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2024-08-27
Australian Centre on China in the World
http://hdl.handle.net/10138/585021
Taylor, M 2024, 'The Digital Yuan : Purpose, Progress, and Politics', Made in China, vol. 9, no. 1, pp. 68-73. https://doi.org/10.22459/MIC.09.01.2024.08

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This is a Version of record of the research article titled *The Digital Yuan: Purpose, Progress, and Politics* and published by the ANU Press in the journal Made in China Journal, Volume 9, Issue 1, 2024, pp. 68-73, online ISSN 2206-9119, available online at http://doi.org/10.22459/MIC.09.01.2024.08.

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This work has received funding from the European Union's Horizon Europe coordination and support action 101079069 — EUVIP — HORIZON-WIDERA-2021-ACCESS-03.

Funded by the European Union

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Digital Yuan, Source: AsiaTimes (CC).

The Digital Yuan: Purpose, Progress, and Politics

Monique TAYLOR

This essay explores the purpose, progress, and strategic political motivations driving China's development of the digital yuan. This central bank digital currency is not merely a technological advancement or modernisation of a fiat currency, it also serves as a key instrument in the agenda of the People's Bank of China to consolidate monetary authority. The essay analyses the development of the digital yuan in the context of China's broader economic and political strategies, including enhancing financial inclusion, centralising the nation's payment ecosystem—currently dominated by private fintech players—and potentially challenging the US dollar's global dominance. It also assesses its possible impacts on international trade, while addressing the challenges it faces in gaining global acceptance.

Millions of users in China now carry the e-CNY in their digital wallets, a digital version of China's fiat currency, the renminbi, which is colloquially known as the digital yuan. When accessing their balances through the e-CNY app, they are greeted with a portrait of Mao Zedong—the same one displayed on Chinese banknotes. This conveys a paradox: a pioneering digital currency, at the forefront of fintech innovation and representing the future of money, while remaining firmly under the watchful eye of the Chinese Communist Party (CCP).

Despite relying on distributed ledger technology (DLT) and cryptographic methods, the digital yuan diverges sharply from its forebear, cryptocurrency, and was established partly as a countermeasure to it. Cryptocurrencies such as Bitcoin and Ethereum are underpinned by an anarcho-libertarian anti-government ethos and utilise blockchain technology to record all transactions on a peer-to-peer decentralised ledger. While supposedly safeguarding anonymity, this also presents new legal and regulatory challenges for traditional financial systems and central banks. Consequently, central banks the world over have been exploring Central Bank Digital Currency (CBDC) as a means of modernising their fiat money systems, each with differing norms around

regulatory oversight and user privacy. As of 2023, more than 20 countries, including Japan, Australia, and India, have initiated pilot programs for CBDCs. China was the first to implement its digital currency and remains the frontrunner in terms of its development and execution, with the largest CBDC pilot in the world in terms of the amount of currency in circulation and number of users. Now edging towards an official national launch, the digital yuan's design reflects the Chinese State's broader economic and political objectives.

Developing the Digital Yuan

China's central bank, the People's Bank of China (PBC), a non-independent institution guided by the State Council—that is, the Chinese Government—first discussed the creation of a digital fiat currency or Digital Currency Electronic Payment (DCEP) in 2014, and in 2016 established the Digital Currency Research Institute, which developed the first-generation prototype of digital fiat currency (PBC 2021: 1). The following year the PBC started collaborating with commercial banks, internet companies, and telecommunications players to develop and test the e-CNY (Bansal and Singh 2021: 4). Pilot programs for the digital yuan were rolled out in 2020 in several cities within 'representative regions', including Shenzhen, Suzhou, Xiong'an, and Chengdu (PBC 2021: 13). This places China ahead of other major economies such as Japan, which launched its CBDC pilot program in 2023 (Reuters 2023). Now operational across 23 cities in China mainly for domestic retail transactions, the digital yuan was also trialled at the 2022 Beijing Winter Olympics (Zhang 2022). In addition, it is being used to pay utility bills and the salaries of public sector and state-owned enterprise employees in some Chinese cities (Kawate 2023; Shen 2023). The digital yuan's scope of use continues to expand, with integration into wholesale banking transactions and cross-border payments constituting the next phase of its development (Greene 2023; PBC 2021: 5). This incremental implementation process is consistent with China's approach to economic policymaking, which is based on local-level experimentation, with successful experiments and models eventually being scaled up to the national level.

The digital yuan is issued by the PBC and serves as statutory digital cash in circulation, or 'M0' (the monetary base) in central bank parlance. The designation M0 implies direct liability from the PBC, meaning the currency is backed by sovereign credit, which confers on it risk-free status (PBC 2021: 3). Hence, the digital yuan offers an additional payment method for daily transactions in China alongside physical cash and electronic payment platforms, such as Alibaba's Alipay and Tencent's WeChat Pay. It operates on a two-tier system, where the PBC issues the currency to commercial banks, which in turn distribute it to users (PBC 2021: 3). There are currently seven commercial banks that provide e-CNY—the Industrial and Commercial Bank of China, Agricultural Bank of China, Bank of China, China Construction Bank, Bank of Communications, Postal Savings Bank of China, and China Merchants Bank—and two online banks, WeBank (WeChat Pay) and MyBank (Alipay). Users can access digital yuan through commercial bank apps or the PBC's e-CNY app. There are significant differences between these apps and other payment platforms. Notably, the digital yuan operates within a state-controlled digital currency system, which contrasts with the privately managed infrastructure of Alipay and WeChat Pay. This distinction impacts how transaction data are handled and stored, with the digital yuan offering a higher level of government oversight and potentially different data privacy implications. There may also be differences in security and regulatory compliance as the digital yuan is more directly linked to the traditional banking system than are fintech companies.

Unlike cryptocurrencies, the digital yuan adopts 'controllable anonymity' or anonymity with oversight, providing transaction privacy from commercial players and between users while maintaining transparency for regulatory authorities (PBC 2021: 7). The technical framework combines various technologies to enhance functionality and scalability (the specifics of this have not been fully disclosed by the PBC), including but not limited to blockchain, and is embedded with rigorous security and cryptographic safeguards. The digital yuan also supports offline payments, including dual offline transactions, via near-field communication technology, which is especially beneficial for remote communities that lack internet access (Kshetri 2023: 104). Since it is still evolving through its pilot phases, the technical

capabilities of the currency continue to evolve, along with its legal and regulatory frameworks.

Beyond the basic imperative of adapting fiat money to the digital age, the drive to develop the digital yuan is also closely connected to Beijing's economic, technological, and geopolitical ambitions. The digital yuan would allow the Chinese Government to exert greater control over domestic money supply and circulation, with a view to minimising fraud, money laundering, and corruption, and offering a safer and more regulated digital payment alternative to cryptocurrencies. The latter were limited throughout the 2010s, culminating in a ban on Bitcoin mining and all cryptocurrency-related transactions in 2021, as these speculative assets were perceived as a threat to financial stability and government control of the financial system (PBC 2021: 2).

The digital yuan's centralised design enables government control over financial transaction data. In addition, big data is a powerful resource to possess when crafting economic policies and strategies. The PBC also sees the digital yuan as a tool for improving financial inclusion by making fiat money available to the unbanked population, especially by allowing for offline payments (PBC 2021: 4). Importantly, the digital yuan injects a government-backed alternative into an electronic payments market that is currently dominated by two private fintech giants, Alipay and WeChat Pay. The digital yuan operates under the PBC's purview, which not only strengthens regulatory oversight but also reduces the monopolistic hold of Alipay and WeChat Pay on consumer data and financial transactions. As users migrate to the digital yuan, the government can more effectively track and manage the flow of digital money in the economy, ensuring compliance with national financial policies and regulations. Over time the digital yuan could potentially displace the need for third-party payment services and directly connect consumers with the PBC's digital currency. This would result in a significant shift in the balance of power in China's digital financial sector, moving from private fintech giants to a state-controlled currency system.

There is also an international dimension to China's digital currency aspirations. The Chinese authorities' pioneering role in CBDCs aligns with their broader goal to become a 'world technology leader' in future or next-generation technologies, providing them with a first-mover advantage, especially when it comes to setting global standards for digital fiat currency relative to other major economies that are considering CBDCs with far longer implementation processes. Due to its efficiency and technological innovation, there is potential for the digital yuan to be widely adopted for cross-border transactions, which could enhance China's economic power and its standing in the international financial system, and potentially challenge the dominance of the US dollar.

In particular, the digital yuan could provide an alternative to the US dollar in regions where China has substantial economic influence. For example, the promotion of the currency as the preferred medium for trade and financial transactions for projects linked to the Belt and Road Initiative (BRI) would strengthen China's economic ties with partner countries and enhance its influence over their monetary systems, while at the same time reducing dependence on the US dollar and Western international payment systems such as SWIFT (Kshetri 2023: 95). Establishing the digital yuan as a viable alternative to the US dollar could also reduce the Chinese economy's vulnerability to US monetary policy (such as interest rate adjustments, which influence dollar-denominated trade and investments) and financial sanctions (The Economist 2022).

Domestic and International Adoption of the Digital Yuan

According to the PBC, 261 million people had set up an e-CNY wallet by the end of 2021. Transactions using the digital yuan reached CNY1.8 trillion (US$250 billion), with a total of e-CNY16.5 billion (US$2.25 billion) in circulation as of the end of June 2023 (Wee 2023). Digital yuan in circulation accounted for only 0.16 per cent of China's M0 money supply—a small balance with many transactions, which means that the 'velocity is high and more efficient' (Wee 2023). Yet, despite circulating through the economy quickly, thereby contributing to economic activity efficiently, the currency still accounts for only a tiny fraction of the total M0 supply. Uptake of the digital yuan has been slow, with the main obstacle being that the Chinese population is already accustomed to using private electronic payment platforms such as Alipay and WeChat Pay (Kawate and Maruyama

2022; Orcutt 2023). Although the currency introduces functionalities such as offline transaction capabilities and zero fees on digital yuan payments for retailers, the public has not yet been convinced to change their payment habits.

The relationship between the domestic fintech players and the PBC is characterised not only by competition but also by cooperation. The PBC is collaborating with Alibaba's and Tencent's fintech businesses to distribute the digital yuan. For instance, Alibaba's MyBank and Tencent's WeBank have helped to make the currency available to users by integrating digital yuan wallets and transactions into their platforms, creating a synergistic pathway for its dissemination and integration into the financial ecosystem. To give another example, the e-CNY app integrated a popular 'red packet' feature, facilitating cash gifts via WeChat and Alipay, leveraging their substantial user bases to promote the digital yuan during the Lunar New Year holiday in 2023 (Shen and Zuo 2023; Feng 2022). For the fintech companies, their involvement in the digital yuan's rollout is strategic, allowing them to adapt to changes proactively rather than simply react to disruption, thus ensuring that their platforms are interoperable with the new currency. Moreover, given the Party-State–centric nature of China's political and regulatory systems, which even requires private firms to align themselves closely with national interests and priorities, it is also likely that significant government pressure is being placed on these companies to support the development and dissemination of the digital yuan.

The PBC is pivoting its marketing strategy for the digital yuan towards institutional and wholesale transactions as a part of the next stage of the digital yuan's rollout. Although Singapore's DBS Bank already allows its corporate clients in mainland China to collect payments from their customers in digital yuan, Western financial institutions that have expressed interest in using the digital yuan, such as France's BNP Paribas SA, face scrutiny from their home countries. Such wariness reflects geopolitical concerns over support for a Chinese digital currency at a time of fraught US–China relations and when moves towards de-dollarisation are gaining momentum in some countries (DBS 2023; Choudhury et al. 2023). This leads to another set of opportunities and challenges for the digital yuan in cross-border payments.

It makes sense for China to build cross-border payment systems that use the digital yuan as this reduces the country's reliance on the US dollar. These methods are also easier, cheaper, and more efficient for its trading partners to use, as well as less vulnerable to sanctions implemented by the United States for geopolitical purposes (The Economist 2022). Such a system not only aligns with China's two-decades-long aspiration to internationalise the yuan, but also positions the digital yuan favourably for adoption among BRI countries where interconnected trade, investment, and political ties with China are strong.

However, there are significant challenges to the global adoption of the digital yuan for cross-border payments. First, there is the problem of insufficient levels of trust and confidence in the digital yuan—a situation compounded by the fact that, by virtue of its design and the PBC being not an independent central bank, the currency is subject to Beijing's political and regulatory machinations. Second, China maintains a closed capital account, which means that companies, banks, and individuals cannot move money in or out of the country, except in accordance with strict rules. These stringent capital controls are designed to curtail speculative activities and prevent capital flight, but concurrently restrict the yuan's global liquidity. Presumably, these restrictions will also apply to the digital yuan going forward, and the limited availability of the currency has the potential to create conversion challenges—that is, difficulties converting large sums of money into or out of it. This constrained supply could also impact the currency's exchange rate, leading to larger fluctuations in response to demand shifts, causing instability in global markets where the digital yuan will play a key role.

Successful currency internationalisation hinges upon trust in the currency's efficacy as a secure and reliable medium of exchange, store of value, and unit of account. This trust is tethered to confidence in the political and economic stability of the issuing country, alongside the robustness of its financial markets and the integrity of its legal and regulatory frameworks. In addition to relative economic stability and transparent economic policymaking, the United States boasts a governance system of checks and balances; deep, liquid, and transparent financial markets; and well-established legal and regulatory frameworks—all of which translate into trust in the dollar as the global reserve currency, despite recent

critiques of America's economic stewardship. China's political and economic system, on the other hand, is state-driven rather than market-driven, lacks transparency in policymaking, and is characterised by closely intertwined relationships between regulatory bodies and the CCP. Financial markets in China, while substantial and growing, are relatively shallow and illiquid compared with more mature markets such as those in Western Europe and North America (Cruz et al. 2014).

Integral to a currency achieving reserve status is the independence of its issuing country's central bank in setting monetary policy. Central bank independence is a prerequisite for ensuring currency stability since it allows the central bank to make decisions based on economic indicators rather than political pressures. The lack of PBC independence from the CCP is a significant impediment to the broad acceptance of the digital yuan as a basis for international settlements and currency reserves. Furthermore, given China's authoritarian governance model, the digital yuan faces a formidable challenge in acquiring global trust due to concerns about Beijing's political influence over, and potential interference in, the way it is organised. In addition, the overlay of growing geopolitical tensions between the US and its allies and China, especially since Russia's invasion of Ukraine, present major challenges, and some opportunities, for the digital yuan at the global level. Geopolitical tensions amplify the reservations of US allies and countries that favour the status quo about the adoption of the digital yuan for cross-border transactions. These countries are likely to avoid becoming excessively financially intertwined with China amid its increasing conflict with the West. On the other hand, geopolitical rifts provide openings for the digital yuan to serve as an alternative settlement currency for countries seeking to minimise their reliance on the US dollar, especially those currently under or fearing US sanctions.

The most likely catalyst for the internationalisation of the digital yuan is the BRI. The currency could be adopted for transactions within BRI projects, especially in Asia and Africa, due to the direct involvement of Chinese companies and banks. Furthermore, since the BRI encourages connectivity and cooperation among participating countries, it could foster an environment that uses the digital yuan as the shared transactional currency. If the digital yuan is adopted by BRI countries and those that are economically, politically, or strategically aligned with China or simply want to reduce their reliance on the US dollar for whatever reason, this could result in a bifurcated international financial system in which one side is led by the US dollar and the other by the digital yuan. This would further intensify strategic competition between China and the United States and would also be a suboptimal development as it would create inefficiencies in global financial systems, disrupting trade and investment flows, and potentially fostering currency instability. While there are challenges to its uptake at home and adoption abroad, over the next decade it is possible that the digital yuan will gain some traction on both fronts given Beijing's resolve and concerted efforts to promote its usage.

Controllable Anonymity

By virtue of being digital and issued by central banks, CBDCs could potentially allow governments to trace and monitor all transactions. Striking the appropriate balance between user privacy and regulatory oversight and compliance is a core concern for digital currencies globally. The various CBDC design and implementation models that countries adopt will reflect their respective regulatory and legal environments, user expectations, and ideological perspectives on privacy and anonymity. The PBC employs the term 'controllable anonymity' (可控匿名) or 'managed anonymity' (in some translations) to articulate a digital currency model in which users' identities are protected and kept anonymous to a degree, while remaining accessible for tracing by the central bank or law enforcement when mandated (PBC 2021; MacKinnon 2022). If the digital yuan were to completely replace physical cash in China, one of the most significant consequences would be the capability of the PBC to monitor, trace, and block all transactions: 'Such a capacity would make financial crimes, such as money laundering, tax evasion, financing terrorism, and the purchasing of illicit goods, far easier to identify and prosecute' (Fullerton and Morgan 2022: 16). Given that tax evasion and corruption are pressing challenges in China, the transaction record provided by the digital yuan could significantly streamline the identification and prosecution of financial crimes

(Fullerton and Morgan 2022: 16; Kshetri 2023: 93).

The PBC maintains that the degree of anonymity experienced by the digital yuan user is dependent on the transaction size: 'Small amounts are anonymous, big amounts are traceable' (小额匿名, 大额可溯) being the slogan for this (PBC 2021; MacKinnon 2022). However, since digital wallets are linked to phone numbers and phone numbers are linked to a government-issued ID, even small transactions are likely not anonymous in practice (Orcutt 2023; MacKinnon 2022). While China's data privacy laws ostensibly safeguard users' personal data from third-party access, they carve out exceptions for government agencies on the broad grounds of 'national security and the public interest' (NPC 2021; Taylor 2022: 75). Hence, controllable anonymity raises ethical concerns about the surveillance capacity that the digital yuan grants to the CCP for monitoring and tracking individuals through their financial transactions (Fanusie and Jin 2021: 11).

The digital yuan could eventually become a profoundly important part of China's authoritarian toolkit by providing the CCP with extensive insight into, and control over, the financial lives of individuals. Given the close relationship between regulatory bodies and the CCP, a lack of checks and balances in the Chinese political system, and the Party's track record of utilising surveillance technology for social control and repression, this is a valid concern. For example, when it comes to political dissidents and human rights activists, the PBC—again, a non-independent central bank that is required to enact the policies of the CCP—could suspend their e-CNY wallets (Keram 2021; Fanusie and Jin 2021: 11). From an international perspective, the digital yuan, with its controllable anonymity, is likely to be met with scepticism or resistance by some countries, particularly when it comes to cross-border transactions.

CBDCs and the Digital Yuan Moving Forward

CBDCs are gaining momentum globally, offering potential benefits such as enhanced financial inclusion, streamlined payment systems, and crime prevention and detection, while also emerging as a novel instrument for implementing monetary policy. However, there are significant risks associated with digital currencies—notably, cybersecurity threats and ethical dilemmas related to privacy and data protection. The digital yuan is ahead of the curve in navigating some of these opportunities and challenges, with outcomes that are strongly influenced by China's specific political, economic, and regulatory environments. Through their leading role in digital currency development, the Chinese authorities are helping to establish the foundational principles and architecture of future digital currencies. The results of their digital yuan rollout to date have been mixed, with slow growth in use for domestic retail transactions, mainly due to competition from the popular extant payment platforms, Alipay and WeChat Pay. This has encouraged the PBC to promote the digital yuan's use by engaging with these private fintech players to embed the digital yuan into their platforms.

The PBC has begun to strategically position the digital yuan to serve as a medium for cross-border foreign exchange payments, which would lower transaction costs and expedite settlement processes, and perhaps reduce China's reliance on the US dollar. China recently took part in a cross-border CBDC project called Multiple CBDC Bridge or mBridge, coordinated by the Bank for International Settlements, which included Thailand, the United Arab Emirates, and Hong Kong, to explore the possibilities and practicalities of CBDCs in facilitating efficient and secure wholesale international transactions (The Economist 2022). It is expected that mBridge will launch a viable product by mid 2024, offering an alternative to SWIFT (BIS 2022). Along with the potential for the digital yuan to be used as a preferred payment medium across BRI countries, this indicates an emerging trend towards payment fragmentation at the global level. However, given the extant trust deficits and liquidity concerns, it seems unlikely that the digital yuan could challenge the dominance of the US dollar in the global financial system any time soon. ■

This project has received funding from the European Union's Horizon Europe coordination and support action 101079069 — EUVIP — HORIZON-WIDERA-2021-ACCESS-03. The views and opinions expressed are, however, those of the author only and do not necessarily reflect those of the EU. Neither the EU nor the granting authority can be held responsible for them.

This text is taken from *Made in China Journal: Volume 9, Issue 1, 2024*, edited by Ivan Franceschini and Nicholas Loubere, published 2024 by ANU Press, The Australian National University, Canberra, Australia.

doi.org/10.22459/MIC.09.01.2024.08