Deliberations of an emerging market economy central bank on central bank digital currencies[1]

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Abstract

There have been heightened activities in the past two years among central banks exploring central bank digital currencies (CBDCs). The 2019 CBDC survey of the Bank for International Settlements noted that CBDC pilot projects were under way among 10% of the survey respondents – and that the central banks which had initiated the pilot projects were all from emerging market economies (EMEs). This interest in CBDC may have been prompted by the rapid global developments among virtual currencies and stablecoins and further spurred by other central banks' advanced CBDC activities. The mobility restrictions caused by the Covid-19 pandemic may have also been a contributing factor towards a "pro-digitisation" mindset among central bankers that looks favourably on digital innovations such as CBDCs. Nonetheless, EME central banks, such as the Bangko Sentral ng Pilipinas, are in the midst of deliberations on the benefits and risks and proper motivations for the issuance of a CBDC.

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I. Introduction

The pattern in central bank exploration of central bank digital currencies (CBDCs) may be seen in the annual surveys conducted by the Bank for International Settlements (BIS). In the first published survey, conducted in the latter part of 2018, 70% of the respondents were engaged in some form of work on CBDC (Barontini and Holden (2019)). Barontini and Holden mention that this figure was slightly higher than the share in an unpublished 2017 survey. The percentage of CBDC-engaged central banks went up to 80% in the 2019 BIS survey (Boar et al (2020)). Of the respondents, 40% had advanced from conceptual research to proofs-of-concept and 10% (all from EMEs) had initiated pilot projects. In 2020, notwithstanding the Covid-19 pandemic, the percentage went up again, with 86% of the respondents reporting ongoing CBDC activities (Boar and Wehrli (2021)).

This rising interest of central banks in CBDCs may have been prompted by developments in virtual currencies and stablecoins. Facebook, for one, announced its

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proposed digital currency Libra in June 2019 (Libra has since been restructured and is now known as Diem).

This interest is being further driven by activities of the CBDC "prime movers" among central banks. In October 2020, the Central Bank of the Bahamas issued the sand dollar, a digital version of the Bahamian dollar. In the same month, the National Bank of Cambodia launched the Bakong, a "quasi-CBDC" which is actually a blockchain-based payment system.

Global developments in central bank digital currencies. Among the notable EME central banks at the forefront of CBDC work is the People's Bank of China (PBoC) with its Digital Currency Institute. It has been implementing pilot projects of the digital yuan in various provinces. The PBoC is also currently involved in a cross-border CBDC experiment with the Bank of Thailand, the Hong Kong Monetary Authority and the Central Bank of the United Arab Emirates. A recent successful implementation of a cross-border CBDC experiment was Project Jura, undertaken by Bank of France, the BIS Innovation Hub and the Swiss National Bank. Another multi-central bank initiative is Project Dunbar, a collaboration among the Reserve Bank of Australia, Central Bank of Malaysia, Monetary Authority of Singapore, and South African Reserve Bank with the BIS Innovation Hub. The Bank of Korea, Bank of Japan and Bank of Thailand are some of the central banks in the Asia-Pacific region undertaking their own pilot CBDC projects.

Meanwhile, the quarantine restrictions that resulted from the Covid-19 pandemic encouraged the move from cash towards digital payments, creating a mindset among central bankers that looks favourably on digital innovations such as CBDCs.

II. Digital financial transactions in the Philippines

One positive outcome of the Covid-19 pandemic and subsequent quarantine restrictions is the impetus it provided to the digitisation of financial services and payment transactions in the Philippines. The latest figures show that by end-2020, 20.1% of the volume of monthly payments were being made digitally, a substantial improvement from the 14% share in 2019 (BSP (2021)). In terms of value, the share of digital payments likewise increased from 24% in 2019 to 26.8% in 2020. The increase in digital payments was largely in the form of high-frequency, low-value retail transactions such as person-to-merchant payments and person-to-person payments such as electronic funds transfers.

The Philippines' National Retail Payment System (NRPS). In 2015, the Bangko Sentral ng Pilipinas (BSP) and industry stakeholders launched the NRPS framework to create a safe, affordable, interoperable and efficient retail payment system in the Philippines with the use of electronic payments to improve the speed, convenience and affordability of financial transactions and, ultimately, to bring about a "cash-lite" Philippine economy. The NRPS became operational with the formation of two automated clearing houses – PESONet (in 2017) and InstaPay (in 2018). PESONet is a batch electronic funds transfer (EFT) credit payment scheme which supports bulk payment transactions of various users. InstaPay, on the other hand, is a real-time low-value EFT credit push payment scheme that facilitates small-value payments. As of 31 October 2021, PESONet had a total of 90 participating institutions, while InstaPay had onboarded 59 institutions.

In turn, PESONet and InstaPay facilitated another two important initiatives of the NRPS: (1) the Government e-Payments facility ("EGov Pay") via PESONet; and (2) the National Quick Response Code Standard ("QR Ph") via InstaPay. The EGov Pay facility digitises government collections and disbursements to allow for more efficient government collection, better audit, enhanced transparency, and minimised revenue leaks. The adoption of QR Ph[3] provided an interoperable payment solution to the fragmented QR-driven payment services market. Thus, merchants and customers no longer need to maintain several accounts and merchants do not need to display numerous QRs.

By end-2020, combined PESONet and InstaPay transfers had grown in volume by 484.7% compared to the previous year; that is, from 46 million transactions in 2019 to 270 million in 2020, with a corresponding increase in value of 165.4%, from PHP 1.5 trillion to PHP 4.0 trillion – tangible evidence of consumers "leveraging on the benefits of these interoperable digital payment services during the pandemic" (BSP (2021)) as well as an affirmation of the efficiency, promptness and reliability of the Philippine domestic retail payment system.

III. The BSP's inquiry on CBDCs

In line with the BSP's thrust on digitisation, a Technical Working Group (TWG) was created in June 2020 to conduct an in-depth study of the policy implications of a CBDC. To allow for a broad perspective, the TWG members were selected from the Department of Economic Research (DER), the Supervisory Policy and Research Department (SPRD), the Technology Risk and Innovation Supervision Department (TRISD), the Financial Inclusion Office (FIO), the Payment System Oversight Department (PSOD), the Payments and Settlements Department (PSD), and the Office of the General Counsel and Legal Services (OGCLS).

Five months later, in October 2020, the TWG submitted a report (BSP (2020b)) that discusses the basic concepts and fundamental issues surrounding CBDC and the possible implications and potential risks from the perspectives of monetary policy, financial supervision, payments and settlements, financial inclusion, and legislative matters.

Some issues for consideration

As has been presented in numerous studies, the report discusses the nature and differences of the types and attributes of CBDC – whether retail or wholesale and whether token-based or account-based. It likewise presents the architectural options: "direct" with the central bank operating the whole system and keeping the ledger for all transactions; and "hybrid" with banks as intermediaries but with the CBDC as a direct claim on the central bank.

From the monetary policy perspective, the impact on monetary policy transmission depends on whether the CBDC is remunerated or not. For the banking system, a CBDC may result in financial disintermediation and a potentially larger central bank footprint in the financial system. In times of heightened financial market

[3] BSP Circular No 1055, series of 2019.

stress, a rapid transfer of funds from bank deposits to CBDCs or a "bank run" would pose risks to financial stability.

A legislative constraint exists for the issuance of a retail CBDC in the Philippines. While the expanded authority provided by the National Payment Systems Act (NPSA) for the BSP to own and operate a payment system may be used as the legal framework to introduce the use of CBDC in wholesale form, it cannot accommodate the issuance of a retail CBDC.

Technological and infrastructure designs should take into consideration policies on data privacy, connectivity concerns and interoperability (both within the domestic market and across country borders).

Benefits and risks. In general, a central bank's issuance of a CBDC provides an alternative means to perform financial transactions, thus promoting financial inclusion. As a form of central bank liability, it presents another instrument for monetary policy. It likewise addresses the concern of countries experiencing a decline in the use of cash. Moreover, a CBDC encourages innovation in the payments system and promotes competition with privately issued digital currencies.

However, as mentioned above, there is the potential risk of financial disintermediation as owners of bank-based deposit accounts shift to CBDCs. In response, banks may raise interest rates on deposits, increasing their costs. With no or few accompanying financial literacy programmes, there would be risks to consumer welfare and loss of privacy. More importantly, with inadequate technological understanding and/or capacity, there is a high risk for cyber security breaches and the use of CBDCs for money laundering and terrorism financing.

Nonetheless, the bottom line is that the implications for the economy and impacts on central bank functions and mandates would depend on the design and features of the CBDC. But the appropriate design and features are to be determined by the motivation – the reason for having a CBDC.

Quest for motivation

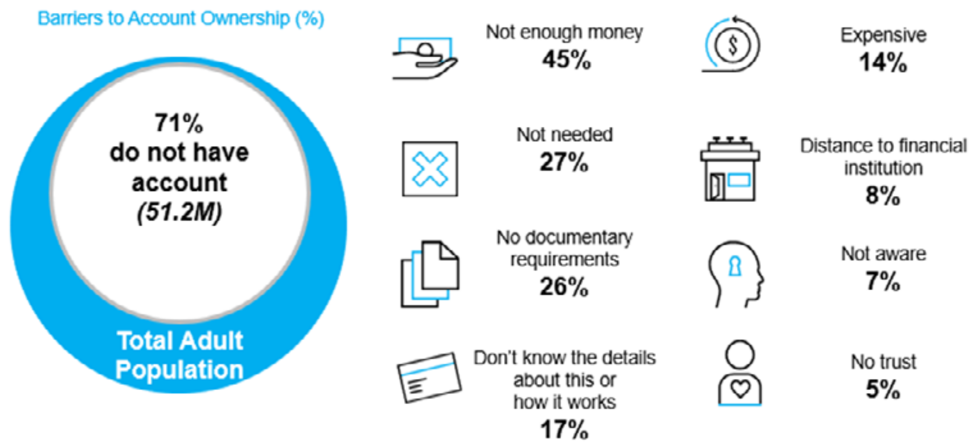
Many parts of the BSP CBDC report (BSP (2020b)) emphasised the need to determine the motivation for the CBDC as this will, in turn, determine the type and design of the CBDC.

Predominance of cash. For some countries, notably Sweden, the main incentive for their CBDC research is the rapid decline in the usage of physical cash. Yet such is not the case for the Philippines. Cash is still the primary mode of payment. As presented earlier, digital payments represent only 20% of the total volume of payment transactions. If a digital peso were to be issued, it would not be to replace cash but to supplement it. In fact, the BSP CBDC report notes that the removal of cash altogether or a restriction of its holdings as a consequence of the issuance of a CBDC could result in the financial exclusion of the most vulnerable segment of Philippine society.

No virtual currency threat. Also, there is, at present, no threat from virtual currencies (or "virtual assets") as these are not widely used in the Philippines. Regulations governing entities engaged in activities regulated by the BSP, such as e-money issuers and virtual currency exchanges/virtual asset service providers, are already in place. The BSP does not regulate specific virtual assets but supervises the business or process of exchanging fiat money for crypto-/virtual assets, as well as exchanges between virtual assets and/or their redemption back to Philippine pesos. The BSP works closely with other regulators, such as the Securities and Exchange Commission, through the Financial Sector Forum, for a coordinated approach in overseeing the wide range of virtual assets.

More targeted financial inclusion measures. One of the more popular reasons for considering a CBDC, especially among EME central banks, is the promotion of financial inclusion. It is argued that CBDCs could improve access to financial services and lower costs of financial transactions.

Financial inclusion is an important concern in the Philippines and is one of the advocacies supported by the BSP. According to the BSP's *2019 Financial Inclusion Survey* (BSP (2020a)), the number of Filipinos who do not own an account is estimated at 51.2 million, or 71% of the adult population. The survey identified the barriers to account ownership as follows:



Source: BSP (2020a).

The primary reasons are inadequate finances (45%), followed by a perceived lack of need for an account (27%) and inability to comply with documentary requirements (26%).

Still, financial inclusion may be addressed more effectively by more targeted measures than the issuance of a CBDC:

- *More financial access points*. With the rationalisation of branching guidelines, banks are expanding their network of branches and other offices, including the establishment of "branch-lite" units. BSP Circular No 940 (20 January 2017) allows banks to use third-party cash agents (such as shops, retailers and stores) as a cost-efficient service delivery channel in remote areas. With cash agents, banks are able to serve clients and expand their market, even in low-income areas.
- The number of touchpoints through agents had expanded to over 58,000 cash agents and over 84,000 e-money agents as of the fourth quarter of 2020.
- *Wider range of products*. Banks have greater flexibility to expand the range of products and services offered through their branch-lite units. BSP Circular No 992 (1 February 2018) sets out the framework for banks to offer basic deposit accounts (BDAs) to promote account ownership among the unbanked and underserved segments of the population. BDAs have simplified "know-your-customer/client (KYC)" requirements, a low opening amount, no minimum maintaining balance, and no dormancy charges.

- The number of BDAs had reached 6.6 million, with balances amounting to PHP 4.71 billion, offered by 133 banks as of the fourth quarter of 2020.
- However, as reported by the *2019 Financial Inclusion Survey* (BSP (2020a)), 60% and 46% of Filipino adults are still unaware of BDAs and of cash agents, respectively.
- *Creation of a dedicated office*. In 2018, the BSP created the Center for Learning and Inclusion Advocacy (now renamed as the Financial Inclusion Office) to work on a policy and regulatory environment that promotes the BSP's financial inclusion initiatives supportive of the country's National Strategy for Financial Inclusion.
- *Conduct of financial literacy programmes*. The BSP's regular conduct of financial literacy programmes aims to address the lack of awareness and information that result in having unbanked and underserved segments of the population.
- *Implementation of a national identification system*. The enactment of Republic Act (RA) No 11055, or the Philippine Identification System Act (PhilSys) in August 2018 provides Filipinos the means to establish a verifiable digital identity that will enable them to open accounts, use financial services more efficiently and gainfully participate in an increasingly digital economy. The BSP actively supports the implementation of PhilSys as a member of the PhilSys Policy and Coordination Council (PSPCC) and Chair of the Inter-Agency Committee (IAC) on Use Cases and Authentication. The BSP will also be involved in the production of the identification cards.

Finally, while CBDC is generally thought to promote financial inclusion, the technology aspect may create another form of barrier in the light of instability or lack of internet connectivity, particularly in rural areas.

Enhancement of the payment system. The BSP CBDC report (BSP (2020b)) notes that a potential contribution of a CBDC may be in enhancing the payment system, especially in areas "where the clearing and settlement function has not yet reached [the] operational capabilities of an RTGS system. While domestic retail payments in economies across the globe have become more rapid and efficient, cross-border retail payments remain cumbersome, expensive and slow." As presented earlier, the Philippine NRPS is one such example of a well functioning domestic retail payment system.

Cross-border payments and remittances. Cross-border transactions are made more significant for the Philippines because of the remittances of overseas Filipinos (OF). Even with the pandemic, OF remittances continue to contribute considerably to the Philippine economy. In September 2021, cash remittances channelled through banks reached USD 2.7 billion, a 5.2% increase from the USD 2.6 billion recorded in September 2020. On a year-to-date basis, cash remittances amounted to USD 23.1 billion for the first nine months of 2021, 5.6% higher than the year-ago level of USD 21.9 billion. If a CBDC could lower the cost of cross-border transfers, the potential gains would be substantial.

Accordingly, to help identify CBDC motivation/s for the BSP, its Payment System Oversight Department (PSOD) has undertaken an assessment of the existing payment system (wholesale and retail) to assess possible gaps or weaknesses which CBDC could address.

IV. Moving forward

The BSP report on CBDC (BSP (2020b)) recognises the importance of determining the motivation for a CBDC. In fact, the initial recommendation of the closing chapters is for the BSP to identify its primary motivation(s) for the issuance of a CBDC. Identifying the motivation is crucial not merely because this would determine the type, design and attributes of the appropriate CBDC but, more importantly, because it would provide clarification, set the direction and ensure alignment of all CBDC-related undertakings.

Clarity in the identification of the objective or motivation could be supported by continuing research. As mentioned earlier, an assessment of the current payment system and possible areas for improvement has been conducted. This could be supplemented by research on: (1) developments in the privately issued digital currencies in the Philippines and their business models and whether regulations (crafted on the basis of the industry sandboxes) are appropriate; and (2) developments in CBDC activities among central banks. Likewise, there could be stakeholder consultations. The determination of the motivation and, subsequently, the design and features of the CBDC should also take into account the "readiness, pain points and growth concerns of the diverse set of ecosystem players".[4]

The second recommendation of the CBDC report is to take a closer look at the technology: that is, for the BSP to learn the technology behind CBDC. To achieve this, the report proposes the following:

a. *Capacity building*. This may be done through learning sessions (such as seminars, workshops, roundtable discussions) conducted by other institutions and subject matter experts, or actual immersions with CBDC projects. The BSP may also benefit from technical assistance from international institutions such as the International Monetary Fund or the BIS.

b. *Establishing networks*. There could be consultations or collaborative experimentations with other central banks, financial institutions or international organisations that are also conducting CBDC-related research and initiatives.

c. *Developing a roadmap to pilot implementation*. A pilot implementation is a huge undertaking and would require an assessment of human resources and potential costs.

These recommendations and proposed actions are all interrelated – with all actions building towards greater knowledge and understanding of the digital payment ecosystem, and a higher level of capacity to implement or adopt an advanced digital technology in the payment system when the appropriate time comes.

[4] CBDC survey response of the BSP's Payment System Oversight Department.

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