

# The Dawn of the Digital Yuan: China's Central Bank Digital Currency and Its Implications

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# Contents

<b>Summary</b> .....	<b>5</b>
<b>Introduction</b> .....	<b>9</b>
<b>A Cashless Society and the Emerging Debates on CBDCs</b> .....	<b>11</b>
The Evolution of the Digital Yuan .....	16
DCEP's Technical Nuances .....	22
DCEP in the US-China Rivalry .....	25
<b>The Implications of a Chinese CBDC</b> .....	<b>30</b>
DCEP in China's Domestic Market: A Surveillance Coin? .....	30
RMB Internationalization and the Digital Yuan .....	37
Global Governance on CBDCs .....	42
<b>Conclusion</b> .....	<b>46</b>
<b>Author Bio</b> .....	<b>48</b>



## Summary

- The COVID-19 pandemic has driven digital innovation and proved to be an enabling episode for the technology industry; the growing focus on central bank digital currencies (CBDCs) comes within such a context. China has rushed to the forefront of the CBDC race to lay the foundation of the widespread implementation of its Digital Currency Electronic Payment (DCEP) system. Although over 80 percent of the world's central banks are engaged in CBDC research and 40 percent are working on pilot programs, the People's Bank of China (PBoC) leads in this domain.
- After being engaged in cryptocurrency research since 2014, China launched the digital yuan in 2020 with the aim of achieving its extensive circulation domestically by the 2022 Winter Olympics in Beijing. The coming year is therefore set to be a critical period for the DCEP, as China aims to emerge as a leader in the space and gain dominance over the US in their great power competition. The coming year is therefore set to be a critical period for the DCEP, as China aims to emerge as a leader in the space and gain dominance over the US in their technological great power competition.
- To realize this ambition, the PBoC conducted multiple large-scale trials with massive stimulus package disbursements in major cities (including Shenzhen, Suzhou, Chengdu, Xiong'an New Area, Shanghai and Beijing) with the involvement of major national and multinational retailers (such as Qingfeng, Baozi, McDonald's,

Subway and Starbucks, to name but a few). China's phased implementation of DCEP is strategic, focused primarily on major financial hubs with vibrant local and international trade and business communities. DCEP's expansion into Hong Kong follows a parallel strategy under its RMB internationalization goals. Ultimately, China hopes to expand the DCEP such that it becomes an accepted mode of transaction alongside its massive supply chain networks and connectivity routes.

- However, the PBoC has released scant details on the DCEP's technicalities, design and distance; the DCEP's technical structure and operational details are closely guarded as tantamount to state secrets. Reports suggest that it will operate on a "two-tier operating system" in which the central bank acts as the first tier and commercial banks as the second. Yet, several legal issues pertaining to data privacy and policy frameworks by which the DCEP will be governed remain unclear. Amid such uncertainties, which are only compounded by Beijing's recent aggressive behavior in the region, the DCEP's success will be invariably dependent on the level of trust and confidence that Beijing can create in the system; this will require increased transparency and more openness regarding technological and legal imperatives.
  
- China has sought to put such key questions on the backburner as it pushes ahead with the DCEP system to gain a first-to-market advantage. Crucially, China hopes that this edge can help position it to shape the international norms and laws that will govern the fintech and advanced technology space. In other words, gaining a first-mover advantage is critical for Beijing to promote a 'China model' of techno-authoritarianism in global norms. Therefore, while



the US' CBDC efforts are bogged down by a democratic approach to DCEP development, Beijing's amplification of DCEP testing seeks to establish unrivaled superiority in the fintech field, and CBDCs particularly, against a backdrop of intensifying great power competition with the US.

- Importantly, the digital yuan comes as the next major milestone in China's RMB internationalization objective, which has been a foremost concern since the 2009 financial crisis, increasing the global circulation of the RMB; this will allow Beijing to hedge against the US dollar's global hegemony. The Belt and Road Initiative (BRI) is central to this goal: DCEP can be incorporated and promoted via the transactions carried out under the BRI corridors. Such cross-border use of the digital yuan could also critically extend China's technological control and surveillance capabilities beyond its borders - making it a security concern for BRI participant states as well as other trade partners.
  
- Domestically, the DCEP is a part of the Chinese Communist Party's (CCP) drive to 'digitalize' and 'intelligentize' its government and private institutions, economy, and society. In practice, however, the DCEP could act as a surveillance coin over the Chinese population and allow the CCP to further consolidate power by strengthening its digital authoritarianism. The DCEP will, in all likelihood, provide the Chinese authorities with access to the transaction data of all users, transforming the system into a big data set that the government can employ to track citizen behavior. Although the PBoC has stated that DCEP will protect privacy, early models of the digital currency also suggest that the PBoC (and therefore the CCP) will have the ability to analyze the vast troves of financial data available in real time. The technology could thus put in place a

politically intimidating social governance system that will give the authoritarian Chinese state more power. It could potentially be embedded within the CCP's existing social credit system and AI-based surveillance system as a tool of oppression to identify political dissenters.

- The DCEP's role as a surveillance tool and the related human rights implications, as well as its implications for China's global role, require serious consideration. The balancing powers must thoroughly study the DCEP's technological framework - especially in terms of how it collects and manages user data - and assess the cyber risks it poses. Beijing already holds a clear-cut advantage in the CBDC domain. To compete, balancing powers must expedite the development of their own CBDCs and cooperate and collaborate to ensure that they can act as standard-setters of the international crypto governance framework.

## Introduction

The first week of March 2021 marked the occurrence of China's 'Two Sessions' (or *Lianghui*)<sup>1</sup>, comprised of annual national meetings of the Chinese People's Political Consultative Conference (CPPCC) and the National People's Congress (NPC). China's biggest political gathering, the 2021 Two Sessions, assumed added importance because the year marks the 100th anniversary of the Chinese Communist Party's (CCP), as well as the onset of Beijing's 14<sup>th</sup> Five Year Plan.<sup>2</sup> As the state-sponsored *Global Times* anticipated earlier, China's Central Bank Digital Currency (CBDC) was featured in the Two Sessions.<sup>3</sup> In envisioning the future of China, the Two Sessions were centered around Beijing's plans for creating a 'Digital China'<sup>4</sup> by further fostering advanced technologies such as artificial intelligence (AI), cloud computing, robotics, and blockchain – which form the building block of any digital currency. Chinese Premier Li Keqiang unveiled plans to develop a digital ecosystem through "innovation-driven development"<sup>5</sup>; a digital yuan that "[integrates] the digital and physical economies" is a

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<sup>1</sup> Qian Zhou, "China's Two Sessions 2021: GDP Target, Tax Incentives, and 14<sup>th</sup> Five Year Plan," *China Briefing*, March 8, 2021, <https://www.china-briefing.com/news/chinas-two-sessions-2021-gdp-target-tax-incentives-and-14th-five-year-plan/>.

<sup>2</sup> Karen M. Sutter and Michael D. Sutherland, *China's 14<sup>th</sup> Five-Year Plan: A First Look* (Washington DC: Congressional Research Service, 2021), <https://crsreports.congress.gov/product/pdf/IF/IF11684>.

<sup>3</sup> Zhang Dan, "China's digital currency likely to be highlighted at two sessions," *Global Times*, March 2, 2021, <https://www.globaltimes.cn/page/202103/1217059.shtml>.

<sup>4</sup> Li Keqiang, "Report on the Work of the Government," *Delivered at the Fourth Session of the 13<sup>th</sup> National People's Congress of the People's Republic of China on March 5, 2021*, The State Council of the People's Republic of China, 10,

[http://english.www.gov.cn/premier/news/202103/13/content\\_WS604b9030c6d0719374afac02.html](http://english.www.gov.cn/premier/news/202103/13/content_WS604b9030c6d0719374afac02.html).

<sup>5</sup> Li Keqiang, "Report on the Work of the Government," 9-10, 21-23.

critical component of advancing Beijing's digital society objective.<sup>6</sup> With trials ongoing in Shenzhen, Beijing, and Shanghai, China's CBDC program has quickly become a part of the agendas of regional Chinese governments. Now, as NPC official Chen Chunxing commented, China's focus is on incorporating its digital currency into cross-border transactions.<sup>7</sup>

This article examines the development of China's CBDC while placing it in the broader context of the changing geopolitical, geostrategic, and technological landscape. It traces how the digital yuan has progressed from research and development to the pilot stage – particularly in the past year as the world grappled with the health and economic repercussions of the pandemic. It assesses the implications of a fully functional Chinese CBDC in the domestic and international contexts in order to understand how China's state-sponsored cryptocurrency program could generate political and economic advantages for Beijing.

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<sup>6</sup> Iris Deng and Xinmei Shen, "China's 'two sessions' 2021: plans for 'Digital China' transformation come with increased regulations for personal data," *South China Morning Post*, March 6, 2021, <https://www.scmp.com/tech/big-tech/article/3124305/chinas-two-sessions-2021-plans-digital-china-transformation-come/>

<sup>7</sup> Zhang Dan, "China's digital currency likely to be highlighted at two sessions."

## A Cashless Society and the Emerging Debates on CBDCs

The rapid development of new technologies has had a massive impact on practically every aspect of society, including the world of finance, through the creation of a digital economy. The 2008 global financial crisis was a black swan event that dramatically altered the financial landscape of the global economy and critically eroded the trust that people held in the existing financial system and banking institutions amid a wave of anti-establishment populism. The pervasive loss of trust in traditional financial platforms and payment structures opened doors for the introduction of disruptive technology in the field of finance, especially through the creation of parallel currencies and the onset of a 'cryptocurrencies phenomenon'.<sup>8</sup>

A cryptocurrency is a virtual currency underpinned by blockchain and distributed ledger technology (DLT)<sup>9</sup>, which allow for safe virtual transactions secured through encryption techniques. In comparison to fiat (or cash-based) currencies, which employ a third-party central server to record all transactions, cryptocurrencies are decentralized networks in which all transactions are secured, verified, and held by all participants. In essence, this allows cryptocurrencies to exist outside the control of any overarching financial authority or government. Since transactions are recorded transparently in a public ledger, individuals have absolute control over their data and funds, making them unforgeable, unalterable, and

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<sup>8</sup> Adrian Blundell-Wignall, "The Bitcoin Question: Currency versus Trust-less Transfer Technology," *OECD Working Papers on Finance, Insurance and Private Pensions*, No. 37 (Paris: OECD Publishing, 2014), <https://doi.org/10.1787/20797117>.

<sup>9</sup> Blockchain 101, "What is a Distributed Ledger?," *CoinDesk*, November 12, 2020, <https://www.coindesk.com/learn/blockchain-101/what-is-a-distributed-ledger>.

immune to manipulation by financial intermediaries. Such currencies are not released by government authorities but by miners in the network, who confirm transactions conducted as legitimate and add them as a 'node' in the ledger – thus creating a blockchain. Therefore, although they operate with government knowledge, cryptocurrencies are not insured by any government reserves and do not have the same legal protections as bank deposits and bank accounts.<sup>10</sup> This 'blockchain' process essentially removes the need for blind trust in the system, replacing it with a consensus-keeping process secured by cryptography.<sup>11</sup> Although there have been several attempts at creating digital currencies, cryptocurrencies today are largely based on the *white paper* released by Satoshi Nakamoto introducing Bitcoin, which laid out a framework for a "peer-to-peer electronic cash system" that enables "online payments to be sent directly from one party to another without going through a financial institution".<sup>12</sup>

Since the release of Bitcoin, which has grown progressively in popularity, the merit of cryptocurrencies has become a hotly debated topic in not only technology but also finance and legal spheres. Both blockchain and cryptocurrencies hold tremendous promise; virtual currencies can help simplify transactions and reduce financial exclusion for the unbanked or underbanked population, that is, the section of the population with limited

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<sup>10</sup> David Perkins, *Cryptocurrency: The Economics of Money and Selected Policy Issues*, R45427 (Washington DC: Congressional Research Service, April 2020), <https://fas.org/sgp/crs/misc/R45427.pdf>; "What to Know About Cryptocurrency," Federal Trade Commission Consumer Information, October 2018, <https://www.consumer.ftc.gov/articles/what-know-about-cryptocurrency#:~:text=Cryptocurrencies%20aren't%20backed%20by,money%20in%20a%20bank%20account>.

<sup>11</sup> Venkata Marella, Bikesh Upreti and Virpi Kristiina Tuunainen, "Understanding the creation of trust in cryptocurrencies: the case of Bitcoin," *Electronic Markets* 30, (June 2020): 259-271, <https://doi.org/10.1007/s12525-019-00392-5>.

<sup>12</sup> In essence, the Bitcoin white paper envisioned a currency with governmental or financial institutional control at all. Rather all transactions would occur directly between parties with no intermediary. Satoshi Nakamoto, "Bitcoin: A Peer-to-Peer Electronic Cash System," Bitcoin, 2009, <https://bitcoin.org/bitcoin.pdf> (Accessed January 8, 2021).

access to banking institutions. The removal of an institutional intermediary also helps cut down transaction costs, which can be especially high for cross-border transfers. They are also easily portable, divisible, and resistant to external uncertainties – including geopolitical tensions, civil unrest, market turbulence, and inflation. However, due to the lack of know-your-customer (KYC) practices, the anonymity involved in crypto-based payment processes is often criticized for enabling illegal transactions for money laundering or tax evasion. Since they are underpinned by supply and demand and not material objects, the rate of exchange of cryptocurrencies vis-à-vis fiat currencies can fluctuate highly, while their mining can take up massive amounts of energy. Moreover, while the transaction records are protected via encryption, other pillars of the payment mechanism (the public key, private key, exchanges, and wallets) remain vulnerable to hacking and theft.

Criticisms of cryptocurrencies have prompted the government of several countries to explore their own Central Bank Digital Currencies (CBDCs) for issue by their fiscal authorities/institutions. A niche technology, CBDC remains an ambiguous concept with no settled definition.<sup>13</sup> The IMF described it as “a new form of money, issued digitally by the central bank and intended to serve as legal tender”.<sup>14</sup> Rather than physical, printed

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<sup>13</sup> See Jason Grant Allen, and Rosa Maria Lastra, *Virtual Currencies in the Eurosystem: Challenges Ahead*, Monetary Dialogue July 2018, Policy Department for Economic, Scientific and Quality of Life Policies (Brussels: Committee on Economic and Monetary Affairs, European Parliament, 2018), 9-11, [https://www.europarl.europa.eu/cmsdata/150541/DIW\\_FINAL%20publication.pdf](https://www.europarl.europa.eu/cmsdata/150541/DIW_FINAL%20publication.pdf); Jason Grant Allen and Rosa Maria Lastra, “Border Problems: Mapping the Third Border,” *Modern Law Review* 83, no. 3, (2020): 505-538, <http://doi.org/10.1111/1468-2230.12506>.

<sup>14</sup> IMF Staff, *A Survey of Research on Retail Central Bank Digital Currency*, Working Paper No. 20/104, (Washington DC: International Monetary Fund, 2018), 7, <https://www.imf.org/-/media/Files/Publications/SDN/2018/SDN1808.ashx>. Subsequent IMF documents provide their own versions of the definition alongside in depth discussions: IMF Staff, *Digital Money Across Borders: Macro-Financial Implications*, Policy Paper No. 2020/050 (Washington DC: International Monetary Fund, 2020), <https://www.imf.org/en/Publications/Policy-Papers/Issues/2020/10/17/Digital-Money-Across->

money, CBDCs stand at the confluence of government-backed and crypto currencies and entail Central Banks issuing electronic coins backed by the “full faith and credit” of the state.<sup>15</sup> The growing popularity of virtual currencies has made it evident that developed economies are increasingly moving towards a cashless society. Digitalization has brought about an evolution in how money is perceived, forcing Central Banks to enter the fray themselves. Instead of the DLT model, CBDCs are the liability of the government, which is responsible for managing its reserves. However, they remain a nascent technology, with most industrialized economies only beginning to experiment with the trial-based demos and pilot programs and researching their potential implications. Venezuela’s petro and China’s digital yuan<sup>16</sup>, in particular, are pioneers in the field, already launched on a limited trial basis.

Although there is much hype about introducing CBDCs to further the goal of a global digital economy, they remain a largely unexplored area, with several unconsidered and understudied implications. While they are believed to hold the potential to be the “next milestone” in financial technology (fintech), they are far from being appropriate or feasible for a mass release.<sup>17</sup> An IMF report published in November 2020 found that CBDCs could pose critical “legal, financial and reputational risks” in the absence of a well-designed monetary law framework and technical features. Several legal and financial questions must be clarified in order to

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Borders-Macro-Financial-Implications-49823; IMF Staff, *Casting Light on Central Bank Digital Currency*, Staff Discussion Notes No. 18/08 (Washington DC: International Monetary Fund, 2018), <https://www.imf.org/en/Publications/Staff-Discussion-Notes/Issues/2018/11/13/Casting-Light-on-Central-Bank-Digital-Currencies-46233>.

<sup>15</sup> “The rise of Central Bank digital currencies,” Atlantic Council, February 1, 2021, <https://www.atlanticcouncil.org/blogs/econographics/the-rise-of-central-bank-digital-currencies/>.

<sup>16</sup> David Pan, “Goldman Sachs Expects Digital Yuan to Reach 1B Users Within 10 Years,” *CoinDesk*, November 20, 2020, <https://www.coindesk.com/goldman-sachs-digital-yuan-report>.

<sup>17</sup> IMF Staff, *Digital Money Across Borders: Macro-Financial Implications*; IMF Staff, *Casting Light on Central Bank Digital Currency*; IMF Staff, *A Survey of Research on Retail Central Bank Digital Currency*.



appropriately roll out CBDCs. Can CBDCs be called a “currency”? Do Central Banks have the authority to issue such currency? Should CBDCs be structured along the lines of a private cryptocurrency in the monetary and digital space or as a form of “electronic money” with ‘legal tender’? What are the CBDCs implications for tax law, contract law, payment systems, cross-border transaction systems, and data protection? <sup>18</sup> Several international financial institutions and think tanks have been increasingly contributing to the debate on CBDCs and the questions they raise, <sup>19</sup>

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<sup>18</sup> For a discussion on legal aspects of cryptocurrencies, see IMF Staff, *Legal Aspects of Central Bank Digital Currency: Central Bank and Monetary Law Considerations*, Working Paper No. 2020/254 (Washington DC: International Monetary Fund, 2020), <https://www.imf.org/en/Publications/WP/Issues/2020/11/20/Legal-Aspects-of-Central-Bank-Digital-Currency-Central-Bank-and-Monetary-Law-Considerations-49827>.

<sup>19</sup> See Committee on Payments and Market Infrastructures (CPMI), *Central Bank Digital Currencies*, Markets Committee Papers (Basel, Switzerland: Bank for International Settlements, 2018), 1, <https://www.bis.org/cpmi/publ/d174.pdf>; Marlene Amstad, Bihong Huang, Peter J. Morgan, and Sayuri Shirai, *Central Bank Digital Currency and Fintech in Asia*, (Tokyo and Shenzhen: Asian Development Bank Institute and The Chinese University of Hong Kong, November 2019), <https://www.adb.org/sites/default/files/publication/539801/adbi-central-bank-digital-currency-and-fintech-asia.pdf>; Morten L. Bech, and Rodney Garratt, “Central Bank Cryptocurrencies,” *BIS Quarterly Review*, (September 2017), 55-70, [https://www.bis.org/publ/qtrpdf/r\\_qt1709f.pdf](https://www.bis.org/publ/qtrpdf/r_qt1709f.pdf); Christian Barontini and Henry Holden, *Proceeding with caution – a survey on central bank digital currency*, BIS Papers No 101, (Basel, Switzerland: Bank for International Settlements, January 2019), <https://www.bis.org/publ/bppdf/bispap101.pdf>; Raphael Auer, Giulio Cornelli, and Jon Frost, *Rise of the Central Bank Digital Currencies: Drivers, Approaches and Technologies*, BIS Working Papers No. 880, (Basel, Switzerland: Bank for International Settlements, August 2020), <https://www.bis.org/publ/work880.pdf>; Agustin Carstens, “The Future of Money and Payments,” (speech by General Manager, BIS, at 2019 Whitaker Lecture, Central Bank of Ireland, Dublin), Central Bank of Ireland, March 22, 2019, <https://www.centralbank.ie/docs/default-source/tns/events/the-future-of-money-and-payments---agustin-carstens-general-manager-bank-for-international-settlements.pdf?sfvrsn=8>; Joanna Perkins, and Jennifer Enwezor, “The legal aspect of virtual currencies,” *Butterworths Journal of International Banking and Financial Law*, (November 2016), 569, [http://fmlc.org/wp-content/uploads/2018/03/jibfl\\_2016\\_vol31\\_issue10\\_nov\\_virtualcurrencies.pdf](http://fmlc.org/wp-content/uploads/2018/03/jibfl_2016_vol31_issue10_nov_virtualcurrencies.pdf); Chiara Zilioli, “Crypto-assets: Legal Characterization and Challenges under Private Law,” *European Law Review*, (April 2020): 251-266, <https://dialnet.unirioja.es/servlet/articulo?codigo=7490528>; J.G. Allen, “Property in Digital Coins,” *European Property Law Journal* 8, no. 1, (2019):64-101, DOI:10.1515/eplj-2019-0005; David Fox, and Sarah Green, (eds.), *Cryptocurrencies in Public and Private Law* (Oxford: Oxford University Press, 2019), <https://global.oup.com/academic/product/cryptocurrencies-in-public-and->

although they remain a matter of debate. The proliferation of China's CBDC presents similar policy-related issues and, therefore, numerous risks, making the aforementioned questions even more critical in China's context. How will a Chinese CBDC operate alongside the existing domestic payment systems? How will it integrate into the international monetary system and impact cross-border transactions? How will the currency work? What are the privacy, legal, security, geo-economic, and geopolitical implications of such a currency? This paper attempts to discuss such issues by tracing the evolution of the digital yuan and its geopolitical implications.

### **The Evolution of the Digital Yuan**

Although COVID-19 has been an assault on human health and the global economy, it has proven to be a much more enabling story for the technology industry, which has sought to develop innovative solutions to digitize trust and replace older systems with new ones for the new era. Essentially, it allowed 10 years of digital innovation to occur within the span of a few months. COVID-19 has provided an ideal and thriving environment for digital innovation and served as a catalyst for China's CBDC; as people and institutions attempted to move away from cash payments, CBDCs have emerged as an attractive alternative by potentially offering an agile payment architecture. Such an infrastructure could seamlessly handle massive volumes of internal and cross-border payments efficiently. The rise in electronic payments amid the pandemic invariably pushed central banks across the world to more seriously consider CBDCs; China, in particular, has rushed to the forefront of what is becoming a CBDC race. Beijing has moved

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private-law-9780198826385?cc=in&lang=en&; Christophe Waerzeggers, and Irving Aw, "Difficulties in Achieving Neutrality and other Challenges in Taxing Crypto Assets," in Chris Brummer, (ed.), *Cryptoassets: Legal, Regulatory and Monetary Perspectives* (New York: Oxford University Press, 2019), 219, DOI:10.1093/oso/9780190077310.001.0001.

beyond a theoretical exploration of the concept and started laying the foundations for the DCEP's widespread implementation.

While over 80 percent of the world's central banks are engaged in researching CBDCs and a further 40 percent in building pilot programs,<sup>20</sup> with several coordinating their efforts under the Bank for International Settlements (BIS), the People's Bank of China (PBoC) is perhaps at the forefront of the field. Unlike most other major economies, China is already one year into its testing process. In 2020, it launched a pilot version of its digital yuan (or e-yuan) – officially called the Digital Currency Electronic Payment (DCEP) system – with the PBoC even confirming that it expected the currency to be in widespread use by the 2022 Winter Olympics in Beijing.<sup>21</sup> By the beginning of January 2020, the PBoC had filed 84 patent applications related to the DCEP; as of May 2020, the number of applications grew to over 120.<sup>22</sup> The DCEP's actualization is widely perceived as a three-step process: *first*, implementing the system across governmental services and institutions; *second*, rolling out the DCEP to the domestic private sector; and *finally*, expanding the use of the system beyond China's borders,

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<sup>20</sup> Codruta Boar and Andreas Wehrli, "Ready, steady, go? – Results of the third BIS survey on central bank digital currency," BIS Papers, 114, January 27, 2021, <https://www.bis.org/publ/bppdf/bispap114.htm>. For the status of progress that each country has made, see: "The rise of Central Bank digital currencies.," Benoît Cœuré, "CBDCs Mean Evolution, Not Revolution," BIS, October 21, 2020, <https://www.bis.org/speeches/sp201021a.htm>.

<sup>21</sup> Isaaku Harada, "China aims to launch digital yuan by 2022 Winter Olympics," *Nikkei Asia*, May 27, 2020, <https://asia.nikkei.com/Spotlight/Cryptocurrencies/China-aims-to-launch-digital-yuan-by-2022-Winter-Olympics>.; Steve Kaaru, "China's digital yuan to be in use by the 2022 Winter Olympics," *Coingeek*, April 22, 2020, <https://coingeek.com/chinas-digital-yuan-to-be-in-use-by-the-2022-winter-olympics/>.; Peng Qihang, "什么是中国版数字货币？怎么用？央行回应 [Translated] What is the Chinese version of digital currency? How to Use? Central Bank Response," *BJ News*, April 19, 2020, <http://www.bjnews.com.cn/finance/2020/04/19/718690.html>.

<sup>22</sup> Faisal Kawar, "Patents reveal extent of China's digital currency plans," *Financial Times*, February 12, 2020, <https://www.ft.com/content/f10e94cc-4d74-11ea-95a0-43d18ec715f5>; Zoey Zhang, "China's Digital Yuan: Development Status and Possible Impact for Businesses," *China Briefing*, December 7, 2020, <https://www.china-briefing.com/news/chinas-digital-yuan-status-roll-out-impact-businesses/>.

particularly for cross-border trade with states along the Belt and Road Initiative (BRI),<sup>23</sup> possibly under the umbrella of the digital silk road (DSR). Engaged in cryptocurrency research since 2014,<sup>24</sup> the PBoC has now conducted several on-the-ground tests of the DCEP, implementing the pilot program in several regions, including Shenzhen, Suzhou, Chengdu, Xiong'an New Area,<sup>25</sup> Shanghai, Beijing, and moving forward, Hong Kong and locations associated with the 2022 Winter Olympics. In April 2020, the PBoC announced the beginning of the Xiong'an New Area DCEP trial with the involvement of major local and international retail giants, including Qingfeng Baozi, McDonald's, Subway, and Starbucks, among others.<sup>26</sup> In the Suzhou trial, held in December 2020, the municipal government announced an airdrop of 20 million yuan to over 100,000 residents.<sup>27</sup> A similar trial was run in Shenzhen in October 2020, with giveaways amounting to 10 million yuan.<sup>28</sup> This was followed by a giveaway of 20 million yuan in December 2020.<sup>29</sup> In August 2020, the Chinese Ministry of Commerce further declared that the DCEP pilot program would be

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<sup>23</sup> Karen Yeung, "China's digital currency no threat to global monetary systems, former central bank chief says," *South China Morning Post*, December 14, 2020, <https://www.scmp.com/economy/china-economy/article/3113786/chinas-digital-currency-no-threat-global-monetary-systems>.

<sup>24</sup> "China aims to launch the world's first official digital currency," *The Economist*, April 25, 2020, <https://www.economist.com/finance-and-economics/2020/04/23/china-aims-to-launch-the-worlds-first-official-digital-currency>.

<sup>25</sup> Xiong'an New Area is a part of Xi Jinping's millennium strategy development program, set to become China's newest district and economic zone. See Frank Ka-Ho Wong, "Xiong'an New Area: President Xi's Dream City," *China Briefing*, March 26, 2019, <https://www.china-briefing.com/news/xiongan-new-area-beijing-tianjin-hebei/>.

<sup>26</sup> "China's digital currency to be tested in Xiongan; trial run involves Starbucks, McDonald's," *Global Times*, April 23, 2020, <https://www.globaltimes.cn/content/1186529.shtml>.

<sup>27</sup> Patrick Thompson, "China's \$3 million DC/EP lottery," *Coingeek*, December 4, 2020, <https://coingeek.com/the-upcoming-3-million-digital-yuan-lottery/>.

<sup>28</sup> Zheping Huang, "50,000 Shoppers Give China's Digital Yuan Its Biggest Test Yet," *Bloomberg*, October 15, 2020, <https://www.bloomberg.com/news/articles/2020-10-15/50-000-shoppers-give-china-s-digital-yuan-its-biggest-test-yet>.

<sup>29</sup> "China launches another public test of digital currency in Suzhou, supporting online and offline payment," *Global Times*, December 6, 2020, <https://www.globaltimes.cn/content/1209124.shtml>.

expanded to cities in Midwestern China, Beijing, Shanghai, Tianjin, Hebei, the Yangtze River Delta, and the Greater Bay Area (of Hong Kong), among others.<sup>30</sup> Reportedly, future trials are set to be even larger, with a distribution of over 50 million yuan in a lottery-style airdrop. The figure on the next page offers a brief timeline highlighting the major developments in China's DCEP system.

The stimulus package disbursements (or airdrops) carried out over the year in select cities are aimed at encouraging citizens to begin employing the system and thereby fast-track its adoption. At the same time, education initiatives<sup>31</sup> to help make digital assets more accessible have accompanied the pilot programs and their large airdrops. Over the past year, China has come to account for almost 60 percent of the digital payment market in Asia, which is valued at USD 2.9 trillion, the largest in the world.<sup>32</sup> As Guandong's Director of the Local Financial Supervision Administration Bureau succinctly put it, widespread adoption of the digital yuan would enable the "modern financial technology to better serve the construction and development" of the region.<sup>33</sup> The Chinese government, at the local level, is thus actively promoting a deeper integration of multinational and Chinese businesses with the new virtual banking system that the DCEP provides.

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<sup>30</sup> "Notice of the Ministry of Commerce on Issuing the Overall Plan for Comprehensively Deepening the Pilot Program for the Innovation and Development of Trade in Services," State Council Policy Document Database, August 12, 2020,

<http://images.mofcom.gov.cn/fms/202008/20200814092010665.pdf>

<sup>31</sup> "What is Central Bank Digital Currency and How do we Use it?," CCTV, 3:59, May 17, 2020, <https://www.youtube.com/watch?v=l6XARdKi6z0&vl=zh-Hans>.

<sup>32</sup> Taimur Baig, Chang Wei Liang, Nathan Chow, Ma Tieying, Tara Menon, Duncan Tan, and Samuel Tse, *Digital Currencies: Public and Private, Present and Future* (Singapore: DBS, August 2020), [https://www.dbs.com.sg/corporate/aics/templatedata/article/generic/data/en/GR/082020/200817\\_insight\\_s\\_digital\\_currency.xml](https://www.dbs.com.sg/corporate/aics/templatedata/article/generic/data/en/GR/082020/200817_insight_s_digital_currency.xml).

<sup>33</sup> "Digital yuan to be tested in HK's Greater Bay Area," *Asia Times*, August 13, 2020, <https://asiatimes.com/2020/08/digital-yuan-to-be-tested-in-hks-greater-bay-area/>



**Figure 1: Timeline of the DCEP's Evolution**

Source: Compiled by the author

The places chosen for the DCEP pilot programs suggest a clear provincial pattern: most districts included are some of China's major financial hubs with vibrant trade and business communities. Each of the chosen cities has a population of between 10 and 17 million, making them key metro cities on China's Eastern coast roughly the size of an average European nation. As a massive country with a vast population, China faces several risks in testing pilot programs on a national scale. The phased process of DCEP is designed to allow China's domestic payment industry to adapt to new fintech technology and timely upgrade their infrastructure – thereby allowing vendors and users to assimilate themselves to the new technology as it becomes more mainstream. The focus on Shenzhen, in particular, draws from the city's status as China's technological hub (or its Silicon Valley) and host to numerous multinational tech corporations.

Similarly, the expansion of DCEP into Hong Kong, even as it is not yet widely operational within mainland China, is drawn on Hong Kong's status as a global financial and trade hub. Most importantly, Hong Kong is a critical player in global cross-border payments and a part of the Greater Bay Area (GBA). The GBA is a cluster of 11 Chinese cities (including Shenzhen) and two administrative regions (Hong Kong and Macau) that act as China's heart of financial activity and technological fulcrum. The choice of major metros and fintech hubs for DCEP trials is a strategic one; it indicates Beijing aims to promote the e-yuan with not only domestic businesses but international companies as well. Here, Hong Kong's status as a leading Asian financial hub offers an added advantage for the DCEP's global aspirations. In fact, Hong Kong was the natural choice of location when Beijing sought to open an offshore RMB clearing center under its RMB internationalization aims; China is following a parallel strategy with the digital yuan as it looks to take it global. Ultimately, China hopes to expand the DCEP such that fiat currencies and traditional bank transfers parallel its

use, so it becomes an accepted mode of practice alongside China's massive supply chain networks and trade and connectivity routes.

## DCEP's Technical Nuances

Despite this push in DCEP's development and testing, Beijing has released few details that shed light on the system's technicalities, design, and issuance. For Beijing, operational details of DCEP (both financial and technological) amount to state secrets and are therefore closely guarded.<sup>34</sup> Although no official PBoC White Paper on the topic exists, scarce details can be discerned from writings of Chinese scholars and current and former PBoC officials – such as Yao Qian (former director of the DCRI), Mu Changchun (current director of the DCRI), Zhou Xiaochuan (former PBoC governor), and Fan Yifei (deputy governor of the PBoC), among others.

The DCEP will be defined by a “two-tier operating system”<sup>35</sup> in which the central bank serves as the first tier and commercial banks as the second tier. In other words, commercial banks will act as an “operating agency” to convert between fiat currency and digital yuan.<sup>36</sup> At present, the “big four” Chinese commercial banks – the Industrial and Commercial Bank of China, the Agricultural Bank of China, the China Construction Bank, and the Bank of China are involved in DCEP's trial phase. During a wider rollout, Beijing

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<sup>34</sup> “Transcript of Governor Zhou Xiaochuan's Exclusive Interview with Caixin Weekly,” People's Bank of China, February 14, 2016, [www.pbc.gov.cn/english/130721/3017134/index.html](http://www.pbc.gov.cn/english/130721/3017134/index.html).

<sup>35</sup> Yao Qian, “Technical Aspects of CBDC in a Two-Tiered System,” (slide presentation), The People's Bank of China, July 18, 2018, <https://www.itu.int/en/ITU-T/Workshops-and-Seminars/20180718/Documents/Yao%20Qian.pdf>.

<sup>36</sup> Fan Yifei, “关于数字人民币 M0 定位的政策含义分析 [Translated] *Analysis on the policy implications of the positioning of digital RMB M0*,” September 15, 2020, <http://blockchain.people.com.cn/n1/2020/0915/c417685-31862262.html>. For a discussion on the characteristics and mechanisms, see Takuma Yatsui, “Implications of China's Digital Yuan Initiative: Potential Impact and Future Focal Points,” Mitsui & Co. Global Strategic Studies Institute, November 2020, [https://www.mitsui.com/mgssi/en/report/detail/\\_icsFiles/afieldfile/2021/01/07/2011c\\_yatsui\\_e\\_1.pdf](https://www.mitsui.com/mgssi/en/report/detail/_icsFiles/afieldfile/2021/01/07/2011c_yatsui_e_1.pdf).



hopes to expand its lineup to other second-tier commercial institutions with the aim of boosting competition in services and encouraging innovations “without being impacted by specific technological schemes,” according to former PBoC governor Zhou Xiaochuan.<sup>37</sup> In other words, the PBoC aims to create a basic underlying technological structure for DCEP, which can be further innovated through competition in the private sector institutions operating at the second-tier of the system. Zhou also clarified that the DCEP would not be issued directly by the PBoC but by state-backed commercial banks that would hold the liabilities.<sup>38</sup>

The PBoC also aims to be adaptable and flexible in its DCEP design<sup>39</sup> and is, therefore, by all appearances, moving away from blockchain and DLT as its underlying technology for the DCEP. In fact, China’s priority is to create a system that is capable of handling at least 300,000 transactions per second so as to make it more competitive with AliPay, which can reportedly process 250,000 transactions every second; whether this system is rooted in blockchain and DLT tech or a centralized system is a flexible choice. Although the PBoC’s initial prototype was based on DLT, Mu revealed in November 2019 that they no longer found the tech ideal for DCEP.<sup>40</sup> In February 2020, Mu further reiterated that blockchain was incompatible with

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<sup>37</sup> Zhou Xiaochuan, “China’s choices for a digital currency system,” *Nikkei Asia*, February 22, 2021, <https://asia.nikkei.com/Spotlight/Caixin/Zhou-Xiaochuan-China-s-choices-for-a-digital-currency-system>.

<sup>38</sup> Zhou Xiaochuan, “Understanding China’s Central Bank Digital Currency,” China Finance 40 Forum, December 13, 2020, [http://www.cf40.com/en/news\\_detail/11481.html](http://www.cf40.com/en/news_detail/11481.html).

<sup>39</sup> See Dobiexchange, “重磅！央行数字货币呼之欲出·设计理念和架构首次曝光（附穆长春演讲全文）[Translated: Heavy! The Central Bank’s Digital Currency is About to Emerge, and the Design Concept and Technical Architecture are Exposed for the First Time (Including Full Text of Mu Changchun’s Speech)],” Huoxing News, August 10, 2019, <https://news.huoxing24.com/20190810211835088808.html>; Wolfie Zhao, “PBoC’s Digital Currency Chief Departs to Lead Securities Clearing House,” *CoinDesk*, October 15, 2018, [www.coindesk.com/pbocs-digital-currency-chief-departs-to-lead-securities-clearing-house](http://www.coindesk.com/pbocs-digital-currency-chief-departs-to-lead-securities-clearing-house).

<sup>40</sup> “Blockchain not suitable for China’s digital currency: PBoC,” *Ejinsight*, November 8, 2019, [www.ejinsight.com/eji/article/id/2298629/20191108-blockchain-notsuitable-for-china-s-digital-currency-pboc](http://www.ejinsight.com/eji/article/id/2298629/20191108-blockchain-notsuitable-for-china-s-digital-currency-pboc).

the PBoC's objective for building a DCEP system capable of handling massive volumes of transactions, although the DCRI could employ blockchain-based innovations for smaller platforms with limited financial transactions.<sup>41</sup> Notably, blockchain and DLT's decentralized nature make it naturally unsuited for a CBDC, which is central bank controlled. Although Yao did propose a blockchain-based DCEP with central bank control,<sup>42</sup> it remains unclear which model DCEP will adopt. In fact, amid several contradicting reports over how DCEP will be technically structured, the system remains highly confidential, and its nuances will likely only be revealed after its full rollout, and perhaps not even then. Cybersecurity concerns and a desire to maintain its edge over global competition mean certain elements of the system may be highly guarded state secrets.

Similarly, several legal questions pertaining to data privacy and policy frameworks governing DCEP remain unanswered. Within DCEP's testing area, for instance, DCEP will operate under three different legal systems – China's socialist system on mainland China, Portuguese civil law in Macau, and British common law in Hong Kong.<sup>43</sup> It is still unclear which system will apply in cases of cross-border transactions between these cities, particularly with regard to issues such as data privacy. Further, geopolitically, China's imposition of the new national security law in Hong Kong has intensified tensions between them and forced the international financial community in Hong Kong to reassess their risk and rethink operating in the region. In fact, several tech and media firms have been forced to shift their base of operations elsewhere – such as to Tokyo or Seoul – in order to avoid being

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<sup>41</sup> “央行数字货币研究所：分析区块链技术的优缺点与管理方法 [Translated: Central Bank Digital Currency Institute: Advantages and Disadvantages of Blockchain Technology and Management Methods],” *ChainNews*, February 21, 2020, <https://www.chainnews.com/articles/190020074225.htm>.

<sup>42</sup> Lin Jiechen, “林洁琛, “姚前：区块链与央行数字货币 [Translated: Yao Qian: Blockchain and Central Bank Digital Currency],” *Yicai*, April 2, 2020, <https://www.yicai.com/news/100576775.html>.

<sup>43</sup> Kelly Le, “Hong Kong may be first global ‘sandbox’ for China's DCEP digital yuan,” *Forkast*, December 17, 2020, <https://forkast.news/hong-kong-pilot-test-china-dcep-digital-currency/>.

subject to the draconian provisions of the law. Therefore, uncertainties regarding Hong Kong make the DCEP trial's success precarious; it will be dependent on the level of trust Hong Kong's international community holds in DCEP. For this, Beijing will need to incorporate more transparency in DCEP and be more open in revealing the system's technological and legal imperatives. Building confidence in DCEP amongst international companies and states will be vital for the DCEP's global ambitions.

### **DCEP in the US-China Rivalry**

The amplification in China's DCEP testing in 2020 came against the backdrop of a markedly different geopolitical, geostrategic, and geo-economic environment. 2020 has seen heightened tensions between two of the world's foremost powers, the US and China, and a great power competition that is gradually giving way to a new Cold War. Factors such as the US-China trade war, China's aggression in the East and South China Seas, border conflict with India, actions in Hong Kong, assertiveness over Tibet, rising military pressure on Taiwan, and treatment of the Muslim Uighur population in the Xinjiang autonomous region, have only added to friction. This competition is critically focused on technology and digital innovation, particularly in cutting-edge areas like artificial intelligence, 5G telecommunication networks, robotics, advanced semiconductors, and, importantly, fintech. The dollar, as the primary global currency since the formation of the Bretton Woods economic system, affords the US economic pre-eminence that gives it an edge over China, despite the rising nation's economic prowess. Beijing's advancements in its DCEP program can, in fact, have grave implications for the dollar as the world's reserve currency by raising the yuan's global profile. The DCEP, in other words, is China's attempt to dethrone the dollar by internationalizing its digital yuan and

making it the dominant currency in global trade.<sup>44</sup> The RMB's rivalry with the US dollar is a decade-old one, and over time, China has sought to systematically subdue the dollar's global political and financial influence through an RMB internationalization strategy. Beijing has not masked its intentions either; a commentary published by the PBoC fervently argued for China to lead the CBDC race (or the "new battlefield" in US-China competition) in order to break the Dollar's monopoly and reduce dependence on the Dollar-based international economic system.<sup>45</sup>

The US government has been somewhat passive when it comes to developing CBDCs; Washington has so far made little progress in its CBDC program and remains at the research stage. However, on February 24, 2021, the US Federal Reserve Chair, Jerome Powell, stated that the coming year would be pivotal for the digital dollar. Speaking before the House Financial Services Committee, Powell provided a timeline for the development of a digital dollar and confirmed that the US Federal Reserve would actively "engage with the public" vis-à-vis its development in 2021.<sup>46</sup> A Federal Reserve White Paper further specified that the Federal Reserve's central objectives would drive the development of a US CBDC arrangement, indicating public and stakeholder (including government bodies, financial institutions, and tech companies) engagement on critical questions of

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<sup>44</sup> Steven Ehrlich, "Not a Cold War: China Is Using A Digital Currency Insurgency to Unseat the US Dollar," *Forbes*, October 15, 2020, <https://www.forbes.com/sites/stevenehrlich/2020/10/15/not-a-cold-war-china-is-using-a-digital-currency-insurgency-to-unseat-the-us-dollar/?sh=2a8633cd748a>.

<sup>45</sup> "China needs first mover advantage in digital currency race: PBOC magazine," *Reuters*, September 21, 2020, <https://www.reuters.com/article/china-pboc-yuan-digital/refile-china-needs-first-mover-advantage-in-digital-currency-race-pboc-magazine-idUSL3N2GI11F?rpc=401&>

<sup>46</sup> Jeff Cox, "Watch Live: Fed Chair Powell testifies before House panel," *CNBC*, video, February 24, 2021, <https://www.cNBC.com/2021/02/24/watch-live-fed-chair-powell-testifies-before-house-panel.html>.; Nathan DiCamillo, "Fed Chairman Powell: We Will Engage the Public on the Digital Dollar This Year," *CoinDesk*, February 24, 2021, <https://www.coindesk.com/fed-chairman-powell-we-will-engage-the-public-on-the-digital-dollar-this-year>.

privacy, payment system security, and accessibility.<sup>47</sup> However, such slow progress on the governmental front is contrasted by rapid progress in stable coin development via the private sector. JP Morgan, Wells Fargo, Accenture, and Facebook have all introduced their digital currency projects – which US policymakers have notably criticized due to their concerns over the risks of such a technology.<sup>48</sup> Facebook’s 2019 announcement of the development of its digital currency, Libra<sup>49</sup>, set for launch in 2021,<sup>50</sup> was, in fact, a major driving factor behind China’s acceleration of the DCEP. While the pandemic had already stepped up CBDC deliberations, Libra’s introduction was a catalyst that kicked the DCEP into high gear.<sup>51</sup> Following Libra’s introduction in June 2019, the PBoC was quick to declare its own CBDC testing plans and vision, and it began carrying out extensive pilots the following year.<sup>52</sup> However, the Libra project remains in limbo due to a lack

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<sup>47</sup> Jess Cheng, Angela N Lawson and Paul Wong, “Preconditions for a general-purpose central bank digital currency,” Board of Governors of the Federal Reserve System, February 24, 2021, <https://www.federalreserve.gov/econres/notes/feds-notes/preconditions-for-a-general-purpose-central-bank-digital-currency-20210224.htm>. One such private initiative surrounding public discussion on CBDCs is the Digital Dollar Project: “Leading the Discussion on US Central Bank Digital Currency,” Digital Dollar Project, <https://www.digitaldollarproject.org/> (accessed February 26, 2021).

<sup>48</sup> Nicky Morris, “Senate hearings highlight potential financial risks to Facebook from Libra,” *Ledger Insights*, <https://www.ledgerinsights.com/facebook-libra-senate-hearings-financial-risks/>

<sup>49</sup> Sowmya Ramasubramanian, “A brief look at Facebook’s digital currency venture,” *The Hindu*, December 3, 2020, <https://www.thehindu.com/sci-tech/technology/facebooks-libra-currency/article33240527.ece>.

<sup>50</sup> Hannah Murphy, “Facebook’s Libra currency to launch next year in limited format,” *Financial Times*, November 27, 2020, <https://www.ft.com/content/cfe4ca11-139a-4d4e-8a65-b3be3a0166be>

<sup>51</sup> Siddharth Chandani, “Central banks accelerate digital currency plans as PBOC surges ahead,” September 7, 2020, <https://www.theasianbanker.com/updates-and-articles/central-banks-accelerate-digital-currency-plans>.

<sup>52</sup> See: “Frank Tang, “Facebook’s Libra forcing China to step up plans for its own cryptocurrencies, says central bank official,” *South China Morning Post*, July 8, 2019, <https://www.scmp.com/economy/china-economy/article/3017716/facebooks-libra-forcing-china-step-plans-its-own>; Kari Paul, “Libra: Facebook launches cryptocurrency in bid to shake up global finance,” *The Guardian*, June 18, 2019, <https://www.theguardian.com/technology/2019/jun/18/libra-facebook-cryptocurrency-new-digital-money-transactions>; “China says new digital currency will be similar to Facebook’s Libra,” *Reuters*, September 6, 2019, <https://www.reuters.com/article/us-china-cryptocurrency-cenbank-idUSKCN1VR0NM>.

of support which it must secure to pass regulatory tests and become a financially stable, sustainable, and trustworthy stablecoin that is fully backed by federal reserves.

China is likely concerned over a potential US-based rival digital currency and wants to ensure it can secure the first to market advantage that will not only give it an edge vis-à-vis its competition with the US but also allow it to write the rules of the game in the international arena. To this end, taking advantage of the US' democratic approach to the development of a digital dollar that has significantly slowed its progress, Beijing has sought to cement its own dominance in the field.

Rather than entering a currency and fintech Cold War with the US, China is all but "waging a digital currency insurgency on the global financial system" by aiming to challenge the dominance of the US dollar.<sup>53</sup> At its core, China's DCEP is underpinned by the Chinese Communist Party's (CCP) and President Xi Jinping's dream of Chinese rejuvenation – that is, the revitalization of Chinese power and restoration of Middle Kingdom Glory.<sup>54</sup> China has marked 2021 – the year of the CCP's centennial anniversary – as the target for the completion of its first centennial goal to "build a moderately prosperous society in all respects".<sup>55</sup> As it celebrates this event, the CCP will look to highlight its successes for not only its citizens but an international audience as well. Beijing's DCEP push is driven on this aim, as China hopes to make 2021 a critical year for its CBDC efforts. China is set to

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<sup>53</sup> Steven Ehrlich, "Not a Cold War: China is Using a Digital Currency Insurgency to Unseat the US Dollar," *Forbes*, October 15, 2020, <https://www.forbes.com/sites/stevenehrlich/2020/10/15/not-a-cold-war-china-is-using-a-digital-currency-insurgency-to-unseat-the-us-dollar/?sh=2a8633cd748a>.

<sup>54</sup> Geremie R. Barme, "Chinese Dreams (Zhongguo meng 中国梦)," in *Yearbook 2013: Civilising China*, The China Story, <https://www.thechinastory.org/yearbooks/yearbook-2013/forum-dreams-and-power/chinese-dreams-zhongguo-meng-%E4%B8%AD%E5%9B%BD%E6%A2%A6/>.

<sup>55</sup> "CPC Q&A: What are China's two centennial goals and why do they matter?," *Xinhua*, October 17, 2017, [http://www.xinhuanet.com/english/2017-10/17/c\\_136686770.htm](http://www.xinhuanet.com/english/2017-10/17/c_136686770.htm). Also see *Xinhua*, "Leading China to accomplish first centenary goal," *People's Daily*, January 5, 2021, <http://en.people.cn/n3/2021/0105/c90000-9805821.html>.

launch a nationwide beta version of the digital yuan to support a domestic payment system. China's PBoC also recently joined hands with Central Banks from Thailand, the UAE, and Hong Kong to explore cross-border payment based on digital currency. These developments point to China's dedication – and superiority – in the fintech domain and CBDCs, in particular, and raise several questions as to its implications.

While the main investment sectors targeted by Chinese enterprises in 2017 included manufacturing, transportation, utilities and infrastructure, in 2018, the automotive, finance and ICT sectors were leading. In 2019, there has been a greater focus on consumer goods and services, especially real estate, hospitality, sports and luxury goods. This trend essentially reflects the rebalancing of the Chinese economy towards domestic consumption but also answers to the stronger demand for luxury goods and entertainment services from the rising upper-middle class in China. Nevertheless, the automotive and financial sectors were also part of the top three for 2019.

## The Implications of a Chinese CBDC

Amid the uncertainties surrounding the DCEP, a survey of writings and statements by Chinese officials and scholars can help offer some insight into the DCEP's future plans and aspirations. The CCP has dual motivations in launching DCEP: *first*, to build a robust cashless Chinese economy that follows China's socialist market economy characterized as capitalism with socialist characteristics; *second*, to emerge as a leader in the state-issued digital currency space in the impending great power technological war.<sup>56</sup> China's domestic vision sees the DCEP as part of its drive to digitalize and 'intelligentize' its government and private institutions, economy, and society.<sup>57</sup> These domestic objectives, in turn, drive China's global aspirations vis-à-vis the DCEP.

### DCEP in China's Domestic Market: A Surveillance Coin?

At present, the DCEP is primarily focused on domestic payments. The PBoC sees several advantages of a digital yuan. In keeping with the attributes of cryptocurrencies, the DCEP will make the domestic payment system more

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<sup>56</sup> "The next war: The growing danger of great-power conflict," *The Economist*, January 25, 2018, [www.economist.com/leaders/2018/01/25/the-growing-danger-of-greatpower-conflict](http://www.economist.com/leaders/2018/01/25/the-growing-danger-of-greatpower-conflict).

<sup>57</sup> PRC National Development and Reform Commission, Ministry of Science and Technology, Ministry of Industry and Informational Technology, and Ministry of Finance, "Guiding Opinions on Expanding Investment in Strategic Emerging Industries and Cultivating Strengthened New Growth Points and Growth Poles," translated by Elsa Kania, Ngor Luong, Caroline Meinhardt, Ben Murphy, Dahlia Peterson, Helen Toner, Graham Webster, and Emily Weinstein (Center for Security and Emerging Technology at Georgetown University and New America), NRDC High Technology Document 1409, September 29, 2020, [https://cset.georgetown.edu/wp-content/uploads/t0222\\_emerging\\_industry\\_opinions\\_EN.pdf](https://cset.georgetown.edu/wp-content/uploads/t0222_emerging_industry_opinions_EN.pdf).



efficient and resilient to cyber-attacks, money laundering, tax evasion, criminal/terrorist financing, and other financial crimes. Furthermore, the shift from fiat to digital currency will also bring with it a decrease in the expenses involved with managing cash flows. Additionally, China remains a nation with an enormous population, and while it has made impressive advancements in improving financial inclusion, over 120 million Chinese citizens remain part of an unbanked sector.<sup>58</sup> The PBoC hopes DCEP can be critical in providing financial services to this section of the population. In China, the widespread use of private payment structures such as Alipay and WeChat Pay has had some success in limiting the cash flow in the market. However, over the past few years, cash circulation is on the rise on a year-on-year basis, with over 7.5 trillion RMB remaining in circulation as of 2019.<sup>59</sup> Ultimately, the PBoC aims for the digital yuan to entirely replace its physical currency – making it an incredibly ambitious project with far-ranging domestic implications.

Beijing believes several positive outcomes will follow the implementation of the DCEP system. The use of digital yuan over cash will allow the PBoC to more easily track suspicious transactions and institute stringent laws against criminal and illicit transfers. Moreover, the PBoC is likely concerned about Alipay and WeChat Pay's current oligopoly over electronic payments; the collapse of either of these firms could threaten the safety of the payment system. While the central bank is implementing several regulations as safeguards to prevent such a scenario from materializing,<sup>60</sup> it also sees the

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<sup>58</sup> The World Bank reported that 225 million people in China did not hold an account with financial institutions in 2017. International Bank for Reconstruction and Development/The World Bank, "The Global Findex Database 2017," 2018, 35. <https://globalfindex.worldbank.org/>.

<sup>59</sup> Takuma Yatsui, "Implications of China's Digital Yuan Initiative: Potential Impact and Future Focal Points."

<sup>60</sup> In January 2019, PBC made it mandatory for private payment service providers to deposit 100% of customer deposits as reserve funds. See Rita Liao, "New policy puts revenue squeeze on China's payments giants," *Tech Crunch*, January 17, 2019, <https://techcrunch.com/2019/01/17/policy-squeezes-at-china-payments-firms/>.

DCEP as a safety net should the private mobile payment market collapse. Precisely how the DCEP will differ from Alipay and WeChat Pay, how it will be issued, and whether and how it will operate in tandem with these services has not yet been made clear. Will it be a payment service in addition to the existing systems – and therefore, a new competitor to the oligopoly? Or will it be available as a preferred payment option via the existing services, thus not having a major market impact in the domestic sense? The answers to such questions will be crucial in determining the DCEP's impact on consumers, businesses, and the market in general.

More importantly, the DCEP comes as a tool to advance the CCP's already strong control over the Chinese population, and it could therefore pose a significant threat to the right to privacy of Chinese citizens. Firstly, a digital yuan offers Beijing and the CCP, in particular, a chance to mitigate the excessive control that the private sector currently holds over digital payment systems in the country. Besides tightening financial regulations to ensure the viability of the oligarchic digital payment industry,<sup>61</sup> China has sought to put in place critical legislations to maintain a semblance of control. For the CCP, the nation's growing private sector has increasingly become a source of concern. In just the past year, Xi Jinping has acted on his deep distrust of the corporate sector and his uneasiness with the unpredictability of markets<sup>62</sup> to enhance state control over corporations. In some cases, this has meant installing CCP party officials within companies and demanding businesses adjust their operational philosophies and objectives in

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<sup>61</sup> "Tencent and Alipay set to lose \$1 bn in revenue from payment rules," *Financial Times*, July 15, 2018, <https://www.ft.com/content/b472f73c-859e-11e8-96dd-fa565ec55929>;  
Andrew Liu, "An Analysis of the PBOC's New Mobile Payment Regulation," *CATO Journal*, (Winter 2019), <https://www.cato.org/cato-journal/winter-2019/analysis-pbocs-new-mobile-payment-regulation>; "Chinese merchants refuse cash as mobile payments take off," *Financial Times*, January 1, 2019, <https://www.ft.com/content/a97d76de-035e-11e9-99df-6183d3002ee1>.

<sup>62</sup> Lingling Wei, "China's Xi Approaches a New Term With a Souring Taste for Markets," *The Wall Street Journal*, October 16, 2017, [https://www.wsj.com/articles/chinas-xi-approaches-a-new-term-with-a-souring-taste-for-markets-1508173889?mod=article\\_inline](https://www.wsj.com/articles/chinas-xi-approaches-a-new-term-with-a-souring-taste-for-markets-1508173889?mod=article_inline).

accordance with state goals. In other cases, this has involved Beijing absorbing “undisciplined” firms into state-owned enterprises in keeping with a revised “mixed-ownership reform” initiative.<sup>63</sup>

In fact, in 2020 alone, the Chinese government absorbed over \$20 billion worth of small businesses in varied industries, including technology and financial services.<sup>64</sup> Under Xi’s state-capitalist ideology that is centered on state intervention, the CCP has prioritized business strategies designed to serve the state over competitive market forces. In other words, the CCP is making every effort to transform its private sector to adopt governance practices ‘with Chinese characteristics’.<sup>65</sup> To this end, a law introduced in January 2020 made it mandatory for all enterprises to modify their charters to formally involve a role for the Party within the company’s governance framework.<sup>66</sup> These developments have made Beijing’s end goal amply clear: to bring the otherwise powerful Chinese private sector within its control. In the digital payments industry, after making several regulatory attempts, China is seeking to use the DCEP as a technological means to gain control over the market – and by extension, its citizens’ financial data.<sup>67</sup> In

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<sup>63</sup> Lingling Wei, “China’s Xi Ramps Up Control of Private Sector. ‘We Have No Choice but to Follow the Party.’,” *The Wall Street Journal*, December 10, 2020, <https://www.wsj.com/articles/china-xi-clampdown-private-sector-communist-party-11607612531>.

<sup>64</sup> *Ibid.*

<sup>65</sup> Scott Livingston, *The Chinese Communist Party Targets the Private Sector* (Washington DC: Center for Strategic and International Studies, October 8, 2020), [https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/201008\\_Livingston\\_CCP%20Targets%20Private%20Sector\\_WEB%20FINAL.pdf](https://csis-website-prod.s3.amazonaws.com/s3fs-public/publication/201008_Livingston_CCP%20Targets%20Private%20Sector_WEB%20FINAL.pdf).

<sup>66</sup> *Ibid.*, 1. Also see: Orange Wang and Zhou Xin, “China cements Communist Party’s role at top of its SOEs, should ‘execute the will of the party,’” *South China Morning Post*, January 8, 2020, <https://www.scmp.com/economy/china-economy/article/3045053/china-cements-communist-partys-role-top-its-soes-should>.

<sup>67</sup> Yaya J. Fanusie and Emily Jin, “China’s Digital Currency: Adding Financial Data to Digital Authoritarianism,” Center for a New American Security, January 2021, <https://s3.us-east-1.amazonaws.com/files.cnas.org/documents/CNAS-Report-Chinas-Digital-Currency-Jan-2021-final.pdf?mtime=20210125173901&focal=none>.

other words, the DCEP will enable Beijing to “[renegotiate] the terms of economic and political power with China’s tech giants”.<sup>68</sup>

Secondly, the DCEP comes as a complementary push to the CCP’s ‘strategy for technology-driven governance and expanding its ‘digital authoritarianism’.<sup>69</sup> China has over 900 million internet users, 86 percent of whom actively use Alipay and WeChat Pay, belonging to Alibaba and Tencent, respectively – a market worth roughly \$50 trillion annually.<sup>70</sup> With the DCEP, the PBoC will likely have direct access to transaction data of all users, essentially transforming the system into a big data set, which can then be employed for various purposes. Although scarce technical and legal details of the DCEP are available, early models presented by Yao suggests data collected by the DCEP will be accessible by the central bank – and thus, by the CCP.<sup>71</sup> While several officials have stressed that the DCEP will protect privacy, they have also revealed that the PBoC will be able to analyze transactions in real time to identify and stop financial or cybercrimes. In fact, China’s fintech development plans are extensively focused on big data and artificial intelligence for innovation;<sup>72</sup> under these plans, the DCEP can

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<sup>68</sup> Maximilian Karnfelt and Kai von Carnap, “China’s New Surveillance Currency,” *The Diplomat*, December 4, 2020, <https://thediplomat.com/2020/12/chinas-new-surveillance-currency/>.

<sup>69</sup> Ibid, 2; Christina Larson, “Who needs democracy when you have data?” *MIT Technology Review*, August 20, 2018, [www.technologyreview.com/2018/08/20/240293/who-needs-democracy-when-you-have-data/](http://www.technologyreview.com/2018/08/20/240293/who-needs-democracy-when-you-have-data/).

<sup>70</sup> China Internet Network Information Center, “第 45 次《中国互联网络发展状况统计报告》(全文) [Translated: *The 45<sup>th</sup> China Statistical Report on Internet Development (full text)*],” Cyberspace Administration of China, April 28, 2020, [http://www.cac.gov.cn/2020-04/27/c\\_1589535470378587.htm](http://www.cac.gov.cn/2020-04/27/c_1589535470378587.htm); China Power Team, “How Will a Central Bank Digital Currency Advance China’s Interests?,” *China Power*, CSIS, August 20, 2020, updated August 26, 2020, <https://chinapower.csis.org/china-digital-currency/>; “It’s time for a consumer-centred metric: introducing ‘return on experience’,” *Global Consumer Insights Survey 2019*, PwC, 2019, <https://www.pwc.com/gx/en/consumer-markets/consumer-insights-survey/2019/report.pdf>.

<sup>71</sup> Yao Qian, “Technical Aspects of CBDC in a Two-Tiered System.” Also see Jinze and Etienne, “First Look: China’s Central Bank Digital Currency,” *Binance Research*, August 28, 2019, <https://research.binance.com/en/analysis/china-cbdc>.

<sup>72</sup> Li Qiaoyi, “China releases fintech development plan, aims for innovation while curbing risks,” *The Global Times*, August 22, 2019, <https://www.globaltimes.cn/content/1162371.shtml>.

provide massive amounts of metadata sets that can be processed and used for purposes like cracking down on dissidents or even individuals critical of the CCP. This information can include not just basic details such as their identities but also details of their movements and habits. In other words, the DCEP will provide the CCP with unparalleled access to people and act as a surveillance and punitive tool of the authoritarian regime.

Access to such vast troves of real-time financial data will enable far-reaching economic oversight, thereby entirely eroding the basic human right of privacy. Whether access to the data is instantaneous or carried through an intermediary – the commercial institutions operating DCEP at the second-tier – is not yet clear. However, what is certain is that extensive data will be gathered through the DCEP and will be available to government authorities.<sup>73</sup> The DCEP technology will impose a rather draconian and politically intimidating digital social governance structure, which the CCP will be able to use to trace the actions of citizens in real time, giving the authoritarian state more power than ever before.

The repercussions of such unprecedented levels of financial and personal data in the hands of an authoritarian regime like China are incalculable. The DCEP's wide rollout will likely also be accompanied by its integration with China's domestic policies and practices – such as its corruption laws and social credit system. Under Xi Jinping, Beijing has engaged in an anti-corruption campaign that aims to “saohei chu'e” (translated: “sweep away black and eliminate evil”).<sup>74</sup> Between November 2012 to 2018, Xinhua reported that more than 1.5 million officials were convicted on a variety of

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<sup>73</sup> See Yao Qian, “A Systematic Framework to Understand Central Bank Digital Currency,” *Science China Information Sciences* 61, no. 3 (2018), <https://doi.org/10.1007/s11432-017-9294-5>; Fan Yifei, “范一飞：关于央行数字货币的几点考虑 [Translated: *Several Considerations about the Central Bank's Digital Currency*],” *Yicai*, January 25, 2018, <https://www.yicai.com/news/5395409.html>.

<sup>74</sup> Emily Feng, “How China's Massive Corruption Crackdown Snares Entrepreneurs Across The Country,” *NPR*, March 4, 2021, <https://www.npr.org/2021/03/04/947943087/how-chinas-massive-corruption-crackdown-snares-entrepreneurs-across-the-country>.

corruption charges;<sup>75</sup> 2019 and 2020 recorded another 485,000 and 152,000 people respectively who were held accountable.<sup>76</sup> Moving forward, the CCP is looking to further strengthen this anti-corruption crackdown between 2020 and 2025 under its goal of achieving socialist modernization by 2035.<sup>77</sup> Further, a newly proposed law seeks to formalize the campaign and intensify anti-corruption regulations.<sup>78</sup> The DCEP will be an enabling tool for the anti-corruption campaign, allowing the CCP to intensify its crackdown considerably through access to transaction data. Essentially, the tracking and supervision of transactions come as a policing move.

The anti-corruption campaign has already enabled Xi to tighten his hold over the Party by offering an excuse to eliminate his critics and extend his tenure as Party leader. The DCEP will assist him in monitoring his party members further, consolidating his power and the CCP's hold over the nation at large. Similarly, the DCEP can potentially be integrated into China's social credit system released in 2014 and expected to be limitedly functional by 2025.<sup>79</sup> The system draws on datasets and other information

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<sup>75</sup> "Spotlight: China's effective campaign sets model for global anti-corruption cause," *Xinhua*, November 3, 2018, [http://www.xinhuanet.com/english/2018-03/11/c\\_137031213.htm](http://www.xinhuanet.com/english/2018-03/11/c_137031213.htm).

<sup>76</sup> "Over 152,000 Chinese officials held accountable in China's anti-corruption campaign this year," *Global Times*, December 4, 2020, <https://www.globaltimes.cn/content/1209010.shtml>; Hu Yiwei, "In numbers: China's anti-graft campaign after achieving 'sweeping victory'," *CGTN*, January 16, 2020, <https://news.cgtn.com/news/2020-01-16/In-numbers-China-s-anti-graft-campaign-NikJIOTb8s/index.html>.

<sup>77</sup> "中共中央印发《法治社会建设实施纲要（2020—2025年）》" [Translated] *The Central Committee of the Communist Party of China issued the "Implementation Outline for the Construction of a Society Ruled by Law (2020-2025)"*, "Supreme People's Court, December 7, 2020, <https://mp.weixin.qq.com/s/nh7pZmvPGAjvxu9gBewWfw>.

<sup>78</sup> "反有组织犯罪专门立法·如何将扫黑除恶进行到底？" [Translated] *How to carry out the anti-organized crime special legislation to the end?*, "Xinhua, December 25, 2020, [http://www.xinhuanet.com/2020-12/25/c\\_1126908659.htm](http://www.xinhuanet.com/2020-12/25/c_1126908659.htm); "Xi Jinping's instruction on China's 2021 anti-corruption," *CGTN*, January 22, 2021, <https://news.cgtn.com/news/2021-01-22/Xi-Jinping-s-instruction-on-China-s-2021-anti-corruption-XgvDAufPhK/index.html>.

<sup>79</sup> "中共中央印发《法治社会建设实施纲要（2020—2025年）》" [Translated] *The Central Committee of the Communist Party of China issued the "Implementation Outline for the Construction of a Society Ruled by Law (2020-2025)"*."

gathered to rate the trustworthiness of citizens and enterprises; high ratings could potentially result in rewards (like discounted public housing and preference in healthcare), while low ratings could lead to punitive measures.<sup>80</sup> The datasets for such assessments are expected to be sourced from third-party credit platforms, although the government is now exploring emerging technologies to build what can only be described as a surveillance state. With artificial intelligence (AI), Xi is looking to build an “all-seeing digital system of social control, patrolled by [precognition] algorithms that identify potential dissenters in real time”.<sup>81</sup> It also employs state-of-the-art surveillance cameras in combination with facial recognition programs to create an additional database; this surveillance is conducted under China’s Integrated Joint Operations Platform (IJOP) developed by a state-owned military contractor.<sup>82</sup> The DCEP will be an added tool of oppression in such a toolkit, allowing the CCP to broaden its surveillance, adding any untrustworthy persons or firms to their blacklist.<sup>83</sup>

## **RMB Internationalization and the Digital Yuan**

Apart from such domestic imperatives, China wants to fast track the use of the RMB internationally, and a digital version of currency can help advance this objective. China and the US are already engaged in a trade war. The

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<sup>80</sup> Amanda Lee, “What is China’s social credit system and why is it controversial?,” *South China Morning Post*, August 9, 2020, <https://www.scmp.com/economy/china-economy/article/3096090/what-chinas-social-credit-system-and-why-it-controversial>.

<sup>81</sup> Ross Andersen, “The Panopticon Is Already Here,” *The Atlantic*, September 2020, <https://www.theatlantic.com/magazine/archive/2020/09/china-ai-surveillance/614197/>.

<sup>82</sup> See Avi Asher-Schapiro, “Chinese tech patents tools that can detect, track Uighurs,” *Reuters*, January 14, 2021, <https://www.reuters.com/article/us-china-tech-uighurs-idUSKBN29I300>; ANI, “China uses tech as tool of repression to monitor citizens: US commission,” *Livemint*, August 9, 2020, <https://www.livemint.com/news/world/china-uses-tech-as-tool-of-repression-to-monitor-citizens-us-commission-11596931164736.html>.

<sup>83</sup> He Huifeng, “China’s social credit system shows its teeth, banning millions from taking flights, trains,” *South China Morning Post*, February 18, 2019, <https://www.scmp.com/economy/china-economy/article/2186606/chinas-socialcredit-system-shows-its-teeth-banning-millions>.

declining trajectory of their ties and increasing tensions over great power competition in the Indo-Pacific no longer makes a more hostile security landscape unthinkable. In the coming times, we may very well witness Washington's attempts to impose economic and trade sanctions on China, which could involve banking restrictions and blocked access to the global payment architecture under SWIFT. China is exceedingly reliant on the SWIFT system for overseas transactions, the majority of which are still conducted in US dollars. Beijing is likely concerned over its dependence on the dollar amid an uncertain geopolitical environment. US financial sanctions have previously proved to be devastating for the economies they were imposed upon; in Iran, US-imposed sanctions preventing banks from using SWIFT brought about an economic recession that considerably lessened its foreign purchasing power and forced Tehran to depreciate its currency.<sup>84</sup> China thus wants to immunize itself against such a scenario by internationalizing the RMB and reducing its dependence on the dollar.

In essence, Beijing hopes being first to the market with a digital yuan under a payment system supporting cross-border transactions will provide the yuan a pathway for global distribution and make it into a currency used for everyday transactions beyond China's borders.<sup>85</sup> In this context, the digital yuan could significantly challenge the US dollar's position as a reserve currency. As of Q3 of 2020, more than 60 percent of the world's total foreign reserves are in US dollars; by contrast, merely two percent are in Chinese RMB.<sup>86</sup> A digital yuan, however, has the potential to balance this number by creating an opportunity for increasing global circulation of the RMB,

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<sup>84</sup> Ibid.

<sup>85</sup> Eustance Huang, "China's new digital currency could encourage worldwide use of the yuan, says CEO," *CNBC*, September 12, 2019, <https://www.cnbc.com/2019/09/13/chinas-new-cryptocurrency-and-yuan-rmb-internationalization.html>.

<sup>86</sup> IMF Data: Access to Macroeconomic & Financial Data, "Currency Composition of Official Foreign Exchange Reserves," International Monetary Fund, March 31, 2021, <https://data.imf.org/?sk=E6A5F467-C14B-4AA8-9F6D-5A09EC4E62A4> (accessed April 15, 2021).



thereby making it more attractive as a store of value and reserve currency.<sup>87</sup> Notably, the internationalization of the RMB has been one of the foremost concerns for China in the post-global financial crisis era.<sup>88</sup>

The PBoC also released a *RMB Internationalization White Paper* in 2019 that highlighted the increasing acceptance of the RMB in the global markets.<sup>89</sup> The 2019 White Paper followed the 2015 and 2016 White Papers on RMB Internationalization that was released after the RMB's official inclusion in the Special Drawing Rights (SDR) basket.<sup>90</sup> China's push to internationalize its currency has been a prominent part of its national strategy for well over a decade now. As of 1993, China's main objective was to achieve "full currency convertibility by the end of the century".<sup>91</sup> This took a backseat in Chinese policy discourse and debates as it was believed to be contingent on a full liberalization of the country's capital account (that is, an account of all the inflow and outflow of funds of the state's economy).<sup>92</sup> In fact, currency convertibility became a largely secondary commitment following the

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<sup>87</sup> See [translated]: "Central Bank Digital Currency Q&A Manual: An article to take you to understand CBDC and Libra," Zero One Think Tank, August 5, 2019, <https://bit.ly/3egp2Ja>.

<sup>88</sup> Michael A. Peters, Benjamin Green & Haiyang (Melissa) Yang, "Cryptocurrencies, China's sovereign digital currency (DCEP) and the US dollar system," *Educational Philosophy and Theory*, 2020, DOI: 10.1080/00131857.2020.1801146.

<sup>89</sup> The RMB Internationalization White Paper is available at: Bank of China, "央行与新加坡金管局续签双边本币互换协议 [Translated] RMB Internationalization White Paper," Original Force Document Network, 2019, <https://max.book118.com/html/2020/0420/5313132112002241.shtm>.

<sup>90</sup> Bank of China, "White Paper on RMB Internationalization: RMB Along the "Belt and Road"," 2015, <https://pic.bankofchina.com/bocappd/rareport/201511/P020151109382840816047.pdf>; Bank of China, "2016 White Paper on RMB Internationalization: RMB Officially Included in the SDR Currency Basket," 2016, <https://pic.bankofchina.com/bocappd/rareport/201612/P020161219347835981524.pdf>.

<sup>91</sup> Pieter Bottelier and Uri Dadush, "The Future of the Renminbi as an International Currency," Carnegie Endowment for International Peace, June 2, 2011, <https://carnegieendowment.org/2011/06/02/future-of-renminbi-as-international-currency#2>.

<sup>92</sup> Haihong Gao and Yongding Yu, "Internationalisation of the Renminbi," *BIS Papers* No. 61, Bank for International Settlements, 2011, <https://www.bis.org/publ/bppdf/bispap61i.pdf>. For a definition of 'capital account', see Troy Segal, "Understanding Capital and Financial Accounts in the Balance of Payments," *Investopedia*, March 6, 2021, <https://www.investopedia.com/investing/understanding-capital-and-financial-accounts-balance-of-payments/>.

outbreak of the 1997 Asian Financial Crisis (AFC); the Chinese government's main priority became the stabilization of the RMB, which naturally brought a pause to any internationalization ambitions.<sup>93</sup> At the same time, for many Asian countries, the AFC prompted a rethink of their US dollar peg when a majority of their trade was intraregional.<sup>94</sup>

Since 2007, however, Beijing has undertaken several steps and reforms that exemplify Beijing's thrust towards its RMB internationalization drive. In June 2007, the first RMB-denominated bonds were released in Hong Kong. These were followed by the establishment of an RMB clearing center in Hong Kong in 2009, which had the authority to settle trades in RMB with the Association of Southeast Asian Nations (ASEAN) alongside Hong Kong and Macau; this was expanded to include trades across the world since 2010.<sup>95</sup> The setting up of the Shanghai Pilot Free Trade Zone and the introduction of the Belt and Road Initiative (BRI), both under Xi Jinping in 2013, marked further breakthroughs in RMB internationalization. The foundation of an offshore RMB clearing center in London, the launch of the Shanghai-Hong Kong Stock Connect, and the RMB's addition to the SDR basket by the IMF further laid the groundwork for the RMB's wider international usage.<sup>96</sup> At the same time, Beijing has also engaged in a growing number of bilateral currency swap agreements, worth RMB 3.67

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<sup>93</sup> Hyo-Sung Park, "China's RMB Internationalization Strategy: Its Rationales, State of Play, Prospects and Implications," *M-RCBG Associate Working Paper Series* No. 63, Harvard Kennedy School, August 2016, [https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/park\\_final.pdf](https://www.hks.harvard.edu/sites/default/files/centers/mrcbg/files/park_final.pdf).

<sup>94</sup> Eiji Ogawa, "Should East Asian countries return to a dollar peg again?" in *East Asian Trade and Financial Integration: New Issues*, eds. P. Drysdale and K. Ishigaki (Canberra: Asia Pacific Press, 2002), 159–184.

<sup>95</sup> For a discussion on how China's offshore RMB centers have evolved, see "China's RMB Internationalization Strategy and Capital Account Liberalization," Chatham House, <https://www.chathamhouse.org/about-us/our-departments/global-economy-and-finance-programme/chinas-rmb-internationalization> (accessed April 15, 2021).

<sup>96</sup> Qingshan Zhang, "The internationalization of renminbi and its recent moves – CWG," International Bar Association, August 12, 2020, <https://www.ibanet.org/Article/NewDetail.aspx?ArticleUid=988e10b7-4205-46e0-95ea-e6cef58a5915>.

trillion, and with 41 countries between 2009 and 2019.<sup>97</sup> Furthermore, in January 2021, SWIFT and the PBoC entered a joint venture, with a particular focus on digital currency research,<sup>98</sup> this further indicates Beijing's active exploration of the DCEP's internationalization.

These measures have undoubtedly resulted in substantial success: the 2019 *White Paper* reported the use of RMB in cross-border transactions grew by 500,000 percent from 2009 to 2019, amounting to nearly RMB 20 trillion.<sup>99</sup> It further found that around 71 percent of enterprises along the BRI corridors were interested in using the RMB as a settlement currency for their cross-border transactions. The DCEP's digital nature can help such companies seek funding in yuan and adopt the RMB as their cross-border transfer settlement currency more quickly. The DCEP, therefore, comes as the next major milestone within this RMB internationalization goal, giving China a prospect of hedging against the US dollar's hegemony within the international financial system.<sup>100</sup>

Such an opportunity to internationalize the RMB could help China bypass, if not surpass, the Western banking system. On a bigger scale, it could be critical in furthering Beijing's efforts to expand China's trade counterparty role by making the RMB a convenient and ideal currency to conduct cross-border payment settlements. The BRI offers China a perfect mechanism for accelerating the international use of a digital yuan. The six major corridors

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<sup>97</sup> Securities Daily, "The Central Bank and the Monetary Authority of Singapore renew the bilateral local currency swap," *Xinhua*, May 14, 2019, [http://www.xinhuanet.com/money/2019-05/14/c\\_1124490199.htm](http://www.xinhuanet.com/money/2019-05/14/c_1124490199.htm) (accessed April 2, 2021); CP Chandrasekhar and Jayati Ghosh, "Bilateral swaps' role in China's rising global footprint," *Hindu Businessline*, December 14, 2020, <https://www.thehindubusinessline.com/opinion/bilateral-swaps-role-in-chinas-rising-global-footprint/article33330279.ece>.

<sup>98</sup> Reuters Staff, "SWIFT sets up JV with China's central bank," *Reuters*, February 4, 2021, <https://www.reuters.com/article/china-swift-pboc-idUSL1N2KA0AK>.

<sup>99</sup> Bank of China, "央行与新加坡金管局续签双边本币互换协议 [Translated] RMB Internationalization *White Paper*"; Michael A. Peters, Benjamin Green & Haiyang (Melissa) Yang, "Cryptocurrencies, China's sovereign digital currency (DCEP) and the US dollar system."

<sup>100</sup> *Ibid.*

of the BRI project, under the Silk Road Economic Belt and the Maritime Silk Road, represent lines along which China is looking to export its soft power influence. They form a network of global supply chains with China at the center of the nexus. In fact, foreign financial aid under the BRI projects lies at the front of China's diplomacy and has become one of Beijing's signature foreign policy strategies designed to further its power ambitions in the region and globally. To this end, the BRI offers a tailor-made platform to incorporate the DCEP in cross-border infrastructure projects between Chinese corporations and BRI nations. Although Beijing is already thrusting on increased fiat RMB use with Pakistan and Turkey, the DCEP can offer a more convenient and possibly cheaper (depending on transaction costs involved) alternative. In the long term, China's CBDC could provide Beijing with an edge in a global financial system dominated by the US dollar.<sup>101</sup> However, considering the excessive technological control that the PBoC will have to track transactions, the digital yuan could potentially allow the Chinese government an avenue to extend its surveillance and control beyond China. In other words, the DCEP will help China rewire the financial networks in multiple countries (especially BRI participant nations) through the vast amount of digital assets that it already controls.

### **Global Governance on CBDCs**

The internationalization of the RMB via the DCEP is largely a long-term goal and one that remains a challenge considering the dollar's continued dominance over the international monetary system, influencing the global governance architecture of CBDCs. As a revisionist state, looking to change the status-quo vis-à-vis the liberal institutional global order and forge a Sino-centric order that is characterized by socialism with Chinese characteristics, Beijing has long sought to remake Bretton Woods's

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<sup>101</sup> China Power Team, "How Will a Central Bank Digital Currency Advance China's Interests?."

institutions. Although China has been an active member of postwar multilateral organizations, such as the World Trade Organization (WTO), its engagement is driven more by a strategic and pragmatic approach to leverage concessions and gain an advantage, rather than a desire to embrace and integrate into global governance institutions. Simultaneously, China has employed its own emerging brand of institutional statecraft to create new multilateral organizations and frameworks – most prominently the Asian Infrastructure Investment Bank (AIIB), the New Development Bank (NDB), and the recently concluded Regional Comprehensive Economic Partnership (RCEP) – as harbingers of China’s “counter-hegemonic” purposes.<sup>102</sup>

Now, being first to the market with a CBDC will give China a first-mover competitive advantage that will critically allow it to dictate the international rules and norms in the domain. As of yet, crucial questions pertaining to legal, technological, international treaties, fiscal and business practices remain unanswered. This presents a major barrier in the shift from fiat to cryptocurrencies, which cannot be solved through a mere transition from the legacy financial world to the crypto world but must be solved through the creation of an entirely new CBDC-centered system that is built in parallel to the existing fiat one. Here, China will have a distinct advantage in laying the foundations of the new system designed through the influence of China’s socialist market economy with Chinese characteristics. In fact, in an indication of its progress in CBDC governance, China has already passed a draft law<sup>103</sup> setting up a legal framework for the DCEP, which has already

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<sup>102</sup> John G. Ikenberry and Darren J. Lim, *China’s Emerging Institutional Statecraft: The Asian Infrastructure Investment Bank and the prospects for counter-hegemony*, Project on International Order and Strategy (Washington DC: Brookings Institution, April 2017), <https://www.brookings.edu/wp-content/uploads/2017/04/chinas-emerging-institutional-statecraft.pdf>.

<sup>103</sup> “中国人民银行关于《中华人民共和国中国人民银行法（修订草案征求意见稿）》公开征求意见的通知 [Translated] Notice of the People’s Bank of China on Public Consultation on the “Law of the People’s Republic of China on the People’s Bank of China (Revised Draft),” People’s Bank of China, October 23, 2020, <http://www.pbc.gov.cn/goutongjiaoliu/113456/113469/4115077/index.html>.

undergone a public consultation process and will likely be passed as law in the near future. Critically, the draft law's Article 19 provides a legal basis for the DCEP's establishment as legal tender, thereby legitimizing and preparing it for broader release.<sup>104</sup> Article 22 of the law also places the PBoC in firm control of the digital yuan, banning any competitors (like Libra) from introducing stablecoin backed by the RMB. At the same time, this clause will also effectively limit cryptocurrency token (like Bitcoin and Ethereum) transactions in RMB, potentially bringing down their values. Although the law's interpretation is not yet entirely clear, it does provide for stiff penalties – including criminal prosecution and jail time – for violations such as the use of any challenger coins.<sup>105</sup>

China already has a vast e-commerce and mobile payments market; the introduction of a legal framework for the DCEP adds another building block on which its DCEP will be built. It can not only help China extend its digital and fiscal silk road but also help it make inroads in the global governance domain through multilateral platforms. In fact, as US-China technological competition heats up, China has actively sought to write the international rules for advanced tech (like 5G, the internet of things, robotics, and artificial intelligence, to name a few), intellectual property protections, data regulation, and cyber norms. For instance, China was the first to introduce draft industrial standards for next-gen technologies under its *China*

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<sup>104</sup> Frank Tang, "China moves to legalise digital yuan and ban competitors with new draft law," *South China Morning Post*, October 27, 2020, <https://www.scmp.com/economy/china-economy/article/3107119/china-moves-legalise-digital-yuan-and-ban-competitors-new>.

<sup>105</sup> Vipin Bharathan, "People's Bank of China Draft Law Provides A Legal Basis for Digital Currency Electronic Payments (DC/EP) And Bans All Stablecoins Backed By Renminbi Reserves," *Forbes*, October 24, 2020, <https://www.forbes.com/sites/vipinbharathan/2020/10/24/peoples-bank-of-china-draft-law-provides-a-legal-basis-for-digital-currency-electronic-payments-dcep-and-bans-all-stablecoins-backed-by-renminbi-reserves/?sh=2ce258ed4c0d>.

*Standards 2035* blueprint.<sup>106</sup> While Beijing's values in these areas are markedly different from the Western liberal powers of the US and Europe, it has vied for dominance in the tech race so as to promote a 'China model' of techno-authoritarianism in global norms.<sup>107</sup> Beijing's dominance in the CBDC sector could serve to further Chinese influence over the global economic and political arrangements on the sector. Yet, China's shaping of cyberspace – and CBDC sector – would hardly be open, transparent, or free, and therefore staunchly against the liberal democratic values that characterize like-minded partners such as the US, Europe, India, Japan, and Australia. In other words, it could very well undermine the human right to privacy as Chinese regulations serve as diplomatic tools to extend Beijing's reach and capabilities.

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<sup>106</sup> Alexander Chipman Koty, "What is the China Standards 2035 Plan and How Will it Impact Emerging Industries?," *China Briefing*, July 2, 2020, <https://www.china-briefing.com/news/what-is-china-standards-2035-plan-how-will-it-impact-emerging-technologies-what-is-link-made-in-china-2025-goals/>; Arjun Kharpal, "Power is 'up for grabs': Behind China's plan to shape the future of next-generation tech," *CNBC*, April 26, 2020, <https://www.cnbc.com/2020/04/27/china-standards-2035-explained.html>. Also see Sofia Baruzzi, "China's Industrial Standards for the Internet of Things: What the Draft Guidelines Say," *China Briefing*, February 18, 2021, <https://www.china-briefing.com/news/china-internet-of-things-industrial-standards-draft-guidelines-released-5-major-standards/>.

<sup>107</sup> Séverine Arsène, "Global Internet Governance in Chinese Academic Literature," *China Perspectives*, no. 2, (2016): 25-35, <https://doi.org/10.4000/chinaperspectives.6973>; Adam Segal, "China's Vision for Cyber Sovereignty and the Global Governance of Cyberspace," *The National Bureau of Asian Research Special Report*, no. 87, August 25, 2020, <https://www.nbr.org/publication/chinas-vision-for-cyber-sovereignty-and-the-global-governance-of-cyberspace/>.

## Conclusion and Recommendations

China's DCEP thus has critical policy, political, human rights, technological, and financial implications for the region and the world. While most other nations have chosen to prioritize a well-researched and well-established CBDC program over being first to the market, China has chosen to expedite its efforts to come out ahead in the ongoing cryptocurrency craze. Whether China's experiment will be a success remains to be seen, but its potential implications are extremely concerning. The DCEP will likely allow the CCP to "strengthen its digital authoritarianism domestically and export its influence and standard-setting abroad".<sup>108</sup> Therefore, accounting for China's progress, it will be critical for balancing powers like the US, Japan, Australia, India, and Europe to take a more proactive stance in the field in order to ensure a liberal influence over global technological and financial norms and protect their own national interests.

Firstly, the balancing powers must conduct in-depth studies of the DCEP's technological framework to understand the cyber risks that it could potentially pose on a global platform. At the same time, they must also consider the possibility of the DCEP's utilization as a surveillance currency domestically and, by this measure, its human rights implications. For such assessments to occur, the US and the other powers must critically call for the DCEP to be more transparent and open in how it collects and manages user data. Simultaneously, they must treat the development of their own CBDCs as an urgent priority if they want any hope of competing with China. Here,

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<sup>108</sup> Yaya J. Fanusie and Emily Jin, "China's Digital Currency: Adding Financial Data to Digital Authoritarianism."



India remains far behind in the race and is only just beginning to seriously consider a Reserve Bank of India (RBI) issued cryptocurrency. Australia too has no immediate plans to introduce a CBDC, although the Reserve Bank of Australia (RBA) is engaged in active research vis-à-vis an electronic Australian dollar built on an Ethereum network. Japan, the UK and Europe are taking a collaborative approach, but this must be further hastened.

The US must also treat the development of a digital dollar as part of its strategic security approach in the coming years. However, even as the US, Europe, and Indo-Pacific powers develop their CBDCs, they must take steps to counter China's lead in fintech innovation and global CBDC norms and standards setting. Rather than continuing their work independently, they must explore collaborative ventures that allow for the exchange of research and progress achieved. This could evolve through interactions between the respective central banks as well as scholarly exchanges at an institutional (university and think tank) level in the technological, economic, and legal realms. Such synergy can thereafter translate to a coordinated approach to set forth their own framework of international CBDC standards that offers an alternative to China's digital authoritarian model. Essentially, as China expands the DCEP to garner further domestic and global economic, political, and strategic clout, it will be crucial for balancing regional and global powers to come together and craft a response that protects liberal values in the international monetary and technological system.

## **Author Bio**

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