Istituto Affari Internazionali

CBDCs for Dummies: Everything You Need to Know about Central Bank Digital Currency (And Why You Shouldn't Be Afraid of It)

by Nicola Bilotta

ABSTRACT

"No cash accepted in this store". What might seem to some like science fiction is on its way to becoming reality. The rise of non-cash payments is a global phenomenon, although moving at different speeds around the world. To keep up with the digitalisation of payments (and of the economy), many central banks are exploring the development of Central Bank Digital Currencies (CBDCs), a digital form of cash. Despite being confined to a technical discussion among experts, when (rather than if) launched, CBDCs concerns us all. Thus, raising awareness of what CBDCs are, and of their key economic and political dimensions, is crucial to ensure that citizens are not only passive spectators. This paper has the ambition to provide (non-expert) readers with straightforward and simple answers to some of the many questions they may have around CBDCs. It sets the ground to better understand what CBDCs are (and are not), their drivers and their possible design. It will explore the impact of CBDC systems on privacy, the geo-strategic drivers of CBDCs and the possible rivalry between public and private money.

Currency | *Digital policy* | *Financial services* | *European Union* | *China* | *USA*

keywords

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by Nicola Bilotta*

Introduction

In the near future, and much sooner than you expect, you will pay your grocery or restaurant bill using your phone. Maybe you are already doing this through Google Pay, Apple Pay or one of the growing number of other payment apps on the market. You connect your credit or debit card to the app and proceed with the payment. Easy and handy, right? Mobile payments – together with old-fashioned credit and debit cards – are consolidating the mega-trend of non-cash payments. Behind the scenes, nothing much changes from card transactions to mobile transactions – they are all initiated and processed within the traditional payment "architecture". So what is a Central Bank Digital Currency (CBDC), and why does it establish a different system from the one in which you use your credit card or mobile payment app? Why are central banks worldwide thinking about developing a CBDC? Could it have major effects on the way in which our economies and societies work? Could it have also geo-strategic implications?

1. The way forward for CBDCs

Before explaining what CBDCs are (and are not), we need to understand why today this is such a "hot" and timely discussion. To be clear, cash will not disappear anytime soon: it remains the most widely used payment instrument in the world, and a 2018 G4S report shows that demand for cash has actually increased. Globally, the average amount of currency in circulation accounted for 9.6 per cent of gross domestic product (GDP) in 2016 – up from 8.1 per cent in 2011. In Europe, 78.8 per cent of all transactions were conducted with cash; the global average was 50 per

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· This paper was prepared in the framework of a research effort on the risks and the opportunities related to Central Bank Digital Currencies (CBDCs) with the support of Intesa Sanpaolo and the Bank of Italy. The author would like to thank Giuseppe Ferrero for his comments and suggestions.

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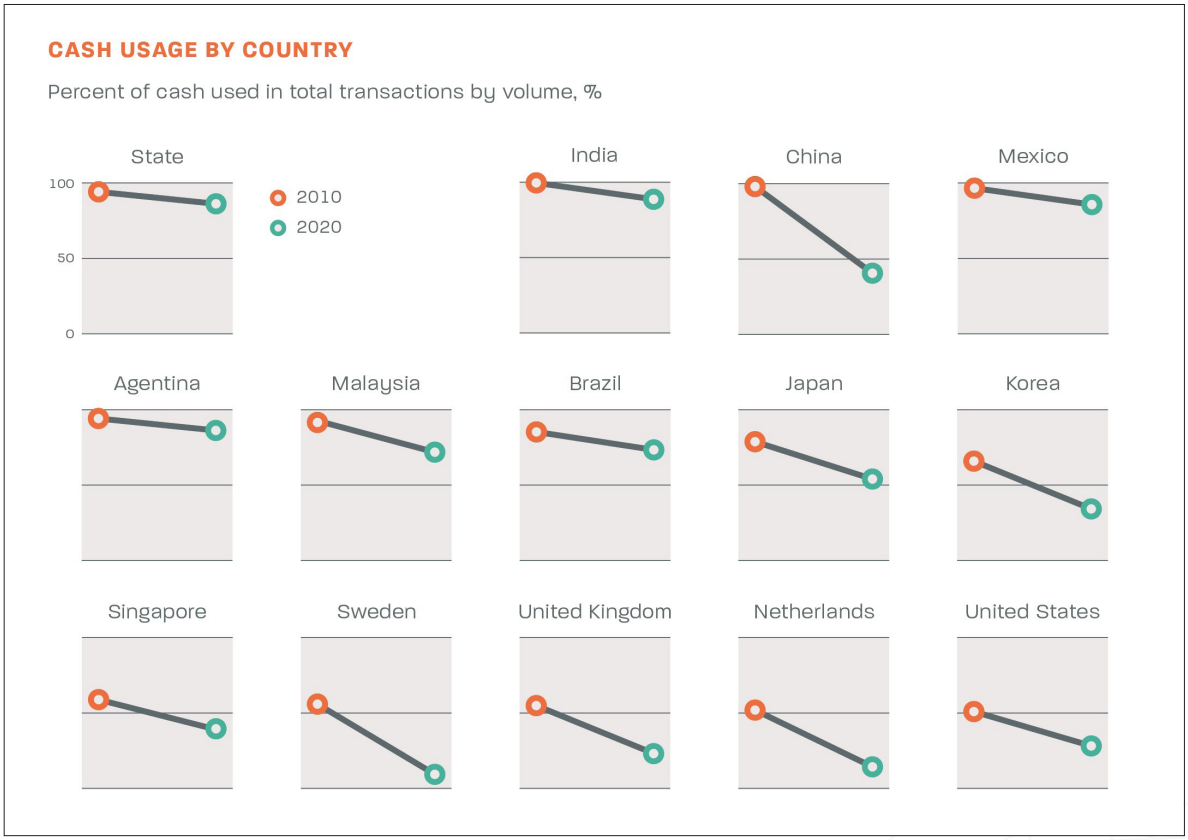
cent.[1] People like, and trust, cash. According to a survey carried out by Deutsche Bank, among the top five reasons people love cash is that they appreciate that it allows better tracking and spending, while making payments faster.[2]

Figure 1 | Percent of cash used in total transactions by volume % in selected countries



Source: Author's elaboration from McKinsey & Company, *The 2020 McKinsey Global Payment Report*, October 2020, https://www.mckinsey.com/~/media/mckinsey/industries/financial%20services/our%20insights/accelerating%20winds%20of%20change%20in%20global%20payments/2020-mckinsey-global-payments-report-vf.pdf.

However, driven by the consolidation of e-commerce and the growing availability of non-cash payment instruments, global non-cash transactions reached a total of 708.5 billion in 2019, an 80 per cent surge since 2014.[3] This mega-trend is likely to keep growing. Smartphones provide consumers with an exceptional opportunity to easily access mobile payment means such as e-wallets and e-money solutions. According to the Global System for Mobile Communications Association (GSMA)

[1] G4S Cash Solutions, *World Cash Report 2018*, August 2019, p. 25, https://www.g4scashreport.com.

[2] Marion Laboure and Jim Reid, *The Future of Payments - Part I. Cash: the Dinosaur Will Survive... For Now*, Deutsche Bank Research, 21 January 2020, p. 6, https://www.dbresearch.com/PROD/RPS_EN-PROD/PROD0000000000504353/The_Future_of_Payments_-Part_I_Cash:_the_Dinosau.pdf.

[3] Capgemini, *World Payments Report 2020*, October 2020, https://worldpaymentsreport.com/resources/world-payments-report-2020.

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Mobile Economic Report, the number of unique mobile-phone subscribers globally is 5.1 billion, or 67 per cent of the world's population. By 2025, the figure is expected to hit 5.8 billion – of which, 5 billion will also be mobile internet subscribers.[4]

Moreover, younger people seem to prefer to pay using mobile payment solutions rather than credit or debit cards. If people do not have an entrenched habit of using cards, mobile payments seem to be more appealing to them. This behavioural shift is noticeable, for example, in China and India, where consumers have switched from cash-based transactions to digital payments, finding the latter more convenient and easier to access than cards. In China, 49 per cent of the population uses mobile payments, a figure which is likely to increase to 60.5 per cent by 2023.[5] In sub-Saharan Africa, around 10 per cent of aggregate GDP in transactions occur through mobile money – in Kenya, M-Pesa alone accounted for 50 per cent of the country's GDP in 2018.[6]

This context helps us understand the global framework that is fostering the current discussion around CBDCs. There are several reasons why countries are exploring this innovation, depending on their individual socio-economic situations. A main driver of the trend is the fact that cash has high costs related to the printing, transporting and storage of coins and bills. Issuing a CBDC could require high sunk costs – to develop the technology that supports it, for example – but its subsequent scalability would reduce the expenses associated with money in the long term. In emerging markets, it could also foster financial inclusion. The powerful experience of mobile payment solutions in Asia and Africa has much to teach us, as it has provided unbanked people with a cheap and easy way to pay and manage money. However, if retail digital payments are currently only enabled by private corporations, countries risk being dependent on the private sector for a core function of their economies. In order not to be left behind or outcompeted by the growing initiatives undertaken by the private sector, central banks would – with a CBDC – regain some control over risk and have a role to play in the digital payment market.[7]

These are only the main reasons why, out of 66 central banks representing 90 per cent of global output, 80 per cent are currently (or soon will be) working on a CBDC – up from 65 per cent in 2017. Those countries that are not yet engaging are either very small or have more urgent priorities. Nevertheless, 70 per cent of the

[4] GSM Association, *The Mobile Economy 2020*, February 2020, https://www.gsma.com/mobileeconomy.

[5] "China Is Moving Toward a Cashless Society", in *eMarketer*, 25 November 2019, https://www.emarketer.com/content/china-is-moving-toward-a-cashless-society.

[6] Amadou N.R. Sy, "Fintech in Sub- Saharan Africa: A Potential Game Changer", in *IMF Blog*, 14 February 2019, https://blogs.imf.org/?p=25686.

[7] See: Massimo Cirasino, "CBDC in the Broad Context of National Payments System Development", in Nicola Bilotta and Fabrizio Botti (eds), *The (Near) Future of Central Bank Digital Currencies. Risks and Opportunities for the Global Economy and Society*, Bern, Peter Lang, 2021, p. 41-74, https://www.peterlang.com/view/9783034342919/9783034342919.00008.xml.

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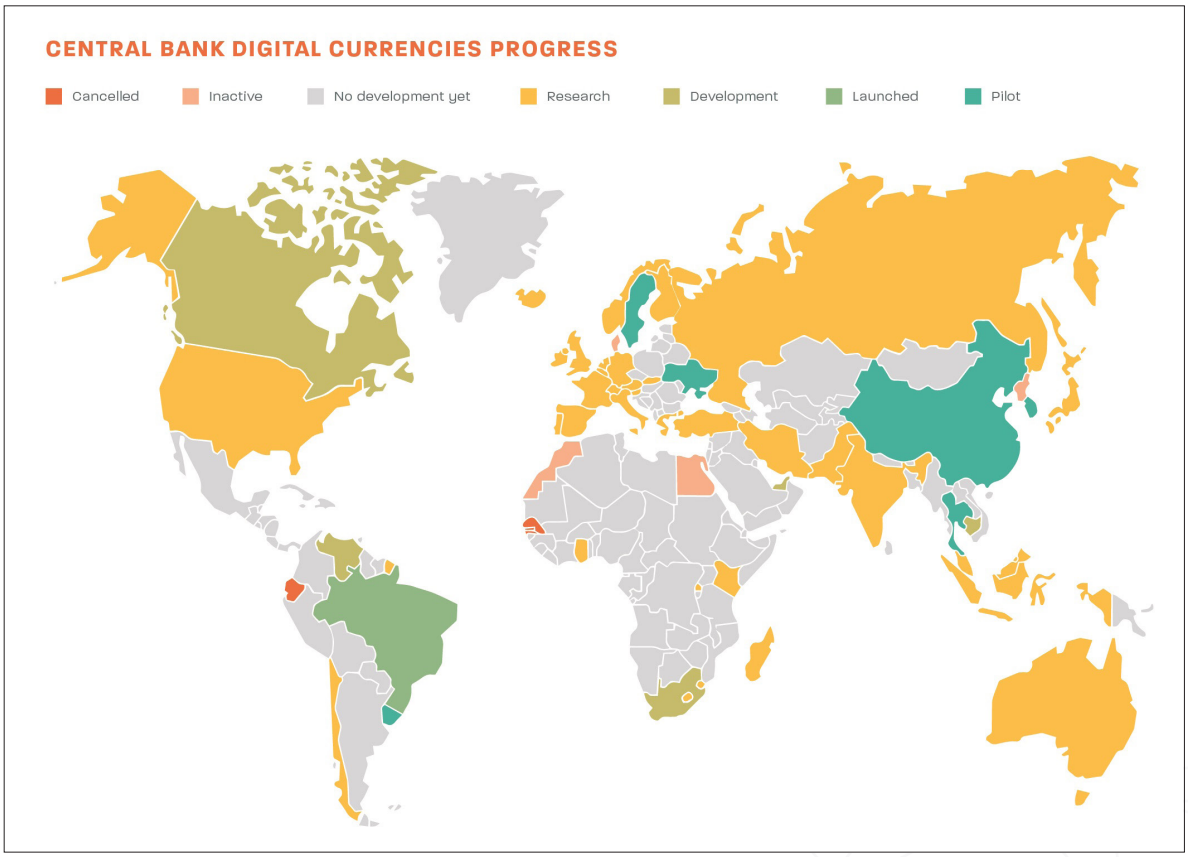
respondents to the Bank for International Settlements (BIS) report stated that it was unlikely or very unlikely that they would issue any CBDC in the short term, while 10 per cent responded that they are ready to do so and 20 per cent said they are considering implementation in the medium term.[8]

Figure 2 | CBDC progress worldwide



Source: Author's elaboration from Atlantic Council, "The Rise of Central Bank Digital Currencies", in *EconoGraphics*, 20 April 2021, https://www.atlanticcouncil.org/?p=255912.

2. What CBDCs are (are not)

Let's start with what CBDCs are not: they are neither Bitcoins nor Diem (formerly known as Libra, Facebook's stablecoin). Bitcoin is a cryptocurrency, meaning a digital currency – with no physical representation like bills and coins – which is not issued or backed by any government or private corporation. Its value is

[8] Codruta Boar, Henry Holden and Amber Wadsworth, "Impending Arrival - A Sequel to the Survey on Central Bank Digital Currency", in *BIS Papers*, No. 107 (January 2020), p. 12-13, https://www.bis.org/publ/bppdf/bispap107.htm; Christian Barontini and Henry Holden, "Proceeding with Caution - A Survey on Central Bank Digital Currency", in *BIS Papers*, No. 101 (January 2019), https://www.bis.org/publ/bppdf/bispap101.htm.

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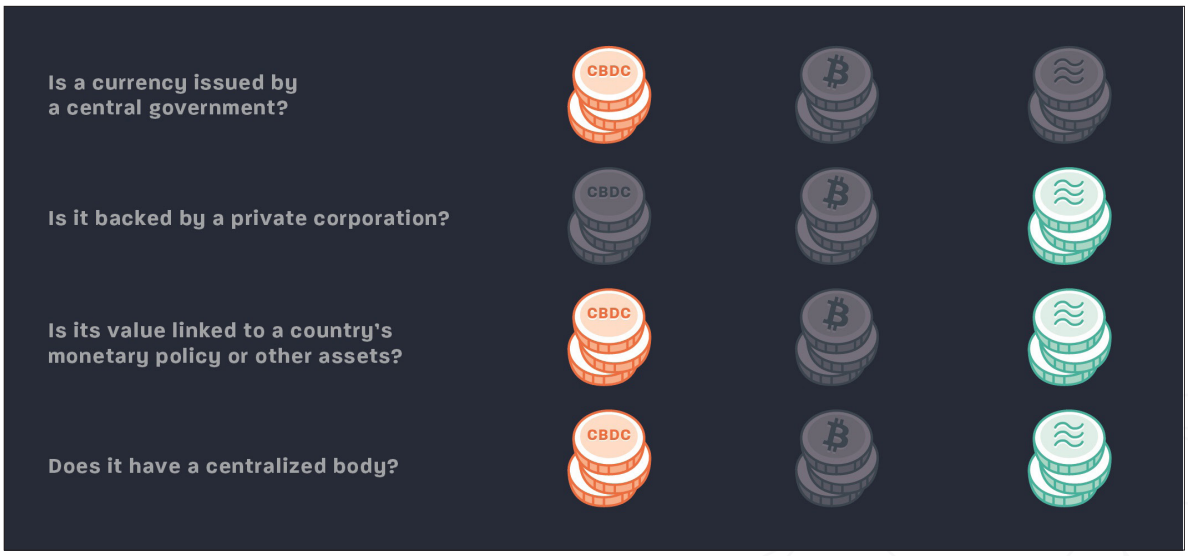
determined by different factors, but the most important one is demand for it. When people buy Bitcoins its value increases; conversely, when people sell Bitcoins, it decreases. For this reason, its value tends to fluctuate a great deal. Stablecoins such as Facebook's Diem are digital currencies whose value is anchored to a basket of assets – which could be national currencies, gold, etc. Therefore, the value of a stablecoin depends on the value of those assets, guaranteeing a more secure form of money. Several digital currencies currently available on the market are shaped by different features – decentralised/centralised; tied to an outside asset/based on demand and supply – but they have one core characteristic in common: they are not issued or backed by any government. Despite CBDC not being "a well-defined term",[9] such a currency is a liability of a central bank, being generally described as a digital form of a country's sovereign currency issued by a central bank and backed by central-government credit. Instead of printing cash, central banks issue virtual money – a sort of virtual representation of coins and bills.

Figure 3 | Main characteristics of CBDCs, Bitcoins and Diem



To be fair, people have been holding digital money balances and central banks have been issuing digital reserves to banks for quite a long time.[10] We can say that to us – as users – these appear as a form of digital money. When we pay by cards or mobile payment apps, we are not dealing with bills or coins. In such cases, digital money is an electronic equivalent of bills and coins that is accessible only to financial institutions, and those financial institutions must maintain reserves and deposits to back it up. This is why many argue that a "wholesale" CBDC – a digital currency accessible only to permitted institutions – already exists in many

[9] Committee on Payments and Market Infrastructures, "Central Bank Digital Currencies", in *CPMI Papers*, No. 174 (March 2018), p. 3, https://www.bis.org/cpmi/publ/d174.htm.

[10] Dirk Niepelt, "Digital Money and Central Bank Digital Currency: An Executive Summary for Policymakers", in *VoxEU*, 3 February 2020, https://voxeu.org/node/65037.

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jurisdictions as a settlement asset in the interbank market.

The truly revolutionary innovation currently under discussion is the issuance of a "general-purpose" CBDC, a digital currency also accessible to and available for retail consumers. What differs between a CBDC and the kind of "digital money" that we can currently access when using cards or mobile apps concerns liability. When you access the money that you currently keep in an account at a financial institution, the bank holds the liability. In case of a CBDC, the liability rests with the central banks.

So the next question is: how could you access and use a CBDC when, for example, grocery shopping? It depends; there is no unique answer. In terms of distribution, central banks have two main options: either to directly distribute currency or to delegate it to specific intermediaries – most likely, regulated financial institutions. Basically, in the first case you would have an account at the central bank from which you can access your money. In the second case, you would instead – as you do now – have an account at a third-party private bank. Both options carry risks and benefits. The first scenario could precipitate a high level of disintermediation, giving central banks much more relevance and power but raising concerns about the effects on credit provision if incumbent banks lose access to demand deposits. Banks obtain money in the form of deposits and they get it back to retail and corporate clients through loans. If they have fewer deposits, borrowing from a bank could become more expensive for consumers. On the other hand, the second scenario could reduce the potential effectiveness and accuracy of a central bank's monetary policies.

The design of a CBDC system can be either token-based or account-based. The former mimics the way in which cash transactions work: each token has a specific denomination, therefore verification depends on the validity of the means used to pay. The latter, instead, works more similarly to credit-card transactions: central banks verify the identities of the two parties involved in the process. Despite this appearing a purely technical choice, it matters greatly as it causes major implications for you as a user. In a token-based system, central banks could more easily establish some form of anonymity in transactions; however, they could have trouble paying interests on their CBDC tokens as interests could alter the value of the token itself. On the other hand, in an account-based system, it would be more difficult to guarantee anonymity, resembling a model similar to that of deposits. Some central banks have also proposed a hybrid system, in which token-based CBDCs are integrated into a closed architecture of certified accounts in an attempt to maximise the benefits of the two systems while mitigating the negative effects. Bear in mind, however, that both options – token-based and account-based CBDCs – could provide some sort of anonymity based on which configuration the system takes.[11]

[11] See: Itai Agur, Anil Ari and Giovanni Dell'Ariccia, "Designing Central Bank Digital Currencies", in *IMF Working Papers*, No. 19/252 (2019), https://www.imf.org/en/Publications/WP/Issues/2019/11/18/Designing-Central-Bank-Digital-Currencies-48739; Seyed Mohammadreza Davoodalhosseini and

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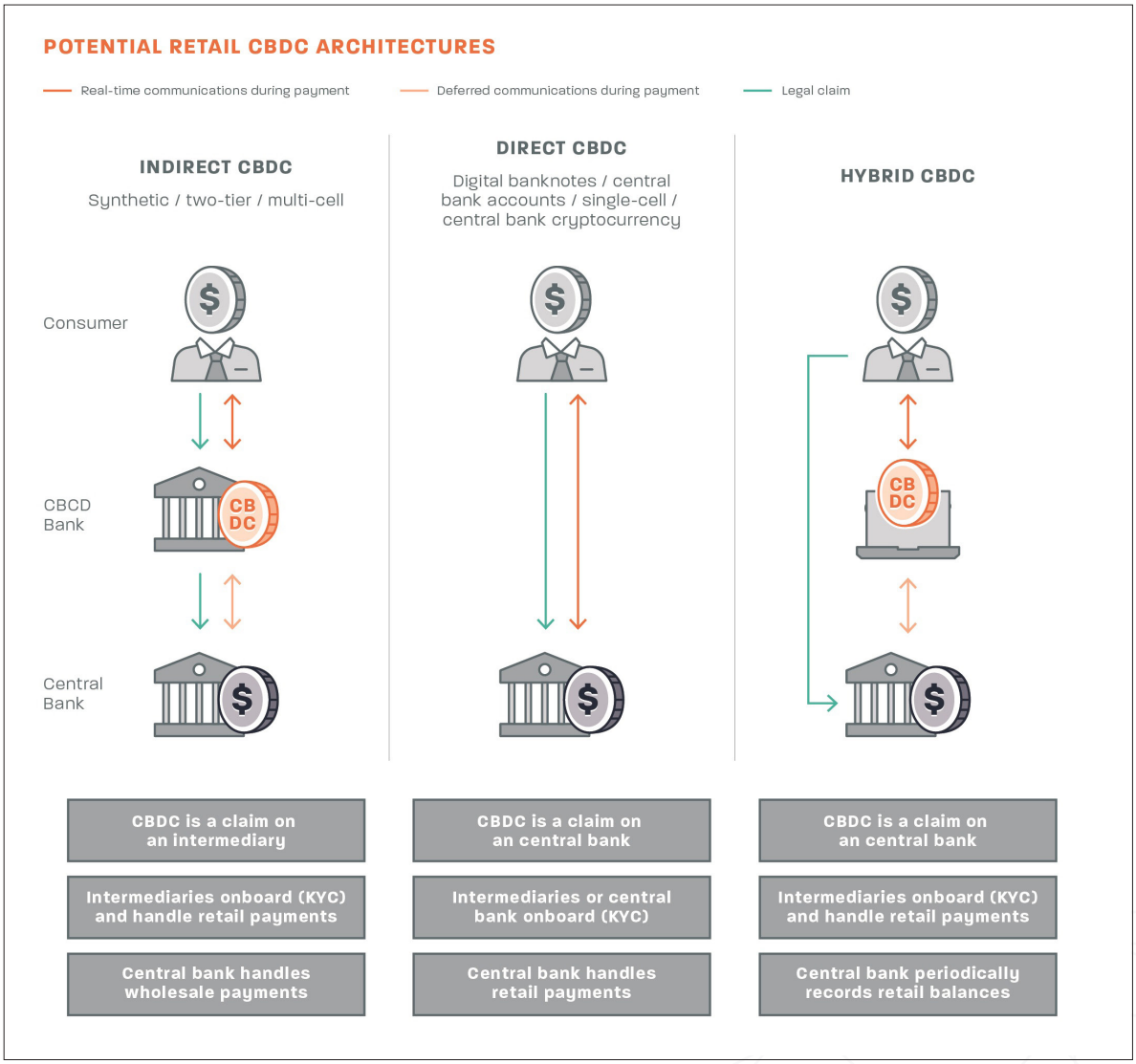
Figure 4 | CBDC design architectures



Source: Author's elaboration from Raphael Auer and Rainer Böhmep, "The Technology of Retail Central Bank Digital Currency", in *BIS Quarterly Review*, March 2020, p. 89, https://www.bis.org/publ/qtrpdf/r_qt2003j.htm.

Lastly, there are questions related to the kind of underlying technology that could best support a CBDC system. The debate here is extremely intense. Some analysts argue that a blockchain system could provide better transparency and resilience than a centralised one as the former is designed to implement a decentralised.[12]

Francisco Rivadeneyra, "A Policy Framework for E-Money", in *Canadian Public Policy*, Vol. 46, No. 1 (March 2020), p. 94-106; Sarah Allen et al., "Design Choices for Central Bank Digital Currency: Policy and Technical Considerations", in *NBER Working Papers*, No. 27634 (August 2020), https://www.nber.org/papers/w27634.

[12] See: Zignuts Technolab, "How Blockchain Architecture Works? Basic Understanding of Blockchain and its Architecture", in *Zignuts Blogs*, 10 July 2018, https://www.zignuts.com/?p=2409; Ameer

ISSN 2610-9603 | ISBN 978-88-9368-198-8

Others think that CBDCs could also be stored in accounts, on prepaid cards or in decentralised database structures; alternatively, a conventional centralised system could also support a CBDC if it incorporated some of the properties of a blockchain, such as immutable data or smart contracts. Despite the technicalities, what matters here is that there are several technological solutions that could be implemented to support a CBDC system.[13]

So what are the risks and the benefits? It depends on the design that a CBDC system takes. As previously mentioned, each design choice implies a different degree of risks and benefits.[14]

3. Political and geopolitical implications

You should be even more fascinated considering CBDCs' political and geopolitical dimensions. Take, for example, the issue of privacy in payments. Cash – in the form of banknotes and coins – has the unique feature of full anonymity: you can use it to pay for goods or services without disclosing any information about your personal identity. This is not true when using cards or mobile payment apps: any time you pay with these solutions, you are leaving a trail. With the growing digitalisation of payments, private providers accumulate data on your transactions, monetising the information they gather. Central banks, however, are not profit-driven; therefore, CBDCs could aim to provide constraints to payment-data exploitation. Data aggregation for central banks makes a lot of sense in order to ensure a more robust monetary and financial system. Tighter control of transaction histories could improve central banks' ability to fight money laundering and tax evasion, at the same time reducing the size of a country's informal economy. Moreover, by being able to more efficiently track payment data, central banks could better monitor the status of domestic economies, reducing the existing information asymmetry when deciding on a monetary policy intervention.[15]

Rosic, "Proof of Work vs Proof of Stake: Basic Mining Guide", in *BlockGeeks*, updated 19 June 2020, https://blockgeeks.com/guides/proof-of-work-vs-proof-of-stake.

[13] Dinesh Shah et al., "Technology Approach for a CBDC", in *Bank of Canada Staff Analytical Notes*, No. 2020-6 (February 2020), https://www.bankofcanada.ca/?p=209522; Committee on Payments and Market Infrastructures, "Central Bank Digital Currencies", cit.; Dirk Niepelt, "Digital Money and Central Bank Digital Currency", cit.

[14] See: Todd Keister and Daniel Sanches, "Should Central Banks Issue Digital Currency?", in *Federal Reserve Bank of Philadelphia Working Papers*, No. 19-26 (June 2019), https://doi.org/10.21799/frbp.wp.2019.26; Jinock Kim and Jaejung Kang, "Money, to Be Publicly Issued, or Not to Be, That Is the Question", in *The Journal of Internet Electronic Commerce Resarch*, Vol. 19, No. 5 (2019), p. 77-91; Hanna Armelius, Carl Andreas Claussen and Scott Hendry, "Is Central Bank Currency Fundamental to the Monetary System?", in *Sveriges Riksbank Economic Review*, No. 2020-2 (June 2020), p. 19-32, https://www.riksbank.se/globalassets/media/rapporter/pov/engelska/2020/economic-review-2-2020.pdf; Timothy Jackson and George Pennacchi, "How Should Governments Create Liquidity?", in *University of Liverpool Management School Working Papers*, No. 202029 (September 2020), https://www.liverpool.ac.uk/media/livacuk/schoolofmanagement/research/economics/How,Should,Governments,Create,Liquidity.pdf.

[15] See: European Central Bank, "Exploring Anonymity in Central Bank Digital Currencies", in *In*

ISSN 2610-9603 | ISBN 978-88-9368-198-8

While all this is true, central banks would also be able to access and collect previously unavailable information, thereby acquiring a newer and deeper identification of users and payment flows capacity. Beyond mere spending habits, it would enable location tracking and the accumulation of sensitive personal data. If misused, CBDCs could adversely foster an unprecedented centralisation of information in the hands of a public institution (the central bank or, depending on the nature of its connection with the government, the government itself). This is not a matter of predicting an Orwellian scenario but of assessing potential risks related to a rise in public visibility within a financial system, altering the balance of power between citizens and governments.[16] Full anonymity in a CBDC context is not desirable, as it could potentially ease illegal transactions and undermine compliance with regulations related to Know Your Customer (KYC) and Anti-Money Laundering (AML) – which are meant to prevent fraud and financial crimes. Similarly, no anonymity at all would produce unnecessary risk.

CBDCs could – and should – technically be designed to regulate states' supervision, allowing users some degree of privacy and anonymity. Yet the correct level of anonymity in relation to efficiency and security in a CBDC system is a political decision rather than a technical issue. The underlying infrastructure is determined by a deliberate choice. The key question, then, is where the boundaries between anonymity and security lie, and how to ensure that those boundaries are respected. For example, the European Central Bank (ECB) has acknowledged that "the payments ecosystem needs to find an answer to an issue that concerns all citizens: the question of how to allow some degree of privacy in electronic payments, while still ensuring compliance with AML/CFT [Combating the Financing of Terrorism] regulations".[17] The technical solution proposed by the ECB is to develop "anonymity vouchers" for low-value transactions while high-value ones would be subject to standard AML checks. Users would be granted time- and quantity-limited vouchers monthly, regardless of their account balances. These vouchers would not be transferable to other users, and their value would be one voucher per one unit of CBDC. In addition to a set of technical areas of improvement, a key question that could be raised in this scenario concerns the criteria the ECB would apply to decide on the limits of anonymity vouchers accessible to users. Again, this would be a political decision rather than a technical one.

Concerns over privacy in a CBDC system stem from the boundaries of its domestic market. If retail and corporate consumers use a foreign CBDC, foreign governments may be able to directly gather data on those transactions (such as in projects for cross-border interbank settle¬ments, migrant remittances or in cases of tourists or business travellers). If a domestic CBDC has different customer-data privacy

Focus Papers, No. 4 (December 2019), https://www.ecb.europa.eu/paym/intro/publications/pdf/ecb.mipinfocus191217.en.pdf; Committee on Payments and Market Infrastructures, "Central Bank Digital Currencies", cit.

[16] Charles Kahn, "Payment Systems and Privacy", in *Federal Reserve Bank of St. Louis Review*, Vol. 100, No. 4 (fourth quarter 2018), p. 337-344, https://doi.org/10.20955/r.100.337-44.

[17] European Central Bank, "Exploring Anonymity in Central Bank Digital Currencies", cit., p. 1.

ISSN 2610-9603 | ISBN 978-88-9368-198-8

policies and safeguards, then foreign-user data may be vulnerable when people use those CBDCs.

A complementary angle is seen in the growing concerns that governments and central banks harbour in the event that the use of cash keeps declining in favour of digital payments. As previously mentioned, the mega-trend of cashless transactions could hand private providers a new centrality in our economy, potentially challenging the role of central banks in issuing and supervising money issuance. These concerns are particularly relevant when these private providers are Big Techs who enjoy strong network effects, meaning that their digital currencies could be easily and quickly adopted by many people and, potentially, could reach global scale. Basically, their initiatives could benefit from two key factors that highly affect money circulation. First, the credibility of the issuer. Consumers need to trust that they can convert their digital tokens into fiat money anytime they like, and that the value of the currency is indeed stable and backed by reserves. Second, the degree of acceptance. Users could be incentivised to adopt a digital currency that is backed by a corporation that has a pre-existing relationship with a large consumer base and has high brand recognition, as this could mitigate the perceived risks related to its governance and, at the same time, it could empower an ecosystem of services and products accessible through this digital currency, exploiting network effects. Such characteristics could allow both diffusion of information and adoption, reducing the common entry barriers to traditional currency.[18]

If this shift happens, the effects on the financial system as we know it today could be disruptive. As acknowledged by Mark Carney, former governor of the Bank of England, these initiatives could become systemically important the moment they are launched,[19] explaining why central banks and international supervisors have immediately reacted to Facebook's stablecoin project.[20] The Financial Stability Board (FSB) has indeed raised a set of issues around the development of global privately owned digital currencies: consumer protection; data concentration; potential effect on monetary policy and financial stability; money laundering and financing of crime and fair competition.[21] If global stablecoins have the features to quickly reach scale, they would then pressure (and potentially surpass) money (cash

[18] Tobias Adrian and Tommaso Mancini-Griffoli, "Digital Currencies: The Rise of Stablecoins", in *IMF Blog*, 19 September 2019, https://blogs.imf.org/?p=27149.

[19] Mark Carney, *Enable, Empower, Ensure: A New Finance for the New Economy*, Speech delivered at the Mansion House Bankers' and Merchants' Dinner, London, 20 June 2019, p. 6, https://www.bankofengland.co.uk/speech/2019/mark-carney-speech-at-the-mansion-house-bankers-and-merchants-dinner.

[20] See: G7 Working Group on Stablecoins, "Investigating the Impact of Global Stablecoins", in *CPMI Papers*, No. 187 (October 2019), https://www.bis.org/cpmi/publ/d187.htm.

[21] Financial Stability Board, *Regulatory Issues of Stablecoins*, 18 October 2019, https://www.fsb.org/2019/10/regulatory-issues-of-stablecoins; Financial Stability Board, *Addressing the Regulatory, Supervisory and Oversight Challenges Raised by "Global Stablecoin" Arrangements. Consultative Document*, 14 April 2020, https://www.fsb.org/2020/04/addressing-the-regulatory-supervisory-and-oversight-challenges-raised-by-global-stablecoin-arrangements-consultative-document.

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and bank deposits), potentially increasing the dependency of states and central banks on private providers. Some fear that global stablecoins could undermine the sovereignty of public money. CBDCs could then perform a counterbalancing function, strengthening the role of central banks – and, therefore, of the state – in a more highly digitalised economy. The driver is to give the public with access to a state-guaranteed means of payment while ensuring resilience and soundness of the monetary system.

There is also a geopolitical dimension to the development of domestic CBDCs. In technology, the "first mover" is likely to influence global standards, gaining an advantage over competitors worldwide. This is why China's trials of a digital renminbi are raising concerns in the United States and the European Union. China may end up providing other countries with a model to follow. Moreover, a digital version could be strategic in supporting China's broader effort to internationalise the renminbi.

In practice, we should bear in mind that in the absence of a global currency, international trade and transnational investments require the intermediation of a national currency[22] – and some national currencies are used disproportionately for this purpose. Behind this choice lie economic factors – such as stability, safety, trade and financial links with the selected currency – as well as political factors – such as strategic, diplomatic and military links.[23] Not surprisingly, the US dollar has a dominant role as global currency, providing the United States with a powerful proxy-tool to strengthen its global power. To put it simply, because a solid majority of transnational transactions are in dollars, if the United States – for whatever reason – cuts off the ability to transact in dollars, any country or private company would struggle to carry on international business. Among other things, this is why US financial sanctions are so effective.

Furthermore, today most global banking transfers are facilitated by the Society for Worldwide Interbank Financial Telecommunication, better known as Swift, the worldwide system for financial messaging and cross-border payments, which has been traditionally accused by Beijing of helping the United States expand the effectiveness of its financial secondary sanctions, giving the latter an extraterritorial reach. With CBDC, China could circumvent the Swift system, bypassing this intermediary node and making itself less vulnerable to US sanctions – if enough countries accept international payments in digital renminbi.[24] To achieve this

[22] Jonathan Kirshner, *Currency and Coercion. The Political Economy of International Monetary Power*, Princeton, Princeton University Press, 1995.

[23] Barry Eichengreen, Arnaud J. Mehl and Livia Chițu, "Mars or Mercury? The Geopolitics of International Currency Choice", in *NBER Working Papers*, No. 24145 (December 2017), https://www.nber.org/papers/w24145.

[24] See: Jan Knoerich, "China's New Digital Currency: Implications for Renminbi Internationalization and the US Dollar", in Nicola Bilotta and Fabrizio Botti (eds), *The (Near) Future of Central Bank Digital Currencies. Risks and Opportunities for the Global Economy and Society*, Bern, Peter Lang, 2021, p. 145-166, https://www.peterlang.com/view/9783034342919/9783034342919.00013.xml.

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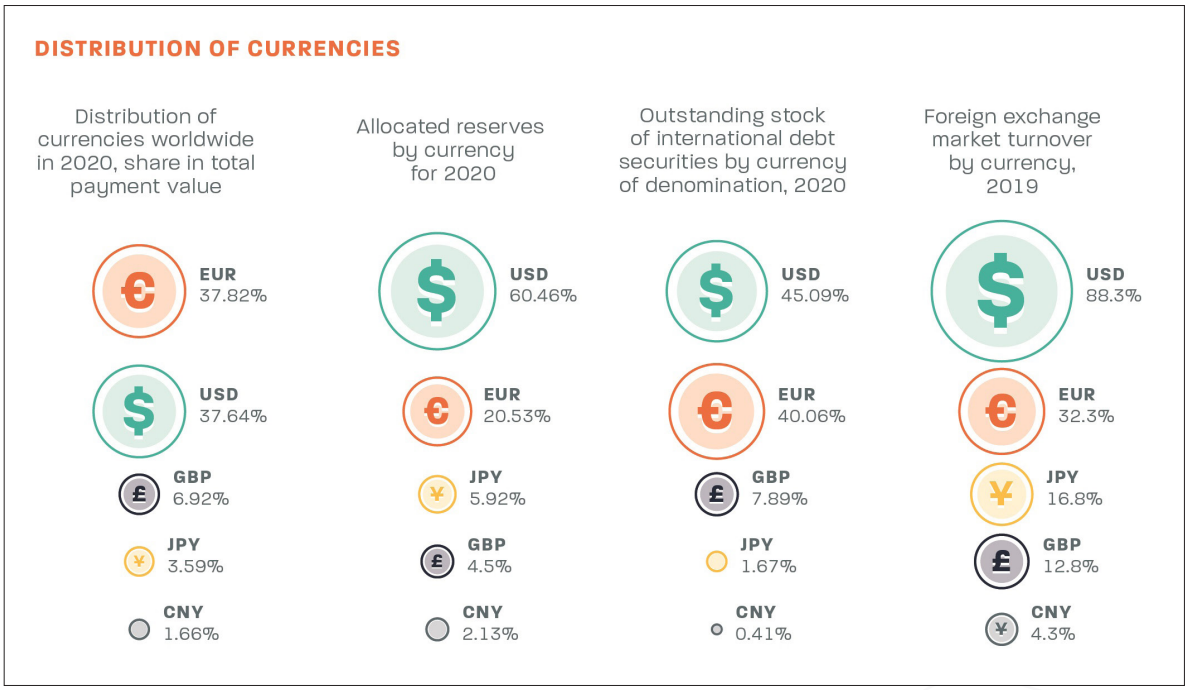
goal, the Chinese central bank has, for example, launched the "m-CBDC Bridge", which is a project for cross-border payments between China, Hong Kong, Thailand and the United Arab Emirates. A total of 84 per cent of Chinese corporates and 61 per cent of overseas companies said the Digital Currency Electronic Payment (DC/EP, China's national digital currency) would have a favourable impact on renminbi internationalisation.[25]

Figure 5 | The international role of leading currencies



Source: Author's elaboration from Statista, *Distribution of Currencies Worldwide in 2020, Based on Their Transaction Value*, https://www.statista.com/statistics/1189498.

Recalling that only a few months prior to the time of writing there were concerns in Beijing that the United States could have cut off China or Hong Kong from the Swift network to punish China for crushing Hong Kong's autonomy explains why a digital renminbi could have a geo-strategic value for Beijing. In line with a similar geo-strategic object, we should also remember that if private US-dollar-based digital currencies emerge they could indirectly further strengthen the international role of the US dollar. For example, when presenting Libra (now Diem), Facebook revealed that the reserve basket would have comprised 50 per cent US dollars, 18 per cent euros, 14 per cent Japanese yen and 7 per cent British pounds sterling. So if consumers not based in the US had used Libra/Diem, they would have indirectly strengthened the international role of the US dollar. A Chinese CBDC could then prevent any foreign private digital-currency initiatives from encroaching on

[25] "Foreign Firms More Keen to Use China's Digital Renminbi CBDC than Domestic Firms", in *Ledger Insights*, 2 July 2020, https://www.ledgerinsights.com/?p=13923.

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China's domestic market in the next future, or at least mitigate the effects of such initiatives.

Other analysts have stressed the potential impact of a digital renminbi on developing economies. Payment solutions owned by Chinese companies – such as Ant Financial, WeChat and China UnionPay – are already quite popular in several developing countries, paving the way for consolidating the renminbi abroad. Developing countries with strong economic and commercial ties with China – notably those included in the Belt and Road Initiative – could then be incentivised to accept payments and investments in digital renminbi. For example, China has finalised a trade agreement with Mauritius to create a digital financial-testing ground which, according to some experts, could be a way to open the doors of the African market to DC/EP in the future.[26]

The degree to which a digital renminbi will actually boost the international role of China's currency remains an open question – we leave this discussion for another day. What matters here is that being a global currency gives some geopolitical leverage, and it is clear why China is trying to foster the internationalisation of its national currency. In line with China's ambitions, the European Union also assigns a geo-strategic dimension to its digital-euro project. One the priorities of the Union is to strengthen its strategic autonomy, meaning improving its independence in key strategic areas. Within this framework, the European Union has highlighted the internationalisation of the euro as a key priority, and a digital euro could help this policy objective. Widespread adoption of CBDCs around the world could then reduce the dollar's dominance in the long run.

Conclusion

CBDCs raise several questions, from their effects on the financial system to geo-strategic competition between countries. We are still in a phase in which central banks are studying, analysing and experimenting around the development and implementation of this innovative but potentially disruptive tool. Raising awareness of what CBDCs are, and of their economic and political dimensions, thus becomes crucial to ensure that citizens are not passive bystanders.[27]

Updated 7 June 2021

[26] Lauren Johnston and Marc Lanteigne, "Here is Why China's Trade Deal with Mauritius Matters", in *World Economic Forum Articles*, 15 February 2021, https://www.weforum.org/agenda/2021/02/why-china-mauritius-trade-deal-matters.

[27] The Istituto Affari Internazionali, with the support of Intesa Sanpaolo and the Bank of Italy, has carried out a research effort by bringing together a highly qualified and diverse group of experts who, for more than a year, exchanged their views and research on various aspects of this innovation. The results are published in a book entitled *The (Near) Future of Central Bank Digital Currencies. Risks and Opportunities for the Global Economy and Society*, which is freely available online in an attempt to contribute to the current discussion and dissemination of information around CBDCs.

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