

Digital RMB

A Possible Way to Reassert Data Control in the Digital Economy

Alex He

Key Points

- The centralized management model and “controllable anonymity” of digital renminbi (RMB) have great potential to help secure capacity for China’s central bank to exert control over big data in the financial system, bring the rapidly growing power of Chinese fintech giants under control, and strengthen personal information and data protection.
- A future wide use of digital RMB would enable the central bank to become the sole entity to see and control all the transaction data, while the third-party payment giants would be cut off from most data and only have access to the data absolutely necessary to finish the transactions in a limited time period.
- The issue of digital RMB will act as a pre-emptive measure for China’s central bank to compete with other central bank digital currencies (CBDCs), positioning itself in the rulemaking for global CBDC, for example, in terms of rules to support multi-currency cross-border payments in the future.

Introduction

As the first digital currency piloted by a major economy, China’s digital RMB or electronic Chinese yuan (e-CNY) — officially known as the Digital Currency Electronic Payment (DC/EP) — has drawn worldwide attention. Many observers, however, have exaggerated the e-CNY’s influence on RMB internationalization and its possibility to challenge the US dollar as the main reserve and international payment currency (Blustein 2021). Some commentators have focused on the digital yuan’s potential replacement of the current third-party payment system, as well as the possibility that the digital yuan could be exploited to strengthen China’s authoritarian regime by way of monitoring everyday transactions conducted by Chinese citizens.

These observations have missed the main point of e-CNY as a key fintech innovation in the age of the digital economy. The digital yuan could be an important tool in assisting China’s central bank to reassert control over big data in the financial system and to bring the rapidly growing power of Chinese fintech giants under control. Its issuance also acts as a pre-emptive measure that positions the People’s Bank of China (PBoC) to compete with other CBDCs and cryptocurrencies.

About the Author

Xingqiang (Alex) He is a CIGI research fellow. His work focuses on China and global economic governance, the Group of Twenty, domestic politics in China and their role in China's foreign economic policy making and Canada-China economic relations.

Prior to joining CIGI in 2014, Alex was a senior fellow and associate professor at the Institute of American Studies at the Chinese Academy of Social Sciences (CASS) and a visiting scholar at the Paul H. Nitze School of Advanced International Studies, Johns Hopkins University in Washington, DC (2009–2010). Alex was also a guest research fellow at the Research Center for Development Strategies of Macau (2008–2009) and a visiting Ph.D. student at the Centre of American Studies at the University of Hong Kong (2004).

Alex is the author of *The Dragon's Footprints: China in the Global Economic Governance System under the G20 Framework* (2016) (in both English and Chinese) and co-author of *A History of China-U.S. Relations* (2009). He has published dozens of academic papers, book chapters and newspaper and magazine articles. He has a Ph.D. in international politics from the Graduate School of CASS and previously taught at Yuxi Normal University in Yunnan Province, China. Alex is fluent in Chinese and English.

Key Features of the Digital RMB

Before discussing the main motivations and goals behind China's e-CNY, let us look first at some of its key features. According to a white paper issued by the Working Group on E-CNY Research and Development of the People's Bank of China in July (PBoC 2021), as well as remarks by PBoC officials in public speeches and comments in recent years, the major features of a digital RMB are as follows:

- The e-CNY will have a two-tiered structure, with the central bank, as the first tier, issuing the digital yuan to commercial banks, and the commercial banks, as the second tier, distributing the e-CNY to the public. The idea of a two-tiered structure was inspired by the currency issuance model in Hong Kong. The commercial banks will be required to maintain a 100 percent reserve ratio for the digital yuan to avoid overissuing.
- The two-tiered structure would avoid financial disintermediation and maintain big state-owned commercial banks' dominant role in China's financial system. These big banks, as main second-tier institutions, are authorized by the PBoC to distribute e-CNY. They also bear the responsibilities of guaranteeing payment and providing the necessary technology and equipment for the digital yuan payment system, such as liquidity management of supply and provision and management of digital wallet software. Their responsibilities also include know-your-customer compliance, anti-money laundering, big-data analysis and data privacy protection, auditing and so forth.
- In contrast to the decentralized structure of cryptocurrencies such as bitcoin, digital yuan will be managed with a centralized structure and allow for controllable anonymity (as described below) and offline transactions.
- Digital yuan at the current stage is a replacement of cash in circulation (M0), not of short- and long-term deposits in banks (M1 and M2).
- Digital yuan at the current stage is essentially designed for domestic retail transactions and can be used in current account cross-border transactions, such as retail transactions.

→ The PBoC takes an open attitude toward the technologies behind e-CNY. The “long-term evolution” route (PBoC 2021, 10) will see which technology or combination of technologies could meet the demand of issuing digital yuan.

The PBoC’s Current Plan for the Digital RMB

The PBoC has explained that it is issuing and circulating digital currency for several purposes: to keep up with the pace of the rapidly digitalizing economy; to optimize RMB’s payment function; to improve efficiency and reduce cost; and to maintain and enhance RMB’s status as a fiat currency (PBoC 2021).

Specifically, the digital RMB is expected to help improve financial regulation and achieve financial regulatory goals. Digital yuan could play a role in strengthening anti-money laundering, anti-terrorist financing, anti-tax evasion and anti-fraud activities, as it would enable the central bank to see and track all necessary real-time data on money flow. Digital RMB would also help improve the efficiency of the monetary transmission mechanism by speeding up money circulation and enhancing payment system efficacy.

The DC/EP system is also intended to reduce the cost of printing and circulating notes, reducing costs for cash management. Due to its status of fiat currency, digital yuan will also facilitate inclusive financing and poverty alleviation. With its loose coupling with bank accounts, digital RMB will be able to serve people who have mobile phones but not bank accounts or internet access, which is a typical situation in underdeveloped, poor areas of the country. For the purpose, the PBoC seeks to materialize the DC/EP “dual offline payment” feature, designed to make payment transactions workable even when both the payer and the payee are offline. This feature is made possible, for instance, through a short-range wireless technology called near-field communication, whereby enabled mobile devices such as smartphones and tablets that contain built-in security element chips can connect and communicate when in close physical proximity.

With its advantages of lower cost, greater anonymity and offline function, enabling transactions without being connected to the internet (Kruger 2020), the digital RMB is also expected to make an impact on the dominating third-party mobile payment platforms, Alipay and WeChat Pay. However, digital yuan is not intended to replace the third-party payment platforms, as Zhou Xiaochuan, the former governor of the PBoC and the founding father of digital yuan, has clarified (Bloomberg News 2021b).

On the contrary, these platforms will be incorporated into the digital yuan payment system. Under the two-tiered structure, Alipay and WeChat Pay, together with the big state-owned commercial banks and three big telecom operators (China Mobile, China Telecom, China Unicom), constitute the second-tier institutions and have already started trial operation. According to the aforementioned white paper, “as of June 30, 2021, e-CNY has been applied in over 1.32 million [application] scenarios, covering utility payment, catering service, transportation, shopping, and government services” (PBoC 2021, 13). Further, “more than 20.87 million personal wallets and over 3.51 million corporate wallets had been opened, with transaction volume totaling 70.75 million and transaction value approximating RMB34.5 billion” (ibid.).

Currently, the digital yuan is designed to replace cash in circulation, and mainly for the use case of small amount transactions in the retail sector. It will not greatly impact Alipay and WeChat Pay and will have only a limited impact on China’s bank and monetary system.

With regard to e-CNY’s impact on RMB internationalization, former PBoC governor Zhou made clear on May 22, 2021, that the design of e-CNY was not intended to replace the US dollar as the main reserve and international payment currency, and would not help RMB internationalization too much (Bloomberg News 2021b). Digital yuan at the current stage is essentially planned to be used for domestic retail transactions. In addition, it could be used for cross-border retail payments, for example, those related to tourism. Zhou (2020) made it clear that the digital yuan was not targeting large-scale cross-border transactions.

Based on this design, digital yuan could contribute to RMB internationalization through facilitating

small cross-border transactions in the tourism, retail and e-commerce sectors in the years to come, but the contribution will be largely limited. It will not help RMB become an international reserve currency. RMB internationalization — whether digital or not — will be determined by China's progress toward capital account convertibility and freely usable RMB, the further opening of China's financial system and economy (Blustein 2021), and the stability of the value of RMB.

How Might the Digital Yuan Plan Evolve?

Officially, the PBoC's plans for the digital RMB largely end here. Beyond that, however, a possibly more significant upshot for the digital RMB not articulated in the official narrative has not been fully explored. The digital RMB has the potential to help reassert the central bank's control over the payment system and the transaction data in the financial system. The centralized digital RMB could eventually enable the central bank to see the transaction and users' data in entirety. Most of this data is currently in the hands of tech giants Alibaba and Tencent, who own, respectively, the two third-party platforms that monopolize the payments sector, Alipay and WeChat Pay.

In August 2017, the PBoC introduced regulations and established NetsUnion Clearing Corporation (NUCC) to provide clearing services for all non-bank online payment institutions, which means all non-bank online payment transactions need to be cleared through the NUCC platform, which enables the PBoC to see all the transactions data. A wide use of digital RMB, however, would enable the PBoC not only to see all the transactions data in a very convenient way but also to become the sole entity to see and control all the data. The third-party payment giants would be cut off from most of the data, such as customers' personal information. They would only have access to the data that was necessary for them to finish the transactions in a limited period of time.

To realize that goal, digital yuan needs to be used widely in the whole financial system. But for now, under the PBoC's current plan, the digital RMB is designed only to replace cash in circulation, and responsible officials have

already made clear (Mu 2019) that interbank payments and clearing systems built on interest-bearing accounts are already electronic and that there is no need to use digital yuan to replace short- and long-term deposits in banks.

However, the design of digital yuan to replace only cash in circulation means that the magnitude and roles of the digital RMB in the financial system will be quite limited. The digital yuan can only be a complementary tool in the retail sector in the existing monetary payment system. It is observed in China's financial circle that the PBoC might hold greater ambition for the future use of the digital RMB. Former officials at the PBoC (Sina.com.cn 2021), the Bank of China (Wang 2021) and experts in finance (Zhang 2021) have raised questions about the design of digital yuan for only cash in circulation and expect the digital RMB to extend into the whole financial system in the foreseeable future.

If this extension occurs in the years to come, e-CNY will be used to replace short- and long-term deposits in banks and be used in issuing loans and buying bonds, and the central bank could issue digital yuan to the market via asset purchasing to achieve monetary policy goals. When that happens, the government would be able to see all the data, as everyone would be using digital yuan for all kinds of financial transactions. It would not matter whether customers were using Alipay, WeChat Pay or any other payment platforms owned by banks and other second-tier institutions. The central bank would be able to see all data through designing and setting up a powerful and comprehensive "super" digital yuan app and different categories of digital yuan wallets, and those tech giants' fintech businesses built on the data from users' financial transactions and personal information could be effectively regulated.

Why and how, then, would the issuance of digital RMB contribute to the Chinese government's control over data? To answer the question, we need to trace back a few years to find out.

Losing Control over Big Data

Since the PBoC issued payment licences to enterprises in 2011, Alibaba Group's Alipay and Tencent's WeChat Pay, which are built upon commercial banks' electronic money system, have helped foster the booming of China's e-commerce. Through playing a crucial role as trusted go-betweens connecting vendors and customers, Alipay and WeChat Pay rose rapidly in China's huge consumption market, where a trustworthy online payment system had been lacking for years, while credit cards and online credit card usages had never been prevalent. The crucial elements influencing the competitiveness of the big internet platforms are technology and data. Over decades, Alibaba and Tencent have accumulated enormous amounts of financial transaction data and users' information and established a huge closed loop through their third-party payment platforms.

On the basis of their payment platforms, Alibaba and Tencent have developed into giant digital conglomerates offering a wide variety of financial services, including mutual fund products, online lending for small-sized enterprises and high-quality credit score systems for users. The transaction volume of the third-party mobile payment sector reached 226 trillion yuan by the end of 2019 (iResearch Global Group 2020, 3), and Alipay and WeChat Pay accounted for 93.8 percent of it (ibid., 4). Tencent Holdings (Horta e Costa 2021) and Alibaba Group (Xie 2020) are each expected to reach a market value nearing US\$1 trillion in a few years, with their investments touching almost every corner of China's economy. Not simply tech giants, they have developed into important financial institutions that are "too big to fail," while financial supervision over them is lagging.

Through their third-party payment platforms, Alibaba and Tencent have monopolized financial transactions data and users' information while China's financial regulators are largely kept in the dark. It seems increasingly obvious that, for Chinese financial regulators, having supervision of transactions data and users' information in the age of the digital economy will ensure better regulation and defuse possible regulatory risks posed by Alibaba's and Tencent's fintech businesses, such as wealth management products

and online lending, that were built on the data they acquired through their payment platforms.

Systemic financial risk has been regarded as a severe threat to the Chinese Communist Party's rule in China (Xi 2017) in the recent decade, and how to prevent it ranks as one of the top priorities on the list of China's financial regulators (S. Guo 2020). In the digital era, new types of financial risks (Y. Guo 2020) posed by fintech businesses, such as online loans and mutual funds products run by third-party payment platforms, clearly need to be addressed. These financial risks are not like the online peer-to-peer lending crash around 2018, which occurred on a relatively small scale (Wildau and Jia 2018). Alibaba's and Tencent's fintech businesses operate on a large scale, and their crash could lead to a systemic crisis. That scale is probably the reason behind the Chinese financial regulators' suspension of Ant Group's (Alipay's) record-breaking US\$37 billion initial public offering in November 2020 (Zhu, Shen and Roumeliotis 2020). Yi Gang, governor of the PBoC, called for stronger fintech regulation in his speech at the Bank for International Settlements (BIS) on September 18, 2021,¹ requiring payment institutions to separate payment instruments from other finance products to prevent cross-product and cross-sectoral financial risks.

The likely role of e-CNY in breaking big internet platforms' monopolies in users' transaction data and personal information is in harmony with the spirit of strengthening personal information protection in the recently issued Personal Information Protection Law of China (Creemers and Webster 2021), which obligates internet platforms to shoulder their responsibilities in protecting personal information by establishing independent bodies to supervise these activities and includes a clause that personal information handlers may not use coercive measures to obtain or use personal data. The Cybersecurity Law that has been effective in June 2017 firstly stipulated several general clauses for personal information protection in China (Creemers, Triolo and Webster 2018). The newly effective Data Security Law otherwise provided another convenient tool for the Chinese government to tighten control over data gathered by these big techs in the name of "state data security" (Chen 2021). By

1 See www.bis.org/review/r210923h.pdf.

defining a broad range of “core state data”² and putting forward compliance requirements, the law further enabled the government to better supervise big techs’ collecting, using and sharing of data to reduce potential security risk.

A Way to Reassert Data Control

The following steps could provide a way for China’s central bank to use digital yuan to secure its sole control of data in the financial system and to break tech giants’ monopoly over the transaction of data and user information in the foreseeable future:

- Under the two-tiered but centralized structure of the digital yuan, the bank could specify that any individual, business or financial institution that intended to exchange and use e-CNY would need to download a unified digital yuan app developed by the central bank and open a digital yuan “wallet” (account) at second-tier commercial banks or institutions such as telecom operators. The data of every transaction would be sent simultaneously to the central bank through the app and to the second-tier institutions via the digital wallet. Behind this “super” digital yuan app, there would be three data centres equipped in the banking system for authentication, registration and big data analysis.
- In this case, the central bank could access all data for transactions and user information pertaining to use of the digital yuan without dealing directly with customers, while the second-tier banks, third-party payment platforms and telecom operations could see, for a limited time period, only the digital footprints of those individuals or businesses using their applications’ digital yuan wallets.
- In practice, the level of anonymity for a digital wallet would be decided by the scale of digital yuan in the wallet. Digital wallets with larger amounts of e-CNY would have weaker degrees of anonymity, and vice versa. In this way, digital

wallets would be catalogued into different levels. All the transactions of large wallets would be traceable. The smallest digital yuan wallet would have the strongest degree of anonymity, and a cellphone number would be all that would be needed to open it. The smallest digital yuan wallet could be totally anonymous, even to the central bank and second-tier institutions, but it would still be traceable to the authorities. This scheme is called controllable anonymity. If necessary — for example, for anti-fraud purposes — law enforcement departments could get the registered information for the cellphone number from telecom operators and trace the smallest digital yuan wallet.

- For individuals and firms, depending on the scale of their digital yuan wallet, they could be anonymous to a different extent when using digital yuan. As for the third-party payment companies and internet platforms, they would be cut off from their users’ personal information data that they could previously see (Bloomberg News 2021a). Users’ payment information would be encrypted in their digital sub-wallet for payment purposes, and platforms would not directly get these users’ personal information. In this way, big platforms’ data monopoly would be broken. Issuance of e-CNY thus becomes a key move for the PBoC toward setting up a super app that suits all payment platforms and business scenarios, which means a unified digital infrastructure would be established to provide necessary support for the circulation of data assets while maintaining control of the digitalized economy.

Precaution and Pre-emption in Global CBDC Competition

Besides the e-CNY’s potential use in reasserting control over big data in the increasingly digitalized financial system, its issue by the PBoC also acts as a precautionary measure toward maintaining its currency sovereignty and financial stability. As the director of the Digital Currency Research Institute at the PBoC, Mu Changchun, said at

² See www.npc.gov.cn/npc/c30834/202106/7c9af12f51334a73b56d7938f99a788a.shtml. [In Chinese.]

the 2020 Bund Summit,³ the central bank's centralized structure of digital RMB will be a helpful measure against the invasion of cryptocurrency and Libra and prevent the power of currency issuing from falling into the hands of others.

The PBoC's study of DC/EP originated when bitcoin emerged. Spurred by the formal announcement by Facebook in June 2019 of Project Libra, its plan to develop a blockchain currency, the PBoC convened a work meeting⁴ two months later to accelerate its preparations for issuing digital RMB. During the same period, while the PBoC was preparing the e-CNY, China began to crack down on bitcoin and other cryptocurrencies. It closed all bitcoin trading platforms in September 2017 and has further cracked down on all virtual currencies trading since May 2021 (Browne 2021a). The PBoC announced in September 2021 that it will be effectively banning all transactions of cryptocurrency (Browne 2021b).

For the PBoC, it is a crucial task to take the strategic high ground in global CBDC competition in the age of the digital economy. The PBoC is keeping an eye on other central banks' trials of digital currency and following any progress in this regard, for example, Project Ubin by the Monetary Authority of Singapore; Project Jasper by the Bank of Canada; and Project Stella, a joint project of the European Central Bank and the Bank of Japan. The issuing of the collaborative report *Central bank digital currencies: foundational principles and core features* in October 2020 (BIS 2020), received much attention from Chinese officials.

The PBoC joined the BIS's Multiple CBDC Bridge project,⁵ trying to position itself in future rulemaking for global CBDC in terms of cross-border payments. In the eyes of officials at the PBoC who supervise the digital yuan, CBDC has become a competition of national strategy in the area of cross-border transactions, which will be a priority area for competition among all CBDCs. They have sensed the urgency in issuing digital RMB (Yao 2021) and tried to learn from practices of other central banks to excel in future competition with the digital dollar, the digital euro and the digital yen.

At present, the digital RMB is still being piloted. Many important set issues concerning the digital RMB under the PBoC's current plans could experience changes in the future — including its operating structure, long-term evolution technology route, issuance model, decisions regarding interest, and regulation — while the discussion and debate on the definition, use cases and roles of global CBDC are still going on. However, there is no doubt that the centralized management model and controllable anonymity of digital yuan have great potential to help secure the central bank's capacity to exert control over big data in the financial system and to harness the power of tech giants, as well as to strengthen personal information and data protection. China's central bank is also making no bones about its precautionary measures in issuing e-CNY as a preliminary move in competing with other CBDCs and cryptocurrencies.

3 See www.youtube.com/watch?v=jlqQeq5IJ_g.

4 See www.pbc.gov.cn/goutongjiaoliu/113456/113469/3869429/index.html. [In Chinese.]

5 See www.bis.org/about/bisih/topics/cbdc/mcbdc_bridge.htm.

Works Cited

- BIS. 2020. *Central bank digital currencies: foundational principles and core features. Report no 1 in a series of collaborations from a group of central banks*. Basel, Switzerland: BIS. www.bis.org/publ/othp33.htm.
- Bloomberg News. 2021a. "China Digital Yuan Will Co-Exist With Alipay, WeChat, PBOC Says." Bloomberg News, March 25. www.bloomberg.com/news/articles/2021-03-25/china-digital-yuan-will-co-exist-with-alipay-wechat-pboc-says.
- . 2021b. "Digital Yuan Won't Replace Dollar, Ex-Bank of China Chief Says." Bloomberg News, May 22. www.bloomberg.com/news/articles/2021-05-22/digital-yuan-won-t-replace-dollar-ex-bank-of-china-chief-says.
- Blustein, Paul. 2021. "Who's Afraid of the Digital Renminbi?" Opinion, Centre for International Governance Innovation, April 26. www.cigionline.org/articles/whos-afraid-digital-renminbi/.
- Browne, Ryan. 2021a. "China's central bank urges Alipay and banks to crack down on crypto speculation." CNBC, June 21. www.cnbc.com/2021/06/21/china-central-bank-urges-alipay-banks-to-crack-down-on-crypto.html.
- . 2021b. "China's central bank says all cryptocurrency-related activities are illegal, vows harsh crackdown." CNBC, September 24. www.cnbc.com/2021/09/24/china-central-bank-vows-harsh-crackdown-on-cryptocurrency-industry.html.
- Chen, Abby. 2021. "A Close Reading of China's Data Security Law, in Effect Sept. 1, 2021." *China Briefing*, July 14. Hong Kong: Dezan Shira & Associates. www.china-briefing.com/news/a-close-reading-of-chinas-data-security-law-in-effect-sept-1-2021/.
- Creemers, Rogier, Paul Triolo and Graham Webster. 2018. "Translation: Cybersecurity Law of the People's Republic of China (Effective June 1, 2017)." *New America* (blog), June 29. www.newamerica.org/cybersecurity-initiative/digichina/blog/translation-cybersecurity-law-peoples-republic-china/.
- Creemers, Rogier and Graham Webster. 2021. "Translation: Personal Information Protection Law of the People's Republic of China – Effective Nov. 1, 2021." DigiChina Project, August 20 (last revision September 7). <https://digichina.stanford.edu/work/translation-personal-information-protection-law-of-the-peoples-republic-of-china-effective-nov-1-2021/>.
- Guo, Shuqing. 2020. "Unswervingly fight the battle to prevent and resolve financial risks." [In Chinese.] *Qiushi Journal*, Issue no. 16. www.gov.cn/xinwen/2020-08/16/content_5535190.htm.
- Guo, Yingzhe. 2020. "Fintech Giants Could Pose 'New Systemic Risks,' Warns Banking Watchdog Chief." *Caixin Global*, December 8. www.caixinglobal.com/2020-12-08/fintech-giants-could-pose-new-systemic-risks-warns-banking-watchdog-chief-101637128.html.
- Horta e Costa, Sofia. 2021. "Tencent nears US\$1 trillion in latest sign of global tech bubble." *BNN Bloomberg*, January 25. www.bnnbloomberg.ca/tencent-nears-1-trillion-in-latest-sign-of-global-tech-bubble-1.1553761.
- iResearch Global Group. 2020. *The Era of Industrial Payment: 2020 China's Third-party Payment Industry Report*. Beijing, China: iResearch Company. www.iresearchchina.com/Upload/202006/20200630162608_6921.pdf.
- Kruger, Mark. 2020. "In China, the Digital Renminbi Is Becoming a Reality." Opinion, Centre for International Governance Innovation, August 21. www.cigionline.org/articles/china-digital-renminbi-becoming-reality/.
- Mu, Changchun. 2019. Speech at the Third China Finance 40 Yichun Forum. [In Chinese.] *The Paper*, August 11. <https://finance.sina.com.cn/blockchain/roll/2019-08-12/doc-ihytcitm8416374.shtml>.
- PBoC. 2021. "Progress of Research & Development of E-CNY in China." White paper, July. Beijing, China: PBoC. www.pbc.gov.cn/en/3688110/3688172/4157443/4293696/2021071614584691871.pdf.
- Sina.com.cn. 2021. "The full text of Yao Qian's latest speech: Digital currency will definitely move towards smart currency. The two-tier architecture does not need to exclude Ethereum, etc." [In Chinese.] Sina.com.cn, May 31. <https://finance.sina.com.cn/blockchain/2021-05-31/doc-ikmxzfm5683886.shtml>.
- Wang, Yongli. 2021. "Digital RMB should not be positioned at M0." [In Chinese.] Sina.com.cn, January 6. https://finance.sina.com.cn/zl/2021-01-06/zl-iiznctkf0416169.d.html?vt=4&cid=76601&node_id=76601.
- Wildau, Gabriel and Yizhen Jia. 2018. "Collapse of Chinese peer-to-peer lenders sparks investor flight." *Financial Times*, July 22. www.ft.com/content/75e75628-8b27-11e8-bf9e-8771d5404543.
- Xi, Jinping. 2017. "Sound, Circular and Healthy Development of the Economy and Finance." *Qiushi Journal*, July 14 (updated July 21, 2021). http://en.qstheory.cn/2021-07/21/c_644059.htm.
- Xie, Jun. 2020. "Alibaba, Tencent to hit \$1t market caps within next few years: experts." *Global Times*, January 19. www.globaltimes.cn/content/1177352.shtml.
- Yao, Qian. 2021. "Some understandings and thoughts on the global central bank digital currency experiment." [In Chinese.] *Finance.sina.com.cn*, April 2. <http://finance.sina.com.cn/zl/2021-04-02/zl-ikmxzfmk1057688.shtml>.
- Zhang, Ming. 2021. "Strategies and ideas for promoting RMB internationalization in the new cycle." [In Chinese.] Sina.com.cn, July 17. <http://finance.sina.com.cn/zl/china/2021-07-17/zl-ikqfnc47454830.shtml>.
- Zhou, Xiaochuan. 2020. "Understanding China's Central Bank Digital Currency." *China Finance 40 Forum*, December 13. www.cf40.com/en/news_detail/11481.html.
- Zhu, Julie, Meg Shen and Greg Roumeliotis. 2020. "China slams the brakes on Ant Group's \$37 billion listing." *Reuters*, November 3. www.reuters.com/article/us-ant-group-ipo-idUSKBN2711OS.

About CIGI

The Centre for International Governance Innovation (CIGI) is an independent, non-partisan think tank whose peer-reviewed research and trusted analysis influence policy makers to innovate. Our global network of multidisciplinary researchers and strategic partnerships provide policy solutions for the digital era with one goal: to improve people's lives everywhere. Headquartered in Waterloo, Canada, CIGI has received support from the Government of Canada, the Government of Ontario and founder Jim Balsillie.

À propos du CIGI

Le Centre pour l'innovation dans la gouvernance internationale (CIGI) est un groupe de réflexion indépendant et non partisan dont les recherches évaluées par des pairs et les analyses fiables incitent les décideurs à innover. Grâce à son réseau mondial de chercheurs pluridisciplinaires et de partenariats stratégiques, le CIGI offre des solutions politiques adaptées à l'ère numérique dans le seul but d'améliorer la vie des gens du monde entier. Le CIGI, dont le siège se trouve à Waterloo, au Canada, bénéficie du soutien du gouvernement du Canada, du gouvernement de l'Ontario et de son fondateur, Jim Balsillie.

Credits

Managing Director of Digital Economy **Robert Fay**
Program Manager **Aya Al Kabarity**
Publications Editor **Lynn Schellenberg**
Graphic Designer **Brooklyn Schwartz**

Copyright © 2021 by the Centre for International Governance Innovation

The opinions expressed in this publication are those of the author and do not necessarily reflect the views of the Centre for International Governance Innovation or its Board of Directors.

For publications enquiries, please contact publications@cigionline.org.



This work is licensed under a Creative Commons Attribution — Non-commercial — No Derivatives license. To view this license, visit (www.creativecommons.org/licenses/by-nc-nd/3.0/). For re-use or distribution, please include this copyright notice.

Printed in Canada on Forest Stewardship Council® certified paper containing 100% post-consumer fibre.

Centre for International Governance Innovation and CIGI are registered trademarks.

67 Erb Street West
Waterloo, ON, Canada N2L 6C2
www.cigionline.org