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E-CNY and the Prospect for a 'Financial Silk Road'

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Contents

[New Zealand Asia Institute](#)

[About this report](#)

[Highlights](#)

[Introduction](#)

[E-CNY's Limits and Potentials](#)

[Cross-Border Settlement, Investment and Financing in RMB](#)

[Multiple CBDC Bridge \(mBridge\)](#)

[Hong Kong's Role in Building Offshore RMB Markets](#)

[Notes](#)

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About this report

This report is the fourth in a series of working papers that report on a research project 'Understanding China's Digital Yuan.' Since the concept of Bitcoin was proposed in 2008, there have been three major rounds of discussions on the topic of digital currency in China's academic, policy and interested public circles. The first round focused on Bitcoin's potential to grow into a new generation of legal tender, the second on Libra's capability to become a 'super-sovereign' currency for cross-border settlements, and the third on central bank-issued digital currencies (CBDC). These discussions have inspired the People's Bank of China (PBC) to begin digital yuan research in 2014, establish the China Digital Currency Research Institute in 2016, complete the R&D and system testing in 2019, launch in 2020 the e-CNY (Chinese yuan), also commonly referred to as digital RMB or the Digital Currency/Electronic Payment (DCEP), and to lately conduct on-the-ground trials.

This working paper series examines these developments and the issues they present for regulators and users, as viewed by Chinese commentators and others.

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Highlights

- Created primarily for domestic usage, the e-CNY system is expected to also assist the RMB to first 'go neighbourly', then 'go regional', and finally 'go global'.
- Payments agreements and cooperation are viewed as important pillars of China's economic, trade, and investment interactions with RCEP and BRI countries.
- The digital RMB's 'settlement-upon-payment' and low-cost features are anticipated to appeal to countries with large numbers of SMEs.
- The e-CNY is seen as being a 'helpful' but 'insufficient' provision for the RMB's global adoption and usage.
- Hong Kong is expected to help foster greater acceptance of the RMB as a popular pricing and settlement currency in overseas markets.

Introduction

There is an increasing sentiment in the developed world that a first-mover advantage in implementing a CBDC will give the RMB an asymmetric advantage in competing with the US dollar as a global reserve currency. In response, Chinese financial officials reiterate at every relevant local and world forum that the efforts to create a digital *yuan* are aimed at domestic use. They also constantly emphasise that the first two letters of the DC/EP, or 'digital currency', represent the cash in circulation, while the last two letters, or 'electronic payment system', refer to circulation and payment channels. Thus, the e-CNY would change only the RMB's form and ways of usage, not its actual value or impact in the international financial system and markets.¹ Chinese financial professionals and scholars further straightforwardly point out that it is unrealistic and even premature to think that employing the digital *yuan* will be singularly influential in propelling the RMB.² A late 2021 study suggests that even in Hong Kong and Macao, residents generally do not understand the operation and benefits of the digital *yuan*, and more than 30% of Hongkongers have no knowledge at all of the e-CNY.³

E-CNY's Limits and Potentials

In addressing the growing public curiosity and enthusiasm within China about the RMB as an international currency, Chinese finance professionals, researchers, and commentators frankly state that the e-CNY is a helpful but 'insufficient provision' for the *yuan*'s global adoption and usage.⁴ They stress that the digital RMB falls into the category of retail CBDCs and will in turn likely boost cross-border recurring small payment transactions and hence the use of China's currency globally. This does not, however, directly

elevate the RMB to the status of a benchmark pricing mechanism for global trade, or a major reserve currency of the world.⁵ Yet the internationalisation of the RMB or any other sovereign currency, digital or otherwise, is ultimately determined by its role and importance in global trade invoicing, foreign exchange markets, and official foreign exchange reserves.⁶ Moreover, ‘world history’ seems to suggest that the internationalisation of a country’s currency often ‘lags behind’ the growth of its economic power.⁷ It should therefore be expected that the journey for the RMB to become a popular global currency may be long and evolutionary.⁸

Indeed, China is now the world’s second largest economy, the largest industrial producer, the largest energy/agricultural/primary raw materials importer, the largest trading nation, and the largest trading partner and export market for more than 130 countries and regions.⁹ The RMB is ranked the fourth most active currency for global payments by value. Nevertheless, its share still only accounts for less than 3% of the world’s total. The ‘harsh’ reality check may help scale down the public’s ‘overly optimistic’ estimations and expectations of the RMB’s internationalisation process. The fact that China’s foreign trade and investment remain heavily dependent on the US dollar for settlement has also aroused concerns among many Chinese about the country being exposed to ever greater foreign exchange risks, transaction costs, and financial sanction threats.¹⁰

On the other hand, the rapid digital transformation of the global economy and trade is widely considered in China to warrant the e-CNY’s having an instrumental role in accelerating the establishment of the ‘underperforming’ RMB as a major international currency that matches the country’s economic size and trading power.¹¹ Simply put, the booming digital economy both enables and is facilitated by the development of digital finance, the crucial components and links of which include digital payment and settlement.¹² Given that China is leading the world in e-commerce and many other day-to-day business and market operational areas of the digital economy, the attendant mobile payment and digital banking systems ‘have cultivated the rich soil’ for not merely the domestic societal adoption of the e-CNY.¹³ More importantly, they have heightened the potential for China’s overseas trade/investment programmes and numerous ‘micro multinational’ e-commerce and digital trading businesses to help put cross-border RMB settlement into a fast growth lane.¹⁴

In that regard, many Chinese researchers and interested public members hail the e-CNY system as a ‘new’ financial infrastructure in the era of the digital economy,¹⁵ and as a ‘technological business card’ of China since the 2022 Beijing Winter Olympics.¹⁶ They generally expect the digital *yuan* to complement China’s trade/investment-backed endeavours in the RCEP region and along the ‘Belt and Road’, and to assist the RMB to first ‘go neighbourly’, then ‘go regional’, and finally ‘go global’.¹⁷ In the meantime, however, leading Chinese economists also caution that to help the RMB grow into a competitive international currency, the present retail-based e-CNY may need to be transformed to incorporate functions of a wholesale digital currency. They stress that an essential prerequisite for the transformation is to continue opening-up China’s capital account and expanding the two-way opening of its financial market.¹⁸

Cross-Border Settlement, Investment and Financing in RMB

With the global digital economy and digital trade rapidly coming of age, China’s effort to construct a supplementary ‘Digital Silk Road’ is also quickly moving to the forefront of its ‘Belt and Road Initiative’ (BRI).¹⁹ Since payments agreements and cooperation are broadly seen in China as indispensable pillars of its economic, trade and investment interactions with countries along the ‘Belt and Road’, building a ‘Financial Silk Road’ for the RMB’s internationalisation has also become a hot discussion topic among Chinese finance specialists and commentators.²⁰ In this regard, they generally think that China is on the

right track as it has already signed bilateral currency swap agreements with forty countries and regions,²¹ more than twenty of which are along the 'Belt and Road'.²² In addition, China has established RMB clearing mechanisms with eight countries and formed collaborative partnerships with thirty-five nations' financial regulatory authorities. Meanwhile, eleven Chinese-funded banks have set up nearly eighty first-tier branches in twenty-nine countries.²³ A consensus conclusion reached among Chinese finance experts suggests that, moving forward, China may be compelled to pay greater attention to issues arising when signing new currency swap agreements, renewing existing contracts, and handling agreement breaches.²⁴ To effectively carry out its 'local currencies first' strategy along the 'Belt and Road' and among the RCEP members, these experts suggest that China should also keep on investing in cross-border applications of the digital *yuan* in trade settlement and investment financing.²⁵

To be sure, the notion and promotion of using local currencies in cross-border economic and business activities has been gaining traction in Chinese corporate, research and interested public circles. Many view the increasing use of the RMB in bilateral and intra-regional trade and investment as a promising step towards reducing settlement costs and risks related to foreign exchange transactions.²⁶ More encouragingly, the e-CNY may also help ease the burden of issues related to complex settlement procedures and long payment cycles.²⁷ The digital *yuan* is believed to be especially attractive to small and medium-sized enterprises (SMEs) as it both maintains the 'settlement-upon-payment' feature of the physical RMB and shares the low-cost and high-efficient 'charm' of existing prominent electronic payment instruments. These characters are expected to improve the speed of capital turnover and ease liquidity pressures, which are persistent challenges faced by SMEs engaging in cross-border e-commerce and trade in goods and services.²⁸ Designed as such, the e-CNY may also appeal to countries that are world leaders in the digital economy but furnished with a limited number of large companies with global influence. As a result, they usually pay special attention to opportunities for their SMEs to adapt to and benefit from new digital business models and trading patterns. Standing out in this group, as noted in some Chinese studies, are Singapore and New Zealand, which are also highlighted as important RCEP participants and founding members of the DEPA, the world-first digital economy partnership.²⁹

On a practical level, though, more detailed suggestions are emerging from Chinese public discussions about progressively increasing the RMB's usage in investment financing along the 'Belt and Road'. Specifically, among the 'connectivity' themes of the 'Belt and Road Initiative', the construction of transportation and energy networks is widely held to be the key area.³⁰ Yet infrastructure projects typically require large capital investment, involve diverse groups of stakeholders, and need to cope with political and economic disruptions.³¹ Many countries along the 'Belt and Road' are part of the developing world and suffer from such recurrent problems as 'currency mismatch' between assets and liabilities, balance of payments crises, and acute foreign exchange shortages. All this exposes China's state and private lending portfolios to constant uncertainties and risks.³² Meanwhile, when implementing infrastructure projects along the 'Belt and Road', Chinese companies in general have to convert their local currency revenues to U.S. dollars through local banks in order to pay for non-locally purchased supplies. It follows that local foreign exchange gaps and shortages often keep them longer in the 'queue' for currency conversion services, which in turn complicates their project plans and contractual obligations. In comparison with other BRI countries and regions, these challenges are reported to be especially serious in island nations along the 'Maritime Silk Road' in the South Pacific.³³

To alleviate these problems, Chinese leading finance specialists argue that China should draw on the examples set by America's 'Marshall Plan' and Japan's 'Capital Recycling Programme', because the former strengthened the dollar's status as the world's dominant reserve currency and the latter pushed the yen onto the global stage. Following suit, they argue, China should make more efforts to increase the usage of the RMB as the payment currency for its foreign aid programmes, governmental preferential loans, and contracted infrastructure projects along the 'Belt and Road'. Chinese finance specialists are confident that the more balance sheets that have both sides presented in the RMB, the better for BRI participating countries to mitigate their 'currency mismatch' challenges, and for China to reduce its investment risks.³⁴

Along the same line, if unexpected events or situations result in loan or investment receiving countries requesting debt reorganisation, China should consider prioritising the potential solution of converting the denomination currency of the debt from the U.S. dollar to the RMB.³⁵ Should the e-CNY be incorporated into China's overseas development assistance, lending, investment, and trade activities, its stated advantage of low settlement cost and high transaction speed may attract more countries towards greater utilisation of the RMB in their economic interactions with China.³⁶ Moreover, the currency shift may necessitate and expand coordination and collaboration between Chinese financial institutions and those along the 'Belt and Road' and in the RCEP region. Increased cross-border financial cooperation may in turn bring forth viable solutions to problems related to currency conversion for procurement payment that have been 'pain points' for Chinese construction enterprises contracted for overseas infrastructure projects.³⁷

While acknowledging the steady growth in cross-border settlement functions fulfilled by the RMB, however, many Chinese economists and finance specialists also underscore the much slower improvement of the *yuan's* 'pricing power' in regional and international commodity markets. Based on their assessments, the e-CNY may not be able to help much in this regard, as it is on the whole a 'retail CBDC' intended for introducing alternative payment and settlement methods that suit the digital economy.³⁸ Yet becoming a major pricing medium for internationally traded goods, especially primary commodities, is increasingly viewed in China as a benchmark indicator of the RMB as a popular global currency. Accordingly, growing attention from Chinese finance research and professional communities is devoted to exploring whether and how high trading demands for commodities generated by China's huge state and private investments along the 'Belt and Road' may be tapped for raising the volume of the RMB's 'voice' in global commodities trade.³⁹

In this respect, particular importance is accorded to the RCEP region, as most of its members are not only on the BRI's land and maritime routes, but are also among the world's important producers and consumers of bulk commodities. Chinese leading economists and finance specialists believe that the free trade partnership agreement opens up new avenues for China to work with RCEP countries in building a 'united' commodities market where currencies from within the region, including the RMB, are used as the standard price and settlement mechanism. They are positive that a 'united' commodities spot market will lay a facilitating ground for a regional commodities exchange, one that should be conducive to enhancing the RCEP countries' 'collective bargaining power' in the international commodities market. These efforts may also be expected to progressively but ultimately establish the RMB first as a regional and then international anchor currency.⁴⁰ At the same time, continued digital shifts of trade and economic development may give the 'pioneering' e-CNY an essential role in 'reshaping' the financial 'ecosystem' to accommodate the application of multiple CBDCs to cross-border payments along the 'Belt and Road', particularly in the RCEP region.⁴¹

Multiple CBDC Bridge (mBridge)

According to studies carried out by China's National Institution for Finance and Development, the massive programme for internationalising the RMB has been accompanied by many challenging issues, including the general problem of insufficient knowledge of cross-border payment rules, and the specific difficulty of the universal compatibility of Chinese character encodings. Nevertheless, the RMB's progress towards becoming an international currency is reported to have been steady. Often-cited supporting evidence is provided by the Cross-Border Interbank Payment System (CIPS).⁴² Established by China's central bank in 2015, this 'highway' for the RMB going global has not only cleared technical and operational barriers like those mentioned above, but already attracted a considerable number of international business institutions to join the system.⁴³

With the world's largest free-trade agreement, the RCEP, officially coming into effect in 2022, it is widely anticipated in China that the demand for cross-border payment services in the Asia-Pacific region, including the need for the RMB as a pricing and settlement medium, will further expand. Moreover, the strong and sustained growth of the digital economy in the RCEP region and around the world is projected to draw more SMEs into cross-border e-commerce and digital trade. Their readiness to steer away from slow and costly intermediary banks and financial brokers for cross-border settlement of transactions should also promise a greater market space for CBDCs, including the e-CNY.⁴⁴

However, since digital currency implementations will neither change the 'credit nature' of a CBDC, nor render obsolete corporate 'credit rating' assessments, the above optimistic expectations have also given rise to concerns among Chinese economists and finance specialists that the CIPS is yet fully prepared to grapple with the opportunity and satisfy the demands.⁴⁵ They thus think that it is a wise move for the CIPS and three other institutions under the People's Bank of China⁴⁶ to have set up a joint-venture company, on 16 January 2021, with the Society for Worldwide Interbank Financial Telecommunication (SWIFT).⁴⁷ With registered capital of 10 million Euros, the new entity, Financial Gateway Information Services Co., is reported to focus its business operations on information systems integration, data processing, and technical consultancy.⁴⁸ The cooperative partnership is meanwhile popularly understood in China as a 'mutually beneficial' effort, which is meant to prepare the e-CNY for cross-border applications on the one hand, and accord the SWIFT a testing ground for establishing message standards and processing rules for cross-border payments in CBDCs on the other.⁴⁹

Whether or not the digital *yuan* will break open new avenues for global trade settlement, its issuance has certainly accelerated the progression of other national CBDC projects. Chinese finance specialists are thus almost certain that the digitalisation of national currencies will become a major global trend in the near future, and that ensuing competitions among them will intensify.⁵⁰ They caution that a world populated with digital legal tenders may exacerbate, rather than stamp out, existing 'asymmetries' in the international monetary system. It follows that much of the regional and international adoption of the e-CNY will depend on multilaterally agreed and shared rules, standards, and solutions. They assert that China should make sure that it has 'a seat at the table' so that it can 'contribute its approach' to the designing and development of technical and operational interoperability between CBDC systems and networks in trade blocks and at regional and international levels.⁵¹ At the invitation of the Bank for International Settlements (BIS), China has likely already taken a solid step towards this goal.

Specifically, in February 2021, the BIS invited the Digital Currency Institute under the People's Bank of China to join the Hong Kong Monetary Authority and the central banks of Thailand and the United Arab Emirates in creating a 'multi-CBDC bridge', or 'mBridge'. This BIS-coordinated 'wholesale' CBDC 'co-creation' project is intended to explore rules, measures, and capabilities of distributed ledger technology (DLT) in enhancing financial infrastructure to support multi-currency cross-border payments.⁵² Chinese economists and finance specialists commend the pilot scheme for its goal and potential to build compatibility and connectivity links between and among CBDCs. They also generally characterise the 'mBridge' as an economic 'public good' because its target of faster, cheaper, and safer multi-currency cross-border payments and settlements will enable unbanked/underbanked SMEs and households to engage more actively in and benefit from the rapidly growing digital economy, digital trade, and e-commerce.⁵³

They do, however, continuously remind the Chinese public that building a well-functioning 'interoperable' financial system to host multiple digital currencies issued by different jurisdictions will be a complex and challenging process that cannot and should not be rushed.⁵⁴ In their opinion, what is particularly trying about the venture is that 'wholesale' central bank digital currencies of different countries are typically built on and supported by different standards, technologies, and systems. 'Bridging' the differences and synchronising transactions across CBDCs will very probably be a gradual and bumpy journey filled with technical, operational, regulatory, and geopolitical obstacles.⁵⁵

On the other hand, the fact that China can participate in the BIS-led explorations for an ‘mBridge’ is seen to be already beneficial, because this allows its voice to be heard during the roadmap design stage and the ensuing trial programme’s developing and testing phases. Moreover, the pioneering project may offer the e-CNY a platform to develop its dual-purpose capacity of ‘front-end retail’ and ‘back-end wholesale’. Functioning as both a retail and wholesale CBDC will enable the digital *yuan* to support cross-border consumer-to-business, business-to-business, and inter-bank settlements of both small- and large-value transactions.⁵⁶ In addition, since Hong Kong serves as the main location of the ‘mBridge’ project, China may leverage the Special Administrative Zone’s central position in international finance and trade to foster greater acceptance of the RMB as a pricing and settlement mechanism in the RCEP region and along the ‘Belt and Road’. Meanwhile, Hong Kong may better showcase its unique role as an important hub where regional and global economic, trade, and capital flows converge.⁵⁷

Hong Kong’s Role in Building Offshore RMB Markets

In 2013, China established its first ‘pilot free trade zone’ (FTZ) in Shanghai. The number of such zones has since increased to twenty-one, with the addition of one ‘free trade port’ in the island province of Hainan. Unlike the ‘special economic zones’ created for China’s ‘opening up’ in the 1980s and 1990s, the FTZs are not expected to function as ‘locomotives’ of export-led growth. They are rather geared towards serving as laboratories, drivers and supporting platforms for the ‘dual circulation’ strategy, which aspires to ‘internally’ spur China’s domestic demand and consumption, and ‘externally’ continue liberalising its capital flows and strengthening its presence in global export markets.⁵⁸

Internally, the FTZs’ listed industrial and business priorities include actively promoting and participating in the development of digital trade and cross-border e-commerce.⁵⁹ Pursuing that goal is broadly reported to also underscore the necessity for the FTZs to integrate financial innovation into their strategic and action plans, particularly in the areas of establishing the RMB as an anchor currency and preparing the e-CNY for cross-border and cross-currency settlement and payment.⁶⁰

Externally, Hong Kong, which is widely regarded as a vital gateway and two-way channel for capital flows between China and the world, needs to take on the challenge of becoming a central hub for joint pilot programmes of cross-border RMB settlement, financing, investment, and trading. Hong Kong has long been a leading international financial centre and the most important offshore RMB market. The setup of FTZs has expectedly seen its financial interconnections with the mainland making greater, but ‘orderly’, headway through shared market access schemes, such as ‘Mutual Recognition of Funds’, ‘Northbound and Southbound Stock Connect’, and ‘Cross-Boundary Wealth Management Connect’.⁶¹ Along the way, Hong Kong has also become an important facilitator of the opening up of China’s capital markets, the development of RMB-denominated investment products, and the improvement of attendant risk management tools and techniques. Its deep and readily available RMB liquidity pool has meanwhile further enhanced the prospects of the Chinese *yuan* growing into a popular pricing and settlement currency in overseas markets.⁶²

In like manner, the fast-evolving digital economy and digital trade have substantially increased the attractiveness of Hong Kong’s financial infrastructure to the Mainland. Its multi-currency, multi-level, and multi-platform transaction settlement structure, which has been ‘proactively’ networked with regional and global payment systems, is popularly viewed as a jumping-off point for China to advance its trade finance ecosystem for faster, safer, and cheaper cross-border payment services.⁶³ The acknowledged progress made in this regard includes the ‘connectivity’ between the People’s Bank of China Trade Finance Platform (PBCTFP) and the Hong Kong Monetary Authority’s ‘eTradeConnect’. Launched in late 2019, the joint

venture is now in its second phase of pilot run of cross-border and cross-blockchain-platform trade finance collaboration.⁶⁴ Also at an advanced stage of studies and trials is the ‘interconnection’ scheme between the e-CNY wallets and Hong Kong’s ‘Faster Payment System’ for cross-border trade and investment transactions in the digital RMB. Headed by the Hong Kong Monetary Authority and the Digital Currency Research Institute at the People’s Bank of China, the retail-oriented project follows a ‘do-no-harm’ and ‘meet-regulatory-compliance’ principle in its technological development and functionality testing.⁶⁵ Moreover, both institutions may draw on the experiences and lessons learned from their joint undertaking when participating in the BIS-led ‘mBridge’ project for wholesale CBDCs.

Yet some AI, Big Data, and finance specialists in Hong Kong candidly caution that a premier financial centre does not automatically become a digital financial focal point. According to their judgement, besides measuring up to the expectation of developing into an offshore RMB settlement and clearing hub for mobile payments, Hong Kong should attach importance to its own fintech development and the digital transformation of its well-recognised financial services. It should also set up an exchange or trading platforms for digital assets in order to compete to become a leading global digital financial centre. All this should help Hong Kong position itself as a vital ‘digital gateway’ to the ‘Digital Silk Road’. In turn, this may allow the Chinese Special Administrative Region a unique opportunity to issue a ‘silk coin’ for trade and investment transactions along the ‘Belt and Road’.⁶⁶

Fintech experts and finance specialists in Hong Kong further explain that if blockchain is to become a commonly used technology in ‘Digital Silk Road’ trade, it could become a matter of course for a ‘silk coin’ to be launched. They reason that if designed as a ‘Diem-type stablecoin’ and issued by the de facto central bank of Hong Kong, the ‘silk coin’ could be at least partly interoperable with the RMB. This feature could conceivably encourage countries along the ‘Digital Silk Road’ to form a consortium to negotiate and decide the coin’s scalability and cost structure. More importantly, given its international nature, multicultural landscape, and established relationships with and credibility in the Mainland and countries along the ‘Belt and Road’, Hong Kong could become a ‘super connector’ and ‘arbitration centre’ for the ‘silk coin’.⁶⁷ Whether or not the idea will bear fruit, Hong Kong is commonly expected to remain a prime cross-border e-CNY testbed and to accelerate the digitalisation of its financial infrastructure and service network for multi-CBDC settlement.⁶⁸

Notes

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