BNY MELLON

AERIAL VIEW

ACCESS A BROADER MARKET PERSPECTIVE

CHINA AND THE DAWN OF DIGITAL CURRENCY

BY GEOFF YU

BY THE NUMBERS

RMB 10 MILLION

The amount of “free money” included in the PBoC’s central bank digital currency (CBDC) pilot in October 2020 (approximately $1.6 million)

2 MILLION

Number of residents in Shenzhen that applied to participate in the PBoC's CBDC lottery

50,000

Number of Shenzhen residents randomly selected to receive CBDC in the PBoC pilot

RMB 200

The amount of CBDC renminbi each participant received in the PBoC pilot program (approximately $30)

CHINA IS EXPERIMENTING WITH A DIGITAL RENMINBI, THE FIRST TIME A MAJOR NATION HAS PILOTED ISSUING A DIGITAL CURRENCY. THE IMPLICATIONS ARE HUGE, FROM ENABLING MICRO-TARGETED ECONOMIC STIMULUS TO TRANSFORMING TRADE WITH THE RISING SUPERPOWER.

BY GEOFF YU

Imagine you are at the supermarket checkout, wallet in hand, about to pay for your groceries with cash. Suddenly, a helicopter lands in the parking lot, and out steps Federal Reserve Chairman Jerome Powell with a bag of freshly printed dollar bills of various denominations.

He walks up to you with a small bundle and stuffs it into your wallet. He tells you the money is to help with the weekly shopping or a little extra to spend at local businesses struggling with the pandemic. There is no need to pay it back.

Finally, Chairman Powell strongly advises you against saving it or using it to repay debt, explaining that this doesn't do as much for the economy as spending. He jumps back into the helicopter and flies off for his next drop.

This narrative sounds far-fetched, but the concept of targeted "helicopter drops" of money by a central bank or a government is not new. Putting funds directly into the hands of households is certainly considered positive for growth, but policymakers often grapple with regional disparities that a one-size-fits-all approach such as quantitative easing cannot address.

COVID-19 has made the problem even more acute due to area-specific lockdowns, the economic recovery from which will depend on local and esoteric support that most central banks are currently ill-equipped to provide.

Central bankers have also previously observed that attempting to provide economic stimulus utilizing such blunt instruments brings its own problems. Money "created" by a central bank requires the acquiring of an offsetting asset, so genuinely "free money" is difficult to deploy in large amounts without adversely affecting the value of the monetary base.

Nonetheless, in October 2020 as part of a controlled experiment, a major central bank began creating money without any reported constraints and subsequently handed it out to random households in the Chinese city of Shenzhen. Although the amounts received by households were small and the central bank did not have an explicit mandate for the exercise, the potential implications for a new form of targeted monetary policy were clear.

The People's Bank of China (PBoC) distributed RMB 10 million (around USD 1.6 million) through a lottery – except it was not distributed with helicopters and paper money: it was done digitally. Recipients had wallet apps at the ready on their mobile phones, primed to receive a central bank digital currency (CBDC).

Fifteen hundred years after inventing the banknote, China is now attempting to take money truly into the digital age. However, the rest of the world is still not sure whether it would like to follow suit.

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A DIGITAL RENMINBI

At first glance, this doesn't seem like such a big deal. After all, people have been paying for goods and services with their phones for many years. For many, adding a payment application or mobile wallet on top of the variety of options offered by an individual's bank or other providers seems an inconvenience.

Yet a CBDC mobile wallet is not the same as a payment-enabled app provided by a commercial bank. The bank's app is merely a replacement or substitute for a debit card in a physical wallet. In contrast, a CBDC mobile wallet is the physical wallet itself, and the money contained in the CBDC wallet is no different to physical notes and coins inside its old-fashioned leather counterpart.

Similarly, the money held in a commercial bank account, which can be accessed in physical or electronic form, is subject to credit risk associated with the bank. The same is true with the plethora of "digital wallets" launched by commercial banks and payments companies – money contained in these wallets is linked to funds held in a bank account and carries the same form of credit risk. In contrast, a physical banknote issued by a monetary authority carries no such risk, nor should a banknote in digital form: both are legal tender.

Under a fully functional CBDC framework, the two forms of money are fully fungible and hold equal status as legal tender. The latest amendments to the PBoC's governing law, proposed in late October 2020, would seek to enshrine this in law: Article 18 establishes the renminbi as legal tender. Article 19 further states that "the renminbi includes physical and digital form."

In April this year, after the preliminary pilot of China's CBDC (formally called Digital Currency/Electronic Payment or DC/EP) was launched, screenshots surfaced on social media of the central bank's digital wallet app.

The functionality within the app (such as scan to pay, send and receive money, etc.) was quite standard for a payment application or digital wallet. However, the screenshots also presented what may be the world's first-ever digital banknote issued by a central bank: a one renminbi note complete with serial number, but it was on a screen. The PBoC made it clear that these notes were real money and carried the same sovereign imprint as their paper counterparts.

LIMITED APPLICATION THUS FAR

For all of its innovations in creating the world's first functional CBDC (a recent report listed 84 related patents filed by the central bank), the PBoC is somewhat circumspect regarding the speed and scope of its adoption.

The aforementioned proposed new central bank law clearly states a role for physical currency to remain.

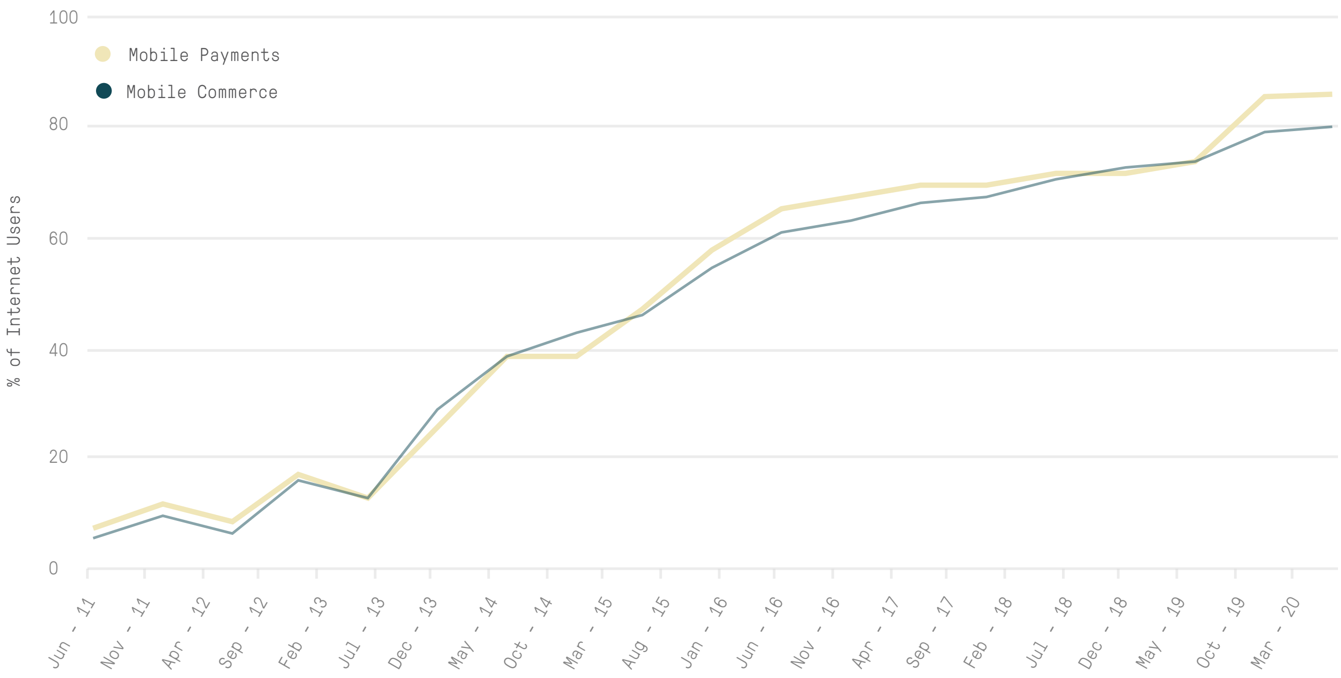
Despite the high penetration of mobile wallets in China – with over 800 million people utilizing payment apps launched by banks and payment companies as of the first half of 2020 (or 86% of internet users, see Figure 1) – there are no explicit plans for mass proliferation of CBDCs in the near future.

The only tangible target currently is for "general adoption" during the upcoming Beijing Winter Olympics in February 2022 – hardly ambitious given the pace of innovation.

For now, the PBoC is probably content to simply observe the household

A NETWORK NATION

Growth in proportion of Chinese internet users utilizing mobile wallets, between 2011 and 2020



SOURCE: BLOOMBERG, CHINA INTERNET NETWORK INFORMATION CENTRE

FIGURE 1

response to the digital renminbi and let usage grow organically. The recent lottery program in Shenzhen was essentially an information-gathering exercise for the central bank, and the results will help determine future development.

One major hindrance for wider proliferation is that while any renminbi in the PBoC's own digital wallet is legal tender, places where it can be spent directly from the CBDC wallet itself are actually quite limited. The PBoC has been cooperating with goods and services providers, such as online retail platforms and ride-hailing apps, and more companies are signing up as "strategic partners."

However, it is difficult to see CBDC wallets challenging existing and well-established payment platforms where transactions between individual and business counterparties are already seamless and at near zero-cost.

Furthermore, as a central bank is not in the business of providing other services such as paying utility bills and buying movie tickets, the functionality of a CBDC wallet will be limited. Households would likely transfer balances to existing universal-service platforms. A central bank should not see any problem with this: ultimately, a foundational principle for a CBDC – as established by the Bank for International Settlements (BIS) – is for a CBDC to complement and coexist with public and private forms of money.

MICRO-TARGETED STIMULUS

In normal times, central banks would not have any interest in printing any money for anyone. Yet a return to normality, in any sense of the word, seems a distant prospect amid the ongoing pandemic. This means as far as monetary policy and central banks are concerned, near-zero rates and unorthodox policy is here to stay – so central banks need to innovate.

One criticism often leveled at quantitative easing is that the "printed money" does not reach those who need it most: households and businesses. Central banks create money through purchasing assets (normally government bonds) in secondary markets from eligible counterparties, mostly banks. The central idea is that lower borrowing costs and a general reduction in risk premia can encourage spending and investment, which would ultimately benefit households and businesses.

The pandemic has certainly focused minds on the limitations of this framework. Around the world, social distancing has placed limitations on the ability of individuals to work and for businesses to operate. Yet there a

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are still bills to pay for all.

Central bank action prevented liquidity crunches in the financial system, but governments were left to do most of the work to buttress households, mainly through grants and loans. In the US, the government actively sent $1,200 checks to individuals.

Although authorities acted quickly, the process still required legislation, additional scrutiny, and cooperation with commercial banks, among other cumbersome procedures. In contrast, central banks – providing there is enough legal authority – can act much faster. With a CBDC wallet, theoretically, money can be created and sent to wallet holders instantaneously.

There will be questions over what exactly the asset is on a central bank's balance sheet through such direct household injections (notes and coin are central bank liabilities), but that can be easily resolved *ex-post*.

Furthermore, from a monetary policy point of view, this kind of instantaneous quantitative easing for the household can be highly targeted. For example, at present, Brooklyn has a higher COVID-19 infection rate than other boroughs in New York City and is most at risk of a lockdown, leading to potentially serious economic problems for households and businesses.

Assuming that each CBDC wallet will be linked to its holder's domicile as a security feature, the Federal Reserve can technically provide quantitative easing to Brooklyn zip codes.

Targeting can extend well beyond a regional approach: the CBDC wallet application can be programmed in a way such that funds contained within can only be spent in designated areas and also have a certain expiry date – an exercise almost impossible to implement with physical notes and coins.

For example, CBDC wallet funds can be restricted to legal tender status in small local shops that were asked to close during a lockdown period (as opposed to nationwide chain stores). Central bank stimulus can therefore be skewed toward helping a designated sector.

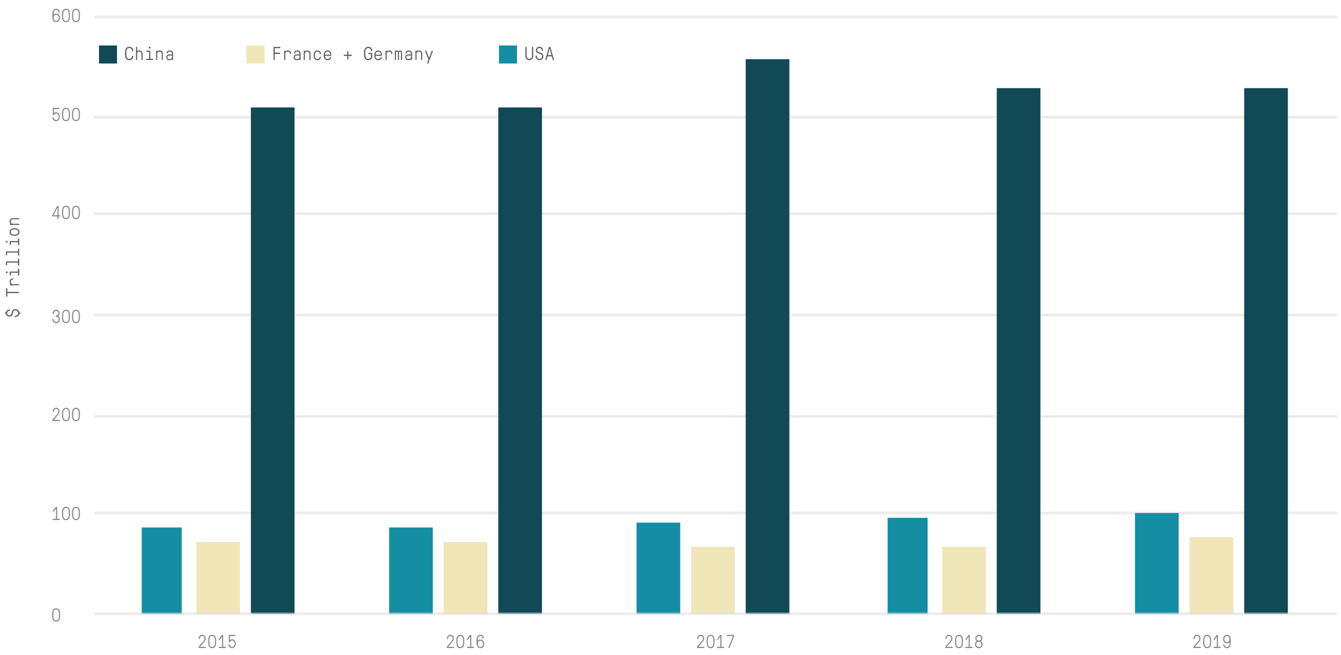
Time expiry in CBDCs would solve a perennial problem with quantitative easing and other forms of cash-based stimulus: too much of the money created can often be left sitting on balance sheets and not being spent or invested.

On a micro-level, households would be informed that specific CBDC funds would need to be spent within a certain time frame on goods or services and not be eligible for transfer into bank accounts for savings or debt repayment purposes.

The fact that China has been focusing its efforts and partnerships with goods and services providers is an indication that the PBoC, for now, primarily sees CBDCs as a pro-growth tool and may wish to develop them in a manner consistent with China's efforts to rebalance the economy in favor of consumption.

A DIGITAL REVOLUTION

Value of cashless payments in selected nations around the world, 2015 to 2019



SOURCE: BANK FOR INTERNATIONAL SETTLEMENTS

FIGURE 2

A GLOBAL CURRENCY DISRUPTOR?

The examples provided above do not even scratch the surface of the possibilities presented by a central bank digital currency.

Perhaps alarmed or impressed by China's test programs, central banks around the world have accelerated their own plans, from proofs of concept to pilots of their own.

Outside of China, Sweden's "e-krona" pilot is perhaps the most advanced. However, unlike China's recent real-life experiment in Shenzhen, the Riksbank is only creating the e-krona in "an isolated test environment" and has explicitly stated that "there is currently no decision on issuing an e-krona."

China may only be taking baby steps, but the rest of the world is not entirely sold on the concept, and no country has come close to China's willingness to actually launch the currency itself into the wider economy.

Indeed, China's embrace of cashless payments has eclipsed the enthusiasm seen in other nations around the globe. As Figure 2 attests, annual cashless payments in China have consistently breached the $500 trillion threshold in the five years to 2019, while comparable values in the US only just surpassed the $100 trillion mark last year.

In addition, there is barely concealed concern at the prospect of a Chinese CBDC and its potential to disrupt the international financial system – even if the disruption itself may not necessarily be negative.

In October 2020, the BIS joined the European Central Bank and the central banks of Canada, Japan, Sweden, Switzerland, the UK and the US to issue the first report setting out the "foundational principles and core features" of CBDCs.

It is worth noting that despite the radical advances the PBoC has made in this field, China does not appear once in the 26-page report – not even in the references. Striving for interoperability and common standards is in the world's interest, yet prospects for deeper cooperation appear limited as de-globalization and decoupling continues apace.

The future of money itself will be defined under these conditions as different financial blocs strive for dominance. The implication is clear: from the G7 and their partners' point of view, development of their own CBDCs, should it happen at all, must be completely independent of the PBoC's efforts. The report also contains the following sentence: "A CBDC of one jurisdiction could impact on another's monetary policy or financial stability (e.g., through 'dollarization') or be used to avoid laws and regulations

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outside a jurisdiction where sufficient controls are not in place."

The sentence acknowledges the cross-border impact of a CBDC: transactions can take place between users of the same CBDC in a geographically neutral manner, subject to the counterparties both holding an approved wallet and being able to receive payments. As long as both counterparties have confidence in the underlying issuer, then a transaction can take place seamlessly. If the transaction itself takes place outside the issuer's jurisdiction, however, it will be very difficult for the home country to supervise or regulate.

If we replace the word "dollarization" with something along the lines of "renminbization," the PBoC's CBDC takes on a geopolitical angle. For example, the phenomenon of countries experiencing a currency crisis suddenly adopting hard currency (usually the US dollar) is well-established.

The Federal Reserve is unlikely to step in to actively provide dollars under these circumstances, but the US can exert some degree of supervision through the International Monetary Fund. Such rescues, be it passive or active, take time and can even involve bringing physical cash into a monetary system at great risk.

A fully functional CBDC can move far more swiftly, providing the issuing central bank is willing to allow non-residents to hold a digital wallet. It is foreseeable that a country's monetary system could be supplanted at rapid speed, with obvious geopolitical implications.

The second risk and its corollaries are even more profound: CBDCs can become easy tools for capital flight, illicit transactions and sanctions avoidance.

The dollar's dominance in the global financial and trade system has allowed US authorities to vigorously police cross-border transactions. Owners of CBDC wallets in a non-US dollar currency can engage in cross-border transactions in the CBDC's issuing currency, fully outside of the visibility of the US (notably, Fedwire and CHIPS, which clear cross-border US dollar transactions).

If there is sufficient penetration of wallets and acceptance for this particular CBDC in a separate jurisdiction (akin to dollarization), it is conceivable that a trade and finance system parallel to the US dollar system can gain critical mass in the not-too-distant future.

A DE-GLOBALIZED WORLD

For the foreseeable future, there is obviously only one contender to challenge the US dollar system in this way, and that is the renminbi.

Throughout the recent deterioration in Sino-US relations, Beijing has become increasingly concerned about Chinese banks' exposure to the US dollar system. The possibility of potentially cutting off the access of Chinese banks to dollar clearing has been called "the nuclear option" for US authorities.

To be clear – going down this road would be a systemically important event with huge implications for

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global financial stability, but Beijing is unwilling to take that chance. While achieving general self-sufficiency within the next generation is now a policy objective, Chinese companies will continue to face US dollar risk in commerce and finance.

A CBDC is certainly not a silver bullet in this respect, as even if a foreign trade counterparty has access to a renminbi digital wallet, the counterparty still needs to be willing to accept renminbi as payment.

This requires China to establish long-term credibility in the currency's store of value. Should this happen, and an exporter to China is willing to accept renminbi through a digital wallet and transfer the renminbi to a custody account in China, in time the funds can be used to purchase goods from Chinese counterparties or to pay a third party who also holds a renminbi digital wallet for goods and services.

US dollar transactions in this form happen on a daily basis, but the renminbi is far from achieving that kind of critical mass, to the extent that Chinese banks at present are engaged in US dollar lending activities because of the demand and profitability.

Full digitization of China's monetary system has a long way to go, but the global implications are becoming more apparent. Before the pandemic, the global reach of Chinese tourists already meant that Chinese payment providers were ubiquitous globally.

The tourism/services trade may be dormant for the time being, but the infrastructure can be easily repurposed for conventional commerce to facilitate trade invoicing and settlement – in renminbi.

As CBDC wallets proliferate globally, seamless RMB payments may require the market to re-examine the "inconvenience" element of RMB. One of the objectives of using the 2022 Beijing Winter Olympics to popularize renminbi CBDC wallets is for foreign visitors to take the wallets back to their home countries.

Meanwhile, Chinese banks and payments firms are continuing to build up capacity to handle greater volumes. Even so, Beijing itself is still unsure what to do with the technology in a global context, as much of the capability seems incongruous with the renminbi's current non-deliverability and strict capital controls.

Yet these issues were defined well before the fintech age: China is probably happy for the renminbi to be a minor player in the twilight of the post-Breton-Woods era of currencies and the global financial system, but the country appears determined to define the terms of the next era.

Geoff Yu is Senior EMEA Market Strategist at BNY Mellon. Questions or comments? Write to geoffrey.yu@bnymellon.com, or reach out to your usual relationship manager.