CHINA’S APPROACH TO CENTRAL BANK DIGITAL CURRENCY: SELECTIVELY RESHAPING INTERNATIONAL FINANCIAL ORDER?

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ABSTRACT

China is likely to be the first major economy to issue central bank digital currency (CBDC), the digital version of sovereign currency. China’s CBDC is also known as e-CNY, DC/EP, or digital yuan. E-CNY has the potential to profoundly affect the international financial system and order. This article explores the following crucial issues from an international perspective: what are the core features of e-CNY? What is China’s approach to CBDC? What is the long-term sustainability of China’s CBDC approach?

This article argues that the role of the state, the potential cross-border use of e-CNY, and China’s proactiveness in international governance are the core features of China’s CBDC. These features

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contribute to China’s CBDC approach, a possible selective reshaping of international financial order. The article adopts a multifactor analytical framework which explores major economic, political economy, legal and regulatory factors affecting the sustainability of China’s CBDC approach. This framework seeks to promote a holistic understanding of e-CNY’s evolution and its profound implications for international economic governance.

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1. INTRODUCTION

Central bank digital currency (CBDC), also called sovereign digital currency (SDC), is the digital version of sovereign currency issued by an economy’s monetary authority. \(^1\) An increasing number of central banks are exploring CBDC, including the Bank of England and the Riksbank, the central bank of Sweden.\(^2\) The digital dollar has also been considered, with the Federal Reserve Bank of Boston working with the Massachusetts Institute of Technology to design a CBDC prototype.\(^3\) At least thirteen states (e.g., Sweden, and South Korea) are testing CBDC pilots,\(^4\) with some central banks like the European Central Bank considering such tests.\(^5\) The Bahamas, Eastern Caribbean, and Nigeria have rolled out CBDC.\(^6\)

CBDC involves “the algorithmic hand” beside the “invisible” hand (the market) and the “visible” hand (government).\(^7\) It is likely to be a critical part of the digital economy, accelerated by the epidemic,\(^8\) while carrying both “policy and legal implications.”\(^9\)

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\(^4\) Id.


\(^6\) See *Central Bank Digital Currency Tracker*, *supra* note 2 (indicating that a country has rolled out a CBDC by categorizing it as “launched”).


CBDC raises many issues including digital payment ecology, financial inclusion, data protection and sovereignty, compliance, financial risks, and governance models.\textsuperscript{10} China is expected to be the first major economy to launch CBDC.\textsuperscript{11} China’s CBDC was previously known as the Digital Currency/Electronic Payment (DC/EP or DCEP),\textsuperscript{12} and is also variously called e-CNY, digital yuan, eCNY, or e-RMB. The People’s Bank of China (PBOC), China’s central bank, started CBDC research in 2014\textsuperscript{13} and issued a white paper on e-CNY (White Paper) in 2021, with no timetable for the final launch of e-CNY.\textsuperscript{14} For e-CNY, “top-level design, function development, and system testing has been basically completed.”\textsuperscript{15} E-CNY pilots have been conducted in ten regions (e.g., Shenzhen)\textsuperscript{16} and the Beijing Winter Olympics.\textsuperscript{17} It is probable that E-CNY will lead to an economic ecosystem (e.g., financial instruments denominated in e-CNY)\textsuperscript{18} that is more...
than just currency or a new “currency infrastructure.”\textsuperscript{19} Digital yuan is likely to develop an ecosystem that interacts with established and emerging payment systems,\textsuperscript{20} with such systems ranging from payment to e-commerce involving, among others, big tech companies, banking institutions and individuals.\textsuperscript{21} International consumer brands, including McDonald’s, Starbucks, and Subway have been involved in the e-CNY trial.\textsuperscript{22} Accordingly, e-CNY is “likely to become an important feature of China’s digital economy and financial system.”\textsuperscript{23}

China’s CBDC is among potential CBDCs that could have real global implications.\textsuperscript{24} For CBDC, it has been suggested that “[w]hatever the Chinese do will affect other national economies.”\textsuperscript{25}

It is expected that China’s CBDC may be “the powerful disruption that kickstarts a move from the extensive SDC-related research and piloting we have seen in Canada, England, and elsewhere, to multiple instances of SDC issuance, particularly by major


\textsuperscript{19} \textit{Id.}


\textsuperscript{23} Olsson et al., supra note 18.


\textsuperscript{25} Bharathan, supra note 20.
More generally, CBDCs will likely affect the development and use of each other. For instance, at the time of this writing, the Federal Reserve is seeking comments on CBDC, including those on how the decisions to issue CBDC should be influenced by other large economies’ decisions around CBDC.27

This article explores China’s approach to CBDC, particularly from an international perspective. The international dimension and impact of China’s CBDC will be highlighted since it carries profound implications for the future of the international economy, while it has received scant attention in current research. This article will first analyse the key aspects of e-CNY (chapter II), and then its core features (chapter III). For its core features, e-CNY is characterised internally by the strengthened role of the state, and externally by possible cross-border use of e-CNY, and China’s proactiveness in international governance regarding CBDC. I argue that these features contribute to China’s CBDC approach of selective reshaping of international economic governance (chapter IV). The article further explores a multifactor framework, engaging with economic, political economy, and legal and regulatory factors, to analyse the sustainability of China’s CBDC approach (chapter V). Chapter VI concludes the paper with a short summary and reflection.

Some carve-outs are rather useful here. This article is based on publicly available materials and does not claim to contain all possible information on CBDC. For CBDC-related research, “caution is warranted in any comparative analysis about a subject in which the public-facing statements and trials are only the tip of the iceberg in comparison to the research, knowledge, and trials that are internal to each central bank and government.”28 Also, of note, this article does not focus on the merits of CBDC, which demand a separate analysis.

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26 Zetzche et al., supra note 24.
2. WHAT IS CHINA’S CBDC?

China’s CBDC is “the digital version of fiat currency issued by the PBOC.” Through account-based interfaces, e-CNY is, at the time of this writing, available to both the public and foreign visitors to China. E-CNY’s functions include “exchange and circulation management, interoperability and [a] wallet ecosystem.” Several major aspects of e-CNY will be discussed below.

2.1. Two-Tier Operational System

China’s CBDC features a hybrid operational system with two layers dealing with issuance and circulation. Within the first layer (the distribution layer), the central bank distributes CBDC to individual banks or payment platforms that then circulate CBDC to users in the second layer.

The structure of e-CNY is illustrated in the figure below.

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32 Id. at 3.
33 Kiff et al., supra note 1, at 24.
In the first layer, the PBOC issues e-CNY to second-tier institutions (currently including six major state-owned banks and two internet banks), also called authorized operators, operating institutions, operating agencies or tier 2 institutions. Second-tier institutions circulate the e-CNY to retail market participants, including the public. The list of second-tier institutions is likely to grow. They will lead the CBDC exchange services (exchanging e-
CNY into traditional CNY for the public\(^{38}\) and circulation services.\(^{39}\) Second-tier institutions are also e-CNY wallet providers.\(^{40}\) A user needs to go to one of these second-tier institutions to open an e-CNY wallet,\(^{41}\) which usually involves an e-CNY wallet app. Three telecommunication operators are also working with major state-owned banks to form joint project teams to participate in e-CNY research and development.\(^{42}\)

Other banks and service providers may be “tier 2.5 institutions” (also known as “related commercial institutions”) that supply payment and other services to e-CNY holders, but cannot provide e-CNY exchange services.\(^{43}\) These institutions appear to include a number of other banks and third-party payment service providers.\(^{44}\) Tier 2.5 institutions could also be regarded as secondary issuers.\(^{45}\)

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40 Mookerjee, supra note 3.

41 Digital Yuan: What is It and How Does It Work?, supra note Error! Bookmark not defined.

42 Li & Ma, supra note 39.

43 DEUTSCHE BANK, supra note 29.


They will join the e-CNY system to provide “e-CNY circulation services and retail management, including innovation on payment product design, system development, scenario expansion, marketing, business processing as well as operation and maintenance.”

Tier 2.5 institutions are expected to cooperate with one or more of authorized operators. After the e-CNY wallet is opened, the user can then access a variety of services provided by both the issuing bank (one of the tier 2 institutions) and tier 2.5 institutions. For instance, ride hailing service, Didi Chuxing, and food delivery business, Meituan Dianping, are involved in the CBDC trial. Tiers 2 and 2.5 institutions are e-CNY intermediaries, many of which have been involved in the development of the e-CNY ecosystem’s “payments solutions and functions.”

End users include businesses and the public. Individual end-users will not be charged by commercial banks for the e-CNY exchange and circulation services. It seems that the issue of fees

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46 WORKING GRP. ON E-CNY RSCH. & DEV., supra note 13, at 8.
47 Du & Li, supra note 44.
48 DEUTSCHE BANK, supra note Error! Bookmark not defined.
50 Gabriel Soderberg et al., Behind the Scenes of Central Bank Digital Currency, IMF FINTECH NOTES, Feb. 2022, at 1, 16.
51 WORKING GRP. ON E-CNY RSCH. & DEV., supra note 13, at 4–5.
collected by tiers 2 and 2.5 institutions on businesses will be decided by the market.\(^\text{53}\)

### 2.2. Loosely Coupled with Bank Accounts

A major feature of e-CNY is its loose coupling with bank accounts.\(^\text{54}\) E-CNY is “a value-based, quasi-account-based and account-based hybrid payment instrument,” with “loosely-coupled account linkage.”\(^\text{55}\) Said differently, e-CNY is “based on broad accounts, loosely coupled with bank accounts.”\(^\text{56}\) However, there seems to be limited elaboration further on what “loosely-coupled account linkage” means.\(^\text{57}\) E-CNY wallets may be used without opening or linking to a bank account in some circumstances that provide rather basic functions: unbanked individuals may access “basic financial services provided via [an] e-CNY wallet,” and foreign visitors may open an e-CNY wallet “to meet daily payment needs without opening a domestic bank account.”\(^\text{59}\)

### 2.3. Managed Anonymity

Managed anonymity is a major feature of e-CNY.\(^\text{60}\) According to the PBOC, managed anonymity means that the CBDC system “does not provide information to third parties or other government agencies unless stipulated otherwise in laws and regulations.”\(^\text{61}\) For

\(^{53}\) See Reuters Staff, supra note 52 (stating that fees must be resolved by operating agencies, service agencies, and merchants by a market-oriented mechanism).


\(^{55}\) Id. at 3.

\(^{56}\) Id. at 6.

\(^{57}\) Bharathan, supra note 20.


\(^{59}\) Working Grp. on E-CNY Rsch. & Dev., supra note 13, at 5.

\(^{60}\) Id. at 13.

\(^{61}\) Id. at 7.
a digital wallet app, where the user’s identity has been verified, the PBOC will know the user’s identity.\textsuperscript{62} In contrast, transactions conducted through the e-CNY wallet app will only transmit the wallet ID, with neither the transaction parties nor the sub-wallet account bank knowing the user’s identity.\textsuperscript{63} This means that users may be able to “hide their identity from counterparties,” making it “more difficult for online platforms to collect user information.”\textsuperscript{64}

The regulation in this regard is yet to be seen. According to the Law of the People’s Republic of China on People’s Bank of China (“PBOC”) (Amendment Draft for Consultation) of 2020 (the “2020 Amendment Draft”), the PBOC and its branches may ask the regulated entity to provide data and information as required by regulation.\textsuperscript{65} The PBOC should, under the 2020 Amendment Draft, establish a regulatory information sharing mechanism with the member institutions of the Financial Stability and Development Committee under the State Council.\textsuperscript{66} However, it is not clear whether and how evolving rules on the sharing of government information among government agencies (such as the Notice of the State Council on Issuing the Interim Measures for the Administration of Sharing of Government Information Resources) will apply to e-CNY.\textsuperscript{67}

\begin{footnotesize}
\begin{enumerate}
\item[62] Olsson et al., supra note 18.
\item[63] Id.
\item[64] Digital Yuan: What is It and How Does It Work?, supra note Error! Bookmark not defined.
\item[66] Id. art. 52.
\end{enumerate}
\end{footnotesize}
3. CORE FEATURES OF E-CNY

China’s CBDC approach can be understood in terms of three core features of the e-CNY: the role of the state (including the prohibition of cryptocurrencies), the possible cross-border use of e-CNY, and China’s proactive efforts in international governance concerning CBDC.

3.1. The Role of the State

E-CNY is a state-led initiative, echoing the development of digital currency which is indicated in China’s fourteenth Five-Year Plan and is regarded as part of structural reforms on the financial supply side. The government is proactive in various aspects of CBDC, including local governments reportedly giving away funding to residents to trial the e-CNY. Major factors in selecting e-CNY pilot areas include both national and regional development strategies.

The legal concept of money is based on the state’s power to regulate the monetary system. CBDC concerns the “very fundamental relationship between money, the State, and the law.” This part focuses on the state’s role in CBDC-related regulation: China’s prohibition of cryptocurrencies and the centralized governance model regarding e-CNY.

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69 Yeung & Mullen, supra note 5.

70 WORKING GRP. ON E-CNY RSCH. & DEV., supra note 13, at 13.

71 Kiff et al., supra note 1, at 38.

3.1.1. The Prohibition on Cryptocurrencies

China’s CBDC approach should be viewed through a functional lens. Its regulation of cryptocurrencies and CBDC is like two sides of a coin, cryptocurrencies being regarded as the opposite of CBDC. Cryptocurrencies are typically understood to include stablecoins and other cryptocurrencies (e.g., Bitcoin). Cryptocurrencies consist of “open” cryptocurrencies (e.g., Bitcoin and Ether) that “operate outside the jurisdiction and direct control of the state or any single entity,” and “corporate or consortium-managed digital currencies.” E-CNY is managed by the PBOC, contrasted with most cryptocurrencies that aim to decentralize power traditionally reserved by the state. To some extent, e-CNY is driven by the response to cryptocurrencies and, relatedly, the risk of capital flight.

China does not permit the parallel development of decentralized cryptocurrencies and CBDC. In the 2020 Amendment Draft, the PBOC proposed to confirm e-CNY’s legal tender status as the digital form of RMB. The 2020 Amendment Draft also forbids and

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75 ASHTON DE SILVA ET AL., RMIT UNIV., CENTRAL BANK DIGITAL CURRENCIES (CBDCs): A COMPARATIVE REVIEW 4 (2021)


78 People’s Bank of China Draft, arts. 18-19; Soderbeg et al., supra note 50, at 18.
imposes fines on the production, circulation, and sale of substitute currencies in digital and physical forms, which seem to include RMB-pegged digital tokens. More recently, China has prohibited all activities concerning private virtual currencies through a notice issued by ten agencies including the Supreme People’s Court (hereinafter “SPC”). This would likely affect not only administrative decisions but also court judgments as the notice was issued by the administrative agencies and SPC.

The crackdown on cryptocurrencies is a distinctive aspect of China’s CBDC approach, differing from many economies in which CBDC and cryptocurrencies could co-exist. This seems to reflect “China’s ‘state-centric’ monetary system.”

3.1.2. A Centralized Governance Model

E-CNY is managed under a centralized model, and it is observed to be “hypercentralized.” According to a then PBOC deputy governor, central governance of e-CNY is meaningful for several reasons: (i) maintaining the role of fiat currency and the authority to issue currency; (ii) enhancing efficiency in payment systems and improving monetary policy transmission (e.g., e-CNY’s

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82 WORKING GRP. ON E-CNY RSCH. & DEV., supra note 13, at 13.

“settled upon payment” to speed up currency circulation); and (iii) ensuring financial stability (e.g., the use of big data and AI to inhibit illicit activities).\textsuperscript{84} CBDC would strengthen the role of the state, which includes related agencies (e.g., taxation authorities), and provide the PBOC with “tight centralized control over digital money.”\textsuperscript{85} The analysis here focuses on the PBOC, which issues e-CNY and manages the whole CBDC life cycle through the e-CNY systems’ operation, regulation, infrastructure and data.\textsuperscript{86}

First, the PBOC is at the center of the operation of the e-CNY system, including taking care of CBDC issuance and disposal.\textsuperscript{87} To illustrate, there is the PBOC’s central ledger,\textsuperscript{88} the “core” of e-CNY.\textsuperscript{89} E-CNY wallets also provide a prime example. The use of e-CNY usually requires downloading the PBOC’s e-CNY app that is the core node of the e-CNY system, and the central bank is the core entry and clearing center for e-CNY.\textsuperscript{90} Moreover, all cross-institutional transactions need to go through the PBOC for the value transfer to occur.\textsuperscript{91}

Second, the PBOC plays the leading role in regulation and setting rules and standards relating to CBDC. The 2020 Amendment Draft provides the central bank with powers spanning across the planning, organization and supervision of the payment system.

\textsuperscript{84} Fan Yifei (范一飞), Guanyu Shuzi Renminbi M0 Dingwei de Zhengce Hanyi Fenxi (关于数字人民币 M0 定位的政策含义分析) [Analysis on the Policy Implications of the M0 Status of E-CNY], Renmin Ribao (人民日报) [PEOPLE’S DAILY] (Sept. 15, 2020), http://blockchain.people.com.cn/n1/2020/0915/c417685-31862262.html [https://perma.cc/ATA5-Q6HZ].


\textsuperscript{86} Working Grp. on E-CNY Rsch. & Dev., supra note 13, at 3.

\textsuperscript{87} Id. at 8.


\textsuperscript{89} Soderberg et al., supra note 50, at 17.

\textsuperscript{90} Wang Yongli (王永利), Shuzi Renminbi Keneng Dailai de Zuida Bianhua (数字人民币可能带来的最大变化) [The Biggest Change that e-CNY May Bring], SINA (Nov. 2, 2020), https://finance.sina.cn/zl/2020-11-02/zl-iizncxkc8953792.d.html [https://perma.cc/45E4-V2KU].

\textsuperscript{91} Li & Ma, supra note 39.
along with responsibility for the cybersecurity of e-CNY. The PBOC also supervises CBDC exchange and circulation (including anti-money laundering (“AML”) regulation) and regulates authorized operators and other commercial institutions. According to a then PBOC deputy governor, the centralized governance of e-CNY requires the setting of standards (i.e., technical, business, security and operational standards). The PBOC is responsible for setting rules for e-CNY wallets and managing e-CNY wallet ecosystem. Commercial banks and licensed non-bank payment institutions must obtain the PBOC’s recognition and support, and must meet compliance and regulatory requirements (e.g., AML, risk management) to take part in China’s CBDC payment system. Authorized operators providing exchange services operate under the “quota management of the PBOC.”

Third, the PBOC is at the center of the system’s infrastructure. Centralized governance of e-CNY involves the development of e-CNY infrastructure (including the connection of different operating institutions). The PBOC is responsible for “inter-institution connect.” Regarding the monitoring of e-CNY transactions, the PBOC is expected to establish three centers for authentication, registration, and big data analysis respectively.

Fourth, the PBOC plays a central role in many other aspects such as technology and data. The PBOC is observed to be “relying to a greater extent on internal resources [in acquiring technology] and

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92 Soderberg et al., supra note 50, at 17–18.
93 Li & Ma, supra note 39.
95 Bharathan, supra note 20.
96 Fan, supra note 84.
98 Id. at 6.
99 Id. at 8.
100 Fan, supra note 84.
has different contractors for different areas as necessary,” which provides “more control over the development process.”103

Centralized governance of e-CNY also involves the management of e-CNY information.104 E-CNY will likely “revolutionize” the regulator’s capacity to “scrutinize the nation’s payment and financial system” with additional powers to track how money is used.105 The central bank could have access to CBDC transaction data and data regarding e-CNY digital wallets, but authorized operators will no longer be able to access all transaction information as was the case before the rolling out of e-CNY; if e-CNY wallets of the payer and payee are opened at different authorized operators, each authorized operator would not have all the information of both parties to the transaction, reflecting e-CNY’s managed anonymity feature.106 Under the loose coupling of accounts, CBDC operating agencies will “submit transaction data to the central bank via asynchronous transmission,” enabling the central bank to “keep track of necessary data.”107 Conversely, the managed anonymity feature of e-CNY will hinder an online platform’s collection of user information.108 E-CNY’s “touch and touch” function, enabling two end users to touch their mobile devices to conduct a fund transfer, “leav[es] no payment record with a third party or the banking system.”109 Managed anonymity features aside, e-CNY helps the state secure a central role in the financial system and fintech industry (including a huge e-payments market).110

103 Soderberg et al., supra note 50, at 16.
104 Fan, supra note 84.
105 Yeung, supra note 76.
108 Digital Yuan: What is It and How Does It Work?, supra note Error! Bookmark not defined., at 5.
109 Yeung, supra note 76.
3.2. The Possible Cross-Border Use of e-CNY

The PBOC has emphasized “the importance of exploring cross-border payments with CBDC,” likely involving retail and wholesale use cases outside Mainland China. For instance, Hong Kong’s forthcoming pilot scheme for e-CNY use will involve retail use in some contexts like shopping and dining for certain individual users in Hong Kong and Hongkongers living in the Greater Bay Area. The PBOC is also involved in the Multiple CBDC Bridge project (mCBDC Bridge, or mBridge), a wholesale CBDC “co-creation” project that explores the capabilities of DLT and that focuses on cross-currency cross-border payments. Here, the PBOC has collaborated with regulators in Hong Kong, Thailand and the United Arab Emirates (UAE) as well as the Bank for International Settlements (BIS) under this mCBDC Bridge.

The possible cross-border use of e-CNY is explored through new and existing mechanisms, multi-level efforts, and the technology and networks that China is involved in. The improvement of international payment is one of the three objectives of China’s CBDC. The PBOC believes that China’s CBDC is “technically ready for cross-border use,” and the bank is to beginning to explore cross-border use, including “pilot cross-border payment programs.” E-CNY may also gain international use due to, inter alia, network effects and common infrastructure and standards. If everything goes smoothly, e-CNY could be used in international

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111 Soderberg et al., supra note 50, at 25.
113 BANK FOR INT’L SETTLEMENTS [BIS], Multiple CBDC (mCBDC) Bridge (2021), https://www.bis.org/about/bisih/topics/cbdc/mcbdc_bridge.htm [https://perma.cc/6YGN-B5SB].
114 BIS INNOVATION HUB H.K. CTR., supra note 12, at 7.
115 WORKING GRP. ON E-CNY RSCH. & DEV., supra note 13, at 5–6.
116 Id. at 5.
117 Id.
118 Diana Choyleva, China Advances in Challenge to Dollar Hegemony, FIN. TIMES (June 30, 2021), https://www.ft.com/content/efa3ec2b-5be8-413f-b23c-cc9b9bff1261 [https://perma.cc/H4UU-DR98].
contexts including cross-border retail payment (e.g., tourism, e-commerce, and business visits), real-time cross-border foreign exchange payments (as explored in the m-CBDC Bridge), remittance, and possibly the Belt and Road Initiative (BRI) projects (e.g., RMB loans and investments). E-CNY will likely be first used in business-to-consumer (B2C) and then in cross-border flows in the medium-to-long term.

3.2.1. The Use of Existing and New Mechanisms

China appears to utilize existing and new mechanisms to explore the cross-border use of CBDC. Its efforts often focus on finance and technology and the development of infrastructure.

In relation to finance, China engages with existing financial systems including SWIFT, the global financial messaging system. China established a joint venture with SWIFT in 2021, which is regarded as part of the efforts to explore the international use of China’s CBDC and propel RMB internationalization. For instance, the joint venture will establish a localized data warehouse

119 Tang, supra note 22.
121 Id. at 15; Bansal & Singh, supra note 52, at 15.
125 Id.
to “monitor and analyze cross-border payment messaging.”

Meanwhile, China’s CBDC is observed to reflect greater efforts to promote an “independent payments system based on its Cross-Border Inter-Bank Payments System (CIPS).”

Concerning technology, new mechanisms may be adopted to promote the CBDC. Blockchain provides a good example. The PBOC Digital Currency Institute (DCI) is developing a trade finance blockchain platform. China’s government-backed initiative, the Blockchain Service Network (hereinafter “BSN”), may also help promote the use of CBDC. Aiming to reduce the costs of using blockchains by individuals and SMEs, the BSN reportedly plans to develop an international network to support future CBDCs. China also launched the Global Initiative on Data Security in 2020.

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131 China’s BSN, supra note 130.

3.2.2. Multi-Level Efforts

China is exploring the cross-border use of CBDC at different levels. E-CNY trials in China are regarded by the PBOC as a basis for the pilot cross-border payment programs related to e-CNY.\footnote{Working Grp. on E-CNY Rsch. & Dev., supra note 13, at 5.} For example, China’s Xiongan New Area is planning for the cross-border use of digital yuan.\footnote{China’s BSN, supra note 130.} The 2022 Winter Olympics also involved a CBDC pilot.\footnote{Yang Jing & AnnaMaria Andriotis, At the Winter Olympics, Beijing’s Digital Yuan Push Puts Visa in a Bind, WALL ST. J. (Feb. 9, 2022, 9:05 PM), https://www.wsj.com/articles/beijings-digital-currency-push-at-winter-olympics-puts-visa-in-a-bind-11644402602 [https://perma.cc/X8B4-8756].} Business and trade use cases may also see increased testing.\footnote{Do Digital Yuan Trial Figures Signal More Business Usage?, LEDGER INSIGHTS (Nov. 2, 2020), https://www.ledgerinsights.com/digital-yuan-trial-figures-business-usage-ecny-cbdc/ [https://perma.cc/R36L-2VNL].}

Outside Mainland China, the DCI has signed a memorandum with the Hong Kong Monetary Authority, with e-CNY cross-border payment technical testing having been conducted.\footnote{BIS Innovation Hub H.K. Ctr., supra note 12, at 14.} At the time of writing, Hong Kong reportedly plans to conduct e-CNY pilots with certain restaurants and shops. Business and trade use cases may also see increased testing.\footnote{Yiu, supra note 112.} It seems that the Macau government will also work with the PBOC to “study the feasibility of issuing a digital currency.”\footnote{Yeung & Mullen, supra note 5.} As an example of bilateral efforts, the possibility of Chinese tourists using China’s CBDC abroad is reportedly being explored by China and Singapore.\footnote{Hu Yue & Denise Jia, China’s Didi Teams with Central Bank on Digital Currency Trial, NIKKEI ASIA (July 9, 2020), https://asia.nikkei.com/Spotlight/Caixin/China-s-Didi-teams-with-central-bank-on-digital-currency-trial [https://perma.cc/32BG-SLY6].}

In addition, the PBOC has collaborated with regulators in Hong Kong, Thailand, and the UAE as well as the BIS under the mCBDC Bridge.\footnote{BIS Innovation Hub H.K. Ctr., supra note 12, at 7.} Multiple CBDC systems are being explored through the mCBDC Bridge that involves a prototype “to support real-time cross-border foreign exchange PvP payment versus payment transactions in multiple jurisdictions, operating 24/7.”\footnote{Raphael Auer et al., supra note 30, at 1, 8.} The PBOC
also engages with international standards development organizations.¹⁴³

### 3.2.3. Taking Advantage of Technology and Network

New technology will help e-CNY lower costs and improve convenience and efficiency in commerce. CBDC frameworks may be leveraged to enhance international payments (e.g., the conversion of CBDCs) and lower costs (such as e-CNY lowering transaction costs for international users compared with cash). E-CNY seemingly aims to further the efficiency and reduce the cost of inter-bank settlements, which is linked with the international acceptance of e-CNY. The m-CBDC Bridge is exploring the use of CBDC and blockchain technology in cross-border foreign currency payments, aiming to make such payments simpler and less expensive. CBDC may also streamline communication processes. Many problems with international fund transfers are attributable to the “communication hops” and numerous updates to ledgers across many intermediaries. CBDCs may enable countries to transact separately, which “would lower demand for correspondent banking services and SWIFT international financial messaging and payment systems.” Moreover, CBDC may reduce the cost of liquidity management. For cross-border payment through traditional money, liquidity management is usually done through prefunding.

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¹⁴³ Bharathan, supra note 20.
¹⁴⁵ Yeung, supra note 76.
¹⁴⁷ Somasundaram, supra note 85.
¹⁴⁸ Bansal & Singh, supra note 52, at 7.
¹⁵⁰ Bansal & Singh, supra note 52, at 7.
(i.e., keeping balances in relevant accounts), which is costly.\textsuperscript{151} That said, cross-border use of e-CNY faces similar challenges to existing currencies, such as capital controls.\textsuperscript{152}

China will likely take advantage of its network, such as its trade and payment networks, to promote CBDC.\textsuperscript{153} E-CNY may continue China’s use of its leading role in trade to increase demand for RMB in trade settlement.\textsuperscript{154} For instance, cross-border use of e-CNY and e-HKD could be impactful given the large volume of trade between Hong Kong SAR and Mainland China.\textsuperscript{155} Notably, BRI-related projects and transactions also promote RMB settlement.\textsuperscript{156} If everything goes smoothly, CBDC might be used in BRI projects (e.g., RMB loans and investments).\textsuperscript{157} With many BRI projects being implemented by Chinese businesses, “the contractor payments could be made using the digital yuan, without routing the money through foreign governments.”\textsuperscript{158} China could “increasingly bill in yuan” given its large-volume trade with Asian and African states.\textsuperscript{159}


\textsuperscript{152} See, e.g., Peking Professor Warns Re Rapid Internationalization of China’s Digital Yuan, L\textit{EDGER INSIGHTS} (July 20, 2021), https://www.ledgerinsights.com/peking-professor-warns-rapid-internationalization-of-china-digital-yuan/ [https://perma.cc/P9B7-5RMN] (noting that internationalizing e-CNY would result in “a relaxation in capital controls by using the currency for cross border payments [that] could be destabilizing”).

\textsuperscript{153} See Zennon Kapron, China’s Central Bank Digital Currency Will Strengthen Alipay And WeChat Pay, Not Replace Them, \textit{FORBES} (May 24, 2020, 8:57 PM), https://www.forbes.com/sites/zennonkapron/2020/05/24/chinas-central-bank-digital-currency-will-strengthen-alipay-and-wechat-pay-not-replace-them/#418342086e69 [https://perma.cc/42Z2-JK8K] (stating that Beijing is not looking to replace existing systems, such as Alipay and WeChat Pay, but rather looking to integrate them with DCEP).

\textsuperscript{154} Knoerich, supra note 88.


\textsuperscript{156} See Tsang Cheng-Yun & Chen Ping-Kuei, Policy Responses to Cross-border Central Bank Digital Currencies – Assessing the Transborder Effects of Digital Yuan, 17 \textit{CAP. MCTS. L.J.} 237, 247-48 (2021) (stating that “[s]ome studies have confirmed that BRI countries prefer RMB settlement more than the non-BRI countries do”).

\textsuperscript{157} Lo, supra note 122, at 70.

\textsuperscript{158} Bansal & Singh, supra note 52, at 14.

\textsuperscript{159} Somasundaram, supra note 85.
and e-CNY may be promoted in a network of international trade built through the BRI.\footnote{Martin Farrer, Currency and Control: Why China Wants To Undermine Bitcoin, GUARDIAN (July 8, 2021), https://www.theguardian.com/world/2021/jul/09/currency-and-control-why-china-wants-to-undermine-bitcoin [https://perma.cc/47QK-7DSH].}


China could also distribute e-CNY through pre-existing payment platforms (e.g., Alipay wallets) and ride on current acceptance infrastructure and networks to improve the scalability of e-CNY.\footnote{Bansal & Singh, supra note 52.} E-CNY could be used through Alipay,\footnote{Digital Yuan Takes Another Step Forward With Alipay Availability, LEDGER INSIGHTS (May 1, 2021), https://www.ledgerinsights.com/china-digital-yuan-currency-ecny-cbdc-alipay-availability/ [https://perma.cc/SZW7-USE4].} and is also connected with China UnionPay Merchant Services, which is affiliated with China UnionPay (a leading payment provider).\footnote{UnionPay Business Access Digital RMB Interconnection Platform, EQUALOCEAN (Oct. 29, 2021, 10:44 AM), https://equalocean.com/briefing/2021102923009708 [https://perma.cc/FXJ5-RUXY].}

One may argue that, theoretically, e-CNY could be used overseas through Chinese payment apps and services.\footnote{See, e.g., Knoerich, supra note 88, at 159 (suggesting that DCEP could expand payments in RMB by providing a way to circumvent the SWIFT payment system).}

3.3. Proactiveness in International Governance

China is proactive in international governance relating to CBDC. As part of the efforts regarding “the promotion of the construction
of a community of common destiny in cyberspace” in China’s recent Five-Year Plan, there is a plan for China to “actively participate” in rulemaking across “data security, digital currency, digital tax, and standards on digital technology.”

China appears to play an active role in formulating emerging standards related to CBDC at various venues and organizations. China has called for the G20 to address the development of CBDC standards and principles while confronting the various risks and challenges. China is represented in the Future of Payments Working Group that derives from the G20 roadmap to improve cross-border payments, with the PBOC actively participating in developing international standards. China is participating in CBDC concept- and standard-setting through standard-setting bodies (SSBs, dealing with topics ranging from CBDC definition and categories, issues affecting CBDC and virtual currencies, to regulation). At the International Telecommunication Union (ITU), China appears to lead research and the standardization of the CBDC ecosystem and reference architecture. China “was the first to add digital currency-related content to the repository for ISO 20022, a new global standard covering financial information transferred between financial institutions that includes payment transactions, securities trading and settlement information, and credit and debit card information.” Relating to the

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167 Five Year Plan, supra note 68, ch. 18, § 4.
169 Soderberg et al., supra note 50, at 14.
170 WORKING GRP. ON E-CNY RSLCH. & DEV., supra note 13, at 14.
172 Yao Qian (姚前), Quanguo Jinrong Biaozhunshu Jishu Weiyuanhui Mishu Zhang Yao Qian Biaozhunshu Xianxing Yingshi Jinrong Zou Chuqu (全国金融标准化技术委员会秘书长 姚前 标准先行 领导金融走出去) [National Financial Standardization Technical Committee Secretary General Qian Yao: Prioritizing Standards, Promoting Going-Out of Finance] WeCHAT (Nov. 1, 2018), https://mp.weixin.qq.com/s/EW5asUXbUHZwTSyY48Rg [https://perma.cc/WHV6-QTQR].
173 Hu Yue et al., In Depth: China’s Digital Currency Ambitions Lead the World, NIKKEI ASIA (Dec 3, 2020), https://asia.nikkei.com/Spotlight/Caixin/In-depth-
interoperability of CBDC, ISO 20022 is among notable common data and message standards and will likely play a role in “enabling interoperability with other payment systems.”\(^{174}\) The PBOC has discussed cutting-edge issues with not only multinational financial institutions but also regulators of different economies and universities.\(^{175}\) China has “introduced standards” on CBDC in certain economies involved in the BRI,\(^{176}\) and it is reported that the Legal Entity Identifier will be both used in China’s CBDC ecosystem as part of the BRI.\(^{177}\)

In addition, China proposes international principles for CBDC design, addressing various issues including the international use of CBDC and monitoring and information sharing.\(^{178}\) The PBOC has reportedly raised these proposals with “other central banks and monetary authorities.”\(^{179}\) China appears to propose the principle of “no detriment,” “compliance,” and “interconnectivity” for CBDC regulation,\(^{180}\) which involves CBDC’s cross-border use.\(^{181}\) The first requirement of “no detriment,” also seemingly called the “do not harm”\(^{182}\) or “no disruption” principle,\(^{183}\) means that one state’s CBDC should not disrupt other states’ currency sovereignty and their monetary and financial stability, along with consumer protection and fair competition.\(^{184}\) This appears to involve avoiding


\(^{176}\) Chen, supra note 171.


\(^{179}\) Id.


\(^{181}\) Soderberg et al., supra note 50, at 14, 25.


\(^{183}\) Soderberg et al., supra note 50, at 14.

negative spillover effects on the economies of China and other jurisdictions (e.g., currency substitution).  

The second requirement is “compliance,” requiring CBDC cross-border payments system to be compliant with the regulations of all connected jurisdictions (e.g., capital management, foreign exchange regulation). Additionally, information flow and funds flow between jurisdictions may be synchronized to promote trade, bolster the real economy and deter illicit activities (e.g., satisfying AML and countering the financing of terrorism (“CTF”) requirements (together AML/CTF), addressing tax evasion). The synchronization of information and fund flows would “facilitate regulators to monitor the transactions for compliance.”

The third requirement is “interconnectivity”: cross-border payments should, instead of a single CBDC being used for transactions on both sides of the border, involve interoperability between different jurisdictions’ domestic CBDC systems and between domestic CBDC systems and existing payment systems. Here, the PBOC “prefers a system where domestic CBDCs are converted to other currencies as payments cross borders.” According to the DCI Director-General Mu Changchun, PBOC “also propose[s] a scalable and overseen foreign exchange platform supported by DLT (distributed ledger technology like blockchain) or other technologies.”

China works on broader issues related to CBDC, particularly technology, and has been proactive in engaging in international standard-setting for new technologies. For instance, the BSN reportedly “envisages” a “standardized digital currency transfer method and payment procedure.” If the BSN manages to develop

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185 Soderberg et al., supra note 50, at 14, 25.
186 WORKING GRP. ON E-CNY RSCH & DEV., supra note 13, at 5–6.
187 Soderberg et al., supra note 50, at 14.
188 Wilson & Jones, supra note 178.
189 WORKING GRP. ON E-CNY RSCH & DEV., supra note 13, at 5–6; Soderberg et al., supra note 50, at 14.
190 Soderberg et al., supra note 50, at 15.
191 Wilson & Jones, supra note 178.
193 China’s BSN, supra note 130.
its network at scale, this may impact international standards.\textsuperscript{194} The DCI is proactive in developing the blockchain standard system, and leads a number of working groups and standardization projects in standardization organizations at both home and abroad.\textsuperscript{195}

4. CHINA’S CBDC APPROACH: SELECTIVE RESHAPING?

Based on these features, China may selectively reshape international economic governance through e-CNY, particularly the US dollar-based international financial system and order. It is due to, inter alia, the development of CBDC systems and possible reduced reliance on the dollar.\textsuperscript{196}

4.1. What Is “Selective”?  

CBDC is an area in which China has an advantage in both technology as well as in standards. Potentially, China could utilize its first-mover advantage in usage and technology. For instance, digital yuan may “enable China to internationalize digital currency payments before other countries’ CBDCs emerge.”\textsuperscript{197} This is based on China’s strengths, not only in CBDC, but also within the related areas of FinTech and e-commerce, more generally.\textsuperscript{198} Being selective is not uncommon in China’s practice of economic governance - China is also selective in its deregulation efforts.\textsuperscript{199}

CBDC involves an emerging new technology, lacking in the areas of international standards, practical experience and design.\textsuperscript{200} E-CNY is “at the most advanced stage” within existing CBDC

\textsuperscript{194} Id.
\textsuperscript{195} PBOC Digital Currency Research Institute, \textit{supra} note 129.
\textsuperscript{196} See, e.g., Somasundaram, \textit{supra} note 85.
\textsuperscript{197} Knoerich, \textit{supra} note 88, at 161.
\textsuperscript{198} See generally Bryan Tan, \textit{The BRI’s Digital Silk Road, in ASEAN AND THE BELT AND ROAD INITIATIVE - CONNECTIVITY THROUGH LAW AND COMMERCE} 289 (Basil C. Bitas ed. 2021) (analysing the practice and issues of the Digital Silk Road).
\textsuperscript{200} Bansal & Singh, \textit{supra} note 45, at 10; Soderberg et al., \textit{supra} note 50, at 24.
projects, and its trial has extended its lead over different economies’ efforts in exploring a CBDC. The PBOC, state-owned enterprises (SOEs), and government subsidiaries had reportedly filed over eighty patents relating to CBDC through 2020.

For standards, the PBOC’s standard system spans from “general requirements, business operation, interoperability, wallet, security and regulation.” CBDC is closely linked with digital payment. China’s digital payment development is, arguably, moving faster than the rest of the world, “with payment systems even in countries with far wealthier populations, such as the United States, lagging on ease, efficiency, and cost.”

4.2. What Is “Reshaping”?

E-CNY may lead to a multifaceted reshaping of the international financial order. Reshaping in this context includes: China’s reduced reliance on the U.S. dollar, the impact of China’s technology and standards on both bilateral and multilateral frameworks concerning FinTech and CBDC, and other related impacts on the international financial order (e.g., the possible emergence of currency “zones”).

4.2.1. The Reduced Reliance on the Dollar

By utilizing technology and a China-led network, e-CNY will likely reduce reliance on the U.S. dollar-based international financial
For technology, CBDC builds on FinTech that may reshape, amongst others, “global production and financial networks.” It has been said that “digitization of the entire monetary base and a speedy payments framework” would reduce reliance on the U.S. dollar-based international financial system. New technology provides an opportunity for developing countries, such as China, to adopt more efficient transaction methods than those of even wealthier nations. It will be arguably easier for new technologies to start from a clean slate, as opposed to encountering headwinds from vendors and users of pre-existing technologies.

Particularly, cross-border payment is arguably the area in which China’s CBDC could maximize its effects and thus help develop a new international settlement system. E-CNY has the “potential to shift the world payments system in favor of the RMB, [and may] provide a completely new and different mechanism, entirely removed from these traditional payments systems.” The currency may be used outside China’s borders, particularly by economies with close links with China. E-CNY could potentially enable the direct exchange of currencies and bypass the use of the U.S. dollar if an efficient peer-to-peer transfer in e-CNY becomes commonly accepted in international business. China’s CBDC would introduce a new payment rail, the system transferring funds between payers and payees, that could arguably reduce reliance on the U.S. dollar and dollar-dominated payment rails.

208 Yeung, supra note 77.
211 Prasad, supra note 206, at 15.
212 Id.
214 Knoerich, supra note 88, at 160.
216 Somasundaram, supra note 78.
217 Bansal & Singh, supra note 52, at 10.
For the China-led network of trade and investment, China will likely build on such a network to reduce reliance on the US dollar.\textsuperscript{218} The reach of e-CNY may be expanded along the BRI as a possible U.S. dollar alternative.\textsuperscript{219} If properly managed, e-CNY transfers may simplify “cross-border RMB-denominated settlement”, with lower currency exchange costs by reducing the need of an intermediary currency (particularly the U.S. dollar), yielding improved efficiency and convenience.\textsuperscript{220} As trade with China may be billed in RMB, this has been dubbed by Charles Gave as: “Asia’s new monetary order”, claiming that ‘‘parallel infrastructure’ is now in place’ that permits states to “move between currencies.”\textsuperscript{221} E-CNY may be used by investors for investment relating to China or in economies with volatile currencies, with “underdeveloped financial infrastructures.”\textsuperscript{222} E-CNY may also be attractive to some emerging markets if cross-border payments become more efficient and less costly and if these markets intend to “reduce their dependence on the dollar for geostrategic reasons.”\textsuperscript{223}

Besides the trade and investment discussed above, China may use its financial network to reduce its reliance on the U.S. dollar, such as through payment systems and swap lines. For example, e-CNY is observed to link with the country’s efforts to develop a new payment system based on CIPS.\textsuperscript{224} CIPS is, to some degree, “an international payment system for RMB”\textsuperscript{225} that could “reduce exposure of China’s global payments data to the United States.”\textsuperscript{226} China’s CBDC system may also be integrated with RMB swap lines


\textsuperscript{219} Zetzsche et al., supra note 24, at 6.

\textsuperscript{220} Knoerich, supra note 88, at 158, 160.

\textsuperscript{221} Somasundaram, supra note 85.

\textsuperscript{222} Knoerich, supra note 88, at 158–59.

\textsuperscript{223} Somasundaram, supra note 85.

\textsuperscript{224} Raghuveera, supra note 128.

\textsuperscript{225} Kai Guo et al., \textit{RMB Internationalization}, in \textit{THE HANDBOOK OF CHINA’S FINANCIAL SYSTEM} 229, 244 (Marlene Amstad et al. eds., 2021).

\textsuperscript{226} Reuters Staff, supra note 124.
to promote the use of RMB.227 Over thirty swap lines involving China were established by 2020, “exceeding the number of swap lines of [many] other states” (with the U.S. having less than half of this number).228 These RMB swap lines are attributable to China’s global role as a major supplier of goods, its investment and credit in developing economies, as well as its efforts to internationalize RMB.229 These swap lines may reduce the reliance on the U.S. dollar as they involve the currencies of states to the swap arrangements.

4.2.2. Shaping Future CBDC Frameworks

China’s technology, standards, and infrastructure may play an important role in bilateral and multilateral frameworks related to CBDC and related FinTech. Through the potential issuance of CBDC, central banks would play a greater role in the “regulatory and policy landscapes of FinTech.” 230 The knowledge and information of various actors may influence the emergence and maintenance of international regimes as well as agenda setting.231 For China, “the PBOC has built a relatively complete standard system.”232 Through e-CNY, China is said to be “the first country to make a bold statement about the future of global payments and the type of data the government should have access to.”233 China’s early push for CBDC helps develop a first-mover advantage in shaping the evolution of the international payments infrastructure that is

228 Knoerich, supra note 88, at 153.
229 See generally Somasundaram, supra note 85 (explaining that RMB swap lines are well-suited to China’s global role and importance).
230 Lai & Samers, supra note 209, at 722.
232 WORKING GRP. ON E-CNY RSCH & DEV., supra note 13, at 13.
important for cross-border remittances and trade. China will likely play an influential role in shaping new rules and standards for CBDC (such as those on cross-currency and cross-border payments), and the ways CBDCs are exchanged and traded in the international system. China will also likely affect the direction of technological development. As discussed above, China’s proactive efforts in international governance may affect emerging standards related to CBDC (e.g., ISO 20022).

4.2.3. Other impacts

E-CNY may affect international economic order in other ways. China’s currency management may affect “the ideational and institutional underpinnings of international monetary relations”. Indeed, given various factors, including China’s economic heft, e-CNY could likely impact the international financial and monetary system as a whole. E-CNY may also affect the design, policy choice and regulatory arrangements of other states concerning CBDC (such as “reshaping domestic finance”). BRI states may learn from and develop CBDCs compatible with e-CNY, and e-CNY may contribute to the possible emergence of currency “zones” in the world economy. If connectivity is developed, it may be
difficult to break, even if interests change. E-CNY, even if not widely used, may be “geopolitically significant.”

4.3 Concluding Thoughts on Selective Reshaping

The three core features of e-CNY (the role of the state, possible cross-border use, and China’s proactive efforts in international CBDC governance) contribute to the possibility of selective reshaping. The role of state is the crucial driving force or “engine” behind e-CNY and lays a foundation for e-CNY’s possible international use and impact. There are “state-driven incentives” behind the e-CNY that could promote various aspects including the scalability of digital payments. E-CNY enables China to form a state-led design of digital currency, regulation, and ecosystem, giving the state the crucial role of shaping the future evolvement of these areas such as digital payment. To illustrate, e-CNY may assist the government in penetrating China’s strong consumer internet applications market. China’s CBDC appears to echo China’s efforts to put forward Chinese initiatives and plans in international economic governance and to enhance its capacity in global financial governance. For instance, CBDC may enable international transactions to be “better controlled.”

The possible international use of e-CNY and China’s proactive efforts in affecting international governance are the main pathways for possible selective reshaping. E-CNY fits with China’s major policy initiative to internationalize RMB. It is observed that such international use would promote the role of RMB in international governance.

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243 Choyleva, supra note 118.
245 Bansal & Singh, supra note 45, at 9.
246 Sundeept Gantori et al., Information Technology: Understanding China’s Digital Currency and Blockchain Initiatives 7 (2020).
247 Five Year Plan, supra note 68, ch. 62, § 1.
248 Knoerich, supra note 88, at 151.
249 Yeung, supra note 76.
transactions (e.g., pricing and settlement), financing of projects in the region, and its acceptance as a reserve currency.\textsuperscript{250}

E-CNY seems to be China’s latest major effort to reshape the international monetary system. It follows efforts such as RMB’s inclusion in Special Drawing Rights (an international reserve asset created by the IMF) in 2016.\textsuperscript{251} E-CNY is observed to be critical in reconfiguring the global monetary system, \textsuperscript{252} being “a key component of an alternative to the dollar-based order.”\textsuperscript{253}

5. THE SUSTAINABILITY OF CHINA’S CBDC APPROACH

CBDC systems, along with innovation, provide a unique opportunity to reshape the international financial system.\textsuperscript{254} CBDC systems, including their cross-border use, start with a clean slate.\textsuperscript{255} For digital money, “the field is on the cusp of major changes that have the potential to reshape cross-border payments and remittances.”\textsuperscript{256}

From the perspective of possible CBDC international use, the sustainability of China’s CBDC approach (selective reshaping) would face economic, political economy, as well as legal and regulatory factors. Multiple factor analysis provides a holistic view of the future of China’s CBDC approach. These factors should not be seen as mutually exclusive. Instead, these factors are related. For instance, resilience standards are related to economic factors of costs (e.g., costs concerning CBDC design to build resilience), and also involve legal considerations (e.g., rules on the roles of different

\textsuperscript{250} Banerjee, supra note 234, at 31; Olsson et al., supra note 18.
\textsuperscript{251} McNally & Gruin, supra note 81, at 600.
\textsuperscript{252} Zetzsche et al., supra note 24, at 6.
\textsuperscript{253} Somasundaram, supra note 85.
\textsuperscript{254} G7, PUBLIC POLICY PRINCIPLES FOR RETAIL CENTRAL BANK DIGITAL CURRENCIES 3 (2021).
\textsuperscript{255} BANK FOR INT’L SETTLEMENTS, CENTRAL BANK DIGITAL CURRENCIES FOR CROSS-BORDER PAYMENTS: REPORT TO THE G20 3 (2021) [hereinafter CPMI REPORT].
actors to ensure resilience). They concern domestic and, more importantly, international aspects, since China’s rising role in international governance is bound by its own “structural and social conditions” and those internationally. These factors will both affect and be affected by e-CNY. Meanwhile, these factors are not exhaustive. For instance, cultural factors may concern users and other stakeholders, involving preferences such as those over different payment methods.

Given the lack of detailed information and the fast development of e-CNY, this part provides broad and primary examples to illustrate the open issues that deserve attention and works to provide a framework to analyze the future of China’s CBDC approach.

5.1 Economic Factors

Various economic factors would affect the performance of e-CNY. These factors pertain to economic efficiency and welfare. They raise crucial questions including CBDCs’ operational arrangements (including operation costs and tasks), the public-private sector relationship, and consumer welfare (e.g., adoption costs concerning CBDC).

5.1.1. CBDC-Related Costs

Costs related to CBDC would affect different stakeholders (e.g., businesses and end-users) and e-CNY’s operation. On the one hand, CBDC may reduce transaction costs compared to traditional

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257 See, e.g., BANK FOR INT’L SETTLEMENTS, CENTRAL BANK DIGITAL CURRENCIES: SYSTEM DESIGN AND INTEROPERABILITY 6 (2021) (discussing factors used to determine resilience of a CBDC system).
261 Auer et al., supra note 30, at 10–11.
A properly managed CBDC could reduce current frictions that hamper local and global transactions for individuals and firms. On the other hand, costs arise from different aspects, including the system’s operation and development, regulation, technical design and interconnection with different systems. CBDC issuance “would require capital expenditure and impose running costs.” The PBOC has recognized that this resource-intensive nature of CBDC acts as a constraint, particularly on its scalability. The regulation of the CBDC, such as data regulation, would also affect costs. Stringent restrictions on data use by businesses may affect potential business models in a CBDC ecosystem and increase costs to end-users (such as indirect fees). Sophisticated technical design (e.g., the CBDC ledger) may work to promote the CBDC adoption but will also raise costs. CBDC also involves interconnections with other systems and the apportionment of costs and revenues across the system.

In particular, the costs to businesses are considerable and some may be passed to end-users. The fee arrangement of e-CNY is as follows: the PBOC does not charge intermediaries or end-users fees; intermediaries are prohibited from charging individual users; but intermediaries may charge merchants (as an incentive for businesses to enter the market, with fees kept in check). While tier two institutions will invest in equipment and technology, it is to be seen whether and how tier 2.5 institutions would take on these responsibilities. Evidently, firms will require viable business models to recover CBDC-related capital expenditures and running costs. Different jurisdictions have identified cost recovery and incentivizing private sector participation as open issues in CBDC

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262 Central Bank Digital Currency Tracker, supra note 2.
263 Siklos, supra note 259, at 1.
265 Soderberg et al., supra note 44, at 24
266 G7, supra note 254, at 21.
268 Id. at 16.
269 Soderberg et al., supra note 50, at 11.
CBDCs also require higher business continuity and resilience standards for intermediaries, increasing costs for intermediaries who may in turn invest less in this regard than “is systemically optimal”. These costs would involve Chinese and even foreign entities and largely depend on the CBDC design, which is as yet unfinalized.

5.1.2. The Implications for Markets

E-CNY’s implications for markets will affect the sustainability of China’s CBDC approach. Market implications affect not only businesses but also users’ choice of e-CNY in particularly currency and payment markets. CBDC will likely bring institutional change while the private sector continues to adopt fintech innovations. Examples include the possible substantial changes to the retail payments system. E-CNY has advantages (e.g., lower cost, offline function) compared with third-party mobile payment platforms in China, while these payment platforms have been incorporated into the e-CNY payment system. Given the great inertia in retail payment behaviors and the convenience of private payment services, it remains to be seen whether e-CNY will change user habits. Legal reform may also be relevant to the uptake of e-CNY. Payment platforms (and relatedly, big tech firms) will have much less access to data than before in the e-CNY ecosystem, and this will affect their pre-existing competitiveness based on data. Another issue is that the introduction of authorized operators in e-CNY narrows market players, compared with fiat money distributed by all commercial banks and other actors (e.g., exchanges). It also remains to be seen whether and how e-CNY can avoid financial disintermediation. Time will tell whether CBDC will bring major policy changes and whether it could dislocate the existing industry

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272 Soderberg et al., supra note 50, at 26.
273 Id.
274 Id.
275 Cukierman, supra note 260, at 117–18.
276 Tsang & Chen, supra note 156, at 6.
277 He, supra note 110, at 3.
278 Auer, et al., supra note 30, at 10–11.
279 He, supra note 110, at 5.
structure for example in relation to banking. Relating to international use of CBDC, it has been stated that “depending on its attributes, a domestic CBDC could potentially compete with private digital currencies, foreign CBDCs, private payment platforms, or banks.” CBDC thus may affect markets both in terms of businesses and users.

5.1.3. Macro-Financial Implications

Macro-financial implications of CBDC around the issuing state and other jurisdictions involved may affect the sustainability of China’s CBDC approach. These macro-financial implications include potential financial stability risks, contagion effects, capital flow volatility, currency substitution risk, and the configurations of reserve currency by central banks. Even if a CBDC is solely intended for domestic use, it will have implications going “beyond borders.” This is recognized in a principle stated in the PBOC’s work on cross-border payments for CBDC, which seeks to “avoid negative spillover effects” on China and other states, e.g., currency substitution.

5.1.4. Other Economic Factors

Other economic factors affect the e-CNY’s possible reshaping of the international financial order. In particular, economic factors (e.g., confidence in the overall stability of a currency’s value,

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280 See GANTORI ET AL., supra note 246, at 11 (“[I]nvestors need to closely monitor the long term disruptive trends, as further significant policy changes may dislocate the current industry structure.”).


282 See CPMI REPORT, supra note 255, at 1 (listing “a range of macro-financial implications” that introducing a CBDC could have).

283 Id. at 19.

284 Soderberg et al., supra note 50, at 14.
liquidity, the issuing state’s transactional network) affect the currency’s international position.  

A key feature of e-CNY is China’s utilization of its transaction network to promote the currency (as discussed above). In the network, the possible contexts of CBDC international use include retail usage (e.g., payments in retail CBDCs across borders), international remittances, as well as trade in goods and services. The scale of the transactional network of a currency issuing state in the international economy will affect international use of its currency. Trade provides a primary example. The use of a currency in world trade, especially for invoicing, is important for enhancing the systemic importance of the currency’s role in international commerce.  

However, the cross-border use of e-CNY mainly hinges on RMB internationalization policy. RMB internationalization continues to face challenges, such as the development of the domestic financial markets and convertibility (especially in the capital account, due to capital controls). For instance, “[d]eep capital markets with a large availability of safe assets and hedging capabilities” are important for an international currency. Many economists are sceptical as to whether the impact of e-CNY could overcome challenges posed by the yuan’s convertibility. E-CNY is likely to face similar roadblocks in its cross-border use.

5.2. Political Economy Factors

Political economy issues, including the role of the state, financial liberalization, and international political power, affect currency,


\[286\] CPMI REPORT, supra note 255, at 9.

\[287\] BANK FOR INT’L SETTLEMENTS, supra note 215, at 12.

\[288\] Chey, supra note 285, at 58–9.

\[289\] See Auer et al., supra note 30, at 10 (“[R]eserve currencies gain ground through . . . use in international trade, particularly for invoicing.”).

\[290\] Tsang & Chen, supra note 156, at 247.

\[291\] Chey, supra note 285, at 61.

\[292\] Auer et al., supra note 30, at 10.

\[293\] Yeung, supra note 76.
particularly currency internationalization. The analysis below focuses on the role of state that is a feature of China’s CBDC practice, and the new landscape of emerging digital currencies particularly other CBDCs, which will affect the outcome of China’s proactiveness in international governance.

5.2.1. The Relationship between the State and Market

The relationship between the state and market in China is different from many other states where the role of the state is less prominent. China is observed to develop “CBDC with Chinese characteristics.” For example, the centralized governance model of e-CNY is consistent with China’s traditional “state-centric modes of governance,” including “centralis[ing] control of the underlying monetary instrument across all payment systems” and “controlling currency inflows and outflows into the RMB area.” In other words, the role of the state in e-CNY, as discussed above, echoes China’s “unique mode of monetary governance that reflects a different relationship between the state and market” from the West. In contrast, the US could “choose[] to leave certain functions to the private sector that China aims to have the public sector provide.” Given these different models of governance, the development of CBDC involves the complex task of defining roles and finding the proper balance between the responsibilities of the private sector, the public sector and the central bank. For instance, CBDC likely implicates the state’s role in digital payments. Theoretically China’s monetary system may even both “conflict and

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294 Chey, supra note 285, at 73.
296 McNally & Gruin, supra note 24, at 600.
297 Zetzsche et al., supra note 24, at 6.
298 McNally & Gruin, supra note 24, at 599.
299 Chorzempa, supra note 28, at 116.
300 BANK FOR INT’L SETTLEMENTS, supra note 257, at 12.
301 See Soderberg et al., supra note 50, at 24 (“[T]he Riksbank sent in a petition to the Swedish Parliament to create a government inquiry int the future role of the state in the digital payments market.”).
harmonize with the existing liberal system.” The way that e-CNY develops and the interaction between the state and the market in this context is yet to be seen.

5.2.2. Currency and Payment Solution Competition

The way CBDCs operates in international transactions is being explored by different economies. The ECB has reportedly indicated that a digital euro may help enhance the attractiveness and international status of the euro. Cross-border CBDC transactions are being tested by France and Switzerland.

Other digital currencies and payment rails, including CBDCs possibly issued by other major economies like the US and EU, will likely compete with e-CNY. The emergence of CBDC could intensify the competition between currencies and incentivize central banks to respond (or not) to other states’ CBDC decisions.

On the one hand, technological evolution may affect power structures. Different economies may seek competitive advantages in the international economic order. As a first mover, e-CNY may enhance the role of RMB, particularly in the region, if everything goes smoothly. For the configuration of reserve currencies, the changes will evolve faster on a regional, rather than a global, level. This is because “[r]egional patterns, where trade connections are tighter, and political pressures stronger, may instead evolve more

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302 McNally & Gruin, supra note 81, at 601.
304 LABONTE & NELSON, supra note 281, at 11.
305 See Auer et al., supra note 30, at 9 (“CBDC issuance might also lead to an intensification of the competition between global currencies, and the need for central banks to respond (or not) to CBDC issuance in other jurisdictions”).
rapidly.”308 E-CNY is likely to affect economies in the region that “conduct RMB-denominated transactions with China.”309

On the other hand, it is not easy for e-CNY to enhance its role in the international financial system. The RMB is currently of “limited importance” as an international reserve, trade and investment currency, and recent figures show that the reliance on payment infrastructure to promote RMB internationalization faces limits.310 Reduced costs in using foreign currencies through CBDC may strengthen established currencies given their significant network effects.311 Reserve currencies (e.g., the dollar, euro) may “become even more dominant if available digitally at a lower cost and to a wider user base.” 312 The US dollar and the euro are “deeply enmeshed in the international financial architecture,” making it difficult to substantially change the international financial order.313 Jan Knoerich argues that “[s]ome advanced-economy CBDCs, even if launched belatedly, might draw on their stronger and more internationally integrated financial systems to leapfrog the DCEP.”314

Payment solutions are among the major competitors of a CBDC.315 For cross-border payments, e-CNY will face competition with the correspondent banking model and dollar-dominated payment rails (e.g., PayPal).316

The landscape of the future is unclear. Competition among currencies and payment solutions is likely to affect the promotion of Chinese standards outside China. Whether pre-existing path dependence on the dominant international currency and institutional equilibrium will be broken, which happened when the USD became the world’s reserve currency, is yet to be seen.317

308 CPMI REPORT, supra note 255, at 18.
309 Tsang & Chen, supra note 156, at 247.
310 Knoerich, supra note 88, at 154.
311 CPMI REPORT, supra note 255, at 16.
312 Id. at 17.
313 Knoerich, supra note 88, at 155.
314 Id. at 162.
315 Shen & Hou, supra note 102, at 4.
316 Bansal & Singh, supra note 52, at 9.
5.2.3. Other Political Economy Factors

Other political economy factors (e.g., geo-economic relationships) affect the traditional RMB and its international position.\(^{318}\) This also applies to e-CNY. The international use of CBDC may involve sovereign power and international relations, and require significant global coordination.\(^{319}\) For instance, the implications of CBDC for different states’ monetary sovereignty are to be seen,\(^{320}\) particularly with a seeming shift towards a “more competitive and conflictual” mindset that can be found in the US regarding its bilateral relationship with China.\(^{321}\) Uncertainties could exist regarding e-CNY’s capability of cross-border payments, given the impact of politics on trade and capital flows.\(^{322}\) Moreover, a risk may exist regarding “a widening gap between countries which are able to more quickly adapt to changing circumstances and countries that lack the means to safeguard themselves from potential adverse effects.”\(^{323}\) This may affect the reception of CBDC by different economies.

Many questions beyond the scope of this article remain open. Will a more fragmented international financial order emerge? Or will digital currencies lead to a reorientation of the international financial architecture?\(^{324}\)

\(^{318}\) See Chey, supra note 285, at 58-62 (discussing political economy factors impacting RMB’s international position).

\(^{319}\) See GANTORI ET AL., supra note 246, at 9 (“With CBDCs like DCEP going mainstream, there are complex issues such as sovereign power, interest and global politics, among others, that comes to the fore.”).

\(^{320}\) See Siklos, supra note 259, at 2 (“These include the loss of monetary sovereignty or in the status of global reserve currencies . . . .”).


\(^{323}\) CPMI REPORT, supra note 255, at 17.

\(^{324}\) See Knoerich, supra note 88, at 145 (“Central bank digital currencies (CBDCs) are predicted to transform the way ordinary payments will be made in the future.”).
CBDC is more demanding of regulation than existing currencies, and e-CNY faces risks (e.g., cyber risks) within and across China’s borders.\textsuperscript{325} It is observed that central banks would need to take on greater operational and oversight responsibilities regarding the CBDC system.\textsuperscript{326} Regulation concerns a broad range of policy concerns and domestic and cross-border implementation practices. CBDC will involve the issues of how to address the protection of individual rights (particularly privacy) and consumer protection,\textsuperscript{327} financial integrity,\textsuperscript{328} data, and law enforcement.\textsuperscript{329} Other issues include cybersecurity, possible disintermediation at the time of financial stress, high technical standards and requirements for the PBOC and the commercial institutions in many aspects ranging from resilience and reliability to scalability and throughput.\textsuperscript{330} To illustrate, “[d]efending against cyber attacks will be made more difficult as the number of endpoints in a general purpose CBDC system will be significantly larger than those of current wholesale central bank systems.”\textsuperscript{331} E-CNY also needs to manage risks relating to data (e.g., the treatment of payment data, and data flow).

Several legal and regulatory considerations deserve more attention here. First, cross-border transactions of CBDC will likely involve complex issues (such as foreign exchange price-discovery
mechanism). CBDCs generate data and concern digital identity (e.g., those concerning digital wallets). Meanwhile, CBDCs are likely to be designed initially for domestic payment systems and users. International payments are more complicated than domestic ones due to the involvement of more regulations (like those of foreign exchange settlements), actors, jurisdictions, and time zones. To enhance cross-border payments may also bring risks and challenges that add to the complexity of CBDC transactions. The risks of CBDC’s international use include operational and cyber risks, as well as micro-financial and macro-financial risks (e.g., financial stability, contagion effects, and volatile capital flows). All these complex issues require substantial effort and adaptability to have CBDC used in an international context involving different governance models, regulations and financial systems. Rules are needed to address issues like the access and use by non-residents to CBDC, and the definition of standards for cross-currency payments.

Second, legal and regulatory factors are closely linked and embedded into technologies. Technology brings opportunities and challenges. CBDC operation and policy goals require a set of complementary technologies to support the core features of CBDC. CBDC designs may strengthen regulation, such as enabling issuing central banks to preclude or limit CBDC’s use outside the issuing jurisdiction, enabling wallets in recipient states to permit local authorities to impose capital flow regulatory measures, limiting CBDC circulation through programmability, and

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333 Id. at 25, 28–29.
335 Id. at 6.
336 Id. at 5–6.
338 See, e.g., Popescu, supra note 337, at 28.
339 G7, supra note 254, at 14.
increasing the effectiveness of capital flow regulation.\textsuperscript{341} However, different technologies will bring complexity around interoperability.

Third, selective reshaping is likely to encounter China-specific regulatory challenges. These challenges include the potential tension between the need for RMB internationalization (e.g., international circulation through expanding capital outflows, capital account liberalization, and a flexible exchange rate) and China’s possible concerns over reduced control over capital flows and increased fluctuation in the exchange rate.\textsuperscript{342} Such tension could also exist in e-CNY as e-CNY is the digital form of RMB.

These complexities set high requirements for law and regulation. As reflected in the major and sometimes overlapping issues below, regulatory and legal responses to these risks are crucial for the long-term sustainability of China’s CBDC approach.

5.3.1. Resiliency

Resiliency is critical to the success of e-CNY. The CBDC system will need to deal with cyber risks, technical failure, and counterfeiting.\textsuperscript{343} The PBOC recognizes that cyberattacks may be a significant risk if e-CNY becomes systemically significant.\textsuperscript{344} Maintaining the system’s resilience will not be easy since technology faces uncertainties in operation and effect and requires careful experimentation before its wide adoption. To illustrate, it has been stated that it is difficult to estimate future volumes, especially given other developments such as smart device payments and “micro transactions.”\textsuperscript{345} In addition, if specific resilience specifications for CBDC are onerous and could impact its performance (e.g., speed), this will reduce its functionality and use.\textsuperscript{346}

\textsuperscript{341} CPMI Report, supra note 255, at 15-16.
\textsuperscript{342} Knoerich, supra note 88, at 156, 159.
\textsuperscript{343} Bank for Int’l Settlements, supra note 257, at 6.
\textsuperscript{344} Soderberg et al., supra note 50, at 24.
\textsuperscript{345} Bank for Int’l Settlements, supra note 174, at 14.
\textsuperscript{346} G7, supra note 254, at 23.
5.3.2. Interoperability

China’s CBDC “would be connected to existing retail and wholesale payment systems.” The interoperability between existing and new systems (including infrastructures) is a complex issue faced by CBDC and will have domestic and international challenges. Interoperability means “technical or legal compatibility that enables a system or mechanism to be used in conjunction with other systems or mechanisms” and “allows participants in different systems to conduct clear and settle payments or financial transactions across systems without participating in multiple systems.” For instance, digital yuan is expected to be compatible with DLT or the intermediaries’ choice of technology. Interoperability involves issues such as lowering the barriers to membership of different systems (such as through common messaging standards and operating times), and developing common business arrangements (such as a designated settlement agent between two systems concerning select payments).

Internationally, interoperability is relevant to CBDC systems of various economies, and to CBDC systems and pre-existing payment systems. Interoperability may need to be enabled at wholesale and retail levels, such as it being possibly “enabled between e-CNY and other retail systems and the conversion of e-CNY and other fiat currencies [that] would be processed at virtual borders between digital wallets.” For instance, compatibility between currencies is crucial for interoperability (i.e., “technical or legal compatibility”) by ensuring the efficiency and safety of money transfers. Notably, interoperability between cross-border CBDC systems is likely to encounter more hurdles and considerations than that in domestic

347 CPMI REPORT, supra note 255, at 8.
348 Id. at 19.
349 Id. at 21.
350 Soderberg et al., supra note 50, at 25.
351 See BANK FOR INT’L SETTLEMENTS, supra note 174, at 9 ("This would include a range of characteristics from accommodative technical infrastructure to common legal and regulatory frameworks and data and messaging standards").
352 BIS INNOVATION HUB H.K. CTR., supra note 12, at 55.
353 CPMI REPORT, supra note 255, at 8.
354 Id. at 21.
355 BANK FOR INT’L SETTLEMENTS, supra note 174, at 17.
CBDC operations. \(^{356}\) Cross-border interoperability involves challenges like different compliance requirements and consumer protection rules concerning payment.\(^{357}\) A compatible ID scheme, without requiring an international database regarding CBDC end-users, may be needed to combat illicit finance.\(^{358}\)

It is to be seen how e-CNY addresses interoperability issues. Interoperability among financial systems is at the core of the third principle of interconnectivity that China proposes regarding CBDC’s cross-border use. A key example of China’s efforts towards developing interoperability is its involvement in the mCBDC Bridge.\(^{359}\) This project faces roadblocks in aspects like governance.\(^{360}\) The mCBDC Bridge’s operating model builds on the Inthanon-LionRock concept.\(^{361}\) Under that concept, international payments are “processed through a jointly operated ‘corridor network’ which links up” separate national wholesale CBDC networks.\(^{362}\) The mCBDC Bridge considers establishing a single mCBDC system across jurisdictions, following a model that “would apply the concept of creating new multilateral payment platforms” and go beyond basic compatibility.\(^{363}\) This model implies deeper integration and high levels of cooperation that builds on “having a single set of rules, a single technical system, and a single set of participants”.\(^{364}\) Such deeper integration would help promote operational functionality and efficiency, but increases operational costs and “the governance and control hurdles (e.g., wider access might allow more efficient settlement but increases other risks) as well as policy issues.”\(^{365}\) It is observed that such multi-CBDC design principles require global coordination so as to limit any regulatory arbitrage.\(^{366}\) The requirement of international coordination is challenging regarding CBDC given the different national positions and sensitive issues concerning CBDC (e.g., data and sovereignty).

\(^{356}\) Id. at 9.
\(^{357}\) Id. at 11.
\(^{358}\) Tsang & Chen, supra note 156, at 260.
\(^{359}\) BIS INNOVATION HUB H.K. CTR., supra note 12, at 7.
\(^{360}\) BIS: INNOVATION HUB, supra note 33, at 33–35.
\(^{361}\) Id. at 7.
\(^{362}\) CPMI REPORT, supra note 255, at 12.
\(^{363}\) Id. at 9–10, 19.
\(^{364}\) Id. at 9.
\(^{365}\) Id. at 9, 14.
\(^{366}\) Auer et al., supra note 30, at 22.
As another example, China has built a blockchain-based e-CNY distributed ledger so that operational institutions may perform tasks like cross-institution reconciliations for the exchange of digital currencies with most commercial banks and the general public. Here, technical standards for blockchain interconnectivity, blockchain scalability, privacy protection, information security and auditing are all problems that need to be addressed.

Moreover, there are other challenges such as domestic circumstances and tensions among different considerations. Importantly, domestic circumstances are likely to affect interoperable system designs. China’s CBDC approach and domestic circumstances are not the same as those of other states. For instance, China’s social conditions, the population’s familiarity with digital payment, and the scalability of FinTech are helpful for promoting e-CNY, but such conditions do not necessarily exist in other jurisdictions involved in the international use of e-CNY. Moreover, there is a tension between sharing limited information about CBDC’s operation to maintain a “lead” and openly sharing the lessons to promote soft power advantages and interoperability. It is to be seen how the e-CNY system would address these issues and interact with the international financial system concerning interoperability.

5.3.3. Adaptability

Adaptability, or flexibility, is an important issue in this discussion. A CBDC ecosystem should be flexible to future demand and be able to interoperate with new systems while maintaining system resilience. Adaptability is also useful to address the various use cases of CBDC. All these explain why a flexible...
approach is explored by e-CNY. E-CNY benefits from the low issuance cost and low traceability of cryptocurrencies while maintaining the advantages of physical currency (e.g., fiat currency status).374 For e-CNY, institutions in the second-tier are relatively free “to choose the right technology in the distribution layer.375 Each of the e-CNY pilots is reversible, with each operator having an exit plan.376

It is to be seen how e-CNY will perform on adaptability across daily operations, while striking a balance with stability. “The governance of the daily operations often requires immediate responses,” but this will likely involve uncertainties (caused by factors like the difficulties in predefining every requirement and changes occurring in the operation) and unexpected behavior.377 Equally, flexibility needs to be balanced with stability, which is important for social and economic systems.378 The changes induced by regulatory measures should not risk outcomes (e.g., data leakage379) that are irreversible or unacceptable.380 Potential ways of avoiding irreversible harm involve establishing a strong oversight system to ensure reversibility,381 and identifying and choosing among a range of policy options regarding potential and real problems.

374 GANTORI ET AL., supra note 246.
375 Id.
376 Auer et al., supra note 30.
377 Janssen & van der Voort, supra note 306.
381 Id. at 536, 537.
5.3.4. International Coordination

The cross-border use of e-CNY needs to address coordination at the international level. Domestic laws will play a crucial role in international use of the CBDC. The mobility of CBDC concerns monetary autonomy of states. Sovereignty and compliance with domestic law are highlighted in the first two principles (i.e., no detriment, compliance) that China proposes regarding CBDC cross-border use. They are likely to involve issues ranging from data to foreign exchange. For instance, China may need to satisfy currency exchange regulations of other states for the international use of e-CNY (e.g., the distribution of e-CNY to foreign nationals). RMB-invoiced international trade may utilize China’s CBDC, “but this is still subject to consultation with other central banks and entities.”

Coordination of regulation is important to address problems in the cross-border operation of CBDCs that are largely attributable to different national laws. International standards for CBDC-related systems and services (such as digital identity repositories) are needed. Important issues for the international use of CBDC include the aligning of regulatory frameworks, consistent technical and regulatory standards (including AML/CTF checks), identity management concerning CBDC users, cross-border access to domestic CBDC, and payment system access. More generally, international coordination is needed regarding capital flow management, treatment of data and privacy, tax, and payments rules. Other relevant issues include rules on settlement finality, participation criteria for payment systems, and rules on the conflict of laws. Overall, central banks of the issuing and recipient states would need to agree on and have insights into aggregate cross-border use of CBDC, in the case of account-based currencies.

382 See GANTORI ET AL., supra note 246, at 9 (arguing that DCEP can replace SWIFT if DCEP is widely accepted and utilized globally).
383 WORKING GRP. ON E-CNY RSD & DEV., supra note 13, at 5, 6.
384 Bansal & Singh, supra note 52, at 14, 15.
385 CPMI REPORTS, supra note 255, at 8.
386 BANK FOR INT’L SETTLEMENTS, supra note 174, at 7.
387 CPMI REPORTS, supra note 255, at 1–4; BIS, supra note 257, at 7.
388 Soderberg et al., supra note 50, at 15.
389 CPMI REPORTS, supra note 255, at 5.
390 Auer et al., supra note 30, at 9.
Coordination between institutions like central banks and related public authorities is crucial to understand and manage any unintended effects of CBDC usage (e.g., a CBDC’s impact on another jurisdiction’s monetary policy or financial stability or use in avoiding rules outside a jurisdiction where sufficient regulation is not in place). A cross-border CBDC may generate other challenges that have the potential to “spillover” into other economies. Coordination and information exchange among different institutions will help to address these issues.

International coordination is challenging, although various projects are working to promote international collaboration on CBDC. Privacy protection provides a prime example. In the economy and the monetary system, the centrality of data (e.g., personal and business data) is increasing. Data bring new challenges for privacy. It is argued that other economies using e-CNY “will find it difficult to control or monitor the flow of the Digital Yuan, and will have to take measures to protect the privacy of their domestic users.” States also have divergent standards on privacy. Ideally central banks would reach agreements on the level of privacy for users making or receiving international payments. However, an international dialogue on the degree of anonymity in CBDCs will likely encounter obstacles, given different approaches and divergent interests of major economies, such as the US, the EU, and China. In relation to CBDC, the G7 has indicated various general principles regarding data collection and processing: data minimization, transparency and accountability. It is to be seen whether a consensus can be reached. Instead, a group of states may adopt common standards and affect other states which need to meet these rules to access the group’s CBDC network.

Behind the challenges in international coordination are the complicated policy trade-offs of different considerations such as

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391 BANK FOR INT’L SETTLEMENTS, supra note 174, at 17.
392 Id. at 7; Tsang & Chen, supra note 156, at 17.
393 Auer et al., supra note 30, at 6.
394 Id.
395 Tsang & Chen, supra note 156, at 1.
396 CPMI REPORTS, supra note 255, at 7.
397 Knoerich, supra note 88, at 177.
398 BANK FOR INT’L SETTLEMENTS, supra note 174, at 6.
399 Knoerich, supra note 88, at 177.
security and efficiency. These considerations will affect the setting of regulatory expectations and implementation. To illustrate, the balance between fighting financial crimes and privacy protection will affect whoever may access which parts of transaction data (such as payment data in the context of evolving data protection law) and under what circumstances.\textsuperscript{400} The identification of users is useful to promote the safety and integrity of the payment system through deterring fraud and combating illicit activities such as money laundering.\textsuperscript{401} This requires close collaboration with regulators, such as tax authorities.\textsuperscript{402} However, challenges exist regarding how to protect privacy. When CBDC infrastructure needs to substantially expand its capacity due to increased demand, this could “require compromises on some features that might otherwise be desirable (such as computationally demanding privacy techniques or programmable payments) as additional complexities could increase the processing demand on the system.”\textsuperscript{403} It is to be seen whether and how “policy synergies between anonymity, risk reduction, and financial inclusion” may be realized.\textsuperscript{404} Essentially, the balances of motivations and objects of different states regarding CBDC, as well as national circumstances and capacity (including the characteristics of the payment systems, staffing), vary widely.\textsuperscript{405} These trade-offs may mean that “not all motivations can be realized simultaneously.”\textsuperscript{406} Potential solutions need to be carefully explored and justified to address these issues. This may require a strong regulatory and technological capacity of the issuing jurisdiction and other jurisdictions involved.

5.4. Concluding Thoughts on the Sustainability of China’s Approach

The landscape of selective reshaping is in flux and remains unclear at this stage. E-CNY is a moving target in terms of its

\begin{itemize}
\item \textsuperscript{400} BANK FOR INT’L SETTLEMENTS, supra note 174, at 6.
\item \textsuperscript{401} CPMI REPORTS, supra note 255, at 7.
\item \textsuperscript{402} BANK FOR INT’L SETTLEMENTS, supra note 174, at 6.
\item \textsuperscript{403} Id. at 15.
\item \textsuperscript{404} Soderberg et al., supra note 50, at 26.
\item \textsuperscript{405} CPMI REPORTS, supra note 255, at 3, 4; Soderberg et al., supra note 50, at 1, 3.
\item \textsuperscript{406} BANK FOR INT’L SETTLEMENTS, supra note 174, at 5.
\end{itemize}
operation and development. New regional reserve currencies may arise due to new CBDCs’ attractive features.\textsuperscript{407} If properly managed, CBDC will increase efficiency, reduce the risks and costs of cross-border payments (such as reducing the intermediation chains in the payment processes), improve integration, and enhance safety and technical compatibility.\textsuperscript{408} E-CNY may strengthen RMB’s role in some regions across the Asia-Pacific. The international use of e-CNY will likely start from a payment infrastructure system, and is more likely to reshape cross-border payment than the investment and reserve currency system due to factors such as the need for greater international liquidity of the RMB.\textsuperscript{409} At the same time, “the credibility and stability of institutions, degree of financial openness, and the rule of law, as well as geopolitical forces, remain essential ingredients to currency internationalization and tend to move slowly.”\textsuperscript{410} For example, adequate accountability and supervisory arrangements are necessary.\textsuperscript{411} These will likely help increase the confidence in e-CNY. On the whole, economic, political economy, legal and regulatory factors will affect the trust in e-CNY.

6. CONCLUSION

Analysis of e-CNY requires consideration of the role of the state, the possible extension of e-CNY into cross-border transactions, and China’s proactive approach to international governance. Through the implementation of CBDC, China may be able to selectively reshape global finance, which is among the new domains of international relations.\textsuperscript{412} However, the long-term sustainability of selective reshaping would be profoundly affected by economic, political economy, legal and regulatory factors. That said, the latest geo-economic tensions may speed up the rolling out of China’s CBDC and its use. International economic governance is likely to be reshaped along with reduced reliance on the US dollar by some

\textsuperscript{407} CPMI REPORTS, supra note 255, at 18.
\textsuperscript{408} Id. at 2, 4.
\textsuperscript{409} Knoerich, supra note 88, at 160.
\textsuperscript{410} CPMI REPORTS, supra note 255, at 17.
\textsuperscript{411} Cooney & Lang, supra note 380, at 536.
\textsuperscript{412} Thomas Hale, Transnational Actors and Transnational Governance in Global Environmental Politics, 23 ANN. REV. POL. SCI. 203, 206 (2020).
countries like China. A new international payment system and ecosystem parallel to the existing Western-led ones may emerge over time.

The interaction and impact of e-CNY on the international economic governance deserve further research, such as whether and how e-CNY might chart a novel course for the international financial system. Trust in the currency is crucial, and it is affected by many factors including the governance, openness of a currency system, and economic development of the issuing country.\footnote[413]{See Knoerich, \textit{supra} note 88, at 157, 159 (observing that strong economic fundamentals, good financial governance, and an open currency system is a current key characteristic of major reserve currencies).} It would be crucial to analyze the development of e-CNY, the influencing factors of China’s CBDC approach,\footnote[414]{Heng Wang, \textit{How to Understand China’s Approach to Central Bank Digital Currency?} 1–32 (Apr. 26, 2022) (unpublished manuscript) (available online at \url{https://www.researchgate.net/publication/360189516_How_to_Understand_China%27s_Approach_to_Central_Bank_Digital_Currency [https://perma.cc/CMY5-WDRR]}).} and its impact on the future international financial systems.\footnote[415]{Heng Wang & Simin Gao, \textit{The Future of the International Financial System: The Emerging CBDC Network and Its Impact on Regulation} 11–21, 22–23 (Jan. 2021) (unpublished manuscript) (available online at \url{https://www.researchgate.net/publication/348486110_The_Future_of_the_International_Financial_System_The_Emerging_CBDC_Network_and_Its_Impact_on_Regulation [https://perma.cc/JTD3-P9FL])}