperation from the bond depository and clearing institution.

The new collateral enforcement rules[21] issued by the CCDC, SCH and China Foreign Exchange Trading System and National Interbank Funding Center (CFETS) in June 2019 (collectively, the 'default rules') are aimed at helping the pledgee realize its security interest more quickly in the event of the pledgor's default. As participants in the interbank bond market are sophisticated financial institutions, in addition to the conversion into value by mutual agreement of the parties, the default rules permit the relevant bond depository and clearing institution to dispose of the pledged bond upon default following a request by the pledgee after a procedural (rather than substantive) review of the pledgee's application.

Discussion 1: Are foreign investors allowed to participate in the disposal of collateral after a default?

The default rules on collateral enforcement do not prohibit foreign investors from participating in the auction or sale of collateral. Foreign investors holding an onshore account through RMB QFIIs or CIBM Direct may participate as third-party buyers in the private sale procedures or as bidders in the auction procedures. Foreign investors using Bond Connect are required to trade through a third-party platform (for example, Tradeweb or Bloomberg), and so can only participate when the trading platforms enable participations in onshore enforcement.

For foreign investors (such as foreign central banks, overseas RMB business clearing banks and participating banks) that can transact repurchase agreements under CIBM Direct, the default rules applicable to repo transactions do not include any restrictions specifically applicable to foreign investors. In principle, it is believed foreign investors can act as pledgor or pledgee and participate in the default disposal. For other types of transactions, enforcing a bond pledge upon a default is subject to the terms of the agreement between the foreign investor and its counterparty and the scope of the collateral enforcement rules of the relevant bond depository and clearing institution.

[21] The CCDC issued the Guidelines of China Central Depository & Clearing Co., Ltd. for the Collateral Default Disposition Business (Trial), the Interbank Market Clearing House Corporation (Shanghai Clearing House) issued the Implementing Rules on Enforcement of Bonds Underlying Repurchase Agreements (Trial) and the Implementing Rules on Auction of Bonds Underlying Repurchase Agreements (Trial), and China Foreign Exchange Trading System & National Interbank Funding Center (CFETS) published the Implementing Rules on Enforcement of Bonds Underlying Repurchase Agreements (Trial)

Discussion 2: During the default disposal process, does the pledgor entering bankruptcy proceedings affect the default disposal?

According to the default rules, if the pledgor enters into bankruptcy proceedings during the default disposal, the enforcement process may be suspended. Article 75 is the only provision in the Bankruptcy Law that imposes a stay on enforcement of a security interest during reorganization proceedings. It is unclear whether the acceptance of a bankruptcy petition by a court will also operate to stay the enforcement of collateral. Under the Bankruptcy Law, when the pledgor enters into bankruptcy proceedings, the pledged collateral becomes the property of the bankrupt debtor and, in principle, is subject to the administrator's management. In practice, if there is no express prohibition on a creditor's right to enforce the security interest in the Bankruptcy Law and the disposal of the collateral by the creditor does not cause any loss to the bankrupt debtor or other creditors, then the risk of the disposal being challenged by the administrator is relatively low. The default rules do not cover the circumstances when a pledgor is subject to bankruptcy proceedings in detail, meaning this would require a case-by-case analysis. Except where the law clearly specifies that the enforcement of a security interest is suspended, the institution responsible for default disposal may make a determination based on specific circumstances.

Policies for Outbound Transfer of Funds After Disposal of CGBs

Under China's FX control regulations, liquidation proceeds realized through the disposal of RMB bond collateral following a default are classed as capital account items. The arrangements for cross-border capital flows and remittances are subject to the applicable Chinese FX control regime[22]. From a legal perspective, there are currently no specific laws, policies or operational procedures that regulate cross-border remittances following the disposal of CGBs used as collateral for cross-border transactions.

For example, under the CIBM Direct access channel[23], foreign investors usually open a non-resident account (NRA) with a domestic custodian or settlement agent bank in China. This account system is recognized by the State Administration of Foreign Exchange and supports the outbound transfer of principal and returns from investments in the onshore market.

[22] For example, CIBM Direct sets a clear requirement for the ratio of RMB fund inflows versus outflows and the maximum fluctuation range. The regulation applicable to Bond Connect specifies that the sale proceeds from disposing of onshore RMB bonds must be converted to foreign currencies if the proceeds are not used for re-investment

[23] CIBM Direct is a direct market entry model where foreign investors can trade bonds on China's interbank bond market directly through their onshore settlement agents

However, the relevant FX policies for CIBM Direct[24] are not clear on whether the proceeds from the disposal of RMB bond collateral following a default are included in the scope of eligible items for cross-border remittances applicable to NRAs. Therefore, although there are no technical obstacles for a foreign pledgee to enforce its rights in the collateral, whether the pledgee ultimately has timely access to the proceeds from the sale of the CGBs is subject to FX controls on the cross-border remittance of the proceeds.

FX Regulations

The main FX regulations governing collateral for cross-border transactions include *Foreign Exchange Control Regulations (State Council Decree No.532), Foreign Exchange Administration Rules on Cross-border Guarantee, Operating Guidelines for the Foreign Exchange Administration of Cross-border Guarantees (H.F. (2014) No.29),* and *Administrative Measures for Registration of Foreign Debts (H.F. (2013) No.19).*

1. *Foreign Exchange Control Regulations (State Council Decree No.532)* requires a domestic entity that provides collateral to an overseas entity to register the security interest over the collateral with the FX authority after signing the security agreement.

2. *Foreign Exchange Administration Rules on Cross-border Security* and *Operating Guidelines for the Foreign Exchange Administration of Cross-border Security* set out the following requirements:

    - **Restrictions on cross-border payments and transactions arising from a security interest over property rights.** Cross-border payments and transactions that arise from a security interest over property rights should comply with the relevant FX restrictions and procedural requirements.

    - **Audit requirements for cross-border payments of proceeds from the disposal of collateral.** Unless specified otherwise, applications for the outward or inward remittance of proceeds from the disposal of collateral may be made directly to a domestic bank. After the bank has verified the authenticity and legality of the performance obligations relating to the security interest and has obtained copies of the necessary supporting documents, the collateral provider or the creditor can purchase or sell foreign currencies and make outward or inward remittance.

    - **Registration requirements applicable to the transfer of ownership in collateral.** If the transfer of ownership of collateral between the pledgee and pledgor triggers cross-border investment FX registration requirements, the parties should comply with these requirements and the ownership change procedures.

[24] These include Rules on Managing Funds from Securities Investments Made by Foreign Institutional Investors in China, and Notice of the State Administration of Foreign Exchange on Relevant Issues Concerning the Foreign Exchange Risk Management of Foreign Institutional Investors in the Interbank Bond Market

- o **Provisions applicable to a security interest provided by domestic institutions for their own debts.** When a domestic entity provides a security interest for the benefit of an overseas creditor, registration in respect of the security interest is not required. Upon default, when the pledgor has the pledged property converted into money to pay off the debt according to the regulations, or when the pledgee applies for outbound remittance after selling the collateral, the pledgor is required to comply with the relevant procedures applicable to repayment of principal and interest of a foreign debt.

Need for Improvements to Cross-border Connectivity

In addition to the legal and compliance issues, the collateral management infrastructures that support the use of CGBs as collateral in international markets are also vitally important. In recent years, major global FMIs have been collaborating to promote and coordinate the cross-border flow of collateral in different regions and facilitate operational efficiency. At present, most cross-border bond collateral is held with a few global international central securities depositories (ICSDs) and custodian banks, enabling investors to use their collateral worldwide.

Generally speaking, investors that have opened RMB bond accounts with onshore custodians can directly pledge and accept the pledge of CGBs. For other investors without onshore RMB bond accounts, the existing custodial system is unable to facilitate acceptance of onshore bonds, which affects the scope of investors that can use CGBs as collateral. In addition, Chinese banks need to enhance their custody service capabilities and international customer base to catch up with their international peers.

To facilitate use of CGBs in the global derivatives market, market infrastructure needs to be enhanced by connecting local custodians and central securities depositories (CSDs) with ICSDs and global custodian banks, which would improve the convenience of using RMB bonds as collateral in cross-border trades. As it stands, however, the cross-border connection between China and international custodians is still incomplete and the cooperation model requires further clarification.

The CCDC has signed a memorandum of cooperation with ICSDs such as Euroclear and Clearstream, and continues to strengthen cross-border collaboration with custodian banks like BOC and ICBC, with a view to creating a pathway for the mutual recognition of collateral and to connect China with international markets. Enhanced connectivity between FMIs would help to reduce potential barriers to cross-border transactions, thereby facilitating a higher degree of market integration.

Further Opening Up China's Bond Market

The use of CGBs as eligible collateral largely hinges on the development of the Chinese bond market. Statistics show that China's capital and financial accounts surplus in 2018 had exceeded the current account for the first time in five years, with a net inflow of bond investments exceeding the inflow of equity investments. Bond investments continued to attract a net inflow of $42.4 billion into China in 2019. Over the past three years, foreign institutions have purchased over 23% of new CGB issuance, exceeding the investment proportion purchased by large state-owned banks[25].

However, stock data indicates that foreign investor holdings of CGBs accounted for only 3%, which is lower than that in other emerging markets such as Malaysia, South Korea, and Thailand (10%-30%). This indicates there is room for the further opening up and development of China's bond market, centred on three key areas.

Narrow range of available products: Bond hedging tools are primarily limited to FX forwards and swaps. In April 2020, commercial banks were permitted to trade CGB futures (starting with the five large state-owned banks). Only a limited number of institutions are currently able to trade long-term interest rate hedging instruments (eg, interest rate options), credit risk mitigation instruments (eg, credit default swaps) and triparty repos.

Lack of trading venues: Foreign investors mainly trade CGBs and related products in the interbank bond market. The futures exchanges and the non-cleared OTC derivatives market is not fully open to foreign investors.

Policy coordination and expectation requires clarification: There are still inconsistencies in the policies and rules governing CIBM Direct and Bond Connect. Specifically, there are discrepancies in onshore and international agreements, regulatory frameworks and trading practices. This hinders the ability of foreign investors to access and participate in China's onshore market.

[25] Data source: BOC

4 PROSPECTS AND SUGGESTIONS

Making use of CGBs as collateral feasible in the global OTC derivatives market requires careful consideration of the relevant regulatory, legal and market developments and the cooperation of all stakeholders. There are a number of steps that could be taken over the short, medium and long term to achieve this goal.

Near-term Preparations

1) Improving the Collateral Enforcement Regime

An enforcement regime that enables the disposal and liquidation of collateral in a timely manner following a pledgor's default is key for CGBs to be accepted as collateral by global derivatives market participants. Substantial progress has been made in developing an efficient enforcement regime for RMB bond collateral in bilateral transactions (such as repo and securities lending) to enhance certainty upon a counterparty's default. Two steps are now necessary to further improve the collateral enforcement regime.

- Chinese regulators and the judiciary should provide further clarification on how the new enforcement regime will be applied in various scenarios (eg, in bankruptcy proceedings) to improve the applicability and operation of the enforcement rules for RMB bond collateral in cross-border transactions.

- China's FX regulator should coordinate with domestic FMIs to clarify the policies and operational rules for cross-border fund remittances resulting from collateral disposal as soon as possible. There are two key elements to a sound collateral enforcement regime: an efficient process to dispose of the collateral and a clear procedure for the remittance of proceeds. For foreign pledgees, the crucial question is whether they could be paid first out of collateral disposal proceeds in a timely manner. The FX regulator should issue clear regulatory and operational rules for outbound fund transfers resulting from the disposal of bond collateral following a default. FMIs could act as a gatekeeper to help supervise these remittances to ensure they are conducted in a risk-controlled manner.

2) Enhancing the Role of FMIs

FMIs play a key role in promoting and coordinating the cross-border flow of collateral in different regions, thereby easing global liquidity strains. This is important for the internationalization of RMB bond assets, which can be achieved when CGBs held by Chinese and foreign entities can move freely across borders for use in the global financial market. FMIs can lay the groundwork for this now in a variety of ways.

First and foremost, the establishment of a stable and efficient cross-border connection system will alleviate operational issues for the cross-border flow of assets. In addition to RMB bond collateral solutions for the domestic financial market, the CCDC has started working with foreign FMIs to establish cross-border connections to further improve the RMB bond custody system and promote use of onshore CGBs as collateral in the international markets.

As a next step, FMIs should develop an infrastructure that enables effective use of RMB bonds as collateral in derivatives transactions globally given increased participation by Chinese banks in the international markets. FMIs should also provide operational guidelines to facilitate the cross-border use of RMB collateral and quick disposal of that collateral in the event of a default. For example, FMIs could facilitate the cross-border movement and custody of RMB bonds by establishing interconnectivity with CSDs located in the EU. Although methods for establishing and implementing connectivity may be different to those used in the Chinese market, the ultimate goal is the same (ie, to establish FMI connections to alleviate technical obstacles for the movement and management of collateral).

Under the BCBS-IOSCO framework, some Chinese banks will become subject to regulatory IM requirements under the phase-five rollout of the margining requirements for non-cleared derivatives, which could boost demand for cross-border use of collateral. It is therefore recommended that FMIs prepare for this by conducting market and customer research to understand market trends and likely demand. Understanding how US Treasury bonds, Japanese government bonds and European sovereign bonds are used as margin for cross-border derivatives transactions will provide a good reference for the globalization of CGBs.

Medium- and Long-term Goals and Recommendations

1) Providing Legal Certainty for Close-out Netting

The UK-China Netting Working Group[26] is working to achieve greater clarity on the legal enforceability of close-out netting in China. Although the Chinese judiciary and regulators have expressed positive views on close-out netting on multiple occasions, there is market consensus on the need for legislative solutions to cover all types of transaction parties. Netting legislation not only ensures netting is enforceable following early termination of a transaction, but also facilitates the fast and effective liquidation of collateral[27].

[26] The UK-China Netting Working Group comprises the Legislative Affairs Commission of the Standing Committee of the National People's Congress, the SPC, the CBIRC, the CSRC, SCH, market participants, the UK Department for International Trade, ISDA, the Asia Securities and Financial Markets Association and the China Banking Association

[27] For example, netting legislation in many jurisdictions specifies that collateral arrangements related to qualified financial transactions are not subject to any stay or restriction on enforcement of collateral in the bankruptcy law, nor to the administrator's right to void a payment or an asset transfer made within a specific period of time before the commencement of the bankruptcy proceeding (unless the administrator can prove that the transaction was fraudulent or harmed the interests of another creditor). For more information on how netting legislation protects financial collateral arrangements, please refer to the 2018 Model Netting Act published by ISDA (www.isda.org/a/X2dEE/FINAL_2018-ISDA-Model-Netting-Act-and-Guide_Oct15.pdf)

2) Continue to Open Up and Develop China's Bond Market

The continued opening and development of China's bond market is critical to support use of CGBs as qualified IM collateral. The goal is to establish a market system that offers product diversity, operational functions with clear rules and regulations to align with international standards. This should involve the following factors.

- **Facilitate market access for foreign investors**
  - Unify market access models by confirming CIBM Direct as the main channel for market access to facilitate accurate and stable policy expectations among domestic and foreign market participants;
  - Further simplify market entry procedures and gradually replace the pre-registration system with a filing requirement; and
  - Streamline the due diligence requirements for foreign investors using derivatives to hedge their RMB bond holdings to facilitate easy access to China's bond market[28].
- **Optimize post-entry services for foreign investors**
  - Provide new services to improve international access – for example, by developing cross-border collateral management, cross-border issuance, cross-border settlement and related information services; and
  - Expand the scope of products available to foreign institutions to include interest rate risk hedging tools (for example, interest rate swaps, CGB futures and standardized bond forwards), credit risk hedging tools and triparty repos that closely resemble those commonly traded in international markets. Foreign investors should be allowed to trade on all venues, including all stock and futures exchanges, the CIBM and the OTC derivatives market, and to trade derivatives including index futures for portfolio management and price discovery purposes.
- **Accelerate the development of China's bond market infrastructure**
  - By learning from the experiences in European and US markets, establish a multi-tiered bond market to address the needs of different investor types (such as market makers, dealers and general investors) to improve market trading activities;
  - Improve the market-making system and its ability to meet different investor needs by expanding market capacity and diversifying the types of institutional participants;
  - Introduce more trading methods to further enhance market liquidity; and
  - Strengthen the supervision of trading behaviors and implement detailed trading rules in the interest rate market to establish a fair, transparent and honest trading environment.

[28] The background review for FX derivatives hedging has been simplified to post supervision, and a reasonable proportion of hedging is allowed

APPENDIX I: USE OF COLLATERAL UNDER NEW MARGIN REQUIREMENTS

INTRODUCTION

This section will explore the operational, custodial and market issues that participants could face under the initial margin (IM) requirements for non-cleared derivatives when using Chinese government bonds (CGBs) to collateralize cross-border transactions.

Background and ISDA's Work

There are various margin regimes for non-cleared derivatives in multiple jurisdictions. As set out in section 1, the requirements have been implemented according to a regulatory phase-in schedule (which has been subject to certain changes) that started in 2016. Please refer to *Rules for Non-cleared Derivatives* (page 8) for further details on the implementation timeline. During previous implementation phases, various custodians, collateral vendors, consultants and legal firms have also been involved.

ISDA has been working with the industry since before the first phase of the IM requirements in 2016 to help facilitate compliance and respond to issues related to documentation, margin calculation, collateral exchange and settlement, information exchange and dispute resolution. These issues include:

- Developing new industry standard legal documentation to govern the exchange of IM.
- Facilitating the two-way pledging of gross IM to legally segregated accounts at third-party custodians.
- Facilitating multiple custodial relationships. This requires legal documentation that diverges across custodians and aligns with the bilateral credit support documents agreed by the trading parties.
- Increasing collateral processing through new operating models, and more stringent settlement requirements and dispute regimes.
- Facilitating calculation of IM, model development, validation (internal and external) and implementation with ongoing backtesting and benchmarking.
- Facilitating greater understanding and adoption of new market-wide technology and connectivity requirements.
- Exploring new types of eligible collateral for posting or receiving IM.

More information and resources relating to ISDA's efforts to support market participants in their margin compliance efforts can be found on the ISDA Margin InfoHub and the credit support documentation section of the ISDA Bookstore.

Why CGBs?

According to the ISDA Margin Survey Year-end 2019[29], phase-one market participants primarily use government securities to meet regulatory IM requirements because it is easier for securities to satisfy bankruptcy remoteness obligations (compared to cash). The survey found use of government bonds decreased from 88.4% in 2018 to 83.9% in 2019, with use of other securities increasing from 11.6% to 16.1%. IM compliance is therefore overwhelmingly achieved through the posting of debt securities, over four-fifths of which are government issued.

Given this reliance on the posting of government debt to collateralize derivatives transactions, it may be beneficial for firms to consider possible ways to broaden the population of government debt instruments available to satisfy the new and complex regulatory obligations.

With more entities from Asia-Pacific likely to come into scope of the rules in 2021 and 2022, there may be increased interest among those in-scope firms to post local government securities like CGBs as IM. This may be heightened by an already present and growing trend in the Asia-Pacific region towards the posting of local government securities and assets denominated in a local currency.

The focus of this appendix is on the technical, operational and regulatory challenges associated with using CGBs as IM. Alleviating these challenges will be essential to the propagation of CGBs as a new asset for IM. However, that does not represent the entire picture. While the focus of this paper is on mandatory IM – collateral that market participants are legally obliged to post/collect as applicable – there is inevitably a commercial backdrop to this landscape. The viability of CGBs as an IM asset will therefore also be determined by a variety of commercial considerations, including:

- **Optimization:** CGBs must be compatible with market participants' increasing desire to actively manage collateral, liquidity and funding requirements by adopting systematic data-driven decision making to achieve efficiency in collateral utilization.
- **Liquidation:** CGBs will only be accepted as IM if the collateral receiver is able to liquidate the asset to cover any portfolio value shifts occurring after default. For this, firms will need to have (or establish) the ability to price/value CGBs and have access to a market in which CGBs can be sold.
- **Operational:** In order to liquidate CGBs in a default scenario, firms not already set up to do so will have to undertake significant trading systems and infrastructure builds.

[29] For non-cleared derivatives, ISDA surveyed 20 firms with the largest derivatives exposures. ISDA also surveyed phase-two and phase-three firms that were subject to the IM requirements from September 2017 and September 2018, respectively. Responses were received from four phase-two firms (out of the six in scope) and three phase-three firms (out of the eight subject to the margin rules). Read the survey here: www.isda.org/a/1F7TE/ISDA-Margin-Survey-Year-end-2019.pdf

- **Clearing:** While the focus of this paper is on issues relating to regulatory IM incurred due to a firm's non-cleared derivatives trades, it is important to remember that IM is also posted for cleared transactions. As IM for cleared and non-cleared trades would be calculated at the portfolio level, the composition of which will impact the amount of IM required to be posted, firms may need to consider margin requirements on their cleared portfolio and how that interacts with their non-cleared portfolio.

These commercial considerations will be flagged where relevant, but will not be explored in detail.

Complexity and Divergence in IM Rules

Differences in how the margin requirements for non-cleared derivatives have been implemented across jurisdictions can complicate compliance because multiple sets of rules can apply to a single trading relationship. In these cases, the strictest rule would apply. While the potential for equivalence/substituted compliance exists, relatively few equivalence determinations have been published to date.

The differences in the rules – for example, between those in the EU and US – can be significant.

Instrument scope: Physically settled foreign exchange (FX) and the exchange of principal on cross-currency swaps are exempt from IM under US and EU rules. Options are not subject to IM requirements in the US, while the EU has a time-limited exemption for equity options that is scheduled to expire in January 2024.

Collateral eligibility requirements: Government debt securities are classed as eligible collateral under both US and EU rules. Certain government securities – those where the sovereign has a capital risk weighting of 20% or less (under the US rules) or is classified as credit quality step one (under the EU rules) – are given preferential treatment and are subject to a lower haircut.

The EU imposes capital concentration limits on IM posted by all counterparties (other than pension funds). For global systemically important institutions or other systemically important firms, a 50% concentration limit is imposed on all government debt issued by a single issuer or issuers domiciled in the same country if the value of the IM exceeds €1 billion.

Calculation requirements: Regulations allow margin amounts to be calculated using a model or standardized margin schedule set by regulators. In response, ISDA has developed the ISDA Standard Initial Margin Model (SIMM). The model is split into four asset classes: i) rates and FX; ii) credit; iii) equities; and iv) commodities. Netting is only permitted within each of the four categories, but not across different asset classes.

Jurisdictions set different requirements for the validation of an IM calculation model. In the US, swap dealers are required to go through an examination process to gain approval. This is not currently required in the EU, but traders need to continuously monitor model performance and conduct back-testing on a quarterly basis at a minimum. An annual recalibration is also necessary – a process run by ISDA for the ISDA SIMM.

Timing: EU rules do not require daily collection of IM, but instead stipulate calculation and exchange of collateral following a change to the netting set. In practice, larger organizations typically calculate margin on a daily basis. IM must be settled no later than two business days after execution (T+2): IM must be calculated on T+1, then settled one business day after calculation. Most custodians can settle assets posted on a pledge or free-of-payment basis on the same day.

US swap entities are required to calculate IM daily and comply with a requirement for collection on the business day following execution (T+1). This works well when automation is in place, but the implications for cross-border trades need to be considered if the process is not automated.

Enforceability and risk management: For EU entities trading with counterparties domiciled in non-netting jurisdictions where there is no possibility of exchanging margin on a gross basis, there is no requirement to post or collect variation margin (VM) or IM. This requires an independent legal review of the enforceability of those agreements, which may be conducted by an independent internal unit or third party. The notional outstanding traded with counterparties in non-netting jurisdictions must be less than 2.5% of the sum of the notional amounts of all outstanding over-the-counter (OTC) derivatives contracts of the group to which the EU regulated entity belongs, excluding OTC derivatives that are intragroup transactions.

If a US covered swap entity cannot apply netting to counterparties domiciled in other countries, it must process the swaps on a gross basis for margin collection, but can net the swaps for collateral posting.

Treatment of collateral: Both the US and EU require collateral to be segregated and held with a third party, such as a custodian. These third parties cannot be related to the counterparties. Assets are pledged under a credit support annex (CSA) or credit support deed and are ring fenced from the proprietary assets of the pledgor and the custodian. Although alternative IM can be substituted as a replacement, rehypothecation or reuse of the assets is not permitted.

The EU rules require an independent legal review to verify that the segregation arrangements meet the requirements set out in the rules.

Access to China's Bond Market

There are several channels for foreign investors to access the onshore bond market: as a qualified foreign institutional investor or renminbi qualified foreign institutional investor, or via China Interbank Bond Market Direct or Bond Connect. In April 2019, CGBs were included in the Bloomberg Barclays Global Aggregate Index. More recently, JP Morgan also announced plans to include highly liquid CGBs in three of its emerging market funds, further increasing investor ownership.

The Chinese bond market is split between onshore and offshore, with most liquidity concentrated onshore. Although foreign investors are permitted to access the onshore bond market, foreign ownership represents a small fragment of overall market size.

CGBs are currently held onshore by the China Central Depository & Clearing Co., Ltd. (CCDC), a wholly state-owned financial institution that provides central registration, depository and settlement services for government bonds.

Constraints

Currently, CGBs are not commonly used as collateral for cross-border financing transactions. CGBs have not been exchanged or accepted as IM for cross-border derivatives trades and cross-border CGB repo is currently not viable. These may be key factors affecting future industry expansion in CGBs, as owners of CGBs would need to be able to broadly utilize them to drive efficiencies. Inaccessible assets or limits on their use create liquidity issues and would likely impact growth in the use of CGBs as an investor asset generally and more specifically as IM.

Smaller entities wishing to use CGBs would benefit significantly from the ability to access these bonds through normal collateral channels, without the need for significant operational or technology builds. This is possible if these entities are willing to collaborate with global dealers that have direct access to China's onshore bond market and overseas custodians that provide collateral management and custody services for IM purposes.

COLLATERAL OPERATIONAL REQUIREMENTS

Oversight

Since the global financial crisis, regulatory reforms have led to greater standardization in financial markets. This has also been the case for collateral operations – for example, through wider take-up of electronic margin call messaging, daily reconciliation of collateral portfolios, intraday settlement of IM calls in certain jurisdictions and improved dispute resolution management.

With a wider universe of firms coming into scope of regulatory IM requirements in September 2021 and 2022, it will become increasingly important for market participants to share information in a secure and fast manner through straight-through processing (STP) with minimal human intervention and errors.

When including new assets such as CGBs into the process of collateral management, it is important to consider certain operational requirements. Collateral management requires a holistic approach to ensure back-office processing is seamlessly integrated into the front-office and treasury management functions to enable control and optimization of the firm-wide inventory.

At a high level, these requirements include:

- Sourcing eligibility terms for collateral;
- Sourcing reliable market data and pricing;
- Real-time (or quasi real-time) access to the level of inventory;
- Understanding the source of internal business for assets;
- Understanding the estimated utilization period of assets;
- Understanding the segregation, settlement and reconciliation process; and
- Perfecting the process of collateral materialization in the event of insolvency.

Eligibility Terms

The non-cleared derivatives margin rules in all jurisdictions set out a list of eligible collateral, which typically includes sovereign bonds, covered bonds, specific securitized assets, corporate bonds, gold and equities. While the regulations in each jurisdiction are subtly different, they are aimed at ensuring the collateral pool is diversified, liquid, not exposed to excessive credit, market and FX risk, and – critically – will hold its value in times of financial stress.

In March 2020, ISDA prepared a high-level summary of collateral eligibility requirements across 16 jurisdictions, focusing on sovereign and corporate bonds, equities and gold[30]. Determining the terms of eligible collateral for cross-border business is complex and the number of elements to consider will increase when multiple regulatory frameworks are involved.

Some terms will involve risk parameters – for instance, wrong-way risk (where the value of collateral should not be positively correlated to the credit rating of the counterparty) must be considered.

The eligible collateral agreed by the counterparties for IM (in compliance with regulatory parameters) will be set out in their credit support documentation. It will also be specified or set out for reference in the custodial documentation agreed between the trading counterparties and the custodian (for example, the custody agreement or the account control agreement). It is important that the terms of eligible collateral can be easily translated into logical rules that market data sources can follow. For example, one potential problem that could apply to CGBs specifically is where the terms of the collateral instrument refer to 'offshore' or 'onshore' bonds, but the same distinction is not made in market data sources.

When trading counterparties are required to make subjective decisions about what assets are included or excluded as eligible collateral, there is a high risk of discrepancy with the market data, which could result in future disputes about valuation and increases in margin.

Complexity of Market Data

Despite the continuous advancement of collateral process automation, there are many cases that require manual intervention. Examples might include:

- If only one party can process the operation of inflation-linked or floating-rate bonds, the description of 'gilts' as eligible collateral will mean different things to each trading counterparty. Normally, this problem occurs only after one agrees to make a margin call and chooses a floating-rate bond as collateral.

- A similar issue would exist for US Treasury inflation-protected securities. These would be considered US government debt under the terms of an eligible collateral schedule. However, if either party to the agreement is unable to determine the current nominal value, there will always be a discrepancy in the valuation of the collateral, thereby resulting in disputed margin calls.

[30] www.isda.org/a/Z9uTE/Eligible-Collateral-Comparison-3.21.20.pdf

- Credit ratings can also hinder the automation of margin processes. If the terms in the collateral agreement specify criteria for credit rating, it must determine whether the rating of the debt or the rating of the issuer will be used. However, not all government securities have a credit rating, especially short-term US Treasury bills. In extreme cases, if the credit support document requires collateral to have a 'safe' credit rating, these securities will be excluded from qualified collateral because they technically do not have a rating.

A similar situation could occur with CGBs. As more institutions consider using CGBs as eligible collateral, there will need to be a discussion about whether policy bank bonds and local government bonds are within the scope of eligible collateral. The challenge is that many of their attributes appear to be the same in market data analysis, so different rules may be necessary to define policy bank bonds and local government bonds.

All collateral management processes require daily extraction of market data, including all the attributes of securities at the ISIN level, such as issuer, maturity, denomination currency and securities price. When it comes to the interpretation of the legal text in a specific context, the granularity of the market data will determine the richness of the classification. For example, if the legal document specifies 'offshore', a series of rules may need to be built to logically determine which ISIN meets the standard and which does not.

For example: Issuer = Chinese government AND currency <> CNY

Pricing Issues

In the wake of the global financial crisis, many swap dealers switched from discounting using LIBOR to overnight index swap (OIS) rates to reflect the true value of collateral in the pricing of derivatives. Trading systems need to compile eligible collateral terms, including the OIS rate applied to the construction of the forward curve used to value each collateral asset, in order to apply the legal terms and incorporate the collateral valuation and applicable haircut into the pricing model. Firms looking to utilize CGBs as IM would need to incorporate CGB forward curves into their internal libraries and trading systems to enable pricing of a trade that permits CGBs as IM.

Most institutions take their collateral operations system as the most suitable data source. However, discrepancies may occur between data extracted from those collateral systems and the description of eligible collateral in the credit support documentation.

In the past, only a small number of counterparties were required to post IM, and a manual process could be used to record which counterparties have specific qualified collateral requirements. This becomes more challenging as the population of market participants required to comply with margin requirements grows significantly.

Asset Inventory Management

The collateral management team needs access to the inventory of collateral assets to determine their availability. When using the third-party agent mode of settlement, the ISIN and value of collateral must be specified. In the triparty mode of settlement, the custodian needs to manage the requirements from all pledging collateral source or proprietary accounts.

Understanding whether assets have been sold recently or used in other transactions is also important for the third-party agent mode of settlement. If they have, the subsequent replacements must be taken into account, which can complicate the process.

CUSTODIAL SETTLEMENT AND SEGREGATION

Settlement Process

Understanding the settlement process is essential when trying to determine how quickly the assets can be transferred and the level of liquidity. After confirming the settlement process, the workflow management requires (almost) real-time notification of failed settlement. At the same time, it is necessary to connect the settlement process with asset inventory management.

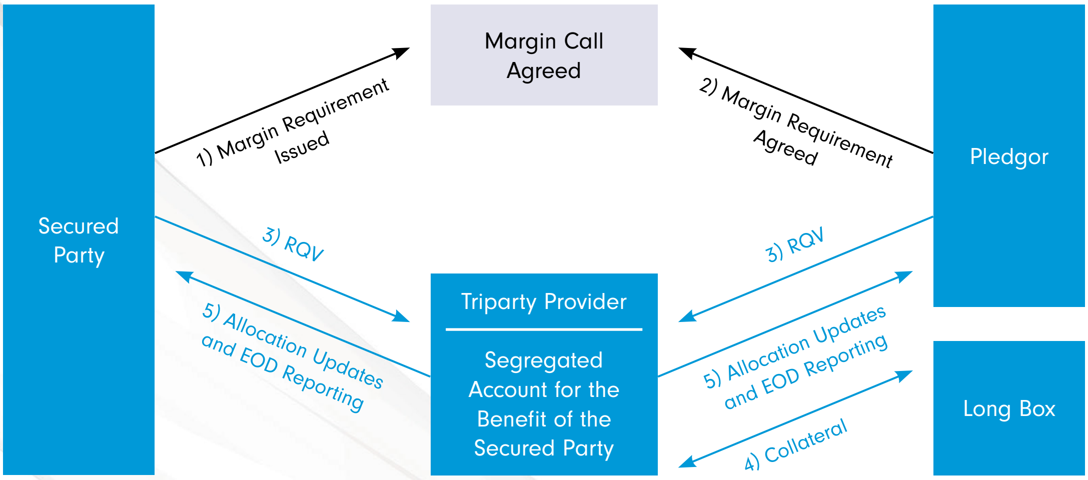
In general, the settlement process for IM is different and more complex than the VM settlement process. VM requires bilateral settlement so the collateral can be rehypothecated or re-used, and the collateral is delivered to the transferee/pledgee's account. IM, on the other hand, is pledged to a segregated account over which the pledgee holds a security interest rather than a proprietary interest. This means the transfer and payment of the collateral is contingent on the pledgor going into default, which adds a layer of additional process.

IM Segregation Process

IM settlement can be subdivided into two types of processes: third party and triparty. There are significant differences between the two models in terms of operation, costs and technology.

Under the triparty model, both parties agree to the IM amount and a required value (RQV) is sent to the triparty provider to fulfill the collateral requirement. The triparty provider also carries out other activities, including automated settlement of collateral from the pledgor's own account (called the longbox) to the segregated account, collateral valuation, optimization, substitutions, eligibility verification, monitoring concentration limits, application of haircuts and reporting.

Figure 21: Triparty Provider Workflows



In contrast, the third-party model requires the pledgor, its manager or an administrator to value the collateral, select the collateral to be pledged, confirm eligibility and concentration limits, determine necessary haircuts, and provide settlement instructions to the custodian. The custodian only provides settlement, segregation and reporting services.

Figure 22: Third-party Custodian Workflows: Pledge

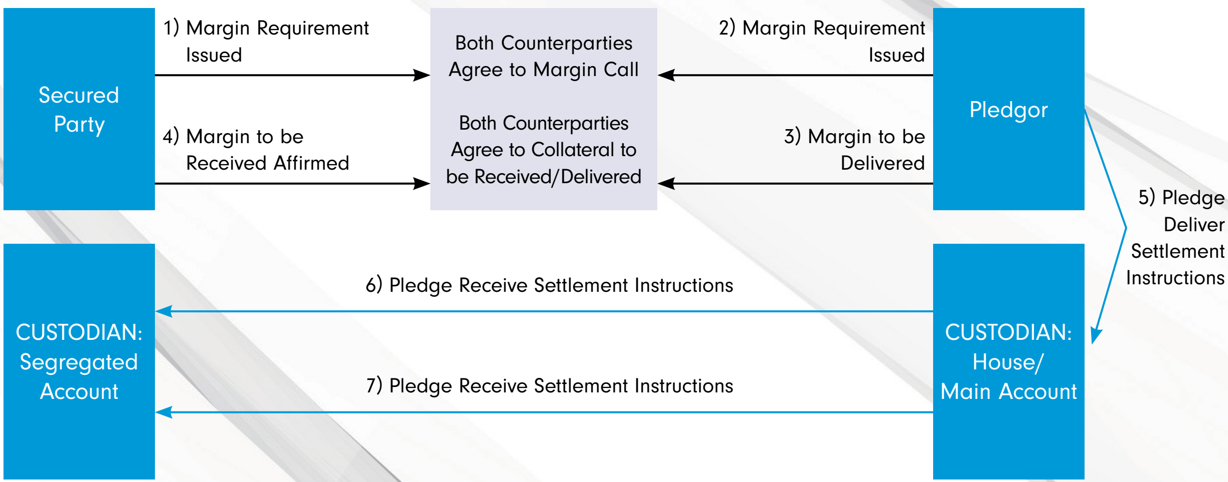
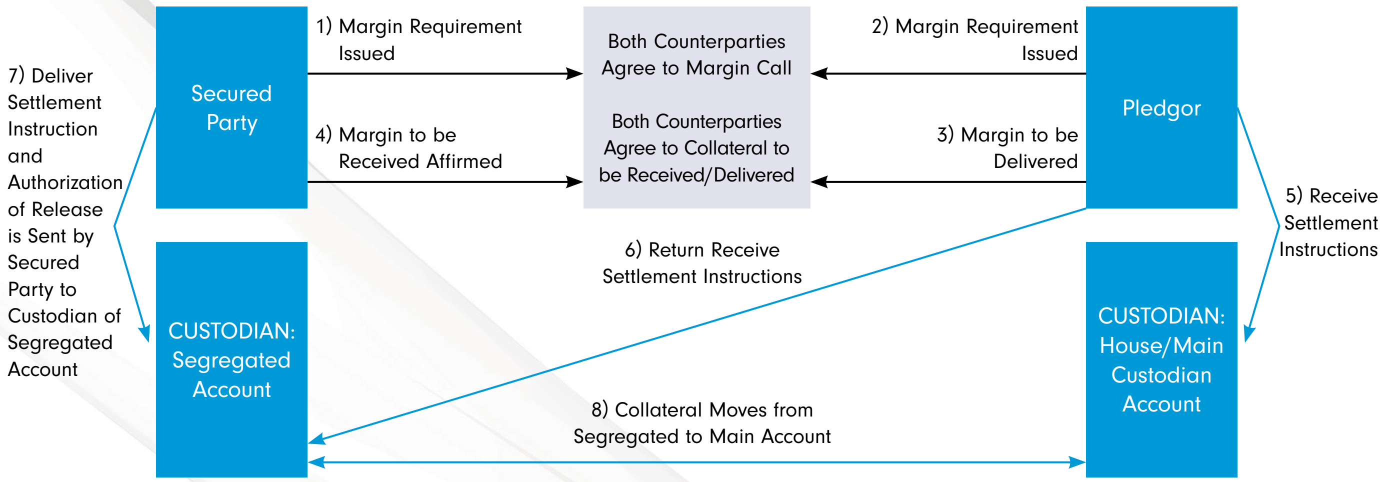


Figure 23: Third-party Custodian Workflows: Return



As the pledged collateral may change within a day, the service provider will send the reconciliation process to the pledgor and the pledgee through SWIFT or other channels at the end of the day. The triparty model aims to provide one-stop-shop services, and there should be no operational difficulties in providing CGB agency services for central securities depositories or international central securities depositories.

Lessons from Previous Implementation Phases

A number of issues arose during the first four phases of the regulatory IM requirements, including:

- Custodian onboarding has been slow, manual, and mainly paper based;
- There is a lack of STP due to the portal and fax-based nature of settlement services;
- Reconciliation of collateral balances can be slow and cumbersome;
- It is not always possible to ensure T+1 settlement (exchanging collateral the same day as the margin call); and
- Interoperability between buy- and sell-side firms needs to be improved to increase STP.

When Chinese financial institutions post CGBs to offshore counterparties, they can choose to establish a mechanism for segregation that adopts either the triparty or third-party model. The inclusion of CGBs as eligible collateral should not be stunted by a lack of market infrastructure to support it. The People's Bank of China recently worked with the CCDC and the China Foreign Exchange Trade System to provide a triparty repo service. This is likely to be extended to a triparty custodial service for collateralization of derivatives.

Legal Documentation Requirements

Since May 2018, ISDA has coordinated a project to facilitate legal reviews of certain custodial documents to support legal documentation requirements. The project requires market participants to indicate which custodial platform is preferred at each stage of the implementation of the IM rules.

Once identified, the account control agreement (or similar documents) of the designated custodian will be reviewed and a consultation will occur with the custodian to determine whether any changes to these documents are required to meet the corresponding IM compliance requirements.

This process was previously conducted by market participants under the auspices of the Derivatives Lawyers Forum. However, from the third phase of the IM requirements onwards, it has become centrally managed by ISDA at the request of its members to address the increasing number of custodial platforms being utilized by in-scope firms.

THE NEW NORMAL

Historically, an active derivatives trading participant might have multiple bilateral credit support agreements with a wide range of eligible collateral (or no posting requirements in some cases, such as FX transactions). As such, posting of the (minimal) required collateral would be a post-transaction matter. In the new environment, participants may now need to meet multiple bilateral netting needs. Each transaction may have a different range of eligible collateral and margin requirements.

The margin rules for non-cleared derivatives have taken this complexity to a new level, particularly for phase-five and phase-six firms that may be unfamiliar with some of the concepts introduced.

- It is necessary to replicate the ISDA SIMM or grid calculations to accurately assess the economics of a bilateral trade versus a cleared trade based on the permitted collateral.
- Two-way posting of IM is required.
- Firms need to get to grips with the possible use of a triparty model.
- Entities need to pay attention to the eligible collateral set out in the relevant regulatory rules.
- Institutions need to be aware of the complexities involved in ensuring new trades are allocated to the correct agreement (eg, non-deliverable forward FX versus spot FX).

In particular, firms need to consider a number of questions related to pre-transaction execution and post-transaction optimization.

As already noted, post-transaction optimization will increasingly be a pre-trade consideration, encompassing more than just the consideration of IM. The funding of a collateral asset is a factor in the pricing of a trade and the requirement to post collateral, whether regulatory or commercial, is assessed at the portfolio level. As such, IM on non-cleared trades cannot be considered in isolation – firms must also consider trades executed on an exchange or trading venue, as well as trades cleared through a central counterparty (CCP), when making decisions about IM.

Pre-trade

- Will the trade be executed on an exchange or trading venue? If so, which?
- Should the trade be transacted on a cleared or bilateral basis? Under the margin rules for non-cleared derivatives, the ability to run IM simulation and liquidation is an important pre-trade commercial consideration.
- If the trade will be cleared, which CCP or clearing member will be used?
- What risk limits would apply given the selection of execution, trading and clearing venues?

As these are pre-trade considerations, they pre-suppose the core issue of this paper – ie, the use of CGBs as IM. However, these considerations could determine whether a trade would even require IM, hence the relevance of these points to firms considering use of CGBs as IM.

Post-trade

- How should the inventory of available assets be selected to meet each margin call?
- If asset conversion is available, which form of asset conversion is used (for example, a collateral transformation transaction)?
- What types of functions may be beneficial (triparty, repo, securities lending)?
- What kinds of organizational changes are necessary?

These post-trade considerations may arise during the ordinary lifecycle of a trade, and will also be relevant post-default. For example, cross-border repo of CGBs is not currently viable, which means a collateral receiver accepting CGBs would face greater limitations in the event it is required to liquidate the collateral.

Looking ahead, complexity will only increase as the margin rules for non-cleared derivatives are rolled out to more and more trading counterparties.

Recent Situation

Many market participants have historically taken a passive approach to IM, maintaining large and unnecessary collateral buffers to avoid the operational burden of daily posting and other inherent settlement and operational risks. However, a more proactive approach to collateral management, helped by the emergence of new instruments that are viable for IM, could be beneficial to market participants. The advent of technological solutions, enabling automation, standardization and processing/cost reduction, could also play a role.

As more entities are required to post regulatory IM, new challenges will emerge. For example:

- Clearing member and CCP trading risk limits will begin to play a role (with precision at the currency level) in pre-trade analysis.
- With the increase in transaction volume, the cost structure of clearing members and CCPs will also be relevant in pre-trade analysis, so an approach is needed to establish the most effective structure.
- Restrictions in concentration limits by assets (particularly for funds with singular eligible assets) will emerge.
- In the event of default, liquidity and other risk multipliers will significantly increase IM (by 20%+ in some cases).
- New liquidity demands (eg, intraday calls) will require real-time treasury management.

As these new challenges emerge, market participants will need to use a broader range of assets to minimize the impact. The changes represent an opportunity for active management of collateral through technology to reduce costs and drive greater efficiency.

New IM Calculations

For clients taking a pledge of assets for IM, there are points to observe with regards to ISDA SIMM calculations, credit and capital for offset purposes and legal enforceability in the event of an insolvency.

In accordance with global regulatory requirements, the ISDA SIMM allocates transactions to four different product categories, and risks can be netted within their respective categories, but not across categories. There remains a question of whether netting can occur within the set when clients in jurisdictions where netting is not enforceable (under the applicable insolvency law) trade with dealers in jurisdictions with a positive netting opinion. An alternative would be to use the standardized grid calculations and to turn off the net-to-gross ratio, ensuring calculation on a gross basis only. This would make IM requirements considerably more expensive, which would likely affect the price of the derivative once various valuation adjustments are considered.

Optimization

As a result of drastic regulatory changes, there is an opportunity for greater optimization of collateral. In fact, this is rapidly becoming necessary for many institutions.

- Cost pressures now mean asset managers need to chase after every basis point, and optimization can help with this.
- The materiality of margin calls in many cases are significantly more important than what they were even a few years ago due to mandatory clearing, margin requirements for non-cleared derivatives and other regulatory pressures, making the rewards of optimization significant.
- Collateral management extends up the value chain and becomes a function of the front desk, which means there is a growing need to incorporate optimization into pre-transaction assessment.
- Institutional clients now expect optimization as part of a value-driven investment management service.

While the cost of complete optimization is not small (involving systems and process transformation), new market drivers mean rapid market returns. A core part of any optimization capability is the ability to transform ineligible assets into eligible assets (for one or more received margin calls). Many market participants are now increasing holdings in CGBs. Addressing the challenges faced by firms wanting to utilize CGBs for IM would therefore enhance the capacity for optimization across the market.

Asset depository is another factor that requires attention. If an institution holds or accepts collateral through an extensive network of custodians, this will significantly increase difficulty and cost. For example, if an institution holds multiple escrow accounts for compliance with margin requirements, it will have to manage multiple relationships, different reporting requirements and diverse collateral handling processes in the event of customer defaults. This will greatly increase operational risk and costs.

BEYOND IM

The previous section illustrated the potential of optimization and the utilization of collateral such as CGBs. If the same principles are extended to all collateral management activities, these advantages would be multiplied.

Other techniques that can be widely used in the optimization toolkit include:

- Real-time treasury management: This can better meet the needs of new regulation (eg, same-day settlement under regulatory IM requirements) and optimize investment in liquidity vehicles.

- Increased use of repo and securities lending: This can improve liquidity and generate eligible assets, including a market for CGBs.

- Use of triparty and FX prime brokerage: Although seldom used by the buy side, it helps to outsource parts of the optimization challenge.

- Centralization of collateral and liquidity management: For the buy side, this could mean creating an 'internal market' in which internal transactions between funds or trading desks are netted before entering the market.

The difference between zero and full optimization is material in terms of cost, and there are many secondary benefits. These include:

- Preservation of high-quality liquid assets for other purposes;
- Reduction in counterparty risk;
- Diversification of risk of issuers;
- Increased revenue;
- Consideration of pre-trade issues in light of multiple bilateral trading relationships; and
- Recognition of the increasing influence of concentration limits and wrong-way risk within risk management routines.

CONCLUSION

As China continues to extend and expand its capital markets capability and access and broaden the opportunity for investors, use of collateral will become increasingly important.

Margin or collateral management is a global requirement for derivatives markets. Counterparty credit risk has to a large extent been mitigated through a shift to CCPs and the implementation of margin requirements in non-cleared derivatives transactions.

In turn, market focus has shifted to capital use, efficient management of balance sheets, improvement of liquidity indicators, increased automation, connectivity and standardization. Efficient market infrastructure, risk management and legal certainty are necessary to expand the scope of collateral application.

Responding to these issues and establishing market channels that provide seamless convergence, liquidity and financing will enable financial institutions to tap into and make full use of CGBs. The benefits of optimization are not just limited to improvements in operational efficiency. Before using assets as IM, financial institutions should be aware of the cost of each asset and possible regulatory or business-as-usual challenges.

Focusing only on internal coordination and the continuation of silo processing of IM may cause problems for the efficiency of IM compliance. Financial institutions need to consider other external factors, such as regulatory complexity, execution venues, CCPs and custodian agents. The future landscape is likely to be very complex.

ISDA statistics show market participants are using a range of assets to meet the IM requirements for CCP and non-cleared derivatives transactions. The significant increase of holdings in CGBs by foreign investors may be conducive to the inclusion of CGBs as eligible collateral for IM. For foreign investors, this will allow them to put the CGBs they have purchased to good use to satisfy their IM posting obligations, which will be particularly beneficial as their IM obligations increase over time.

For Chinese banks, CGBs are generally a cheaper and safer asset to source than foreign government debt (due to market factors and the absence of FX risk). It is therefore an asset that Chinese banks will want to utilize to satisfy their IM posting obligations. However, if their non-Chinese trading counterparties do not hold or trade CGBs, meaning they lack the internal infrastructure and market access that will make it difficult for them to liquidate the CGBs following a default, they may not agree to CGBs as an eligible collateral asset.

To this end, many financial institutions would welcome the further opening of China's bond market and the development of cross-border financial infrastructure connectivity and custodian arrangements that will support the exchange of CGBs as collateral in derivatives transactions.

The complexity of the challenges involved should not be underestimated. There is a need to eliminate uncertainty over the netting mechanism and disposal of collateral. On this basis, an in-depth, comprehensive and thorough plan is needed to integrate onshore and offshore seller and buyer agencies. In order to achieve this goal, industry players, market participants, vendors and external experts should coordinate to ensure that a glide path to compliance is created and to lay a solid foundation for China's IM and VM system.

APPENDIX II

Milestones in the Opening Up of China's Bond Market

Timeline	Features	Year of Policy Release	Milestone Progress
Phase 1 (before 2009)	Access granted	2005	The People's Bank of China (PBOC) approves the Pan-Asia Bond Index Fund and Asian Bond Fund China Bond Index Fund to enter the China interbank bond market (CIBM).
		2007	Onshore financial institutions are allowed to issue renminbi (RMB) bonds in Hong Kong, leading to an increasing number of issuers and volume of such bonds.
Phase 2 (2010-2015)	Types of investors increased, and scope of investments expanded	2010	Yinfa No. 217 [2010]: Foreign central banks, monetary authorities, RMB business clearing banks in Hong Kong and Macao and overseas participating banks for cross-border RMB trade settlement are allowed to trade in the CIBM.
		2011	Yinfa No. 321 [2011]: The RMB qualified foreign institutional investor (RQFII) regime is established.
		2012	The total RQFII quota increases by RMB200 billion.
		2013	Yinfa No.69 [2013]: The PBOC permits qualified foreign institutional investors (QFIIs) to trade in the CIBM.
			The investor scope under the RQFII regime is expanded.
			As an outcome of the fifth China-UK Economic and Financial Dialogue (EFD), both sides agree to the direct trading between RMB and sterling on the China Foreign Exchange Trade System in Shanghai and the offshore market in London.
		2015	Yinfa No. 220 [2015]: International financial institutions and sovereign wealth funds enter the CIBM. Foreign central banks, international financial institutions and sovereign wealth funds are allowed to access the market via registration with the PBOC without being subject to any investment quota limit.
			The International Monetary Fund recognizes RMB as a freely usable currency and includes RMB in the special drawing rights basket.
Phase 3 (since 2016)	Further opening of China's bond market, with access channels broadened and liquidity improved	2016	Yinfa No.3 [2016]: The investment quota applicable to mid- to long-term foreign institutional investors (such as commercial banks, mutual funds, pension funds, insurance companies and charity funds) is abolished.
			Huifa No. 12 [2016]: Foreign institutional investors are allowed to remit investment funds freely to and from the CIBM, as long as the remittance complies with the foreign exchange regulation in China.
		2017	Huifa No.5. [2017]: Foreign institutional investors are allowed to enter China's interbank foreign exchange derivatives market to hedge exchange rate risk by trading foreign exchange forwards, swaps and options.
			The PBOC releases *Interim Measures for Administration of Mutual Market Access between Hong Kong SAR and Mainland China*, which establishes the Bond Connect regime.
		2018	Bloomberg announces that Chinese government bonds (CGBs) and policy bank bonds will be included in the Bloomberg Barclays Global Aggregate Index over a 20-month period starting from April 2019. When fully included in the Global Aggregate Index, RMB will become the fourth largest currency component following US dollar, euro and Japanese yen.
			Chinese stocks (A shares) are included in the MSCI Emerging Markets Index.
		2019	Bloomberg starts to add RMB-denominated CGBs and policy bank bonds to the Bloomberg Barclays Global Aggregate Index.
			As an outcome of the 10th China-UK EFD, both sides agree to promote RMB bonds as common qualified collateral accepted by the UK market.
			Yinfa No. 240 [2019]: Foreign institutional investors are permitted to conduct two-way and non-trading transfers of CIBM bonds between their accounts under the QFII/RQFII regimes and their accounts under the direct interbank bond investment regime (CIBM Direct).
		2020	Liquid RMB-denominated CGBs are included in JP Morgan's Government Bond Index-Emerging Markets (GBI-EM).
			Yinfa No. 46 [2020] proposes to grow the RMB interest rate and FX derivative markets, introduce RMB interest rate options, and increase available product types (such as foreign exchange options) in the markets. The circular also allows foreign institutions to choose which master agreement to use when trading in the onshore derivative markets and permits the use of the ISDA Master Agreement.
			The State Administration of Foreign Exchange (SAFE)) issues the *Notice on Improving Foreign Exchange Risk Management of Foreign Institutional Investors in the Inter-bank Bond Market* (Huifa No.2 [2020]), relaxing restrictions on FX hedging under the CIBM Direct regime.
			The PBOC and SAFE issue *Regulations on the Securities and Futures Investment by Foreign Institutional Investors* to standardize and simplify administrative requirements on the remittance and repatriation of funds, as well as currency exchanges by foreign institutional investors.

About CCDC

China Central Depository & Clearing Co., Ltd. (CCDC), established in December 1996, is the only wholly state-owned financial institution approved and funded by the State Council of China to engage in national financial market infrastructure (FMI).

In recent years, focusing on providing FMI services, the CCDC has steadily promoted the development strategy of diversification, conglomeration and internationalization. The CCDC has been engaged in the innovative development of the bond market, which enhances its role as a major FMI. The CCDC started as the centralized depository for China government bonds (CGBs) and gradually developed into a central securities depository (CSD) for various kinds of financial products. By the end of 2019, the total value of financial assets under the depository of the CCDC had reached RMB118 trillion.

In 2011, the CCDC launched the ChinaBond collateral management service, which is integral to the CCDC's role as a risk management platform for the financial market. The CCDC has independently developed a professional, intelligent and integrated collateral management service system to protect the stability and improve liquidity of the Chinese financial market. In June 2016, the ChinaBond collateral business center was officially established. As of June 2020, the total value of the collateral under the CCDC's management has reached RMB13.7 trillion, with 8,800 clients. The CCDC has become one of the world's biggest collateral management platforms.

About ISDA

Since 1985, ISDA has worked to make the global derivatives markets safer and more efficient. Today, ISDA has over 925 member institutions from 74 countries. These members comprise a broad range of derivatives market participants, including corporations, investment managers, government and supranational entities, insurance companies, energy and commodities firms, and international and regional banks.

In addition to market participants, members also include key components of the derivatives market infrastructure, such as exchanges, intermediaries, clearing houses and repositories, as well as law firms, accounting firms and other service providers.

Information about ISDA and its activities is available on the Association's website: www.isda.org. Follow us on Twitter, LinkedIn, Facebook and YouTube.