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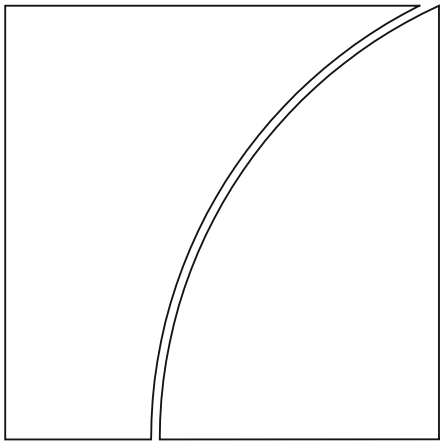

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Proceeding with caution – a survey on central bank digital currency

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Proceeding with caution – a survey on central bank digital currency[1]

A survey of central banks shows that a majority are collaboratively looking at the implications of a central bank digital currency. Although many have reached the stage of considering practical issues, central banks appear to be proceeding cautiously and few report plans to issue a digital currency in the short or medium term.

Introduction

Payments are changing at an accelerating pace. Users expect faster, easier payments anywhere and at any time, mirroring the digitalisation and convenience of other aspects of life (Bech et al (2017)). And, although paper-based payments like cheques and cash still play important roles, new technologies and market entrants are challenging the traditional bank-based payment systems (Jakobsen (2018)).

In addition to changes in how payments are made, even the type of money used could be changing. Across the world, central banks are reportedly thinking about how new central bank digital currencies (CBDCs) could replace traditional money (CPMI-MC (2018)). There is significant public interest in such a fundamental potential change, and this paper takes stock of central banks' current work and thinking. It is based on a recent survey of central banks to which 63 responded[2] (representing jurisdictions covering close to 80% of the world population). The survey asked central banks about their current work on CBDCs, what motivates that work, and how likely their issuance of a CBDC is.

The survey shows that, although a majority of central banks are researching CBDCs, this work is primarily conceptual and only a few intend to issue a CBDC in the short to medium term.

Central bank digital currencies

The 2018 report by the Committee on Payments and Market Infrastructures (CPMI) and the Markets Committee (MC) defines CBDCs as new variants of central bank money different from physical cash or central bank reserve/settlement accounts. Based on four key properties, the CPMI-MC report provides a taxonomy of money ("The money flower") which delineates between two broad types of CBDC: *general purpose* and *wholesale* – with the former type coming in two varieties (Graph 1).

The four key properties of money are: *issuer* (central bank or not); *form* (digital or physical); *accessibility* (widely or restricted); and *technology*. In terms of technology,

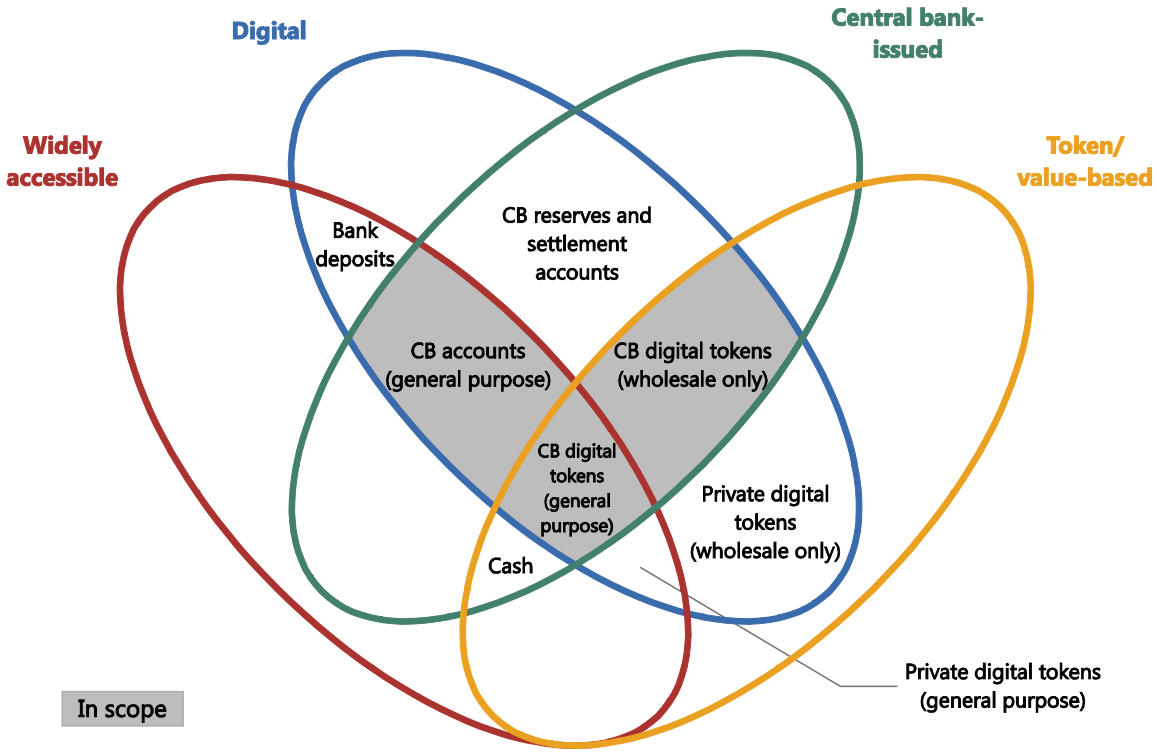
[1] We thank Morten Bech and Paul Wong for valuable comments, Codruta Boar for excellent research assistance, Harish Natarajan and World Bank colleagues for help disseminating the survey, and Klaus Löber and members of the CPMI Working Group on Digital Innovations for comments on the questions asked. The views expressed in this article are those of the authors and do not necessarily reflect those of the BIS.

[2] See complete list in Annex 1.

the report distinguishes between money that is token- or account-based. In payment economics, a key difference between tokens and accounts is in their verification: a person receiving a token will verify that the token is genuine, whereas an intermediary verifies the identity of an account holder (Green (2008) and Kahn and Roberds (2009)). However, the definition of tokens varies considerable across scientific fields, and other reports distinguish between value- or account-based forms of CBDC (eg Sveriges Riksbank (2018) and Norges Bank (2018)). This paper uses the terms value- and token-based interchangeably.

The money flower: a taxonomy of money

Graph 1



The Venn diagram illustrates the four key properties of money: *issuer* (central bank or not); *form* (digital or physical); *accessibility* (widely or restricted); and *technology* (account-based or token-based). CB = central bank. *Private digital tokens (general purpose)* include cryptocurrencies, such as Bitcoin. For examples of how other forms of money may fit in the diagram, please refer to the source.

Sources: CPMI-MC (2018); Bech and Garratt (2017).

In sum, this paper discusses the three variants of CBDC highlighted by the grey-shaded areas within the "money flower" above. The first is a "general purpose", "account-based" variant, ie an account at the central bank for the general public. This would be widely available and primarily targeted at retail transactions (but also available for broader use). The second form is a "general purpose", "token-based" variant, ie a type of "digital cash" issued by the central bank for the general public. This second variant would have similar availability and functions to the first, but would be distributed and transferred differently. The last form is a "wholesale", "token- or value-based" variant, ie a restricted-access digital token for wholesale settlements (eg interbank payments, or securities settlement). Two general purpose CBDC projects, the e-Peso and e-Krona, and the motivations behind them, are discussed in detail in Box A.

Box A

Motivations for general purpose CBDCs: Sweden and Uruguay

Although in many parts of the world, the amount of cash in circulation has risen over the last decade, there are some countries that buck the trend (Bech et al (2018)). In this small club of jurisdictions, a few have considered general purpose CBDCs that would be a complement to cash. Sweden and Uruguay are notable not just for the advanced stage of their work but the amount of information their central banks have made publicly available about their respective projects.

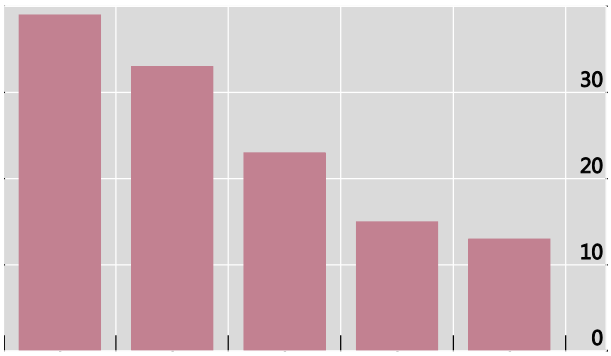
*e-Krona*①

Cash use in Sweden has declined for many years (Graph A). The country's retailers have good reason to expect that the decline will continue and the cost of accepting cash will become prohibitive, so that it will no longer be accepted in the future (Sveriges Riksbank (2018)).

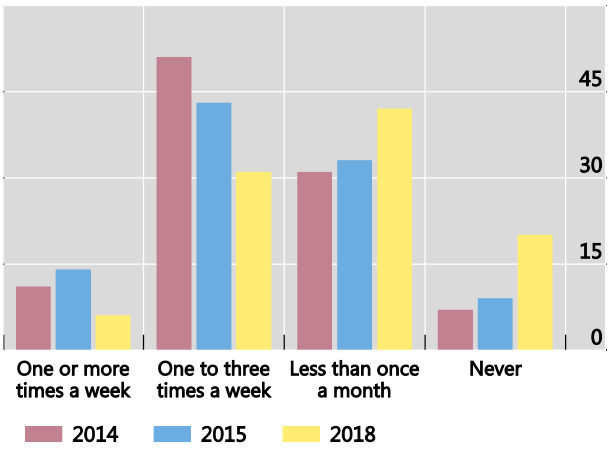
Sveriges Riksbank payment survey

As a percentage of respondents — Graph A

Who paid for their most recent purchase in cash?



How often do you withdraw cash from an ATM or cash desk at a bank?



Source: Sveriges Riksbank.

In response to this decline, the Riksbank is working on an "e-Krona" project, beginning in early 2017 and publishing its second report in October 2018. The report noted that the use of cash continues to decline and that the state needs to have a role in the payment market. A means by which to do this is to have an electronic krona. The e-krona would be a complement to cash, as well as to current electronic payments (especially in a serious crisis where other electronic payments might not be available).

Electronic payments beyond cards (specifically, a mobile payment system called "Swish") have recently seen a significant increase in Sweden, but usage is markedly lower among the elderly (Graph B). The Riksbank notes that some in society, who may have access only to cash, including the elderly and other more vulnerable groups, may need a simpler, more user-friendly offering to avoid exclusion.

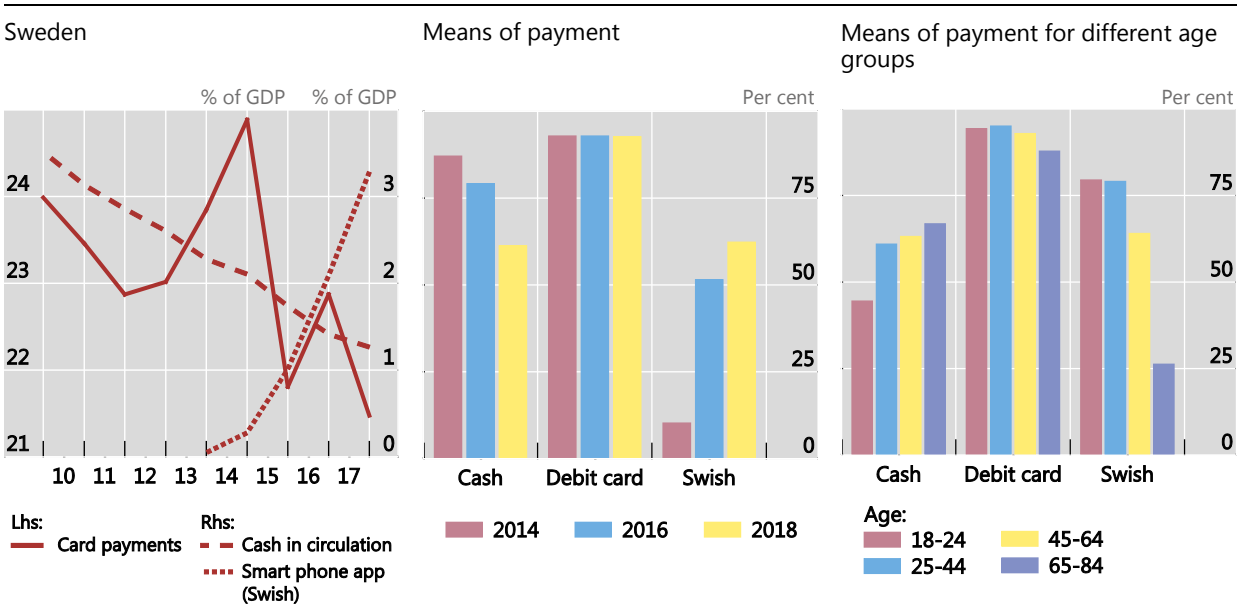
An e-krona might be "value-based" (ie not an account). However, the current versions of distributed ledger technology (DLT) are considered to be too immature, although they are not ruled out for the future. The Riksbank envisages a "platform" where payment service providers (PSPs) of the e-Krona would connect and distribute the currency. Those PSPs could, the Riksbank thinks, use DLT in providing their services.

A value-based approach would be compatible with the Riksbank's legal mandate (the Sveriges Riksbank Act), but an account-based e-Krona would require the mandate to be adapted for clarity. An account-based e-Krona is not

ruled out, but the Riksbank notes that coordination with other agencies would be necessary, and so dialogue should begin. The next stage will be a pilot programme for a prepaid value, non-interest bearing and traceable e-Krona. This will investigate a range of possible choices to better inform the decision whether to issue a full-scale e-Krona.

Rapid increase in use of new payment solution in Sweden

Graph B



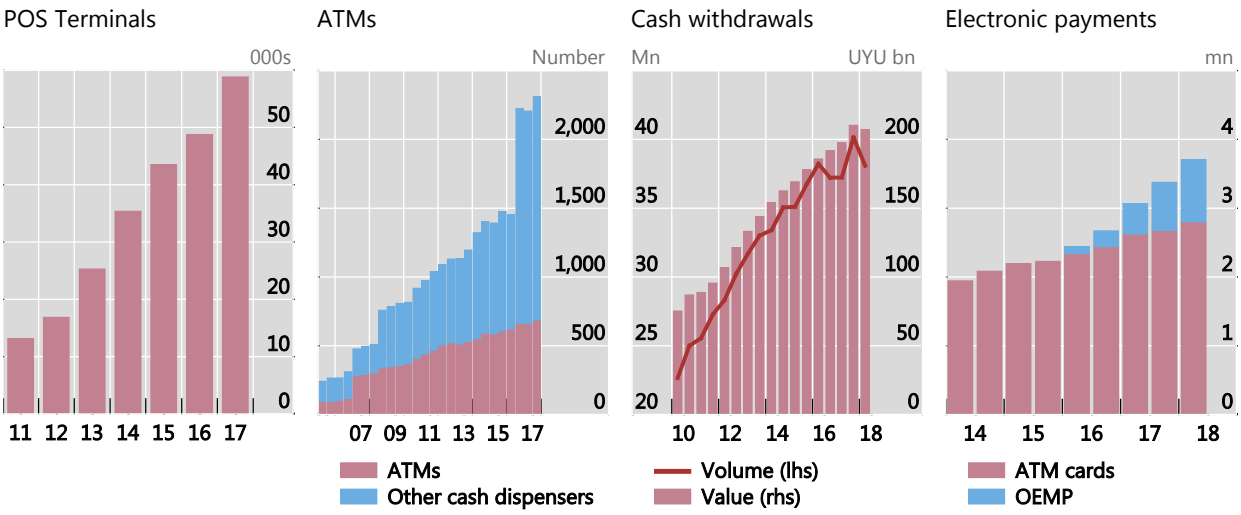
Sources: Sveriges Riksbank; CPMI Red Book statistics.

*e-Peso*②

The Central Bank of Uruguay has just completed a pilot programme on a general purpose CBDC. The pilot was part of a wider governmental financial inclusion programme, which began in 2011, aiming for greater access, labour market formalisation and payment system efficiency. Since these efforts began, the availability of ATMs and other cash dispensing mechanisms has grown enormously but cash withdrawals have plateaued (Graph C) and cash in circulation has fallen (Graph D).

Uruguay

Graph C



POS = point of sale. ATMs = automated teller machines. OEMP = other electronic means of payment.

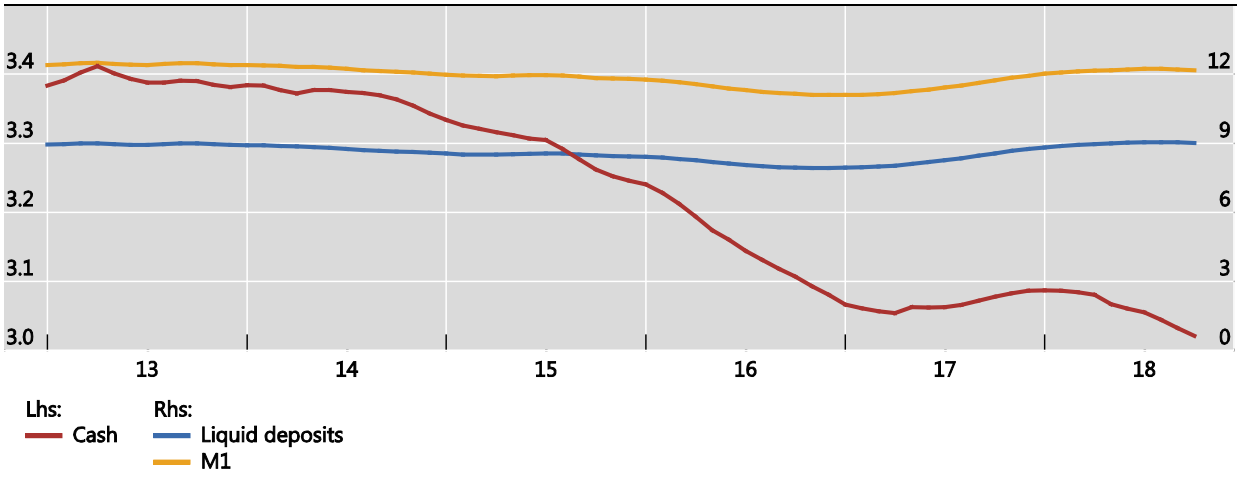
Source: Central Bank of Uruguay.

To respond to these changes and further its broader financial inclusion goals, the Central Bank of Uruguay began a pilot programme in November 2017 to issue, circulate and test an e-Peso. Unique digital banknotes in several denominations were issued for distribution to an "e-note manager platform". The platform acted as registry of the ownership of the digital banknotes. DLT was not used. In total, 20 million e-Pesos were issued, of which 7 million were distributed by a third-party PSP, which held an equivalent value of pesos in a central bank account. Individual users and businesses, in electronic wallets, could hold a maximum of 30,000 e-Pesos (roughly USD 1,000) and 200,000 e-Pesos respectively. Transfers took place instantly and peer-to-peer, via mobile phones using either text messages or the e-Peso app. The Central Bank of Uruguay's legal mandate was sufficient to issue the electronic e-Peso as a complement to physical cash.

The pilot was deemed a success and closed in April 2018, after which all e-Pesos were cancelled. The programme is now in an evaluation phase and a number of questions are being considered, before a decision on further trials and potential issuance can be made. These include design specific challenges, eg how best to manage the stock of digital banknotes in different denominations as well as wider questions eg the level of anonymity the e-Peso would have, whether it would bear interest, the final role of the central bank and what the wider impact on businesses and the economy would be.

M1 and its components in Uruguay

As a percentage of GDP — Graph D



Source: Central Bank of Uruguay.

① Sveriges Riksbank (2018).

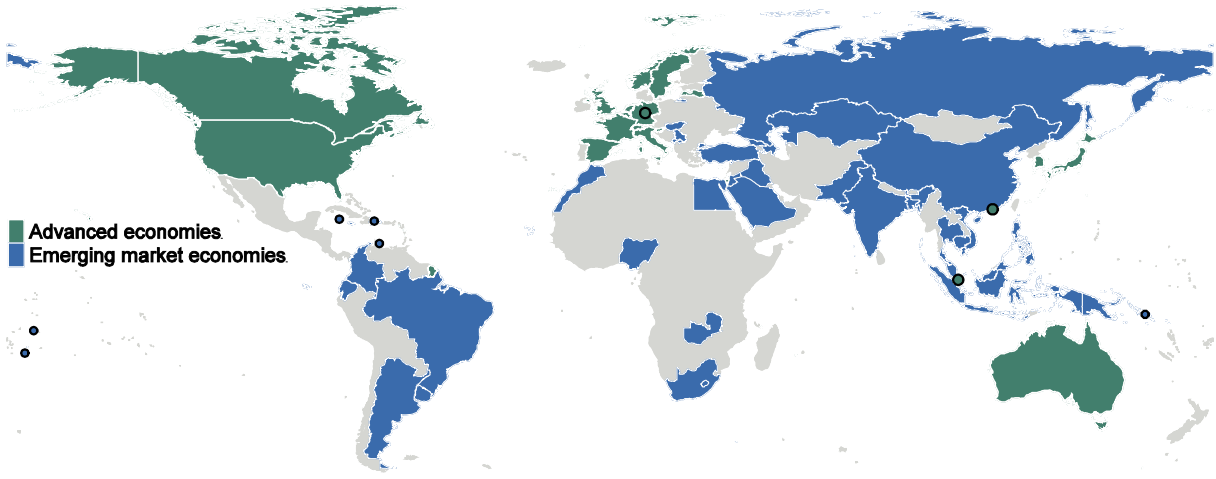
② Slides presented at the Conference on "Economics of Payments IX", hosted by the Bank for International Settlements and Committee on Payments and Market Infrastructures in Basel, Switzerland, 15–16 November 2018 (agenda).

The survey

Geographical coverage

Some 63 central banks replied to the survey, of which 41 are located in emerging market economies (EMEs) and 22 in advanced economies (Graph 2). Together, the respondents represent close to 80% of the world's population and over 90% of its economic output.

Respondents to the survey[1] Graph 2



[1] The black circles represent the Cayman Islands, the Dominican Republic, the Dutch Caribbean, the euro area, Hong Kong SAR, Samoa, Singapore, the Solomon Islands and Tonga. "Advanced economies" and "Emerging market economies" as defined by the IMF *World Economic Outlook* country classification.

The boundaries and names shown and the designations used in this map do not imply endorsement or acceptance by the BIS.

Questionnaire

The survey was conducted in latter part of 2018. It starts by asking central banks if they work on CBDCs or not and, if they do, it further inquiries about the type of CBDC and how advanced the work is. Motivations and current expectations for potentially issuing a CBDC are also queried, as well as whether central banks have legal authority to issue. The questions asked are included in Annex 2.

Given the complexities involved, central banks also provided a wealth of supplementary qualitative explanations to their answers. This survey follows a similar (but smaller-scale and unpublished) survey conducted by the CPMI in 2017. Results from the 2017 survey are included where relevant.

In addition to questions about CBDC, the survey also asked about "private digital tokens" and their use for payments. Private digital tokens encompass the wide variety of digital tokens not issued by central banks. The survey differentiated between so-called "cryptocurrencies" and other private digital tokens, with cryptocurrencies defined as decentralised tokens without an issuer or representing an underlying asset or liability. Central banks' responses are discussed in Box B.

Results

The survey finds that a wide variety of motivations is driving an increasing number of central banks to conduct conceptual research on CBDCs. However, only a few central banks have firm intentions to issue a CBDC within the next decade.

Work underway

Some 70% of respondents are currently (or will soon be) engaged in CBDC work, a slight increase compared to the 2017 survey (Graph 3, left-hand panel). Central banks currently not looking at CBDC are typically from smaller jurisdictions and/or face more pressing priorities. Some central banks indicate that they rely on research conducted by international organisations (in particular the BIS) or regional networks (eg CARICOM's fintech Advisory Work Group). Of those that *are* engaged in work, over half cover both general purpose and wholesale CBDCs (Graph 3, right-hand panel), with about a third focusing only on general purpose and an eighth only on wholesale.

Central bank CBDC work

Share of respondents — Graph 3

[1] Share of respondents conducting work on CBDCs, 2018 survey.

Source: Central bank survey on CBDCs.

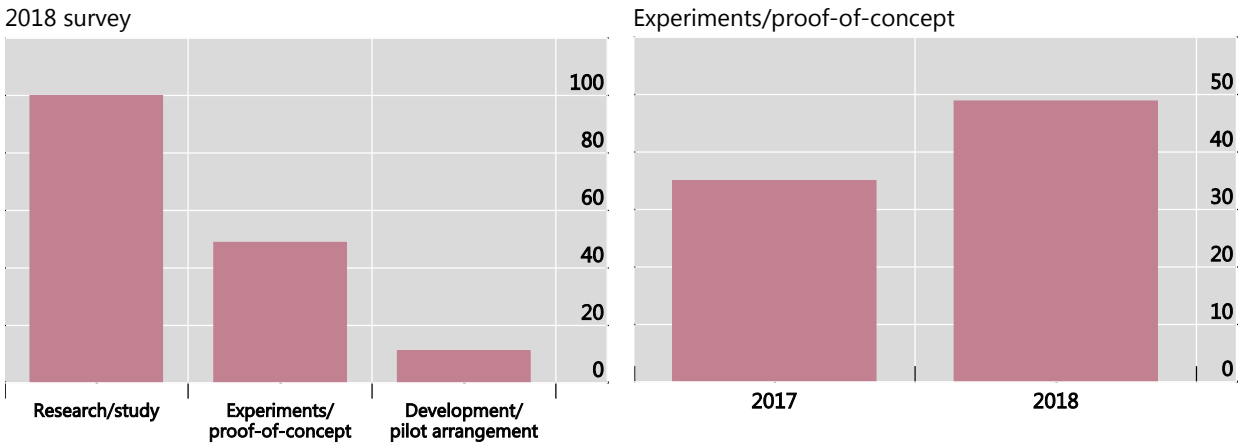
All central banks have begun their CBDC work with theoretical and conceptual research and are generally sharing their studies, with a view to developing a common understanding of this new field of study. At this point, half have moved on to experiments or more "hands-on" proof-of-concept activities to test new technologies (Graph 4, left-hand panel). This represents an increase of 15 percentage points over 2017 (Graph 4, right-hand panel).

Many central banks in both advanced economies and EMEs are attempting to replicate wholesale payment systems using distributed ledger technology (eg projects Jasper, Ubin and Khokha (Bank of Canada (2018), Monetary Authority of Singapore (2018), South African Reserve Bank (2018)).

Only five central banks have progressed to running pilot projects. The e-Peso project described in Box A is an example of a completed pilot. Importantly, despite the quantity of work underway, many of these proofs-of-concept or even pilot projects are only investigative in nature and do not imply plans to issue a CBDC.

Type of CBDC work

Share of respondents conducting work on CBDCs — Graph 4



Source: Central bank survey on CBDCs.

Central banks are also increasingly collaborating with each other to carry out proof-of-concept work on eg cross border payment and securities settlement arrangements. Collaborations include Project Stella by the ECB and the Bank of Japan (ECB-BoJ (2017)) as well as a joint project by the Bank of Canada (BoC), the Monetary Authority of Singapore (MAS) and the Bank of England (BoE) (BoC, MAS and BoE (2018)).

Motivations

The survey asked central banks about their motivations for potentially issuing a wholesale or a general purpose CBDC. Central banks chose from the same set of predefined factors for each type of CBDC, concerning payment safety and efficiency as well as other aspects of central banks' mandates. The central banks ranked their relative importance on a four-point scale ranging from "not so important = 1" to "very important = 4" and supplemented their choice with comments.

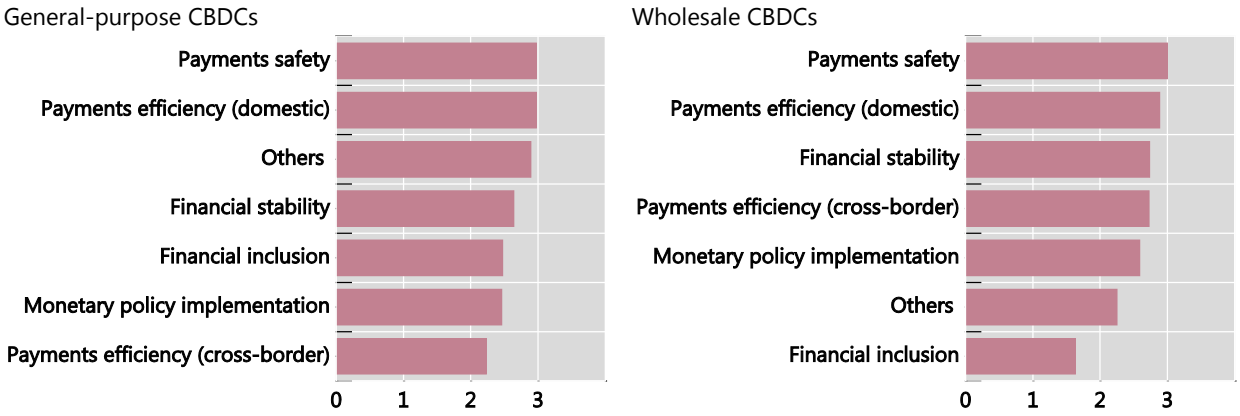
Looking across all respondents for both types of CBDC, payments safety and domestic efficiency are the most important motivating factors to central banks (Graph 5). Least important are, predictably, financial inclusion for wholesale CBDCs and, less-predictably, cross-border payments efficiency, for general purpose CBDCs. To note, however, all rankings remain in a rather narrow range which suggest at this "investigative" stage the main motivation is to learn. However, as central banks progress, more differentiation in terms of motives might emerge.

Outside the predefined choices, many central banks consider a range of other factors important as well. For general purpose CBDC, this broadly relates to issues around cash, either responding to dwindling use or discouraging it through supporting electronic innovations and payments. For wholesale CBDC, the other

factors are more diverse and overall, considered less important. They include better monitoring of transactions as well as safety and efficiency benefits for end users.

Motivations for issuing a CBDC, ranked in order of importance

Score[1] Graph 5



[1] The score is calculated as an average of the options: "Not so important" (1), "Somewhat important" (2), "Important" (3) and "Very important" (4).

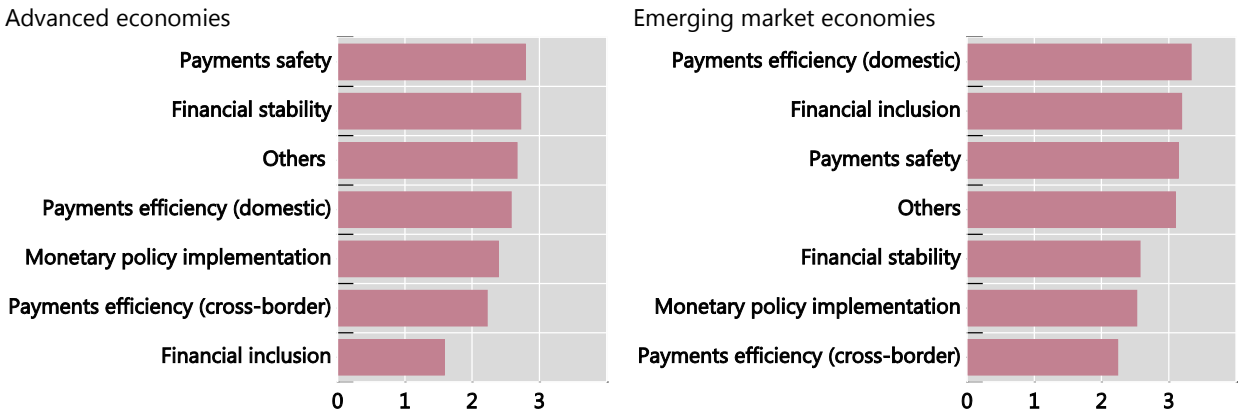
Source: Central bank survey on CBDCs.

Breaking respondents down by stage of economic development shows that, for general purpose CBDC, EMEs value domestic payments efficiency and financial inclusion most (Graph 6). On the other hand, cross-border payments efficiency is the least important. In contrast, for advanced economies, payments safety and financial stability are the primary motivators for potential issuance. Financial inclusion is clearly the least important factor.

In qualitative commentary, EME central banks also note that supporting digitalisation, incorporating the informal economy and fighting financial crime, are key motivators for potentially issuing a CBDC. Some advanced economies are motivated by the prospect of a "less-cash" or even "cash-less" society (see Box A for a discussion of the e-Krona).

Motivations for issuing general-purpose CBDCs, ranked in order of importance

Score[1] Graph 6



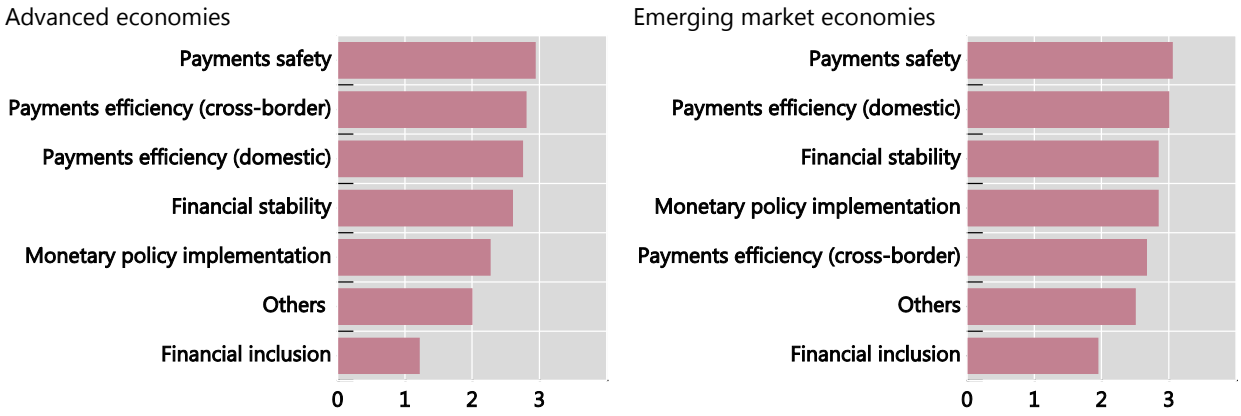
[1] The score is calculated as an average of the options: "Not so important" (1), "Somewhat important" (2), "Important" (3) and "Very important" (4).

Source: Central bank survey on CBDCs.

For wholesale CBDCs, both advanced economies and EMEs consider payments safety and efficiency the most important motivating factors (Graph 7). However, for EMEs, the cross-border dimension is somewhat less important. All central banks (including EMEs) consider financial inclusion the least important factor for wholesale CBDCs.

Motivations for issuing wholesale CBDCs, ranked in order of importance

Score[1] Graph 7



[1] The score is calculated as an average of the options: "Not so important" (1), "Somewhat important" (2), "Important" (3) and "Very important" (4).

Source: Central bank survey on CBDCs.

Outlook

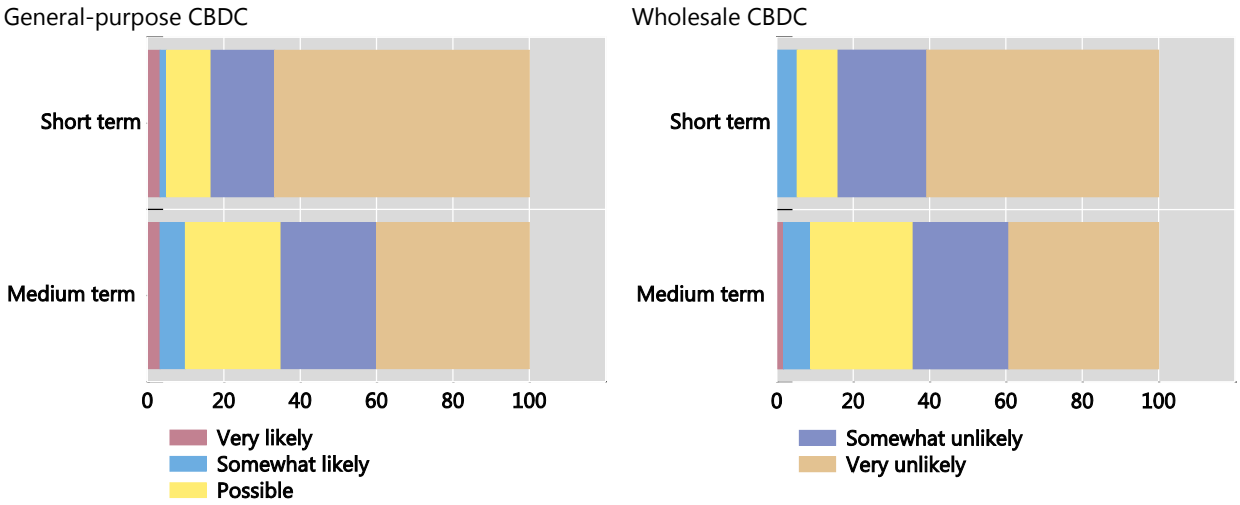
The survey asked central banks to describe the likelihood of their issuing each type of CBDC over the short (up to three years) and medium (up to six years) term. Central banks could choose from "very likely" to "very unlikely" on a five-point scale.

In the short term, over 85% of central banks see themselves as either somewhat unlikely or very unlikely to issue any type of CBDC (Graph 8). No central banks are very likely to issue a wholesale CBDC in the short term, but two EME central banks are considering issuing a general purpose CBDC over the same horizon.

Beyond the short term, an increased proportion of central banks consider the issuance of both types of CBDC to be possible. Nevertheless, a majority still consider this move at least somewhat or very unlikely. In the medium term, only one central bank reported that they see themselves as very likely to issue a wholesale CBDC. Overall, the likelihood of issuing both types of CBDC is somewhat similar, despite the perceived greater operational complexity and larger impact on the financial system of a general purpose CBDC (CPMI-MC (2018)).

Likelihood of issuing a CBDC in the short and medium term[1]

Share of respondents — Graph 8



[1] Short term: 1–3 years and medium term: 1–6 years.

Source: Central bank survey on CBDCs.

The 2017 survey also asked about the likelihood of issuing CBDC. However, the questionnaire did not differentiate between general purpose and wholesale CBDCs. Of the central banks that answered, half deemed issuance possible whereas the other half deemed it unlikely. At that time only one central bank was considering CBDC issuance to be likely but in the 2018 survey, it indicated that it is no longer pursuing any research.

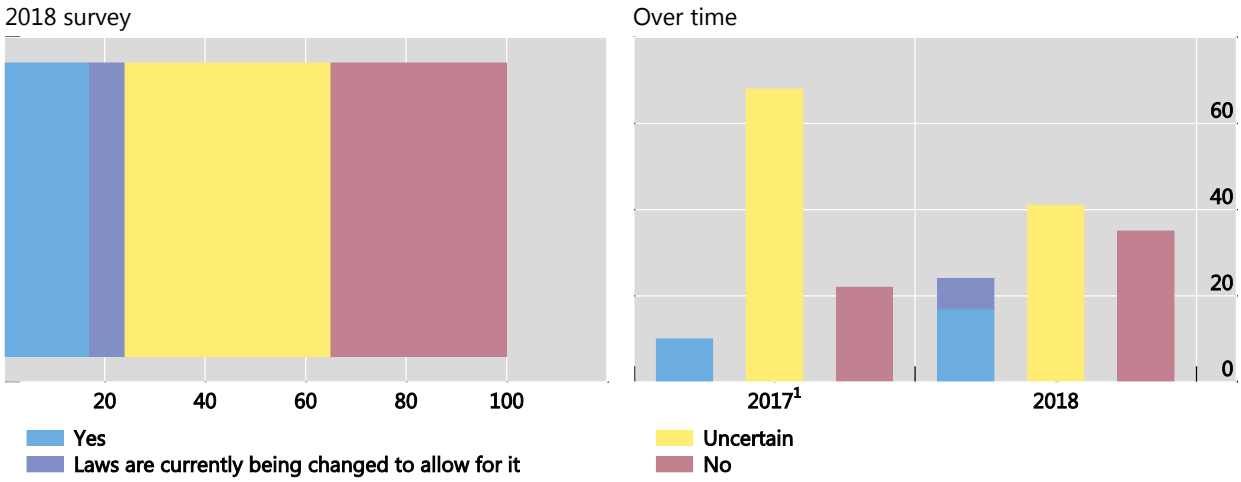
Legal authority

A prerequisite for issuing a CBDC is that the central bank has the legal authority to do so. The survey asked central banks to indicate whether they have, or are in the process of acquiring, this authority. The same question was asked in the 2017 survey.

Almost a quarter of central banks have, or will soon have, authority to issue a CBDC while a third do not, and about 40% remain unsure (Graph 9, left-hand panel). The high level of uncertainty is unsurprising, given that most central bank mandates predate not only cryptocurrencies but also many forms of electronic money. However, as central banks are studying all aspects of CBDC, the level of uncertainty has fallen compared with the 2017 survey (Graph 9, right-hand panel). The uncertainty does not differ materially by geography or a jurisdiction's economic development.

Legal authority to issue a CBDC

Share of respondents — Graph 9



[1] There was no "laws are currently being changed to allow for it" option for the survey in 2017.

Source: Central bank survey on CBDCs.

Conclusion

Most central banks are conducting research into CBDC. Many are progressing from conceptual work into experimentation and proofs-of-concept, including in cooperation with other central banks. Nonetheless, motivations for issuing a CBDC are largely idiosyncratic (eg falling availability of cash in a jurisdiction). This has meant that only a limited number of central banks are proceeding to the pilot stage with CBDCs, and even fewer see issuance of a CBDC as likely in the short or medium term.

At this stage, most central banks appear to have clarified the challenges of launching a CBDC but they are not yet convinced that the benefits will outweigh the costs. Those that do see clear benefits are predominantly from EME jurisdictions. From survey responses, this seems to be because financial inclusion projects create a clear mandate for central bank action, and a lack of current infrastructure limits the disruption a CBDC could create while simultaneously encouraging the use of new technology.

The trends identified in the survey are likely to continue. Different central banks will continue to move at different speeds. This creates a potential risk for spillover effects across borders (CPMI-MC (2018)). However, the evidence from this survey is that central banks are proceeding cautiously, and also that they are collaborating and

sharing the results of their work. Caution and collaboration will reduce the likelihood of unintended consequences.

To meet the payment needs of the future, physical cash is unlikely to be the main answer. Yet, most people will have to wait to use a CBDC. However, central banks are working hard to make sure the wait is worth it.

Box B

Cryptocurrencies and other private digital tokens

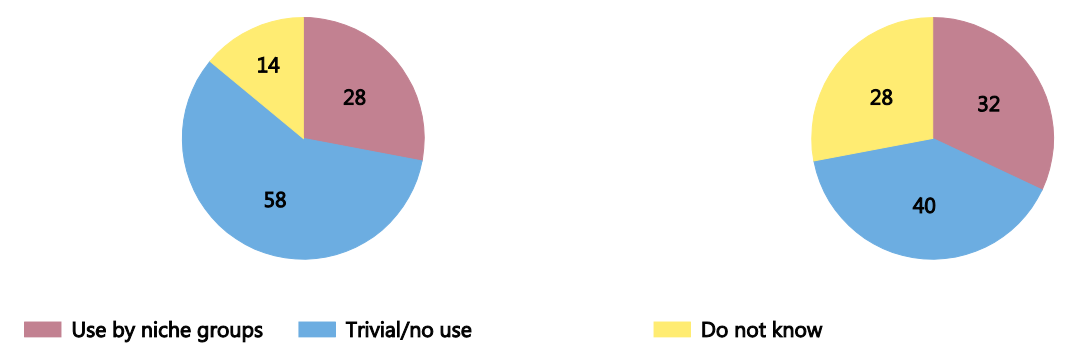
As well as questions on CBDC, the survey asked central banks about private digital tokens, encompassing the wide variety of digital tokens not issued by central banks. Decentralised digital tokens without an issuer that are not representative of any underlying asset or a liability are referred to as "cryptocurrencies". The survey included questions on the use of cryptocurrencies for domestic and cross-border payments, their judgement on whether that use would rise or fall and the state of experimentation with other digital tokens by the private sector in their jurisdictions.

Cryptocurrencies

No central banks reported any significant or wider public use of cryptocurrencies for either domestic or cross-border payments in their jurisdictions (Graph E). Usage of cryptocurrencies is assessed to be either minimal ("trivial / no use") or concentrated in niche groups for a large majority of the responding central banks. Answers were largely based on judgment, informed by industry, market and research sources although a few transaction monitoring programmes are reportedly in place. This is consistent with other research looking at payments made with cryptocurrencies (Graph G, right-hand panel), (Auer (2019)).

Current use of cryptocurrencies for payments[1]

Share of respondents — Graph E



[1] There were no responses for the options "Significant use" and "Wider public use".

Source: Central bank survey on CBDCs.

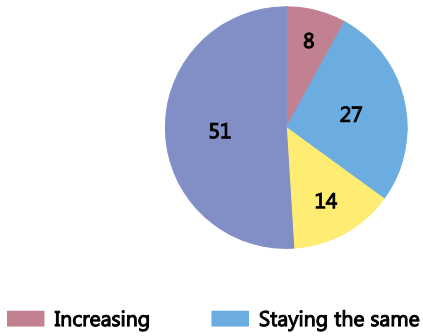
Judgments about future usage are, unsurprisingly, difficult to make. Most central banks have not formed a firm view, especially in the case of cross-border payments (Graph F). Of those that could, the majority think use in payments will remain minor. Reasons for this judgment include low retail acceptance, compliance issues, better public understanding by the general public of the risks involved and, for some jurisdictions, outright bans. This is in line with other research that suggests the values and volumes of cryptocurrencies are influenced by regulators' actions (Auer and Claessens (2018)).

Some central banks reported that both the current and prospective use of cryptocurrencies seemed contained to such assets being used for investment purposes.

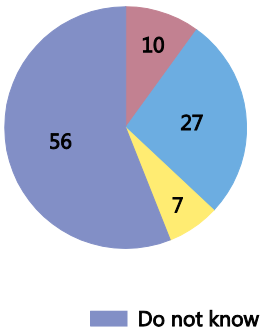
Anticipated use of cryptocurrencies for payments

Share of respondents — Graph F

Domestic



Cross-border



Source: Central bank survey on CBDCs.

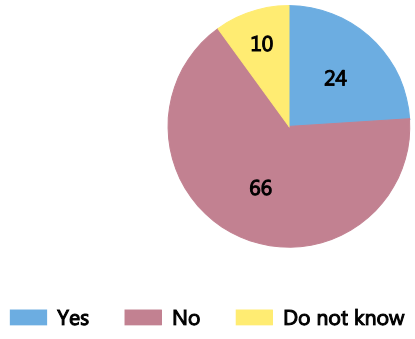
Other private digital tokens

A great deal of attention has been paid to the distributed ledger technology (DLT) underlying cryptocurrencies, with almost a quarter of respondents reporting that banks or non-banks are experimenting with or issuing private digital tokens as part of their payment services (Graph G, left-hand panel). The reported experiments are concentrated in advanced economies and remittance-receiving EMEs in Asia and are mostly at early stages. Projects reportedly focus on cross-border payments, consistent with domestic faster payments being available in the relevant jurisdictions. Some central banks note that initiatives are often akin to more traditional arrangements (eg e-money or correspondent banking) and may blur boundaries or give rise to definitional issues

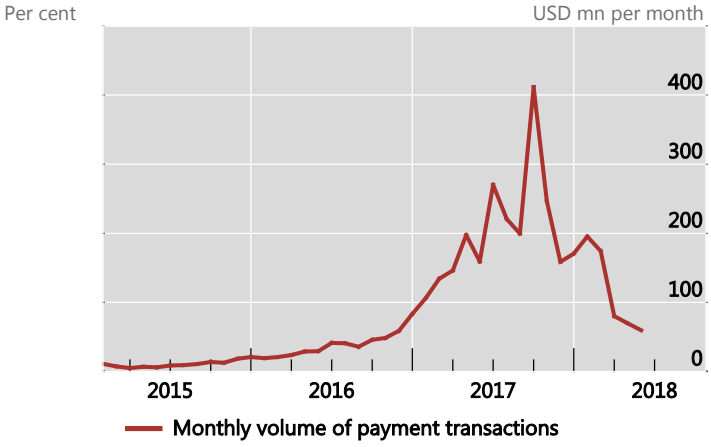
Are banks or non-banks experimenting with or issuing private digital tokens as part of their payment services?

Graph G

2018 Survey



Bitcoin payment transactions



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Annex 1: Central banks participating in the survey

Some 63 central banks participated in the survey from the following jurisdictions:

- Argentina
- Australia
- Azerbaijan
- Bangladesh
- Belgium
- Brazil
- Cambodia
- Canada
- Cape Verde
- Cayman Islands
- China
- Colombia
- Curaçao & Sint Maarten
- Cyprus
- Dominican Republic
- Ecuador
- Egypt
- Euro area (ECB)
- France
- Georgia
- Germany
- Hong Kong SAR
- Hungary
- India
- Indonesia
- Iraq
- Israel
- Italy
- Jamaica
- Japan
- Jordan
- Kazakhstan
- Korea
- Kosovo
- Latvia
- Malaysia
- Montenegro
- Morocco
- Netherlands
- Nigeria
- Norway
- Pakistan
- Papua New Guinea
- Philippines
- Russia
- Samoa
- Saudi Arabia
- Serbia
- Singapore
- Slovenia
- Solomon Islands
- South Africa
- Spain
- Sweden
- Switzerland
- Thailand
- Tonga
- Turkey
- United Kingdom
- United States
- Uruguay
- Vietnam
- Zambia

Annex 2: Survey questions

1. Has your central bank engaged, or will engage, in any kind of research, experiments or development work related to the development and use of CBDC? *[Yes / No]*

2. Is your work related to:

- *wholesale CBDC:*
- *general purpose CBDC*
- *both*

3. What type of work is being, or will be, conducted? Please check all that apply.

- research/ study
- experiments / proof-of-concept
- Development / pilot arrangement

4. How important are the following aspects to your motivations in issuing a:

- General purpose CBDC
- Wholesale CBDC

The following aspects were proposed:

  - financial stability
  - monetary policy implementation
  - financial inclusion
  - payments efficiency (domestic)
  - payments efficiency (cross-border)
  - payments safety / robustness
  - others (please specify below)

For each: *very important / important / somewhat important / not so important*

5. How likely is it that your central bank will issue a CBDC in the:

- General purpose CBDC
- Wholesale CBDC

For both, two time horizons were proposed:

  - short term (within the next three years)
  - medium term (four to six years)

For each: *very likely / somewhat likely / possible / somewhat unlikely / very unlikely*

6. Does your central bank have the legal authority to issue a CBDC?

- *Yes / no / uncertain / laws are currently being changed to allow for it*

7. Please provide any other details about CBDC and the thoughts and work in your jurisdiction, including your key motivations.

8. For your jurisdiction, please tick "True" or "False" for the following statements:

- Domestically:
  - There is a real-time-gross-settlement system (RTGS) available
  - The RTGS system settles more than one currency
  - There is a faster payment system used for domestic retail payments
  - There is broad participation by eligible financial institutions in the faster payments system
  - There is a legal framework for e-money

    - Non-banks are active in issuing e-money
- cross-border:
    - Payment mechanisms for cross-border e-commerce are widely available
    - There are exchange or capital controls that apply to cross-border retail payments

9. In your jurisdiction, how significant do you think consumer use of cryptocurrencies or crypto-assets for payments is?

- For domestic payments
- For cross-border payments

For each, the following options were proposed:

    - Significant use
    - Wider public use
    - Use by niche groups
    - Trivial / no use
    - Do not know

10. In your jurisdiction, do you think consumer use of cryptocurrencies or crypto-assets for payments is increasing or decreasing?

- For domestic payments
- For cross-border payments

For each, the following options were proposed:

    - increasing
    - staying the same
    - decreasing
    - Do not know

11. In your jurisdiction, are banks or non-banks experimenting or issuing private digital tokens as part of their payment services? *[Yes / no / don't know]*

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