



CENTRAL BANK DIGITAL CURRENCIES

DIGITAL SECURITIES REPORT

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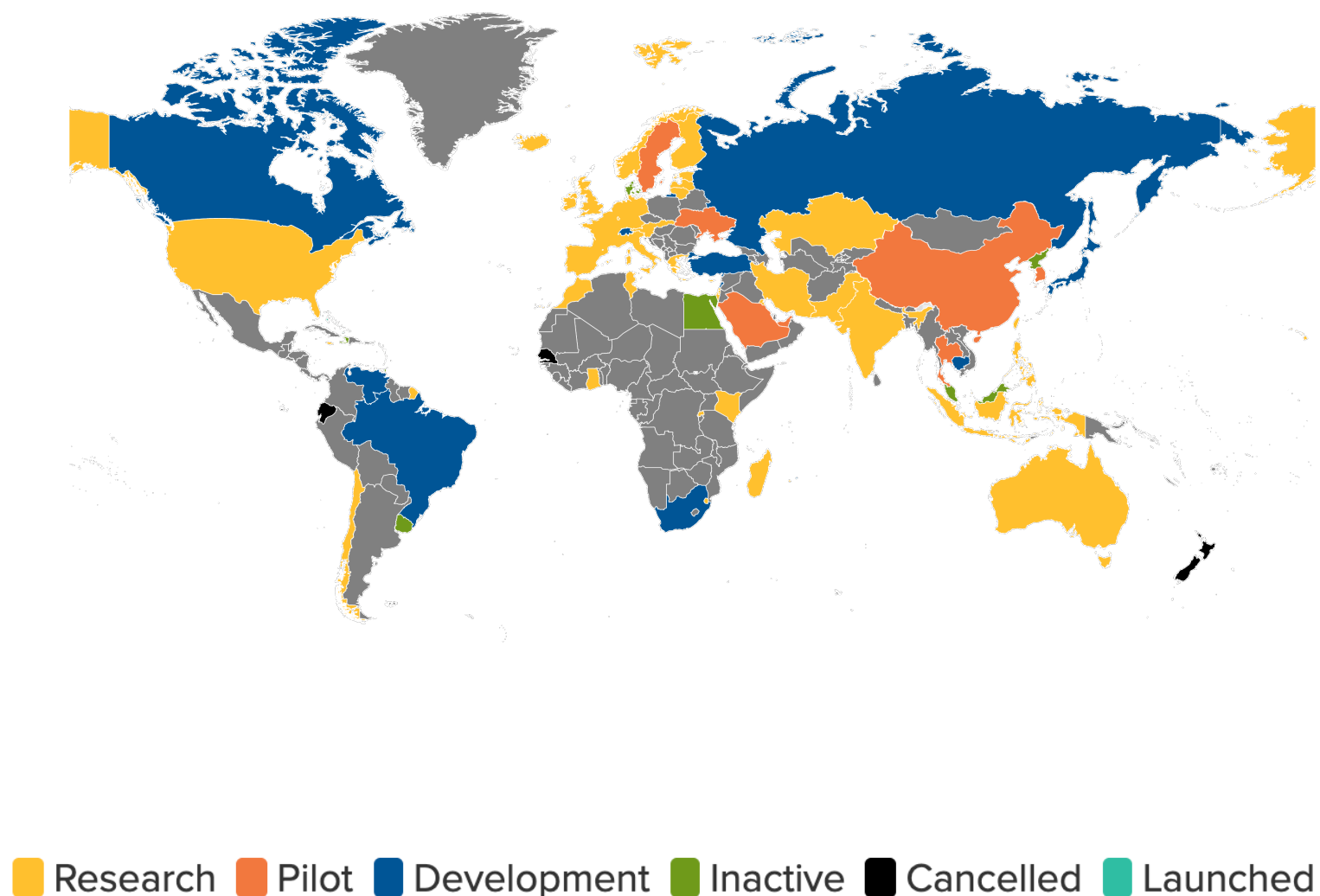


CENTRAL BANK DIGITAL CURRENCIES

An important driver of digital securities adoption is blockchain-based settlement solutions, usually offered through Central Bank Digital Currencies (CBDCs). As of yet, only a few jurisdictions have adopted CBDCs on a mass-scale, but many are experimenting with the idea.

In North America, we are still ways away from digital currency adoption at the Central Bank level, but the Bank of Canada openly states its intention to eventually digitize currency for faster settlements and smoother transactions. For additional information on the topic, [take a look at our previous article on CBDCs](#).

The map below illustrates the current state of CBDC adoption around the world (*source: Atlantic Council*):



As blockchain adoption grows around the world in the form of cryptocurrencies and tokenization, fiscal and regulatory bodies are preparing for the inevitable introduction of CBDCs. In this paper, we explore the benefits of CBDCs as well as how various jurisdictions are exploring the idea.

ADDRESSING FINANCIAL INCLUSION

One of the most imminent value propositions of CBDCs is the ability for poor countries to provide financial services to their populations. Not only do digital currencies create the ability for unbanked individuals to access the services they need, but they also facilitate the creation of financial services infrastructure.

Bank of America recently stated in a report that digital currencies could boost economic growth in developing countries by 50%, by reducing transaction costs and enabling more economic activities.

"Digital currencies have the potential to address many practical constraints on financial services in poor countries," David Hauner said. "More than 50% of adults in developing countries do not have a bank account. Digital currencies could substantially reduce transaction costs and allow more economic activities. This would be a major boost to economic growth."

The report also outlines a clear correlation - in countries where a lesser percentage of the population has a bank account, bitcoin trading seems to be significantly higher. Relative to GDP, the biggest countries in terms of bitcoin trading volumes are all emerging markets: Kenya, Nigeria, Columbia, South Africa, Russia, and Peru.

CHEAPER PAYMENTS & FASTER SETTLEMENT

Central bank digital currencies (CBDCs) offer in digital form the unique advantages of central bank money: settlement finality, liquidity and integrity. They are an advanced representation of money for the digital economy.

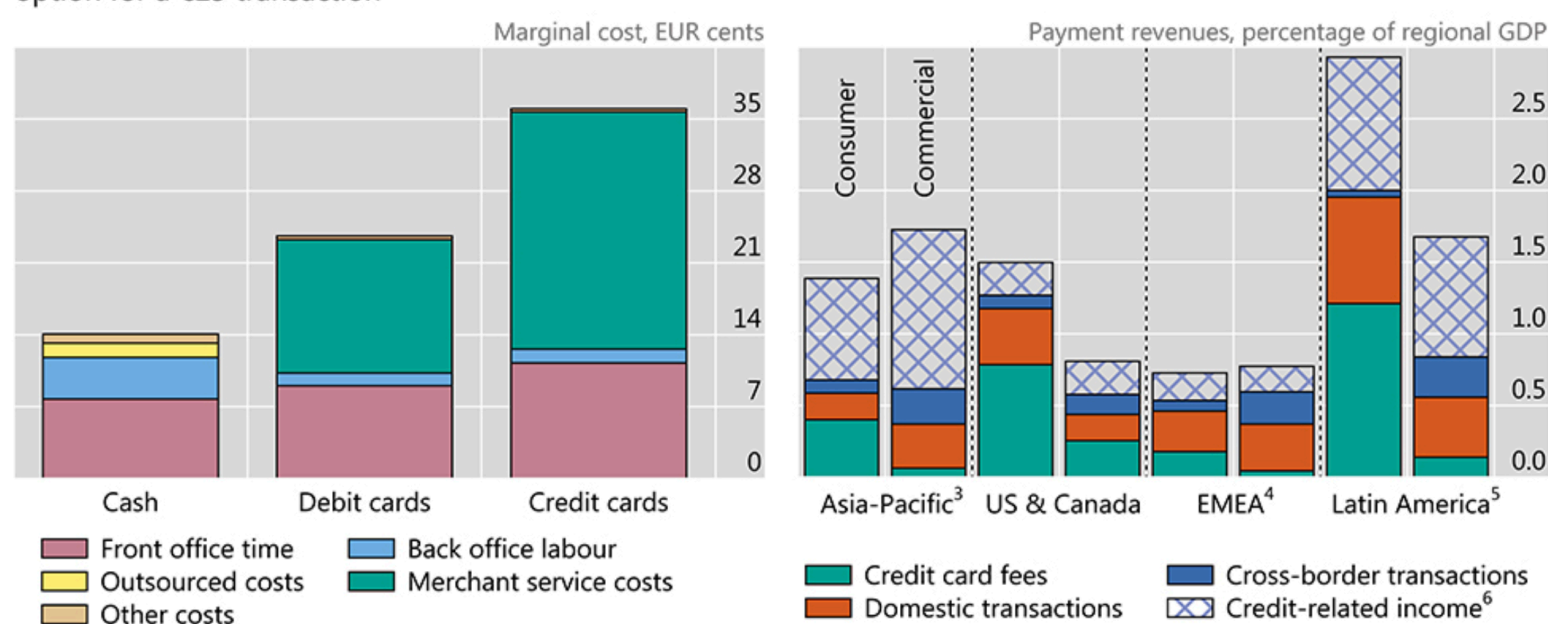
Currently, high merchant fees are prominent in retail businesses as well as e-commerce and securities transactions. The payment industry is highly concentrated, and although some startups are attempting to disrupt this ecosystem, the costs associated with payment processing is very high. The chart below illustrates this in relation to GDP:

Current forms of digital payments remain expensive

Graph III.2

For merchants cash is still the least expensive payment option for a €25 transaction¹

Payment costs are higher in card-dependent regions²



¹ Data for Europe (AT, BE, DE, ES, FR, GB, IT, NL, PL and SE), 2015. The graph reflects a scenario in which merchants were asked to assess fixed or variable costs for accepting cash, debit card and credit card payments for a €25 transaction over a three- to four-year time horizon. ² Data for 2018. ³ AU, CN, HK, IN, ID, JP, KR, MY, NZ, PH, SG, TH and TW. ⁴ AT, BE, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LT, LU, LV, MT, NL, NO, PL, PT, RU, SA, SE, SI, SK, TR and ZA. ⁵ AR, BR, CL, CO, MX and PE. ⁶ Includes revenue that may be considered an ancillary service (credit) rather than revenues from payment services, eg net interest income for revolving balances.

Sources: V Alfonso, A Tombini and F Zampolli, "Retail payments in Latin America and the Caribbean: present and future", *BIS Quarterly Review*, December 2020, pp 71–87; European Commission, *Survey on merchants' costs of processing cash and card payments*, March 2015.

Central Bank Digital Currencies would rapidly decrease the costs of payment processing, since account records would be automatically and securely updated on a blockchain. It is important that Central Banks develop a digital currency that still allows payment processors to exist, but reduces costs in order to boost economic activity and potentially make markets more efficient. In other words, credit card companies and payment processors would also incur lower costs in processing payments, which could leave their margins relatively high while decreasing the cost ultimately paid by businesses.

CBDC FOR SECURITIES SETTLEMENT

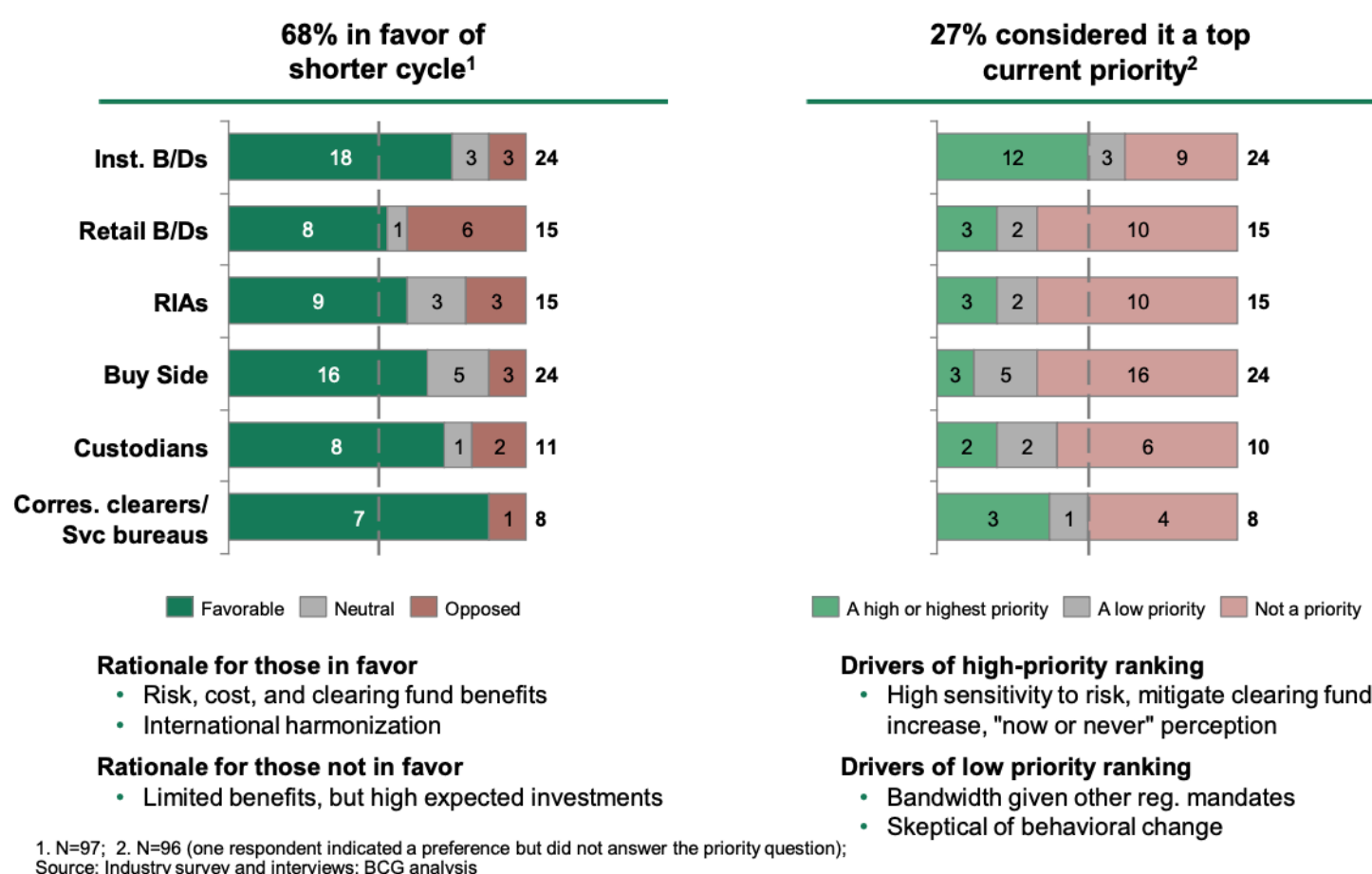
Currently, securities settlement is an outdated, timely process. Although the transaction date determines the price at which securities are traded, ownership transfer is determined on the settlement date.

Historically, securities transactions were settled on a “T+5” basis, meaning that it would take 5 business days after the transaction date (T) for settlement to occur. Thanks to technological advancements, most publicly traded securities currently operate in “T+2”, meaning the transactions are settled 2 business days after the trade is executed.

Securities settlement is an issue on a variety of fronts. Not only is it costly to have to settle transactions after the trade date, but it also creates challenges when it comes to dividend distributions.

For instance, when an investor purchases a security, they are only entitled to dividends if they own the security on the ex-dividend date. This entails waiting for the transaction to settle in time, and in certain securities this can take even longer than the current T+2.

Further, longer settlement times traditionally imply higher counter-party risk. As a result, margin requirements increase and the operating model becomes more expensive. Moreover, the industry's preference is for shorter settlement cycles:



In the figure above (source: Boston Consulting Group), we can clearly see that most firms in the securities trading industry prefer a shorter settlement cycle. In 2012, most considered T+0 to be an unrealistic operating model. But now, this standard has evolved.

CBDCs solve the counter-party risk problem by providing near-instant settlement, as proven in numerous experiments conducted by major Central Banks around the world. By leveraging blockchain technology, CBDCs allow trades to settle swiftly and with lower risk of default.

BANK OF FRANCE TESTS SECURITIES SETTLEMENT USING CBDC

The Bank of France has successfully completed an experiment involving the use of CBDC to settle listed securities. The test has been carried out with the help of an alliance of partners led by SEBA Bank, a digital asset banking provider based in the Swiss crypto valley.

This is a major milestone in the adoption of CBDCs for securities settlement purposes. Currently, securities settlement in Europe is done on TARGET2-Securities (T2S).

T2S revolutionized securities settlement in Europe because it brought an end to complex cross-border settlement procedures and the problems caused by different settlement practices among countries. With T2S, there now is a common platform on which securities and cash can be transferred between investors across Europe, using harmonized rules and practices. Currently 20 European countries use T2S.

One challenge of CBDCs (and blockchain-based financial solutions) is their integration into traditional financial systems. Currently, oracles are used to connect blockchains with real world data, and projects such as Chainlink are pioneers in this development. But in terms of integrating transactions that occur on a blockchain into the traditional financial system, we are in uncharted territory.

The Bank of France's experiment shows the feasibility and efficiency of settling securities transactions with a CBDC. One aspect that is also crucial to the success of CBDC securities settlement is confidentiality. In this case, the confidentiality of transactions was

achieved through a protocol that makes use of zero-knowledge proofs in order to encrypt and obscure the values of the CBDC transactions over a public Blockchain.

“We are delighted to have led the successful completion of this experiment with the Banque de France and to have leveraged SEBA Bank’s institutional grade digital assets platform infrastructure to support Banque de France in this important development and contribution towards the possibility of a Digital European currency”, said Matthew Alexander, Head Digital Corporate Finance SEBA Bank.

This experiment comes at an opportune time, with the European Central Bank scheduled to decide on the digitization of the Euro in the coming months. The US is also following suit - the Federal Reserve is actively working on a central bank digital currency and some prototypes are near completion. The Federal Reserve Bank of Boston and the Massachusetts Institute of Technology (MIT) plan to unveil two prototypes of a digital dollar as early as July.

RECENT NEWS & DEVELOPMENTS

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- **Securitize, Inc.** announced on June 23rd that its Series B fundraising round was oversubscribed, with \$48 million raised from new and existing investors. The convergence of venture capital and asset management signals a consensus on the future adoption of digital asset securities and this technology continuing to grow. The raise also comes before the anticipated launch of Securitize Markets, a marketplace designed for the trading of digital asset securities, providing a path to liquidity for the private capital markets.
- **CurrencyWorks Inc.**, a financial technology blockchain pioneer, NFT, and digital payment provider is pleased to announce that the first NFT sales have been successfully concluded through the Motoclub.io platform – a joint venture between the Company and Barrett-Jackson Collector Car Auctions. Four unique NFTs, represented by first of their kind automobiles (all VIN 001), were auctioned as part of the Barrett-Jackson Prestige Collection at the Barrett-Jackson 2021 Las Vegas Auction, for \$67,000 USD in sales.

- **CNN** announced recently the launch of *Vault by CNN: Moments That Changed Us* – a new non-fungible token (NFT) blockchain technology offering for CNN users. For 41 years, CNN has gone to extraordinary lengths to document and broadcast the global stories of our time. *Vault by CNN* will house a select set of digital collectibles, or ‘Moments’, from CNN’s television archives, mint them as NFTs using blockchain technology, and sell them at vault.cnn.com.
- **DeFi11**, a decentralized gaming ecosystem, is introducing major changes to both revamp the platform and make it fairer to users as part of an expansion fuelled by recent funding. Fantasy sports have gained massive popularity in recent years. The market is expected to grow by 7% by 2024.
- **Nornickel**, the world’s largest producer of palladium and high-grade nickel and a major producer of platinum and copper, announces that the Global Palladium Fund (GPF) has launched Exchange Traded Commodities (ETC) for nickel and copper on the London Stock Exchange (LSE). GPF is the first ETC issuer to use Blockchain technology to provide investors with enhanced transparency and security in their metal ETCs by recording bar information into distributed ledger technology.

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