Trendsights

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A regular focus on trends and innovations that matter to Interac Corp.

Central banks shake up the future of money with digital currencies

Money has evolved from shells to coins to bank deposits. Today, deposits and bank notes issued by the Bank of Canada make up the vast majority of money in Canada's economy. In 2008, the Bitcoin whitepaper set out the technical principals underlying the world's first peer-to-peer electronic currency, kicking off the development of so-called "cryptocurrencies". At the same time, increased use of digital payment methods (accelerated by the pandemic) spurred the declining use of cash.

Traditionally-cautious central banks now find themselves pulled into the fray, compelled to maintain control of monetary systems spawning new alternatives, yet aware of potential harm to financial institutions and consumers if intervention goes wrong. Facebook's 2019 announcement of plans for a new digital currency, Libra (see our July 2019 *Trendsights* on that), increased central bank concerns about the impact all of this might have—if scaled up to critical mass through the reach of big tech—on the role and responsibilities of financial institutions, and of themselves. "Central bank digital currencies", or CBDCs, are now on the table as a possible response, with research projects and pilots emerging in China and around the world.

This edition of *Trendsights* looks at CBDCs in the context of other digital currencies, and at the implications they might have for financial institutions—and for Interac Corp. (Interac).

Dive in

Overview

The various new forms money is taking

Like any new technology, new forms of money aren't immediately and comprehensively replacing older forms, but instead function alongside them in the economy as alternatives with attributes that differentiate them: for example, their physical or digital nature, who issued them, how their value is determined, and the level of transaction privacy they may offer. Here we take a comparative look at the four primary catagories of money currently in use, and how CBDCs may compare with them.

	PHYSICAL CURRENCY (FIAT)	DIGITAL CASH	CRYPTOCURRENCY (UNPEGGED)	CRYPTOCURRENCY (STABLECOIN)	CENTRAL BANK DIGITAL CURRENCY
Physical vs. digital	 Coins & bank notes	 Electronic registers	 Blockchains	 Blockchains	 Electronic registers
Issuer	 Central banks & FIs	 Central banks & FIs	 Peer-to-peer Business-to-business	 Peer-to-peer Business-to-business	 Central banks
Value	 Actively managed by central bank	 Actively managed by central bank	 Market supply & demand	 Pegged to currency or other instrument	 Actively managed by central bank
Privacy	 Private to user	 Private to user + FI	 Public but anonymous	 Public but anonymous	 Private to user + CB
Examples	**Dollar bill**	**Bank deposit**	**Bitcoin**	**Tether**	**Digital Yuan** China (pilot)

CBDC Definition and attributes

In a recent paper, the Bank for International Settlements (BIS) defined a CBDC as **"a digital payment instrument, denominated in the national unit of account, that is a direct liability of the central bank."**[1] Both "wholesale" (customers access CBDCs via financial institutions) and "retail" (customers access CBDCs directly with the central bank) delivery mechanisms have been considered by policymakers, but the retail version is the one most often discussed publicly, so we focus on that here. In fact, this is just one of several important design choices that central banks face in considering CBDCs.

Key design choices[2]

Note: "CB" = central banks; "KYC" = know your customer; "AML" = anti-money laundering

Retail vs. wholesale

Retail	Wholesale
Payments made between individuals, or individuals and businesses	Payments between commercial banks and central banks, for use in capital markets and settlement
Cross-economy access for all users	Access limited to financial institutions

Account vs. token-based

Account	Token
Transactions based on verified customer accounts and approved by payer and payee	Transactions based on cryptographic tokens, allowing "cash-like" anonymity
Requires central bank-provided accounts and identity system	Token security and authenticity is key; user identities not required

Distribution models

Direct	Indirect	Hybrid
Users have accounts with CB, and payments are made directly from one account to another	CB passes CBDC token to a financial institution, which then distributes the currency	Retail services to end users are provided by commercial intermediaries
CB clears transactions, provides KYC & AML services	Financial institutions provide KYC & AML services	Intermediaries handle transactions; CB maintains a tracking ledger

[1] Source: "Central bank digital currencies: Foundational principles and core features", Bank for International Settlements
[2] Source: "BIS Working Papers, No 880: Rise of the central bank digital currencies", Bank for International Settlements

CBDC Proposed principles[1]

Central banks have well-defined mandates, and in light of these, the Bank for International Settlements (BIS) has proposed a set of "foundational principles" that should guide the development and implementation of CBDCs.

1

Do no harm to wider policy objectives
CBDCs should continue supporting public policy objectives and should not impede a central bank's ability to carry out its stability mandate.

2

Ensure co-existence and complimentarity of public and private forms of money
Different types of central bank money should coexist in a wider payment ecosystem, including commercial bank accounts.

3

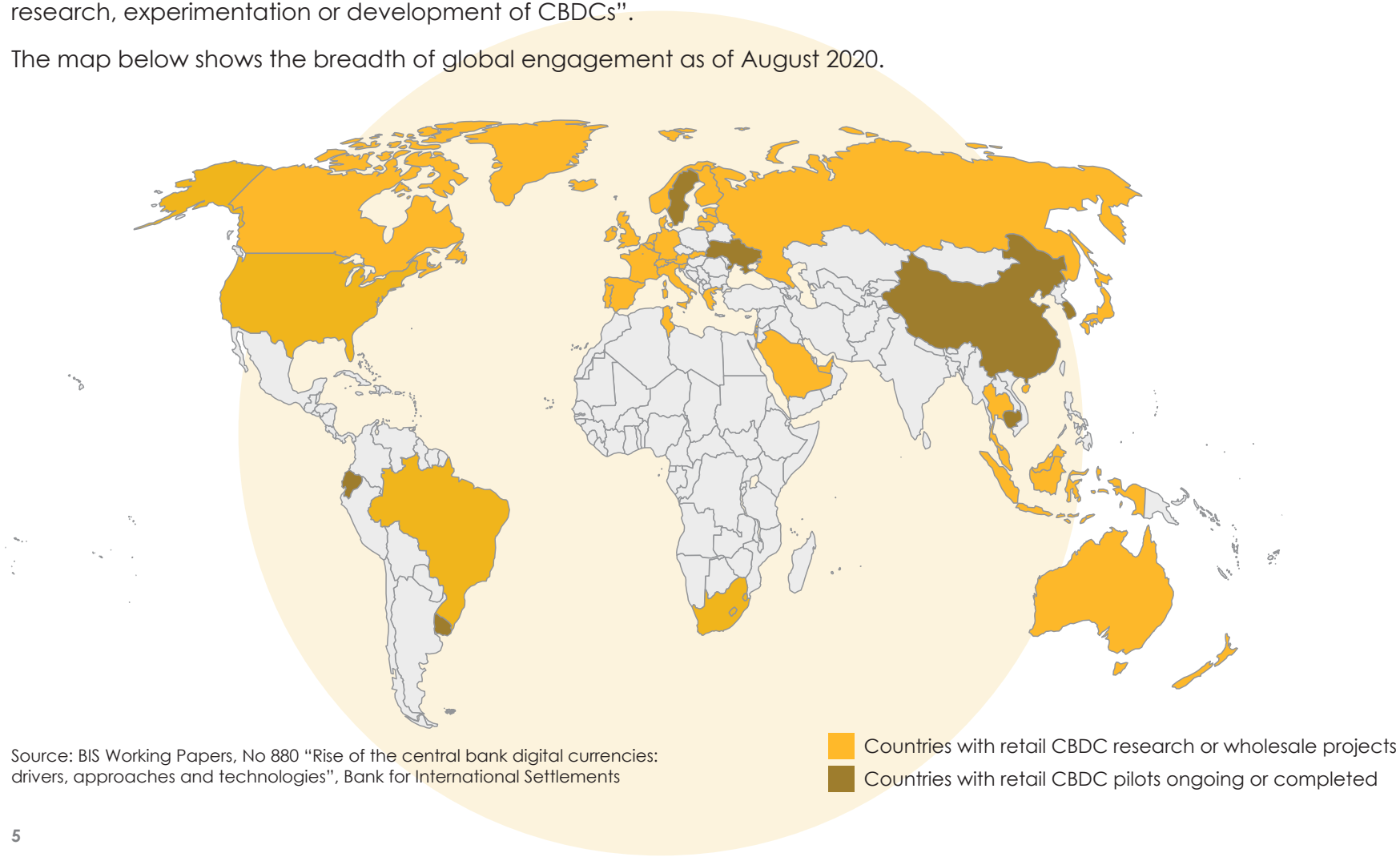
Promote innovation and efficiency
Innovation and competition must be allowed to enhance payment systems, to avoid user migration to less safe instruments.

[1] Source: "Central bank digital currencies: foundational principles and core features", Bank for International Settlements

CBDC Where is it being explored?

While the concept of a CBDC is over thirty years old now, in the most recent handful of years it has begun to be taken seriously by a very large number of countries; according to BIS, "a full **80% of surveyed central banks** are engaging in research, experimentation or development of CBDCs".

The map below shows the breadth of global engagement as of August 2020.



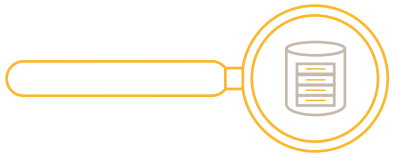
Source: BIS Working Papers, No 880 "Rise of the central bank digital currencies: drivers, approaches and technologies", Bank for International Settlements

Why CBDCs? Risks and opportunities

While some observers point to risks that may impact financial institutions and their customers, proponents of CBDC have identified opportunities which they think justify further exploration of the concept—and possible pilot projects.

RISKS

Could undermine consumer privacy and potentially push transactions towards more anonymous forms of money: cash, cryptocurrencies like Bitcoin, or even CBDCs offered in "tokenized" (anonymous) forms for small transactions.



Could disintermediate commercial banks, reducing their deposit levels and their ability to lend while putting them in direct competition with government.

Could increase the velocity and severity of "bank runs"— i.e. when large numbers of customers withdraw money from institutions they no longer believe capable of guaranteeing their deposits.

Could disintermediate and compete with payment card networks, driving down the interchange fees they can charge.

OPPORTUNITIES

Could allow central banks to reduce fraud and other illegal activities through direct regulatory oversight, benefiting consumers and supporting trust in the system.

Could provide a risk-free digital alternative to physical cash (which is costly to the government to produce as usage continues to decline), while—as an alternative to traditional financial institutions—lowering the cost to customers of maintaining interest bearing accounts, thus addressing financial inclusion policy goals and supporting a more competitive financial services landscape

Acting as a kind of "national database for money", could allow the near-instantaneous movement of money and payments between individuals, institutions, and across borders.

Final thoughts

"According to a Payments Canada study published in May 2020, 62% of Canadians reported using less cash since the start of the pandemic, and 53% of Canadians have reported increased use of contactless payment methods, illustrating a material shift in consumer behavior."

Source: "COVID-19 pandemic dramatically shifts Canadians' spending habits", Payments Canada (May 2020)

For all the buzz around CBDCs, many financial services players find themselves asking whether CBDCs may be a problem in search of a solution, particularly in light of the various mechanisms and initiatives already aiming at the same opportunities that CBDCs have been proposed to address. Given the complexity of modern financial and monetary systems, the possibility of unintended consequences must also be considered.

Central banks, of course, cannot ignore ongoing declines in the use of physical cash, nor the potential ramifications of a Big Tech-led boom in cryptocurrency usage if no competing alternative has been offered.

Yet in developing such an alternative, a crucial balance needs to be struck between the need for societal protection and the principle of privacy. Combating tax evasion, money laundering, and the financing of illegal activities are important goals, but must be weighed against the risk of undermining long-standing human rights. For example, consider the potential risks associated with the collection of your private information when coupled with other emerging technologies, and with a lack of transparency about how algorithms may make decisions on your creditworthiness—based, perhaps, on your purchases or social behaviours.

Another important issue that central banks ought not to ignore is that of equality of access to payment mechanisms. Just as when schools went virtual during the pandemic and not all Canadians had access to the Internet or to the necessary computing devices, universal access to baseline technology (such as a mobile device with a modern OS) would be a must-have digital public good in an economy running on CBDCs.

With potential implications for a wide variety of stakeholders—financial institutions, consumers, governments, businesses, payment processors, and central banks themselves—CBDCs are only one of several pieces in the "new money" puzzle, which includes unpegged cryptocurrencies, stablecoins, and decentralized finance (DeFi) itself.

Here at Interac we'll be keeping a close eye on these developments. Stay tuned.

For more information or questions, please contact:
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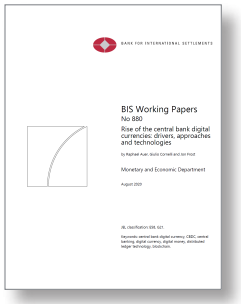
Sources for additional learning:



BIS Working Papers, No 880
Rise of the central bank digital currencies: drivers, approaches and technologies

Link: https://www.bis.org/publ/work880.pdf

Central bank digital currencies:
Foundational principles and core features

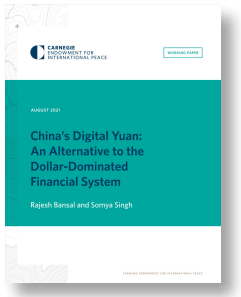
From BIS. Landing page includes video and podcast discussions.

Link: https://www.bis.org/publ/othp33.htm

Get Ready for the Future of Money

From Boston Consulting Group. A thorough overview of various digital currency models, including cryptocurrency, corporate currency, and CBDCs.

Link: https://www.bcg.com/publications/2020/get-ready-for-the-future-of-money



Carnegie Endowment
China's Digital Yuan: An Alternative to the Dollar-Dominated Financial System

Link: https://carnegieendowment.org/files/202108-Bansal_Singh_-_Chinas_Digital_Yuan.pdf

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