

# The flipside of China's central bank digital currency

Dr Samantha Hoffman, John Garnaut, Kayla Izenman,  
Dr Matthew Johnson, Alexandra Pascoe, Fergus Ryan,  
and Elise Thomas



## About the authors

**Dr Samantha Hoffman** is a Senior Analyst working with the International Cyber Policy Centre at ASPI.

**John Garnaut** is a Senior Fellow at ASPI and the founder of China advisory firm Garnaut Global.

**Kayla Izenman** is a Research Analyst at the Royal United Services Institute's Centre for Financial Crime and Security Studies.

**Dr Matthew Johnson** is Research Director at Garnaut Global.

**Alexandra Pascoe** is a Research Intern working with the International Cyber Policy Centre at ASPI.

**Fergus Ryan** is an Analyst working with the International Cyber Policy Centre at ASPI.

**Elise Thomas** is a Researcher working with the International Cyber Policy Centre at ASPI.

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## ASPI

Tel +61 2 6270 5100

Email [enquiries@aspi.org.au](mailto:enquiries@aspi.org.au)

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Policy Brief  
Report No. 40/2020



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## What's the problem?

China's central bank digital currency, known as 'DC/EP' (Digital Currency / Electronic Payment), is rapidly progressing and, if successful, would have major international implications that have not yet been widely considered by policymakers. DC/EP would have ramifications for governments, investors, and companies, including China's own tech champions. It has the potential to create the world's largest centralised repository of financial transactions data and, while it may address some financial governance challenges, such as money laundering, it would also create unprecedented opportunities for surveillance. The initial impact of a successful DC/EP project will be primarily domestic, but little thought has been given to the longer term and global implications. DC/EP could be exported overseas via the digital wallets of Chinese tourists, students and businesspeople. Over time, it is not far-fetched to speculate that the Chinese party-state will incentivise or even mandate that foreigners also use DC/EP for certain categories of cross-border RMB transactions as a condition of accessing the Chinese marketplace. DC/EP intersects with China's ambitions to shape global technological and financial standards, for example, through the promotion of RMB internationalisation and fintech standards-setting along sites of the Belt and Road Initiative (BRI). In the long term, therefore, a successful DC/EP could greatly expand the party-state's ability to monitor and shape economic behaviour well beyond the borders of the People's Republic of China (PRC).

## What's the solution?

To date, policymakers in the democratic world have taken a whack-a-mole approach to the security challenges presented by Chinese technologies, if they have taken action at all. Those actions—such as those pertaining to Huawei and 5G over several years and TikTok and WeChat more recently—have been taken long after the relevant brands and technologies have entered the global marketplace and established dominant positions, and they don't solve root problems. The potential for DC/EP to be successful enough to have a disruptive impact on the global economic system might be far into the future, but it's important to consider what impact DC/EP could have on the global economy. Liberal democracies should act now to deepen analysis, develop standards and coordinate approaches to the risks inherent in DC/EP, including unconstrained data collection and the creation of powerful new tools for social control and economic coercion. By acting now to build a baseline analysis of the DC/EP project, decision-makers have an opportunity to anticipate challenges and build a consistent and coherent policy framework for managing them. Early efforts to establish and coordinate norms, rules and standards will reduce any subsequent need to resort to blunt and arbitrary measures that are economically, socially and diplomatically disruptive. Governments should also act to address existing vulnerabilities that DC/EP could exploit, for instance by introducing stricter laws on data privacy, by regulating the way that any entity can collect and use individuals' data and by improving due diligence aimed at mitigating data security risks.

# Executive summary

Globally, there's increasing interest in the development of central bank digital currencies, driven by a wide range of policy motivations. A survey published by the Bank for International Settlements in January 2020 found that, out of 66 central banks, 80% were engaged in the research, experimentation or development of a central bank digital currency.<sup>1</sup>

The PRC is a significant actor in this space, not least because it's years ahead of the world in research into the development of its central bank digital currency known as 'digital currency / electronic payment' or simply 'DC/EP' (see Figure 1). China's market-Leninist approach to innovation, personal data and industry policy makes it possible to conceive that over a billion Chinese consumers could be transacting in DC/EP before a central bank digital currency becomes mainstream in any other country.

At the technocratic level, DC/EP is designed to ensure visibility and traceability of transactions and establish greater control over China's financial system and capital accounts while displacing anonymising cryptocurrency alternatives that can't be readily controlled. Recent reporting has also indicated that the People's Bank of China (PBoC) aims for DC/EP to erode the dominance of Alipay and WeChat Pay in the digital payments space, levelling the playing field between the technology duopoly and commercial banks.

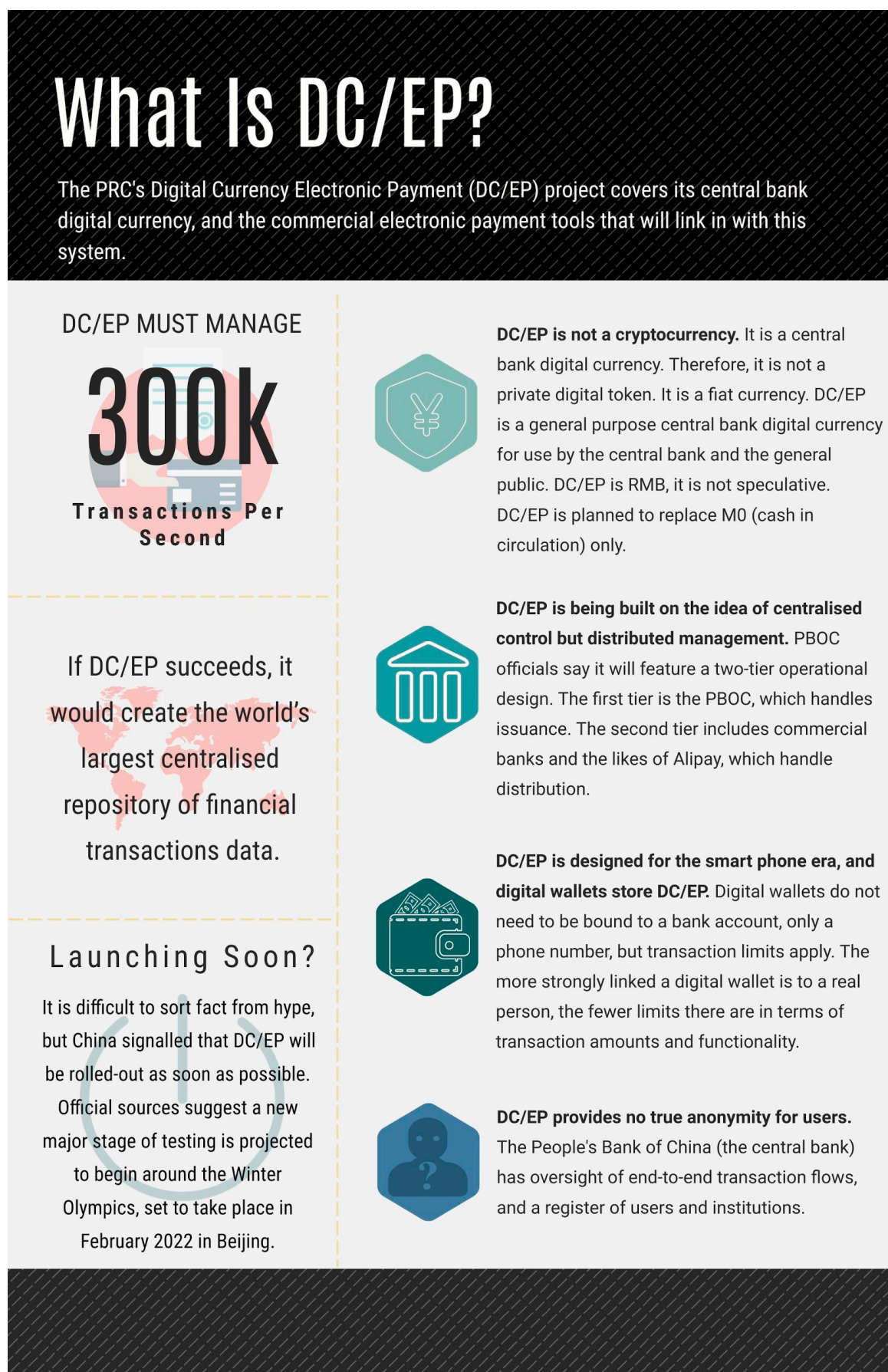
At the leadership level, DC/EP is being driven by the financial 'risk management' and 'supervision' imperatives of Chinese Communist Party (CCP) General Secretary Xi Jinping. DC/EP will offer no true anonymity, as the PBoC will have both complete visibility over the use of the currency, and the ability to confirm or deny any transaction. There are also no express limits on the information-access powers of the party-state's political security or law enforcement agencies, such as the Central Commission for Discipline Inspection (CCDI), which has a keen interest in the technology. While DC/EP could enable more effective financial supervision and risk management than any government might seek to embed in a central bank digital currency, the PRC's authoritarian system embeds political objectives within economic governance and otherwise reasonable objectives. Terms such as 'anti-terrorist financing', for instance, take on a different definition in the PRC that is directed at the CCP's political opponents.

DC/EP is being developed and implemented domestically first, but could allow China to shape global standards for emerging financial technologies. It also creates opportunities for the PRC to bypass the US-led financial system, which it perceives as a threat to its security interests, potentially disrupting existing systems of global financial governance. Through DC/EP, Beijing could over time move away from the SWIFT system and bypass international sanctions.

The purpose of this policy brief is to improve baseline understanding of DC/EP's structural mechanics and place the project in its political and bureaucratic context. The aim is to catalyse and contribute to an informed conversation about what the rollout of DC/EP may mean for China and for the world.

This policy brief is organised as follows: Section 1 is a general overview of digital currencies; Section 2 focuses on the policy drivers behind DC/EP; Section 3 examines DC/EP's architecture based on patents in order to assess the surveillance capabilities it would embed; Section 4 describes the institutional ecosystem behind DC/EP; Section 5 looks at how DC/EP would affect domestic digital payment systems Alipay and WeChat pay; and Section 6 looks at the implications DC/EP could have for global financial governance.

Figure 1: What is DC/EP?



Source: Created by ASPI

# 1. Two sides of the digital-coin: freedom and control

**Elise Thomas**

A fundamental question at the heart of all digital currencies is one of control, but the ways in which the dynamics of control and power play out differ between different types of digital currencies. There is a difference between private digital tokens (for example, cryptocurrencies) and central bank digital currencies (such as DC/EP). A primary goal behind many cryptocurrencies (such as bitcoin, a decentralised, anonymised blockchain-based digital token) is to evade the controls of any single actor, and in particular the control of governments.<sup>2</sup> In this sense, the technology behind cryptocurrencies was devised as a challenge to the power of states over the finances of individuals. For a centralised, state-controlled digital currency, however, the inverse may be true. A centrally controlled digital currency could enable a level of financial surveillance, economic power and societal control that was previously impossible. Such tools present tantalising opportunities for authoritarian states, financial institutions and corporations in the absence of effective controls.

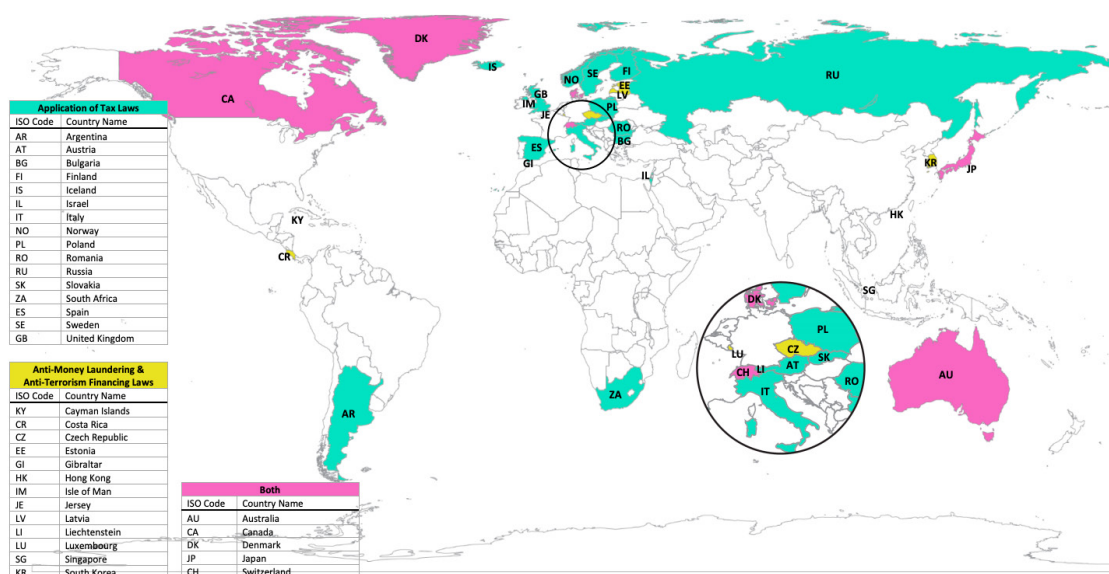
While many digital currency projects have been announced by both state and non-state actors, none has managed to attain a level of widespread adoption or to operate at scale as a medium of exchange.<sup>3</sup> In Venezuela, the aggressive support of the Maduro government hasn't been enough to make the nation's 'petro' currency a success.<sup>4</sup> Even the Facebook-backed Libra project—with its potential to leverage Facebook's 2.6 billion users—has changed course towards integrating fiat currency payments into its existing platforms.<sup>5</sup>

Despite the failure to date of any digital currency to achieve mass adoption or widespread use as a medium of exchange, many central banks around the world have demonstrated an interest in the concept of developing their own digital currency. Beyond the PRC, central banks in Canada, Sweden, the Bahamas, Japan and many other countries are at different stages of research on and development of central bank digital currencies.<sup>6</sup> They provide a range of policy justifications. The Bank of Canada, for instance, has said its research is contingency planning, and the bank doesn't currently plan to launch a central bank digital currency. It has said that, alongside a potential decline in the use of bank notes, a key reason to potentially launch a central bank digital currency is the widespread use of alternative digital currencies, probably by private-sector entities that could 'undermine competition in the economy as a whole because the company might use its dominant market position in one industry to control payments and competition in other industries'.<sup>7</sup>

Existing digital currencies have provoked mixed regulatory responses from states and financial institutions, and those responses have focused largely on the risks arising from cryptocurrencies (see Figure 2). There's a tendency to approach them as speculative assets or securities, rather than as actual currencies.



**Figure 2: Global regulatory framework for cryptocurrencies**



## Regulatory Framework for Cryptocurrencies:

### Application of Tax Laws, Anti-Money Laundering/Anti-Terrorism Financing Laws, or Both

Source: Created by the Law Library of Congress based on information provided in this report.

Source: Created by the Law Library of Congress based on information provided in the report, *Regulation of cryptocurrency around the world*, [online](#).

The goal of decentralised cryptocurrencies is to disperse power across the network and away from any one actor. Central bank digital currencies are fundamentally different. They are, as the Bank for International Settlements defines it, ‘a central bank liability, denominated in an existing unit of account, which serves both as a medium of exchange and a store of value’.<sup>8</sup> DC/EP, for example, is a form of legal tender that’s issued and backed by a liability of the PBoC. It introduces the digital renminbi, an encrypted string that holds details about that individual bill and additional fields for currency security and tracking.

In a world increasingly driven by access to data, that granular detail about how money moves through the economy, through specific companies and industries, and through the personal accounts of individuals presents both a promise and a threat. The promise is a vastly greater understanding of how the economy operates and the ability to respond where needed for the benefit of all. The threat is the ability to consolidate power in the hands of authorities, to enable persecution and surveillance and to reshape society as the authorities want it to be. Centralised digital currencies have the potential to turn financial surveillance into a powerful tool that could be wielded by authoritarian states inside, and potentially even outside, their own borders.

## 2. Drivers of the PRC's digital currency project

**John Garnaut and Dr Matthew Johnson**

At the leadership level, the DC/EP project has been driven by the financial 'risk management' and 'supervision' imperatives of CCP General Secretary Xi Jinping. At the technocratic level, it's designed to ensure the visibility of all financial flows and establish greater control over China's financial system and capital accounts while displacing anonymising cryptocurrency alternatives that can't be readily controlled. Statements from the CCP and financial insiders indicate that a key driver of DC/EP is the party's need for a financial architecture which exists outside the SWIFT network<sup>9</sup> and other US-dominated alternatives. The imperative of operating beyond the reach of US monitoring and law enforcement has come to the fore in recent months, as the US targets financial sanctions against CCP officials and entities in response to human rights and national security concerns. 'We must make preparations to break free from dollar hegemony and gradually realise the decoupling of the RMB from the dollar,' said Zhou Li, a former deputy minister of the International Liaison Department, in a June 2020 article.<sup>10</sup>

### What problems would DC/EP solve?

PBoC official statements and documents give no clear answer to the basic question: What is the policy problem that China's digital currency project is trying to solve? Nobody is claiming a consumer experience that's superior to the already impressive convenience accessible through Alipay and WeChat Pay. The answer, however, becomes clear in statements emanating from higher up in the CCP organisation chart, where CCP leaders and Politburo-level organs describe a need to use technology to enhance the party-state's visibility and control over the entire financial system. DC/EP is conceived as a supervision mechanism for preserving 'stability' and enhancing state control.

DC/EP fits within a vision of 'economic work' that Xi Jinping has developed over the past five years, which puts surveillance and supervision at the core. At the Central Economic Work Conference in December 2015, he said:

It is necessary to strengthen omni-directional supervision, standardise all types of financing behaviour, seize the opportunity to launch special programs for financial risks regulation ... strengthen risk monitoring and early warning, properly handle cases of risk, and resolutely adhere to the bottom line that systemic and regional financial risk will not occur.<sup>11</sup>

Xi's position that 'financial risk should not occur' is consistent with the party's state security strategy, which prioritises pre-empting risk before it can emerge. This is embedded in the party's state security work through the concept of 'financial security' (金融安全).<sup>12</sup> Financial security means stability on the party's terms. It calls for reforming the financial system by establishing supervision and control mechanisms, total financial governance, and strengthening China's financial power.

At the Politburo's collective study meeting of 23 February 2019, which focused specifically on preventing financial risks, Xi's was quoted as stating:

It is necessary to do well in comprehensive financial industry statistics, complete an information system that reflects risk fluctuation in a timely manner, perfect information release management regulations, and complete a credit punishment mechanism. It is necessary to 'control people, watch money, and secure the system firewall' ... Modern technological means and payment settlement mechanisms should be used to dynamically monitor online, offline, international, and domestic capital flows in a timely manner, so that all capital flows are placed within the scope of supervision of financial regulatory institutions.<sup>13</sup>

Xi's guidance for using technology to connect finance and security has cascaded down to the fintech planning and implementation level. At every step, internally focused discussion of DC/EP has focused on supervision and centralised management. During a 30 December 2019 meeting of the PBoC Financial Technology Committee, PBoC deputy governor Fan Yifei reiterated the importance of supervising fintech innovation, 'optimising' the mobile payment ecosystem and 'actively promoting data governance and accelerating the construction of a "digital central bank"'.<sup>14</sup> At a PBoC work meeting held on 5 January 2020, participants including Governor Yi Gang and PBoC Party Committee secretary Guo Shuqing spoke of party-building at all levels of the financial system, building a 'big supervision mechanism', and strengthening financial statistics monitoring and analysis with specific reference to fintech and digital currency.<sup>15</sup>

### **Macroeconomic policy**

As well as improving the scrutiny, and visibility, of international capital flows, and reducing the costs of printing and maintaining the circulation of cash, PBoC officials say the data collected through DC/EP will be used to improve macroeconomic policymaking. According to Yao Qian, who founded the Digital Currency Research Lab at the PBoC:<sup>16</sup>

Within this [digital currency] technology system, the central bank has the highest decision making and operational jurisdiction... big data analysis comes in during the process of currency issuance, monitoring, and control. Under conditions of data being appropriately stripped of identifying details, the central bank can use big data to carry out in-depth analysis of digital currency issuance, circulation and storage; understand the laws of monetary operation; and provide data support for intervention needs such as monetary policy, macro-prudential supervision, and financial stability analysis.<sup>17</sup>

Yao says the data used to inform macroeconomic policymaking will be anonymised. However, he also says the data will be used for law enforcement.<sup>18</sup>

## Political discipline

The CCP's top political organ for imposing political discipline internally, the CCP's CCDI, is increasingly prominently involved in both the promotion and policy direction of DC/EP. The CCDI has recently promoted DC/EP's potential to 'solve' the problem of terrorist financing and combat financial crimes such as bribery and embezzlement.<sup>19</sup> However, the purpose of the CCDI is to impose party discipline through channels that exist above and outside the formal legal apparatus. The CCDI has served as Xi's primary organisational weapon in his ongoing campaign to combat corruption, enforce ideological unity and purge the party of potential rivals.<sup>20</sup> The involvement of the CCDI serves as a strong indicator of how the party intends to exploit the vast troves of data that DC/EP will make available to it.

## Competing with the US financial-led global financial system

The party's six-year program to develop a sovereign digital currency has been driven in part by a desire to propose currency alternatives to the US dollar (see Section 6). Recently, however, it's been spurred by the competition from US digital currencies. China's finance and banking officials have repeatedly expressed concern at the prospect of a supranational stablecoin, which they perceive as being tied to the US dollar. They equate US digital currencies with US dollar hegemony and say that it reinforces the need to decouple the renminbi from the US-dollar-led global financial system.<sup>21</sup> An article by the PBoC's China Banknote Printing and Minting Corp. Blockchain Technology Research Institute,<sup>22</sup> published in the CCP Central Party School journal *Study Times* in August 2019, described DC/EP as a response to US-based digital currency Libra's imminent "major and far-reaching effect on the global pattern of international monetary development", and called for accelerating China's development of digital currency and a digital currency supervision system.<sup>23</sup> Similarly, Wang Zhongmin, former deputy chair of the China Social Security Fund Council and a former long-serving CCDI official, has said DC/EP's progress is being benchmarked against that US effort.<sup>24</sup> Li Lihui, former Bank of China president and head of the Blockchain Research Group of the China Internet Finance Association, has also indicated that China's banking sector views US currencies as a danger to China's currency and an extension of US global financial leadership and democratic values.<sup>25</sup>

## Competing globally

China has a clear ambition to shape global technological and financial standards. With a new industrial policy (China Standards 2035) on the horizon, DC/EP and its related technologies are likely to be an important component in China's push to establish a comprehensive alternative to the dollar system. The liberalisation of China's current account is not required for export of the DC/EP technology stack to other countries. China's ability to develop new financial technology that embeds authoritarian norms of control and surveillance may affect global standards and financial infrastructure well before the internationalisation of the renminbi is achieved.



### 3. DC/EP and surveillance

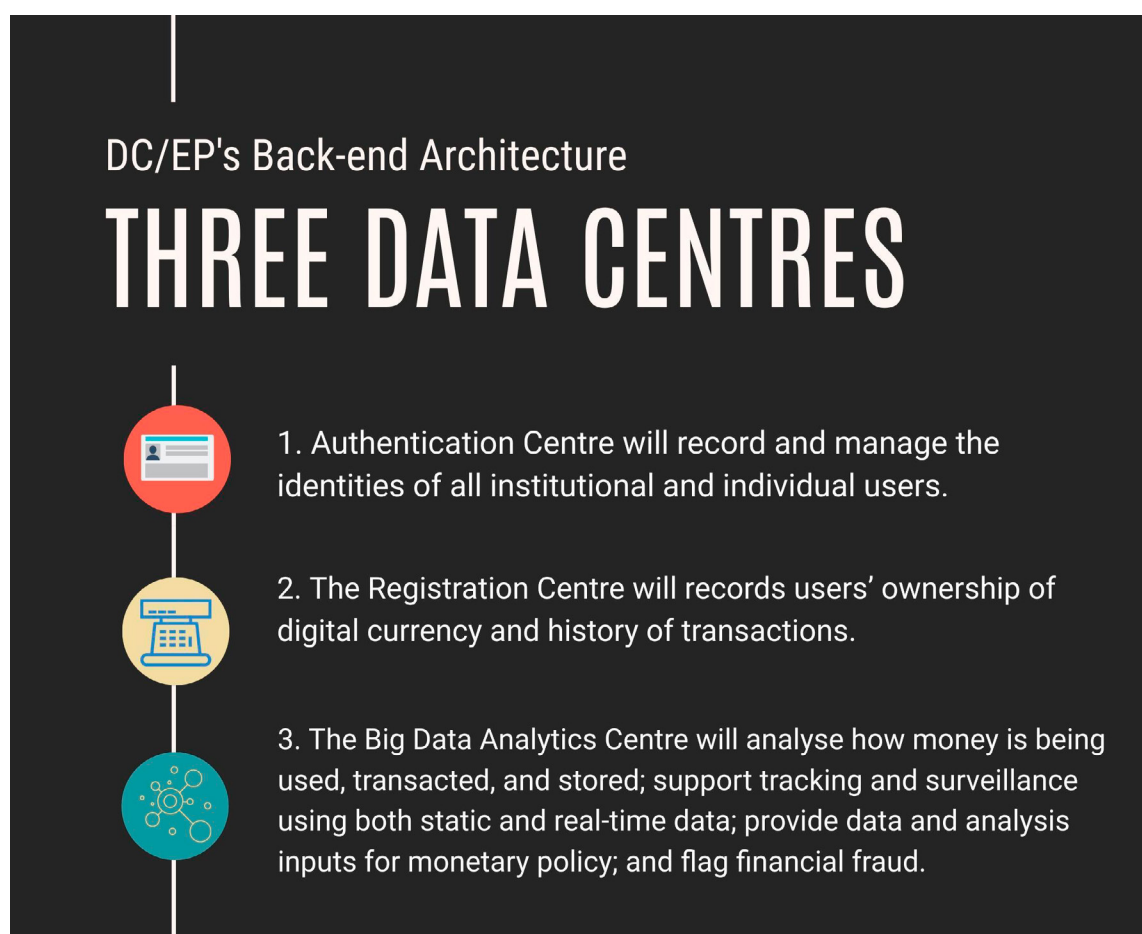
**Dr Samantha Hoffman**

DC/EP is being built to meet China's specific needs, as defined by the party-state. In order to understand the CCP's needs and their potential implications, it's necessary to examine the tracking of money flow that is inherent in the DC/EP system, in conjunction with the supervision objectives those capabilities support. DC/EP's surveillance and data collection potential doesn't create fundamentally new forms of political or financial control but will enhance existing monitoring and surveillance capabilities.

#### Centralised control and visibility

DC/EP transactions are fully traceable. Yao Qian (the PBoC's primary patent author on DC/EP) described DC/EP as having an 'anonymous front end, real-name backend'.<sup>26</sup> There's an element of anonymity through a characteristic of DC/EP called 'controlled anonymity', but true anonymity doesn't exist, as currency registration and traceability are built into DC/EP's transaction process. That process, augmented by data mining and big-data analysis, provides the PBoC with the ability to have complete oversight over the use of the currency. That functionality is provided through DC/EP's 'three centres' (Figure 3).

**Figure 3: DC/EP's data centres**



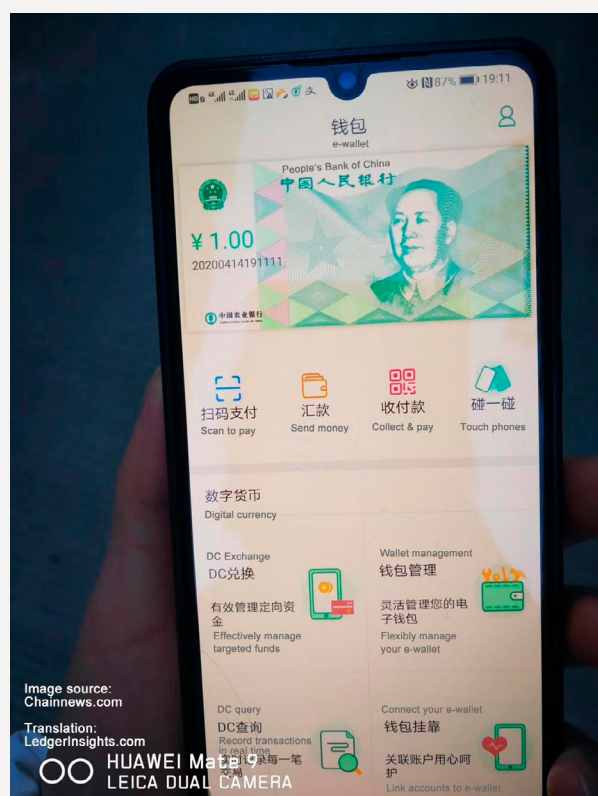
Source: Created by ASPI

The term ‘controlled anonymity’ within the operation of DC/EP means that the PBoC has complete supervision over the digital currency but has afforded users some anonymity for their transactions and protection of their personal information from other third parties, besides PBoC. DC/EP has been designed such that, even if commercial banks and merchants were to collude, users’ purchase history couldn’t be determined by them or any other third party, except, crucially, the currency issuer.<sup>27</sup>

PBoC Deputy Governor Fan Yifei has explained that full anonymity won’t be implemented through DC/EP in order to discourage crimes such as tax evasion, terrorism financing and money laundering.<sup>28</sup> All central banks would need to ensure that their digital currency meets anti-money-laundering and countering terrorism financing rules. Central bank digital currencies would allow for better digital records and traces, but it’s been suggested in a report by the Bank of International Settlements that such gains may be minimal because illicit activity is less likely to be conducted over a formal monetary system that’s fully traceable.<sup>29</sup>

DC/EP is designed so it can be used without the need for a bank account, but digital wallets have a grading system such that wallets that are loosely bound to a real-name account have transaction size limits. A user can attain the lowest grade of digital wallet—with the transaction limits—by registering their wallets with a mobile number only (of course, phone numbers are required to be registered to an individual’s real name in the PRC). Users can access higher grade digital wallets by linking to an ID or bank card. Through the Agricultural Bank of China, for instance, users are encouraged to upgrade their digital wallets to a ‘Level 2 digital wallet’ by registering with their name and national ID details (Figure 4).<sup>30</sup> If a user registers in person at a counter, there are no restrictions on their digital wallet.<sup>31</sup>

**Figure 4: Leaked Agriculture Bank of China DC/EP mobile application**



Agricultural Bank of China’s test DC/EP mobile app provides the function to scan code to pay, transfer money, receive payment and touch phones to pay. The digital currency section allows the user to exchange digital currency, view transaction summaries, manage the digital wallet exchange and link an account to the digital currency wallet.

Source: ‘China’s central bank digital currency wallet is revealed’, Ledger Insights, [online](#).

The integration of DC/EP into third-party applications doesn't make users' transactions on those applications more private, but the underlying digital currency system is designed to provide privacy from third parties (except, of course, the central bank). That being said, practicalities when implementing any payment system mean that in practice there's little anonymity for the individual from any app, because the app will already know the user, and when transacting will need the user to identify the recipient of the funds and the transaction amount. Therefore, the implementation of DC/EP into mobile applications, such as DiDi Chuxing, Bilibili and Meituan Dianping, that are in partnership negotiations with PBoC<sup>32</sup> doesn't change the amount of information those apps, and by extension their linked platforms, are able to collect on the user.

### Using DC/EP to enhance the party-state's control

The PBoC's creation of a massive repository of financial transaction data could improve both the efficiency and visibility required for the PBoC and CCDI to effectively supervise and police financial transactions. DC/EP's political-discipline-linked policy drivers—anti-money-laundering, anti-terrorist financing and anti-tax evasion—are linked to the party-state's 'social governance' process (also called 'social management'). Social governance describes how the CCP leadership attempts to shape, manage and control all of society, including the party's own members, through a process of co-option and coercion.<sup>33</sup> DC/EP helps solve legitimate problems, but that problem solving also acts as a tool for enhancing control. For instance, a local PBoC official described 'anti-money laundering' as an 'important means to prevent and defuse financial risks and consolidate social governance.'<sup>34</sup> Similarly, an article by Deputy Governor of the PBoC Liu Guoqiang published in the *People's Daily* said:

In recent years, the scope of anti-money laundering work has become increasingly diverse and has expanded to many areas such as anti-terrorist financing, anti-tax evasion and anti-corruption. Anti-money-laundering work has strengthening modern social governance as its goal, through guiding and requiring anti-money-laundering agencies to effectively carry out customer identification, discovering and monitoring large-value transactions and suspicious transactions, timely capturing abnormal capital flows, and enhancing the standardisation and transparency of economic and financial transactions to weave a 'security net' for the whole society to protect normal economic and financial activities from infringement ...<sup>35</sup>

More specifically, the connection of DC/EP's policy drivers to social management is indicative of how DC/EP would ultimately serve the party's needs in practice. Through the PRC's global Operation Skynet, which seeks to 'track down fugitives suspected of economic crimes and confiscate their ill-gotten assets', the PBoC cooperates directly with the Ministry of Public Security because of the role of the PBoC as an anti-money-laundering authority.<sup>36</sup> Genuinely corrupt officials are certainly caught up in the campaign, but the accusation of corruption is the result of a political decision linked to power politics. Likewise, the crime of 'terrorist financing' is defined by the Chinese party-state's version of 'terrorism', and it's been directly linked to the PRC's campaign against the Uyghurs in Xinjiang. For instance, in July 2020, Australian media reported on a Uyghur woman who has been arrested on charges of financing terrorism for sending money to her parents in Australia, who used it to purchase a house.<sup>37</sup> DC/EP doesn't create a process that didn't already exist, but the technical ability to aggregate bulk user data in one place has the future potential to automate identification and analysis processes that at present are only partially automated; for example, to help trace money transfers through different entities at different levels.

Nor does DC/EP create objectives that didn't already exist. Rather, its digital nature and centralised supervision facilitate the aggregation and bulk analysis of user and financial data, to more easily meet those objectives.

### **Future extraterritorial implications?**

Under Xi Jinping, the concept of social management has expanded to specifically include 'international social management'.<sup>38</sup> Something to consider is the fact that Hong Kong's new state security law criminalises separatism, subversion, terrorism, and collusion in and support for any of those activities by anyone in the world no matter where they are located.<sup>39</sup> This means that journalists, human rights advocacy groups, researchers or anyone else accused of undermining the party-state and advocating for Hong Kong democracy could be accused of those four types of crime. By extension, anyone financing those individuals or entities (such as funding a research group) could potentially be linked to the accusations. If DC/EP is successfully rolled out and adopted, then the world would have to be prepared to contend with a PRC in possession of information that would also allow it to enforce its definitions of the activities that it's monitoring (anti-corruption and anti-terrorism, for instance) globally, thus potentially allowing it to implement PRC standards and definitions of illegality beyond its borders with greater effectiveness.



## 4. The party-state ecosystem behind DC/EP

**Dr Matthew Johnson**

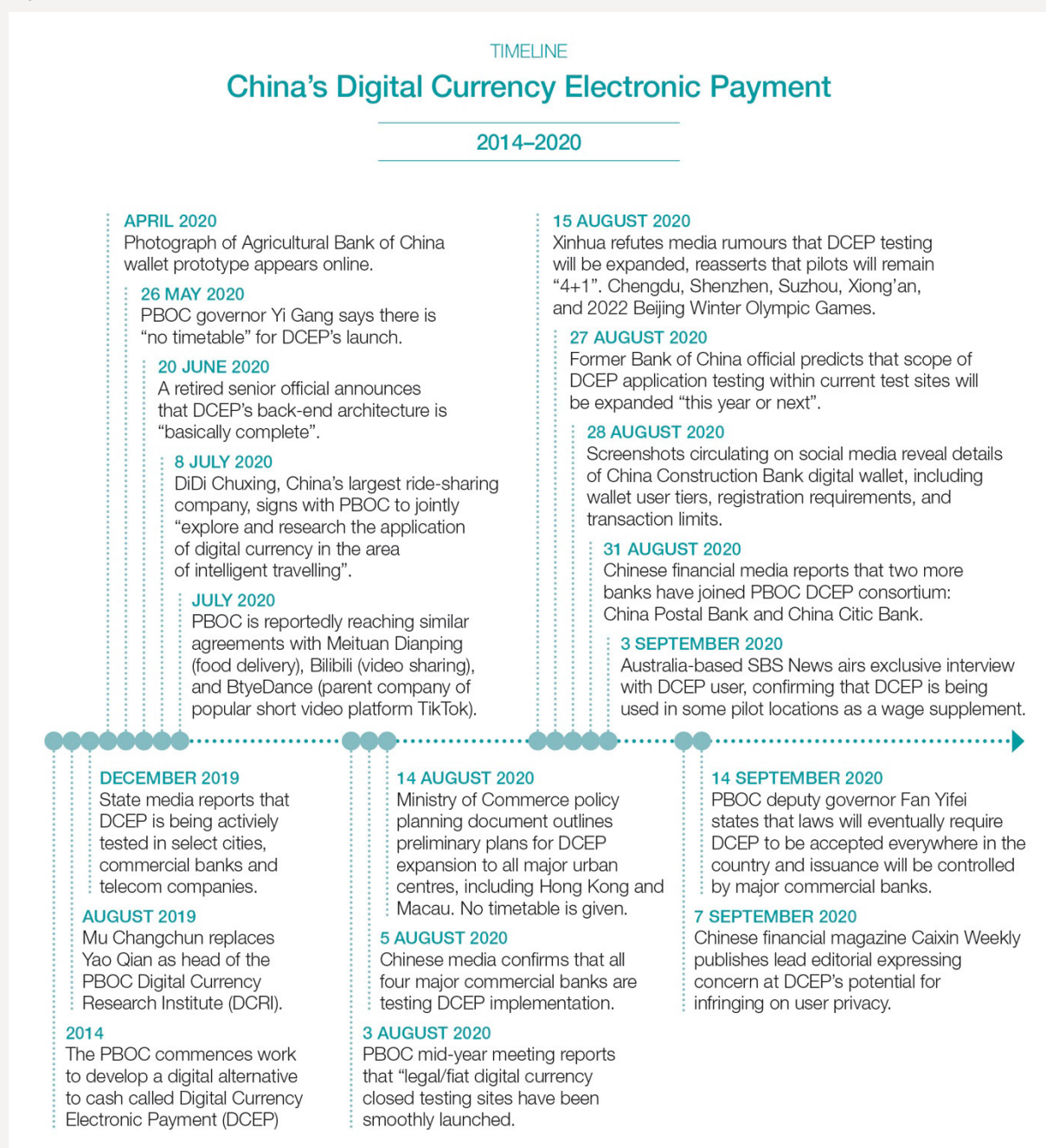
At the China Fintech Development Forum on 20 June 2020, Wang Zhongmin, the former deputy director of the China Social Security Fund Board (China's national pension fund) and a former member of the CCP's CCDI, announced that the back-end architecture for China's central bank digital currency was basically complete.<sup>40</sup> After six years of planning, investment and R&D, progress towards a cashless society had finally reached the testing stage (Figure 5, next page). The fact that this key announcement was made by a former member of the party's political discipline inspection body, rather than a current or former official of the PBoC, demonstrates that the bureaucratic structure behind DC/EP's development goes well beyond the central bank.

The speed with which DC/EP is being developed is partly a result of the enormous institutional power behind it. As well as the PBoC and the CCDI, the project is being shaped by a cluster of powerful regulatory and supervisory institutions that serve as the fulcrum for CCP efforts to maintain leverage over every element of the financial and economic systems.

Beyond the supervisory institutions, many of China's biggest companies are also being called in to support. They include:

- Bank of China, China Construction Bank, Agricultural Bank of China, Industrial and Commercial Bank of China, China Postal Bank and China CITIC Bank
- China Mobile, China Telecom, China Unicom, and China UnionPay
- Alibaba Group affiliate Ant Group (Alipay), Tencent (WeChat Pay), Huawei Technologies and JD.com.

Figure 5: DC/EP development timeline



Source: Garnaut Global, September 2020.

## PBoC leadership and innovation

The DC/EP project has been driven by the PBoC since its inception. Former PBoC Governor Zhou Xiaochuan established a digital currency research group in 2014. In March 2018, Zhou announced that the project had received approval from the State Council and now had a name—Digital Currency Electronic Payment.<sup>41</sup>

Through DC/EP, the PBoC has been swiftly transformed into a hub of party-state fintech innovation. It has established its own technology units, such as the Digital Currency Research Institute, and harnessed a constellation of commercial enterprises and government agencies to drive investments

in blockchain and fintech.<sup>42</sup> More than 80 patents related to DC/EP have been filed with the Chinese Patent Office by research institutes connected to the PBoC.<sup>43</sup> The standards created by these new technologies are likely to shape future development pathways for China's cashless monetary system.

Information concerning local DC/EP pilots has been scarce, imprecise and occasionally misleading, but the overall trend it describes suggests that progress towards buildout of the user 'front end' is real. Since April 2020, banks and government institutions have launched pilot distribution experiments and showcased prototype 'digital wallets' (apps that store payment details). The private sector has been particularly critical to building DC/EP's scale; PBoC partners Alibaba Group and Tencent provide networks and raw data-processing power that no other state-controlled system can match (see Section 5).<sup>44</sup>

## Powerful guidance

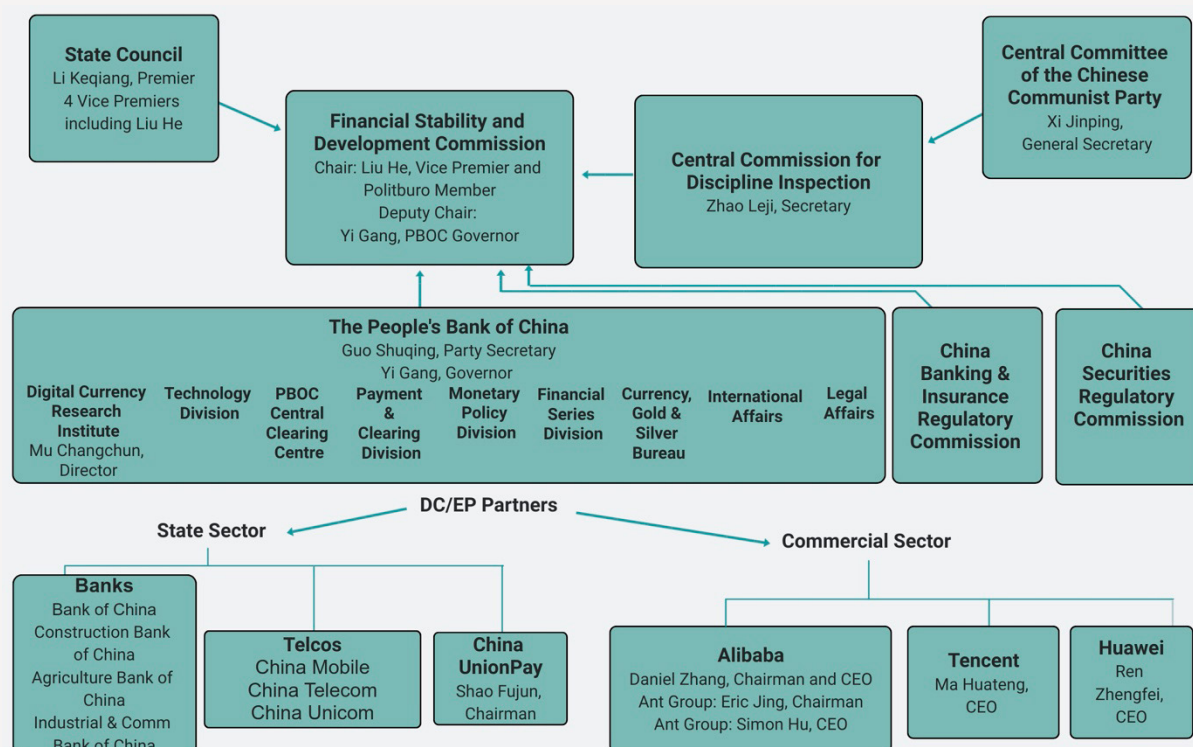
Outwardly shaped and managed by the PBoC, China's DC/EP project is also guided by the top echelons of the CCP leadership. The PBoC itself isn't independent but is one of several interconnected institutions, the function of which is, collectively, to prevent systemic risk through total control over China's financial economy.<sup>45</sup> The Financial Stability and Development Commission, chaired by Xi Jinping's trusted economic adviser Liu He, sits at the apex of this financial regulatory cluster. The CCDI, the party's extrajudicial discipline enforcer, encircles both, ensuring that regulatory officials adhere politically to Xi's authority.<sup>46</sup>

## Managing corruption: the Central Commission for Discipline Inspection

The CCDI sits several bureaucratic rungs above the PBoC and hasn't featured in mainstream or industry reporting on DC/EP. Analysis of party texts and structures, however, indicates that the CCDI is emerging as one of the key patrons and potential customers of the DC/EP project. An 'authoritative explainer' on DC/EP, aired by national news broadcaster CCTV in June 2020, even explained that the CCDI would use digital currency as a 'booster in managing corruption'.<sup>47</sup>

CCDI organisations are embedded directly within the PBoC itself, which is significant because it illustrates the party's growing control over the central bank as well as other systemically important financial institutions.<sup>48</sup> The CCDI is one of the party's four core departments. It's answerable directly to the Politburo Standing Committee through its Secretary, Zhao Leji, who's the sixth-ranked leader in the Party (Figure 6). Three of Zhao's deputies sit in the Central Committee. Compared to the CCDI, the PBoC is politically a relatively junior organisation. Its Governor, Yi Gang, isn't counted among the 205 members of the Central Committee.<sup>49</sup>

**Figure 6: DC/EP's political and commercial ecosystem**



Source: Garnaut Global, June 2020.

## Coordinating security: the Financial Stability and Development Committee

In July 2017, Xi Jinping moved to integrate financial system regulation with the Party's political, security, and legal organs by creating a new super agency called the Financial Stability and Development Committee (FSDC).<sup>50</sup> Xi tapped Vice Premier Liu He to chair the committee, with Premier Li Keqiang as his deputy.<sup>51</sup> The FSDC now serves as China's main financial regulatory body.<sup>52</sup> It also serves as the institutional flywheel that connects the finance system to key security organs. According to state-controlled economic news media, the FSDC has special 'planning and coordination' arrangements with the party-state's core security bodies, including the CCDI, the Propaganda Department, the Office of the Commission for Internet Security and Informatisation, the Ministry of Public Security, the Ministry of Justice and the Supreme People's Court.<sup>53</sup> The FSDC also oversees local financial coordination and regulation through local branches of the Banking and Insurance Regulatory Commission, the Securities Regulatory Commission and the Foreign Exchange Bureau.<sup>54</sup> The Office of the FSDC is located within the PBoC and is directed by PBoC Governor Yi Gang, illustrating the 'deputy' function that the PBoC plays in implementing FSDC policy.<sup>55</sup>



## 5. The role of WeChat Pay and Alipay in DC/EP

**Fergus Ryan and Alexandra Pascoe**

China's mobile payments industry has seen explosive growth over the past decade as the country's two most widely used mobile payment services, Alipay and WeChat Pay, have garnered more than 890 million users.<sup>56</sup> The two platforms have driven a shift away from cash in the country's economy—an effort that DC/EP is expected to continue and complete.

In 2016, China's mobile payments hit US\$5.5 trillion, or roughly 50 times the size of America's \$112 billion market, according to consulting firm iResearch.<sup>57</sup> The following year, that figure more than doubled: transactions made on the two third-party payment institutions (TPPIs) totalled more than US\$17 trillion.<sup>58</sup> Using QR codes and digital wallets, the companies enabled consumers to jump directly from cash to mobile payments. That saw users leapfrog the nascent and cumbersome debit and credit card systems established by the commercial banking sector. Collectively, the two TPPIs hold more than 90% of the market. Alipay has over 50% market share, and WeChat Pay almost 40%.<sup>59</sup> Ninety per cent of people in China's biggest cities use those payment platforms as their primary payment method; each platform boasts more than 600 million monthly active users.<sup>60</sup>

Beijing's policy towards the TPPIs was marked by early optimism about the ability of the companies to break down the control of the banking system by the Big Four state-owned commercial banks. The aim was to increase competition and innovation in the financial sector and drive economic activity by opening up additional sources of lending for Chinese small and medium-sized enterprises. The disruption and innovation brought about by Alibaba and Tencent were actively encouraged and coupled with favourable government policies and protection from international competition. However, Alipay's and WeChat Pay's rapid growth and increasing level of dominance have caused the overt encouragement of the fintech sector and regulatory permissiveness to increasingly shift to ambivalence and moves to enhance oversight over the payment systems.

In 2010, the PBoC enacted regulations that meant that foreign-funded third-party operators would need State Council approval to operate in the Chinese market, and under different rules from those governing domestic operators. That ruling prompted Alibaba founder Jack Ma, in a highly controversial decision, to secretly spin off the online payment service Alipay from Alibaba Group, which foreign operators Yahoo and Softbank have significant stakes in, to a private firm he controlled.<sup>61</sup>

In a text-message exchange with Hu Shuli, the editor of business magazine *Caixin*, Ma sought to explain his decision to spin off the company without the go-ahead from Yahoo and Softbank by saying the decision involved 'more than just commercial interests' and that there were national security implications to Alipay's ownership structure. 'The market economy tells us to steer clear of politics. But if I ruin Alipay, I may face prison in addition to bankruptcy,' Ma texted Hu.<sup>62</sup> The spun-off firm was later renamed Ant Financial and now operates Alipay.

Like its rival, Tencent, Alibaba and Ant Financial both have CCP committees as part of their governance structures.<sup>63</sup> The CCP has a direct line into both companies, but policymakers are increasingly concerned about the inordinate power of the duopoly. There are also concerns over the speed with which their third-party payment ecosystems have taken over systemically important functions of the country's economy.

Driven by concerns over the growing size of money market funds facilitated by Alipay and WeChat Pay (Yu'e bao 余额宝 and Lingqiantong 零钱通), as part of its 'deleveraging campaign' in 2017,<sup>64</sup> the PBoC expanded its regulatory oversight of the TPPIs, ordering the firms to move funds out of commercial banks and into PBoC accounts. In 2019, that process was completed when the central bank took over all deposits of platforms such as Alipay and WeChat Pay.<sup>65</sup> This has helped to address risks associated with shadow banking, while also moving valuable user transaction data into the hands of the PBoC.

Most recently, it was reported that the State Council is considering whether to launch an antitrust investigation into Alipay and WeChat Pay. The PBoC recommended the probe earlier this year, given the platforms' dominance and attempts to foster greater competition in the payments space by assisting smaller companies to enter the market.<sup>66</sup>

### Co-opting Alipay and WeChat Pay

DC/EP will be made available through a two-tier system. The central bank plans to issue DC/EP to both commercial banks and TPPIs, and then the banks and TPPIs would distribute it to consumers. In this case, the current financial structure doesn't change with DC/EP, only the mechanism through which commercial banks and TPPIs get their money.

The PBoC could have dealt a serious blow to Alipay and WeChat Pay by excluding them from the second tier of the structure. However, given the user base of the two payment platforms, that would severely limit the take-up and use of the digital currency. The PBoC appears to be bringing Alipay and WeChat Pay into the DC/EP structure on its own terms, allowing it to continue its quest to rein in the dominance of the firms while also using their user base and technology.

Patent applications from both Alibaba and Tencent appear to indicate the role that these platforms will play in the issuance of DC/EP. Between 21 February and 17 March 2020, Alibaba filed five patents on 'digital currency delivery and transaction account functions, supervision and handling of illegal accounts, digital currency wallets, [and] support for anonymous transactions'.<sup>67</sup> On 24 April, it was also reported that Tencent had filed a patent related to the transaction of digital assets, although the report didn't directly refer to the PBoC's digital currency, as appeared in Alipay's patents.<sup>68</sup>

That being said, how exactly the PBoC and TPPIs will cooperate remains unclear. How those institutions distribute DC/EP will be the subject of a 'horse race' between the commercial banks and the TPPIs, the eventual frontrunner of which will 'take the whole market', the head of the PBoC Digital Currency Research Institute, Mu Changchun, told an audience in Hong Kong in 2019.<sup>69</sup> That echoed comments made in 2018 by PBoC Deputy Governor Fan Yifei, who wrote that the central bank could leverage market forces to optimise related systems through close cooperation with commercial banks and other organisations, without imposing any prescriptive technology path in advance. This would facilitate resource integration, synergistic collaborations and innovation, as well.<sup>70</sup>

Mu Changchun has trumpeted DC/EP as having a superior legal and security status to WeChat Pay and Alipay due to its state backing.<sup>71</sup> He has said that, should Alipay or WeChat Pay go bankrupt, there's currently no way to assure the money held in those digital wallets. However, if the wallets held PBoC-backed digital currency, those funds could be guaranteed by the central bank.

The alleged superior security of DC/EP is perhaps more a rhetorical point from Mu, rather than reflecting any real possibility of Ant Financial or Tencent going bust. Furthermore, regulation changes requiring Alipay and WeChat Pay deposits to be moved into PBoC accounts mean that the PBoC has already clawed back a fair degree of oversight and control over funds held by those platforms.

Mu's statements, along with references to how DC/EP will allow for anonymous transactions, taking user transaction data out of the hands of 'private' firms and into the hands of the central bank, appear to be aimed at sowing distrust in the non-state platforms and motivating trust in the PBoC's digital currency in an attempt to drive take-up.

Recent reporting citing sources 'familiar with the thinking' of the PBoC states that DC/EP is aimed at eroding the dominance of Alipay and WeChat Pay in the digital payments space and providing a more level playing field between the two payment giants and the commercial banks.<sup>72</sup> While DC/EP certainly presents an opportunity for greater competition—with commercial banks advancing their own user-facing offerings of digital wallets and QR codes—the current market share of Alipay and WeChat Pay means that it's unlikely that the commercial banks will be able to quickly gain a stronger foothold in the payments space. It's true that the PBoC has tried to rein in the dominance of Alipay and WeChat Pay, but it's likely that the two platforms will play some role in DC/EP's success.

According to PBoC statements, the transaction processing requirement for DC/EP is an average of 300,000 transactions per second (tps).<sup>73</sup> While Tencent's fintech division processes an average of 1 billion transactions per day, on Singles Day in 2019, Alibaba reportedly demonstrated its ability to process 544,000 tps.<sup>74</sup> It's unclear how closely Alibaba is working with the PBoC on DC/EP and, although it could be called on for assistance if asked, the PBoC would be building its own back-end architecture, meaning that it couldn't simply replicate Alibaba's system. Despite that, the raw data-processing power of Alibaba, and to a lesser degree of Tencent, is unmatched by any state-controlled system. Without an ability to at least match Alibaba's capabilities in this area, widespread voluntary take-up of DC/EP will be difficult to achieve.

## Future adoption

Given the ubiquity of Alipay and WeChat Pay in China, implementing digital wallets via the commercial banks alone would not readily result in the wide-scale adoption and use of DC/EP that the PBoC hopes for.

There's speculation that the PBoC will provide incentives to drive take-up in the use of digital currency, for instance by providing salaries and travel subsidies in the digital currency, or not charging merchants a fee to accept DC/EP. Those incentives could be coupled with further measures to limit the dominance of Alipay and WeChat Pay and to boost the competitiveness of the commercial banks.

But, since most people in China's biggest cities use either WeChat Pay or Alipay as their main payment method, the PBoC needs the user base of those platforms to achieve scale. The way in which the payment platforms are integrated into Chinese people's daily lives means that Alipay and WeChat users are unlikely to quickly switch to a different wallet that, from a user's perspective, barely differs from what they already use.<sup>75</sup> As indicated by patent applications, the two payment platforms appear to

have scoped out a role within the DC/EP system in order to maintain their user base and position in the payments space. Further, Alipay and WeChat Pay are working hard to stay ahead of a QR-code-based DC/EP, exploring the development of payments systems based on facial-recognition technology.<sup>76</sup>

Thus, DC/EP can't be read simply as an attempt to wind back the dominance of Alipay and WeChat Pay. Beijing is likely to be working to strike a balance between using the technology and user base of the platforms while encouraging greater involvement from other players in the payments space.



## 6. DC/EP's potential internationalisation and the global economy

**Kayla Izenman**

The Chinese Government has stated that one driver behind its attempts to internationalise the renminbi is to create a substantial rival to the US dollar. From Beijing's perspective, a US-led global economy is a potential threat to the Chinese party-state's stability, because the US could leverage economic tools that could act as a catalyst for disrupting Chinese economic and social stability.<sup>77</sup> Recent developments in Hong Kong illustrate why the party-state takes that threat seriously. In reaction to the Hong Kong State Security Law enacted on 1 July, the US and EU have both threatened sanctions on foreign financial institutions that knowingly do business with Chinese officials involved in stifling the protests.<sup>78</sup> If taken to extremes, such sanctions could damage the Chinese economy and stifle development. Of course, Beijing has also suggested that any 'rash' US sanctions ultimately could damage US companies as well, including via possible Chinese retaliation.<sup>79</sup>

If DC/EP supports the PRC's efforts to gain a stronger foothold in the international economic system, it could also help the PRC disrupt the existing system of global economic governance, which among other things could reduce the impact of international sanctions.

### Renminbi internationalisation?

Since the 2009 global financial crisis, the internationalisation of the renminbi has been a significant PBoC objective. China's 13th Five-Year Plan (2016–2020) clearly outlined the ambition, stating that China 'will take systematic steps to realize RMB capital account convertibility, making the RMB more convertible and freely usable, so as to steadily promote RMB'.<sup>80</sup> Its efforts to achieve that goal to date have included signing bilateral currency swap agreements,<sup>81</sup> agreeing to add the currency to the International Monetary Fund's Special Drawing Rights basket of currencies<sup>82</sup> and investing heavily in renminbi-based regional projects.<sup>83</sup>

The nature of the Chinese economy and political system, however, undermines those objectives. Most internationalised currencies are associated with relatively open economies. In maintaining a 'closed' capital account<sup>84</sup> and tight controls on the economy, Beijing inhibits its own internationalisation attempts. The renminbi doesn't compete seriously on the international stage, even compared to its regional competitors, such as the Japanese yen. SWIFT's June 2020 *RMB Tracker* statistics list the renminbi as the sixth most active currency for global payments by value, following the dollar, euro, pound, yen, and Swiss franc.

That being said, DC/EP could allow China to further define the global standards for emerging financial technologies, giving Beijing space to shape international standards (particularly as opposed to rival stablecoins). As a result, DC/EP may serve as a model for digitising a fiat currency—which would create a new form of power for Beijing. As a new technology, DC/EP's incorporation into Chinese apps and cross-border trade might not have major implications initially, but could enable the PRC to push other countries' financial technology out of developing markets.

Through DC/EP, payments would be settled as soon as possession of the digital currency changes, as opposed to the current system, which relies on intermediaries. Most current transaction methods are technically reversible for a period of time, depending on the speed and communication of the banks involved. This change would have significant implications for internationalisation via Chinese regional initiatives, particularly the BRI. If Beijing moves BRI payments to DC/EP, it could create DC/EP-based automated payments across more than 60 countries.<sup>85</sup> Requiring DC/EP in payments doesn't necessarily translate to those countries choosing to hold DC/EP or transact in it in any meaningful way, but it would provide an incentive for them to increase renminbi transactions where they might otherwise be reluctant. In any case, this process would be likely to take years. Even the integration of DC/EP into China's financial activities wouldn't necessarily lead to other countries choosing to either keep or spend DC/EP on their own.

### **An alternative to SWIFT?**

If DC/EP succeeds, it could help reduce the PRC's reliance on the SWIFT system. SWIFT is viewed as a secure financial messaging service that plays a vital role in connecting the international banking system. Although the system itself has some flaws,<sup>86</sup> it's the mechanism by which financial institutions are able to communicate with each other, sending and receiving information about transactions in order to complete transfers and settlements. SWIFT acts as an intermediary for most global bank transactions, and the US has a capability to access those transactions for national security concerns. For example, in 2006, the US Department of the Treasury went through SWIFT's database to identify transactions tied to al-Qaeda, instructing SWIFT to block terror-related transactions.<sup>87</sup> If SWIFT declines to be involved in a transaction, the transfer won't go through. Naturally, this perceived level of oversight and control is concerning to many other global actors, especially those under sanctions.

Global reliance on SWIFT is one of the most crucial pieces of the financial system, and its impact is one that China doesn't underestimate. In 2019, Huang Qifan, Deputy Director of the China Center for International Economic Exchange, stated that SWIFT is 'gradually becoming [a] financial instrument for the United States to exercise global hegemony and exercise long-arm jurisdiction,' citing examples of the US using the SWIFT database to blacklist and freeze transactions from Iranian banks over terrorism financing allegations, as well as the US's 2014 threats to exclude Russia from the system altogether.<sup>88</sup> The threats alone had an intensely negative impact on the Russian economy and depreciated the rouble.<sup>89</sup>

According to PBoC official Li Wei, through the BRI, China seeks to establish a 'financial standard exchange cooperation and build a "hard mechanism" of ... financial infrastructure cooperation'.<sup>90</sup> To date, Beijing's attempts to create an alternative to SWIFT have resulted in the introduction of the Cross-Border Inter-Bank Payments System (CIPS) in 2015. In 2018, CIPS handled approximately US\$3.7 trillion.<sup>91</sup> SWIFT, meanwhile, facilitated the transfer of US\$40 trillion in 2018 and US\$77 trillion in 2019.<sup>92</sup>

### **Bypassing sanctions?**

The creation of an effective alternative to SWIFT would create an opportunity for Beijing to bypass international sanctions. In fact, CIPS has already been used by countries exposed to US sanctions, such as Turkey and Russia, to avoid SWIFT.<sup>93</sup> If foreign businesses are able to bypass US banks and US currency, then the impact of US sanctions would be significantly reduced. While CIPS aids efforts to

bypass US banks and currency, DC/EP could be implemented as a key part of the settlement system or as an alternative transaction method functioning in parallel to CIPS. It's worth noting, however, that CIPS can carry any currency, while DC/EP will be limited to the renminbi.

DC/EP offers the opportunity to move away from the SWIFT system, as it appears DC/EP would have the same messaging capabilities that SWIFT and CIPS provide, but it would remove the need for intermediaries. DC/EP, therefore, could serve as a new messaging system that allows sanctions evasion, as an article published in Chinese state media argued:

[a] sovereign digital currency provides a functional alternative to the dollar settlement system and blunts the impact of any sanctions or threats of exclusion both at a country and company level. It may also facilitate integration into globally traded currency markets with a reduced risk of politically inspired disruption.<sup>94</sup>

Other state actors, such as North Korea, may also be attracted to the option to use DC/EP to evade sanctions. North Korea is widely understood as a proficient and successful cyber actor with an interest in cryptocurrencies and blockchain.<sup>95</sup> Given Pyongyang's interest in cryptocurrencies and increased holdings in various coins, any possibility of China allowing transactions between cryptocurrencies, such as bitcoin or Monero, and DC/EP could prove to be extremely beneficial to North Korea, and any other sanctioned actors. The most difficult part of sanctions evasion using cryptocurrency is the exfiltration point into fiat (or other digital) currency—DC/EP could offer a solution to that problem. While, initially, given Beijing's oversight, engaging with DC/EP might not be the ideal way past SWIFT, tightened sanctions and limited options could lead various sanctioned countries to view Beijing as their best path forward.

## 7. Recommendations

DC/EP's rollout is likely to have notable ramifications for governments, investors and companies, including China's own tech champions. More analysis is needed before prescriptive policy solutions can be developed for the political and financial oversight challenges DC/EP could create. At the same time, it's important to act in anticipation of key shifts in global financial regulation and advances in financial technology, so that governments don't end up trying to reverse course when it's too late to deal with the systemic risks DC/EP could create.

We suggest the following:

1. If DC/EP achieves global take-up, the political features it embeds won't be possible to effectively mitigate or regulate. Therefore, governments must be prepared to mitigate the political risks by investing in research into and the development of credible alternatives to DC/EP for all key highly traded currencies.
2. Decision-makers in liberal democracies must develop a clear strategy for detecting flaws in and improving the existing system for global financial governance and work to improve international coordination among each other to achieve those strategic outcomes.
3. Liberal democracies should establish domestic laws on data privacy and protection. They should regulate the ways that any entity can collect and use individuals' data, improve oversight and improve due diligence aimed at mitigating data security risks.



# Notes

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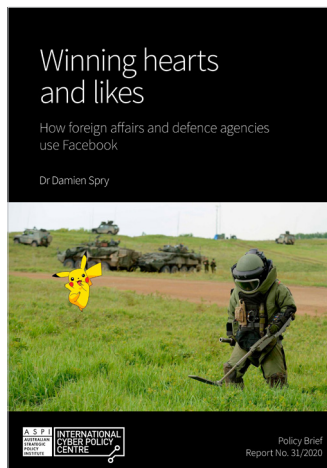
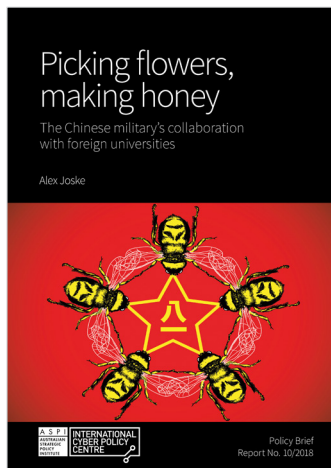
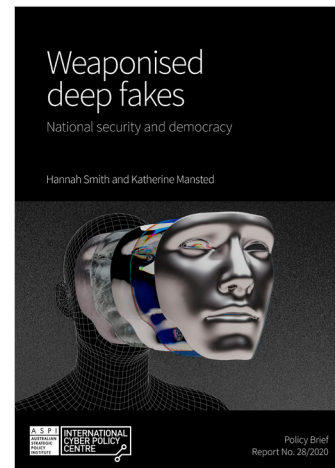
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## Acronyms and abbreviations

BRI	Belt and Road Initiative
CCDI	Central Commission for Discipline Inspection
CCP	Chinese Communist Party
CIPS	Cross-Border Inter-Bank Payments System
DC/EP	Digital Currency / Electronic Payment
EU	European Union
FSDC	Financial Stability and Development Committee
PBoC	People's Bank of China
PRC	People's Republic of China
RMB	renminbi
SWIFT	Society for Worldwide Interbank Financial Telecommunications
TPPI	third-party payment institution
tps	transactions per second

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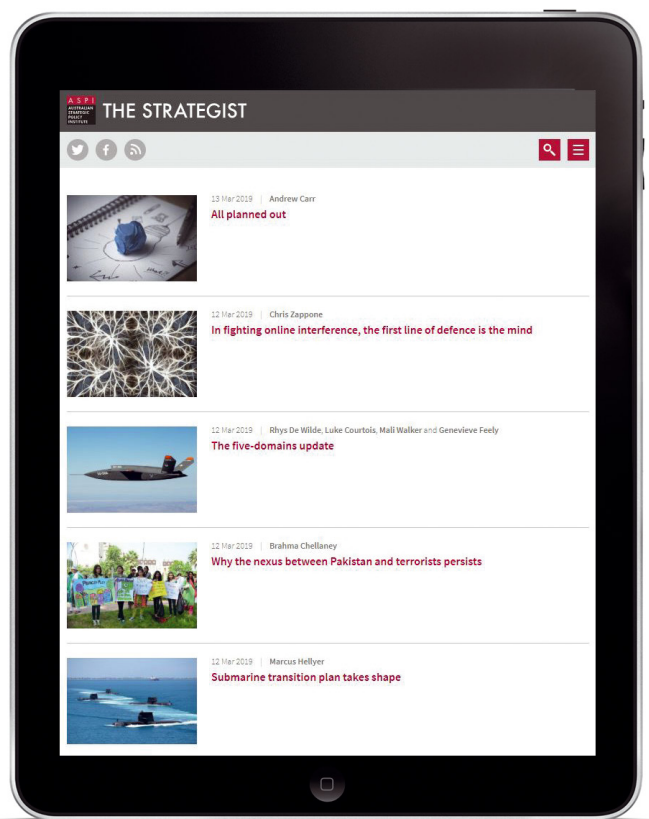


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