Central bank digital currencies for emerging market economies

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My talk today

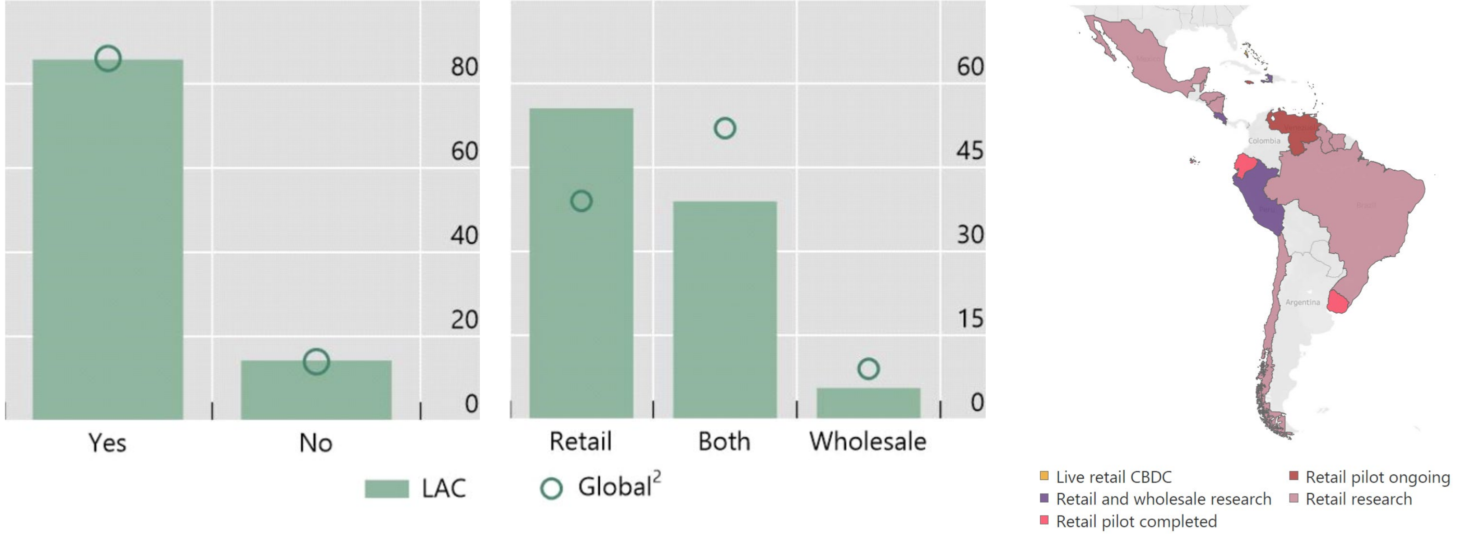
- Motivations for issuing CBDCs based on a BIS survey
- Potential benefits of CBDCs for LAC economies vs costs and risks
- Main takeaways

CBDCs in Latin America and the Caribbean: Central Banks' views

Central bank's work on CBDC advances further

Share of respondents

Engagement in CBDC work | Focus of work[1] | CBDC research and pilots in LAC



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[1] Share of respondents conducting work on CBDC. [2] Global results corresponds to the 65 countries answering the survey in 2020 for Boar, C and Weherli, A, (2021):"Ready, Steady, Go", BIS Working paper N°114.

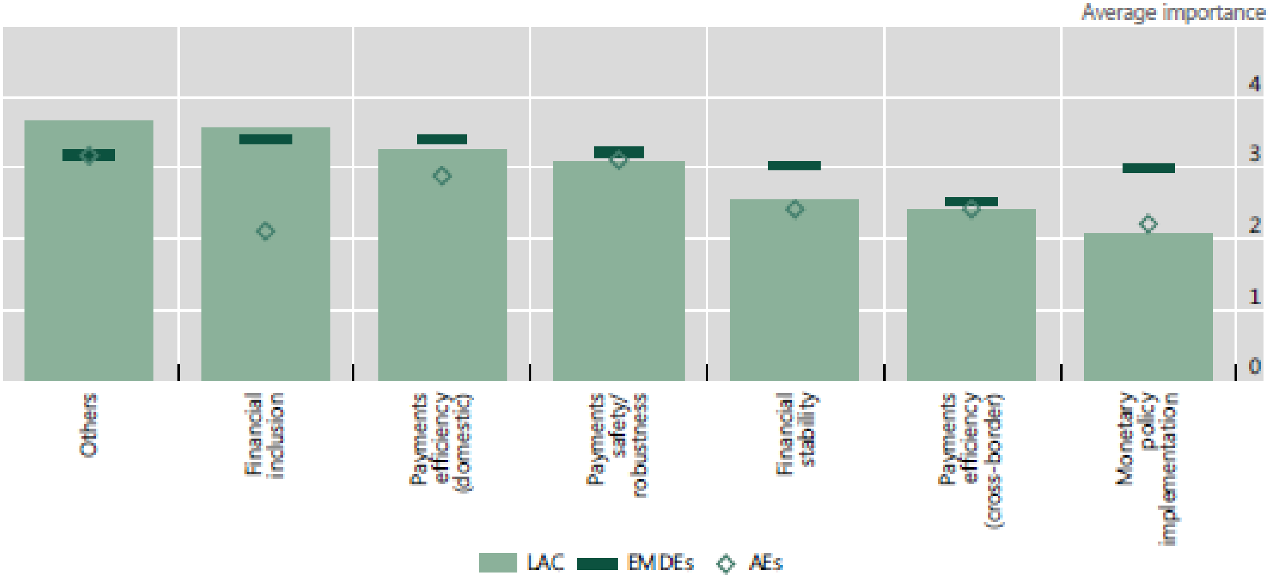
Source: BIS central bank survey on CBDC; R Auer, G Cornelli and J Frost (2021): Rise of the central bank digital currencies: drivers, approaches and technologies, BIS Working paper N° 880, August.

- 21 central Banks surveyed: 2020-2021
- Clear interest in CBDCs: 85% engaged in CBDC research.
- Higher interest in retail CBDC compared with the global average
- One of the most dynamic regions in the world

CBDCs in Latin America and the Caribbean: Central Banks' views

- Main motivations are to improve financial inclusion and the efficiency and safety of domestic payments
- Related motivation: To anticipate entries by private cryptocurrencies or stablecoins into local economies.
- Reduce – not replace – cash use is also a motivation: Cost of production and distribution
- Most central banks are not planning to issue a CBDC soon

Motivations for issuing a retail CBDC



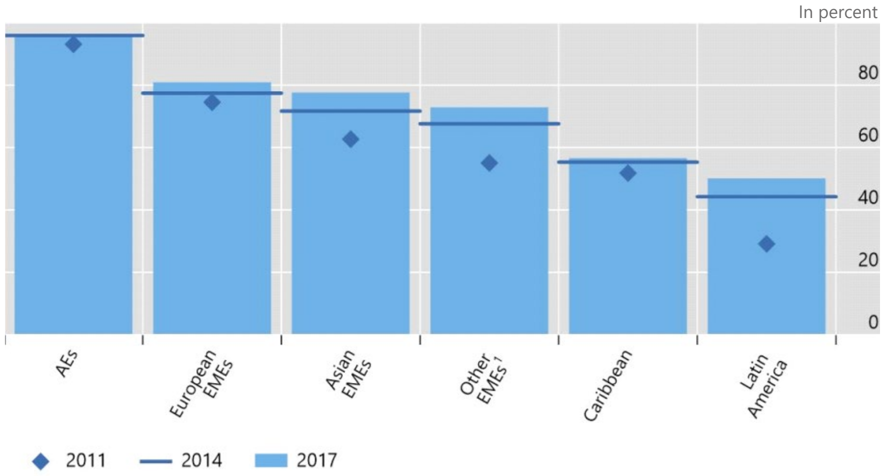
Scale: 1 = not so important; 2 = somewhat important; 3 = important; 4 = very important.

Source: Boar and Wehrli (2021); BIS survey on CBDC in LAC.

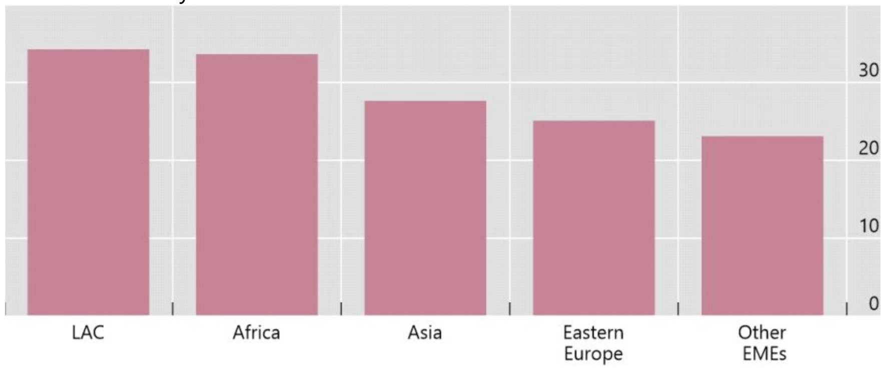
Promoting financial inclusion

- In our survey, most salient motivation for central bank interest in CBDCs.
- Especially relevant to LAC, given low share with transaction accounts.
- 69 percent have cellphones, only 49 percent have bank accounts.
- Reducing informality
- Getting funds to hard-to-reach people and places

Share of adults with access to transaction accounts



Shadow economy[2]



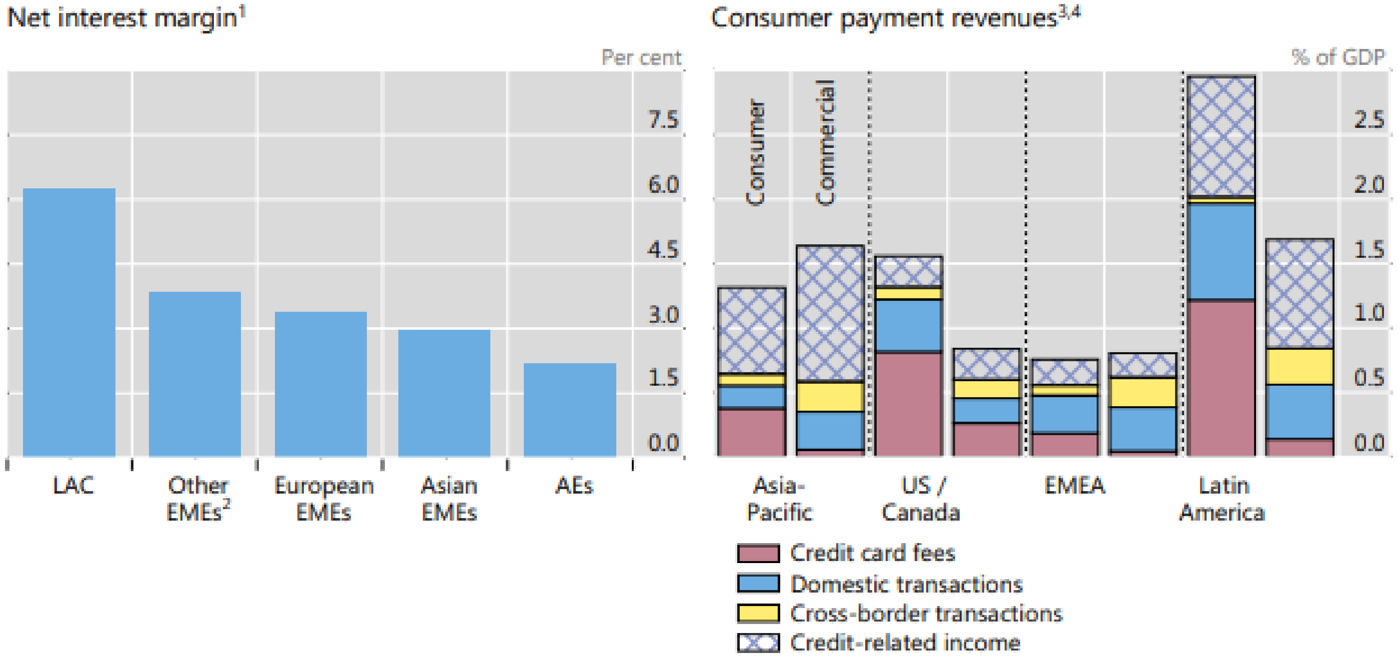
[1] Middle East, Russia and South Africa. [2] Index to measure shadow economy used by Auer, Cornelli and Frost and originally calculated by Leandro Medina and Friedrich Schneider

Sources: CEMLA, Foro de Pagos Yellow Book statistics; CPMI, Red Book statistics; World Bank, Findex; R Auer, G Cornelli and J Frost (2021): Rise of the central bank digital currencies: drivers, approaches and technologies, BIS Working paper N° 880, August.

Promoting more efficient and competitive payments systems

- LAC banking and payment systems: concentrated, uncompetitive, inefficient, and high prices

- Entry of big techs could exacerbate the problem



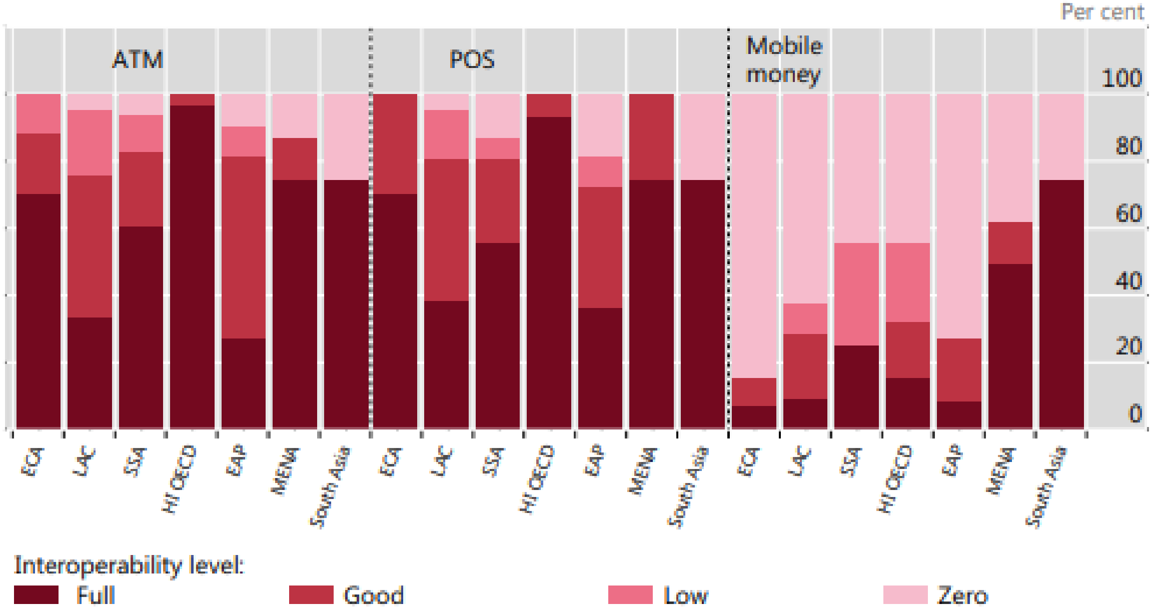
[1] Data for 2017. [2] Middle East, Russia and South Africa. [3] Data for 2018. [4] The regional GDP equals the sum of individual countries' GDP.

Sources: Beck et al (2000); McKinsey (2019b); World Bank *Global Payment Systems Survey* (GPSS).

Promoting more efficient and competitive payments systems

- Concentration not the only concern: another is fragmentation
- Payments providers may offer systems that aren't interoperable – ie, difficult to conduct payments across different services – and that could raise costs, too.
- LAC already lagging in operability for mobile money services.

Degree of technical interoperability by region



EAP = East Asia and Pacific; ECA = Europe and Central Asia; EMEA = Europe, Middle East and Africa; HI OECD = High-income OECD; LAC = Latin America and the Caribbean; MENA = Middle East and North Africa; SSA = Sub–Saharan Africa.

Sources: Beck et al (2000); McKinsey (2019b); World Bank *Global Payment Systems Survey* (GPSS).

Promoting more efficient and competitive payments systems

- CBDCs may be able to address both concentration and fragmentation.
  - Can design common platform, open to private payments providers, and supervised to ensure fair competition.
  - Could ensure both free entry into market, and
  - Interoperability among payments systems.

- What about retail fast payments systems?
  - PIX in Brazil account for 70 percent of digital transactions.
  - Also CoDi in Mexico.

- CBDCs have some advantages:
  - No need for intermediary credit – can streamline payments, including cross-border
  - Could embed programmable contracts to automate financial transactions
  - Provide a safe alternative to private cryptoassets

Potential costs and risks of CBDCs

- Cyber attacks and criminal activity
- Disintermediation of banking sector
- Greater volatility of capital flows
- Overlap between monetary and fiscal policy

Conclusions

- Central banks in LAC are very interested in CBDCs.
- Benefits appear to outweigh the costs/risks.
  - Costs/risks can be addressed through careful design and implementation.
- But benefits likely to be incremental, not transformative.
- Issuing CBDCs not an immediate and pressing priority. But central banks need to be ready.

Some references

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Central bank digital currencies (CBDCs) in Latin America and the Caribbean

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Retail payments in Latin America and the Caribbean: present and future[1]

Retail payment services in Latin America and the Caribbean are characterised by high costs and insufficient access for large swathes of the region's population. To overcome these limitations, some of the larger central banks in the region have taken the lead to introduce fast retail payments and develop an open banking ecosystem. Several others have launched central bank digital currency pilots. The shift to digital payments, which is supported by these policy initiatives, is likely to receive further impetus from the Covid-19 pandemic.

JEL classification: E42, E58.

Despite the widespread adoption of mobile and internet technology, countries in Latin America and the Caribbean (LAC) have not been at the forefront of payment innovation. Relative to other regions, retail payment services in LAC continue to involve high costs for end users and be of subpar efficiency, partly reflecting low competition among financial institutions and limited compatibility among different payment solutions. Along with low income levels, high informality and low financial literacy, high costs contribute to limiting the access to electronic and digital payments for large swathes of the region's population.

However, conditions in LAC are ripe for a change. Central banks and other public authorities have recently launched important initiatives to improve national payment systems, which complement developments in the private sector. In recent years, the region has seen a sharp rise in the number of fintech firms offering more convenient ways to pay, and big tech firms have begun to integrate payment services into their e-commerce or social media platforms. However, private sector incentives are not always aligned with social goals. Central banks are the ultimate source of trust in money and payments and therefore play a key role in maintaining the safety and integrity of payment systems as well as ensuring that private sector innovation is channelled towards improving competition, consumer protection and financial inclusion, and preserving financial stability (BIS (2020)).

These efforts to improve payment services have received further impetus from the Covid-19 outbreak. Both the volume and value of digital payments have been rising faster than before the pandemic. Many individuals had a strong incentive or no alternative other than to use digital payments during lockdowns, and governments

[1] We thank Claudio Borio, Carlos Cantú, Stijn Claessens, Angelo Duarte, Jon Frost, Daniel Garrido, Wenqian Huang, Thomas Lammer, Benoît Mojon, Daniel Reiss, Tara Rice, Hyun Song Shin, Takeshi Shirakami and Nikola Tarashev for helpful comments and suggestions. We are also grateful to Cecilia Franco and Rafael Guerra for excellent research assistance. The views expressed are those of the authors and do not necessarily reflect those of the Bank for International Settlements.

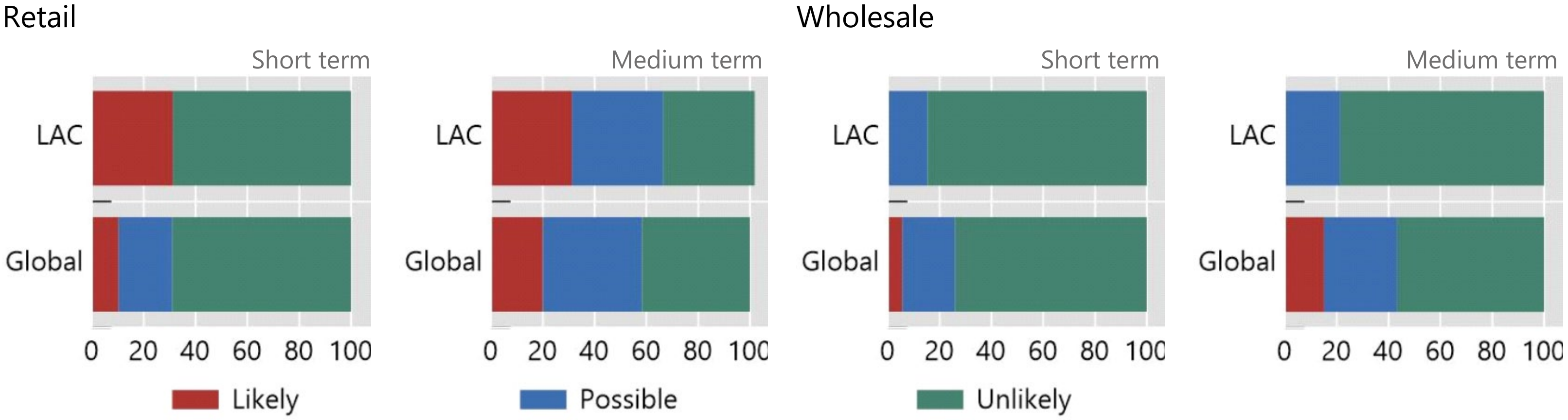
Thank you!

The likelihood of CBDC issuance

- Despite being one of the leading regions in the world, most central banks are not planning to issue a CBDC soon

- Much less interest in issuing a wholesale CBDC

Share of respondents



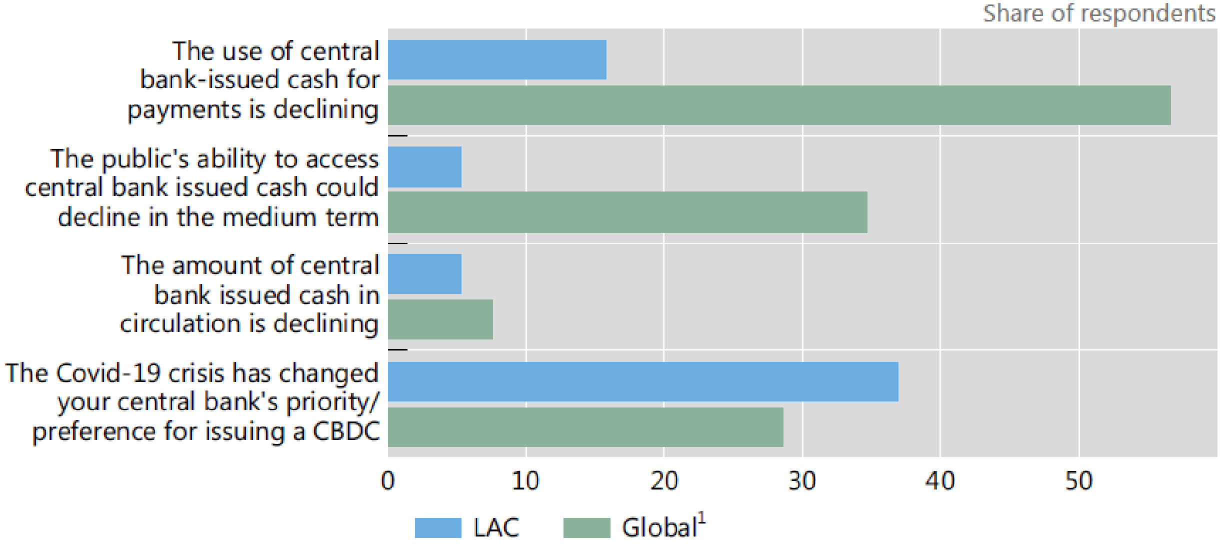
Short term: 1–3 years; Medium term: 1–6 years. In all graphs "Likely" combines "very likely" and "somewhat likely". "Unlikely" combines "very unlikely" and "somewhat unlikely".

Source: BIS central bank survey on CBDC.

Cash use not declining

- Confirmed by our survey: LAC central banks don't see cash use declining now or in medium term.
- So declining cash use not a first-order rationale for CBDCs in LAC.

Central bank responses to assertions about cash use



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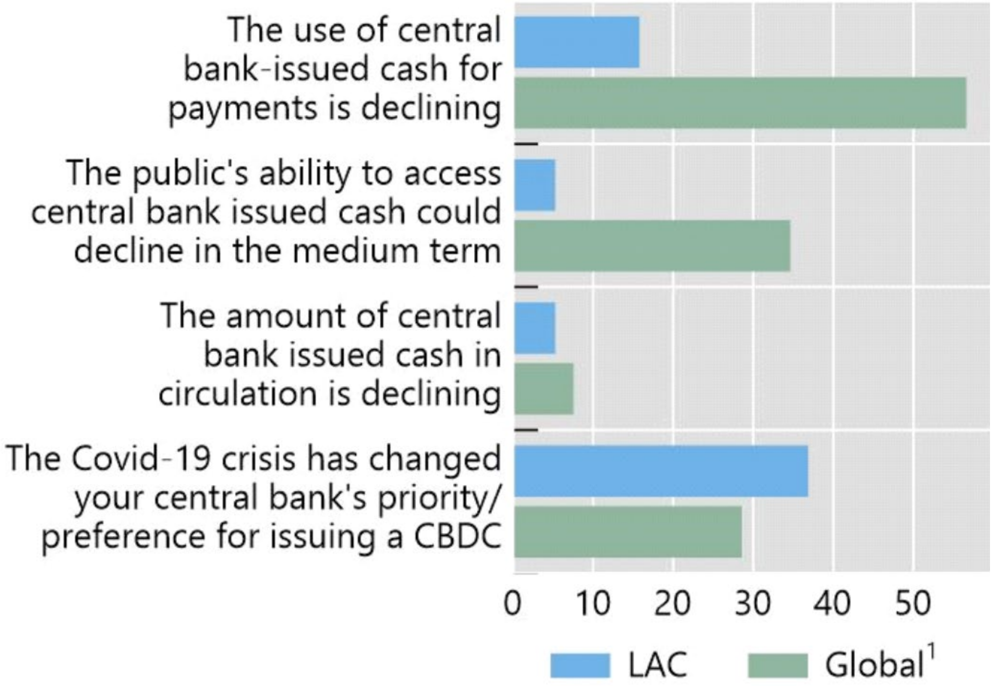
Source: BIS central bank survey on CBDC.

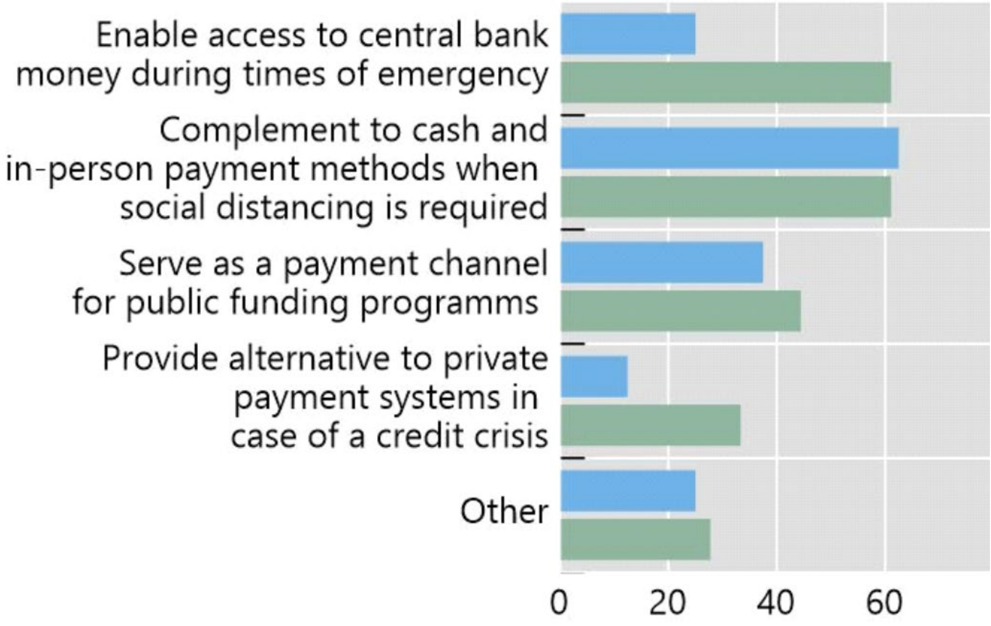
Getting funds to hard-to-reach people and places

Share of respondents

Agreement to statements on cash use



Reasons for altered stance on CBDC due to Covid-19

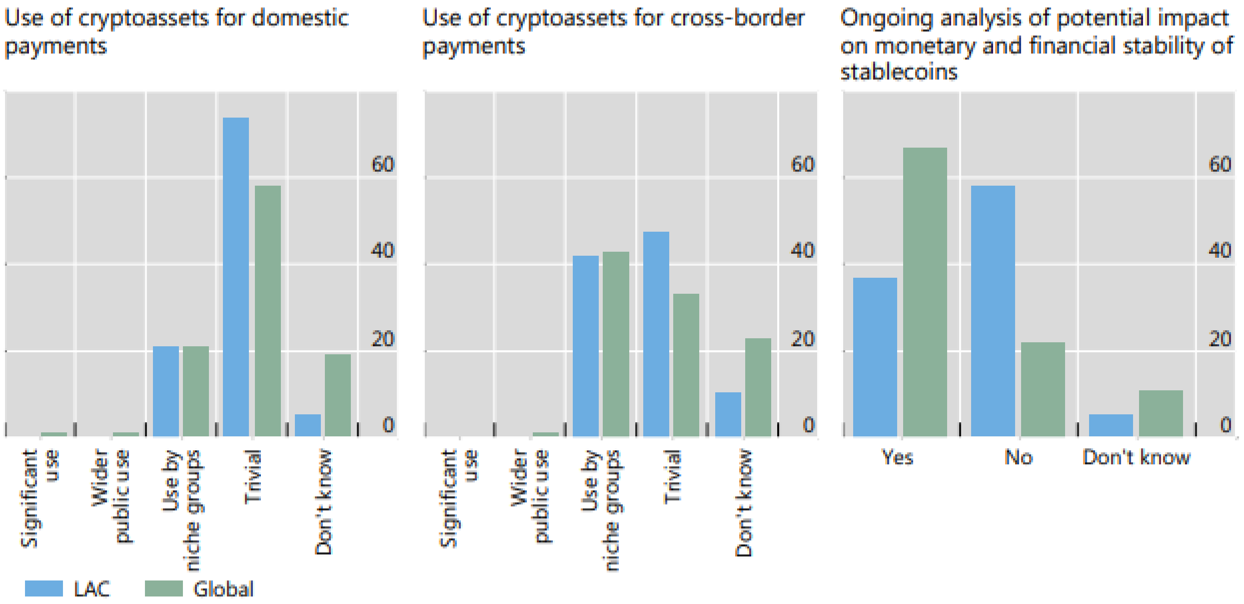


Source: BIS central bank survey on CBDC.

Fending off private crypto assets and foreign CBDCs

Private digital tokens[1]

Share of respondents



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Source: BIS central bank survey on CBDC.

Design choices and challenges

- 5 LAC experiments, 3 ongoing
- All ongoing use hybrid model
- Both centralized and DLT
- Bahamas/ECCB: caps on holdings, no interest paid
- Central banks lack direct access to users' personal data
- No cross-border use

Features of major CBDC projects in Latin America and the Caribbean

Table 5

	Ecuador	Uruguay	The Bahamas	East Caribbean	Jamaica
Architecture	Direct[1]	Hybrid	Hybrid[2]	Hybrid[3]	Hybrid[4]
Infrastructure	Centralised	Centralised	DLT and Centralised	DLT	Centralised
Cross-border use	National use only	National use only	National use only	Use by EC residents only	National use only
Offline use	Available	Available	Possible[5]	Possible[6]	Possible
Users' personal data	Held on the central bank platform	Anonymous but traceable	Can be accessed only by user's wallet provider	Can be accessed only by user's financial institution	Can be accessed only by user's wallet provider
Transaction registry	Held on the central bank platform	Managed by a private company	Central bank keeps the ledger of all individual transactions and holdings	Held on the blockchain	Central bank can access retail ledger but not the user's identity
Current status	Operated between 2014 and 2018	Pilot concluded in April 2018	Live CBDC	Live CBDC	Pilot concluded in December 2021. Rollout planned for 2022

[1] Central bank handles the retail payments and digital wallets. [2] Central bank maintains the ledger of all individual holdings of the digital currency; private providers of digital wallets onboard clients and perform KYC procedures. [3] The CBDC is issued to financial institutions, and they distribute it to their customers on demand. [4] The Bank of Jamaica will issue to commercial banks as well as authorised deposit-taking institutions, building societies, merchant banks and payment service providers (PSPs). These entities will distribute CBDCs to the retail market. The central bank will only have the wholesale ledger of transactions. [5] Users can make pre-set payments when the network in the island is down and wallets update against the network once communications are re-established. [6] The party initiating the payment must have an internet connection. If the receiver is offline, the payment will be still processed and the balances would be updated as soon as they are back online.

Sources: Central banks; A Arauz, R Garatt and D Ramos, "Dinero Electrónico: The rise and fall of Ecuador's central bank digital currency", *Latin American Journal of Central Banking*, vol 2, issue 2, June 2021; R Auer, G Cornelli and J Frost, "Rise of the central bank digital currencies: drivers, approaches and technologies", *BIS Working Papers*, no 880, August 2020, as updated in October 2021.