

## Tracking Global Motivations for CBDCs: The Financial Inclusion Prerogative

Ananya Kumar, Assistant Director, GeoEconomics Center, Atlantic Council

In the crypto world, there has been a generally accepted axiom that lower-income countries are more likely to use decentralized tokens, networks, and exchanges, and do so at a faster pace than higher-income countries. This claim has already driven private investments in many emerging markets<sup>1</sup>. It is primarily based on private cryptocurrency adoption and use in emerging markets. Indeed, of the top twenty countries with the highest rates of cryptocurrency adoption, only one is a high-income country<sup>2</sup>. However, not all digital currency is privately issued and transferred. Since 2017, countries have shown growing interest in providing a digital version of their fiat currency, or a Central Bank Digital Currency (CBDC), which, much like private cryptocurrency, can be based on distributed-ledger technology.

Is this discrepancy in adoption also true in the case of CBDCs? To answer this question, I rely on data from the Atlantic Council's CBDC tracker to look at the spread of low- and high-income countries globally. In doing so, I find that, regardless of income grouping, a country's financial inclusion motivations have a lot of influence on (1) whether the country will create a wholesale or retail CBDC and (2) how quickly will the country launch a CBDC. I conclude with a few thoughts on what this means for the international financial system.

What drives countries' interest in CBDCs? A vast majority of countries are motivated by financial inclusion, believing that greater digitalization of their monetary system could expand access to financial

services for their citizens. Some are also driven by the need to introduce competition and redundancy in their existing payments systems, which might be monopolistic. Countries are also interested in the advantages of a blockchain based system—transactions could be made faster, cheaper, and safer using the technology. Finally, countries are interested in the programmability functions of a CBDC and the potential advantages for monetary and fiscal policy implementation. Due to these overall benefits, some countries have raced ahead with developing their CBDCs. The below section highlights the specific motivations that have driven their interest.

According to the Atlantic Council's CBDC tracker, 105 countries are exploring CBDCs, and fifty are in the advanced stages of development<sup>3</sup>. This advanced stage includes countries that have fully launched, piloted (limited or otherwise), and produced technical designs and proofs of concept for a digital currency issued by a central bank (development)<sup>4</sup>. Table 1 finds that while more lower-income countries are in the advanced stages of CBDC development, it is only in the launched stage that there is a considerable difference in number—eight lower-income countries in comparison with three high-income countries.

Eight out of the eleven countries that have launched their CBDC projects are a part of the Eastern Caribbean Currency Union (ECCU), which made its CBDC, DCash, available to the public on March 31, 2021. Financial inclusion is the primary issue driving the countries that have launched their CBDCs, since a good proportion of

ECCU countries’ population (over 20 percent) does not have access to financial services<sup>5</sup>. In addition, the ECCU and the Bahamas, both consisting of island nations, need to deal with the issue of dispersed geography, where it has been difficult for traditional banks to build infrastructure and expand services<sup>6</sup>. The geography of island nations also makes them prone to natural disasters, and digital payment systems like a CBDC could address those needs.<sup>7</sup> Moreover, the operational costs of maintaining and transacting in cash and checks in these nations are very high, and a CBDC could reduce them. At the launch of Jamaica’s JAM-DEX, it was announced that Jamaica would be able to save the \$7 million annually that it currently spends on handling and storing cash.<sup>8</sup>

Nigeria is a clear outlier when it comes to motivation, compared to these island economies. Nigeria’s focus is on digitizing its economy; however, it is also interested in improving financial inclusion with the launch of eNaira. Bank account ownership (or, banked population) in Nigeria is around 45 percent, and Nigeria is one of the seven economies with the most unbanked adults in the world<sup>9</sup>. However, more than half of Nigeria’s unbanked population has access to a mobile phone.<sup>10</sup> The Nigerian government is interested in a CBDC to improve the efficiency of welfare payments, tax collection, and cross-border payments such as remittances.<sup>11</sup> There is, therefore, an acute financial inclusion motivation for Nigeria accompanied by economic conditions and ambition that have facilitated the introduction of the eNaira.

DCash was developed in 2019 and launched in 2021. The Jamaican government began developing the JAMDEX in 2020 and was able to launch

in June 2022. Nigeria began researching the eNaira in 2017 and launched in 2021. The Bahamian Sand Dollar was developed in 2019 and launched in 2020<sup>12</sup>. This means that, on average, these countries took two and a half years to develop and launch their CBDCs.

The countries that have launched a CBDC all have specific incentives in addition to financial inclusion and are relying on digitizing their fiat in order to meet their needs. In digital currency parlance, there are well-defined and actualized use cases for these eleven economies, which has led to the fairly swift introduction of CBDCs.

Table 1: Country CBDC and Income Status: Advanced Stage

	High Income	Lower Income
Development Stage (25)	Canada	Haiti
	Israel	Belize
	Bahrain	Venezuela
	Japan	Brazil
	Australia	Turkey
	Germany (EU)	Iran
	France (EU)	Lebanon
	Italy (EU)	Mauritius
	Spain (EU)	India
	Netherlands (EU)	Bhutan
	Estonia (EU)	Cambodia
	Switzerland	Indonesia
		Palau

	<b>High Income</b>	<b>Lower Income</b>
Pilot Stage (14)	Sweden United Arab Emirates (UAE) Saudi Arabia Singapore Hong Kong Lithuania South Korea	Ukraine Kazakhstan Russia China South Africa Thailand Malaysia
Launch Stage	The Bahamas Antigua & Barbuda (ECCU) St Kitts & Nevis (ECCU)	Anguilla (ECCU) Montserrat (ECCU) Dominica (ECCU) St Lucia (ECCU) St Vincent and the Grenadines (ECCU) Grenada (ECCU) Jamaica Nigeria

Next, let us look at a few examples of countries in the pilot stage of CBDC exploration. On the lower-income side, China stands out as a country with an expansive and well-developed CBDC project, which began in 2017 and is currently run in eleven regions<sup>13</sup>. China is motivated by introducing competition to

its domestic payments architecture, which is dominated by WePay and AliPay. Russia is interested in building its CBDC to reduce dependence on dollar-based transactions—although it is uncertain how a domestic, retail CBDC will be able to achieve this.

Around 90 percent of the population of both Russia and China have access to bank accounts.<sup>14</sup> Similarly, most other countries in the pilot stage (both lower and high income) have between 85-99% of the population with bank accounts.<sup>15</sup> Eight of them (Singapore, Hong Kong, UAE, Saudi Arabia, South Africa, Thailand, China, and Malaysia) are interested in wholesale CBDCs, which allow for bank-to-bank or institutional transfers, primarily for FX settlements. This could provide the technological benefits of digital currencies (faster, cheaper, and safer payments) in a cross-border use-case.<sup>16</sup> In other words, instead of the financial inclusion use-case demonstrated by countries that have launched CBDCs, here we see a largely cross-border use-case emerging as most countries are in the process of developing wholesale CBDCs.

In the development stage, all high-income countries have high rates of financial inclusion and are instead interested in monetary and financial policy advantages of CBDCs, along with its programmability functions. On the lower-income side, there are variations in the banked population across the countries: India is at 78 percent, Brazil is at 84 percent, while Cambodia is at 33 percent.<sup>17</sup> However, the financial inclusion incentive is strong—over a quarter of the world’s unbanked population resides in India and Indonesia alone.<sup>18</sup> It is not surprising that most of these countries are interested in retail CBDCs because of their financial inclusion benefits.

Some of the high-income countries have been contemplating these projects for a long time: Japan and the European Central Bank have been working on Project Stella, a wholesale CBDC platform since 2016; Canada began Project Jasper in 2017; and Australia and Switzerland began their research in 2019.<sup>19</sup>

Interesting learnings emerge as we analyze both low- and high-income countries in the launch, pilot, and development phases. In both high- and low-income group countries, a high unbanked population, along with other strong economic incentives such as improving the resilience of financial services and modernization of digital infrastructure, creates an incentive to launch a retail CBDC. Some of these countries have done so at a surprisingly fast rate. For lower and higher-income countries with a low unbanked population rate, the use-case for domestic, retail CBDC is less developed, and instead, these countries are seen to focus on cross-border advantages through wholesale CBDC development. Other lower-income countries with high unbanked populations have begun to focus on retail CBDCs, and given precedence, will move faster than higher-income countries. Table 2 opposite summarizes these findings.

Table 2: Country and Unbanked Rate Analysis

Lower-Income Country	High unbanked rate (in %)	Retail CBDC Development, faster
High-Income Country	High unbanked rate (in %)	Mostly wholesale CBDC Development, slower
Lower-Income Country	Low unbanked rate (in %)	Mostly wholesale CBDC Development, slower
High-Income Country	Low unbanked rate (in %)	Mostly wholesale CBDC Development, slower

Given this, we are likely to see retail CBDC developments at a much faster rate in lower-income countries than in higher-income countries. As the analysis shows, this is because CBDC uptake is highest in countries with clearly articulated financial inclusion benefits along with additional conducive economic conditions. It is likely that the lower-income countries in the development row of Table 1 will develop retail CBDCs at a faster rate than the high-income countries.

This is certainly true for economies like the United States and United Kingdom, which are further behind in their CBDC exploration than their G20 counterparts, such as India, China, and Indonesia<sup>20</sup>. The Eurozone is an interesting case, where despite a relatively highly banked population, the European Central Bank (ECB) is interested in the digitization benefits of CBDCs often expressed by other

lower-income economies.<sup>21</sup> The ECB is also further ahead of the US and the UK in its exploration.

Moreover, central banks, such as the ECB, the Federal Reserve, and the Banks of Japan and England, have an added responsibility as their fiat is held in reserves in countries around the world. The Federal Reserve has an increased responsibility as the issuer of the world's reserve currency to maintain financial stability not just domestically, but also internationally. It is evident that the slower movement in these banks has been the result of cautiousness.

However, CBDCs do not just affect flows of money as a digitally held and transferable product; they also create and influence technical and regulatory standards when it comes to privacy, cybersecurity, interoperability, digital IDs, anti-money laundering (AML), and know-your-customer (KYC). Increasingly, CBDC models that are already proliferating will set the standard for some of these issues, and if unchecked, models that do not align with high standards on privacy, cybersecurity, AML/KYC, and ID will become the norm. This will lead to greater fragmentation and instability in the financial ecosystem. This is the cost that the four largest central banks—the Federal Reserve, the European Central Bank, the Bank of Japan, and the Bank of England—pay if they wait much longer to create a CBDC. Responsible CBDC development that can keep up with rapid changes in the vast majority of the world needs to be the emphasis for high-income countries, such as the United States.

## Endnotes

1 For example, see Binance’s investments in India and Latin America: Bloomberg Línea, “Binance Unveils Pre-Paid Crypto Card for Latin America.” August 5, 2022. and Cointelegraph, “Binance to Drive Crypto and Blockchain Awareness among Indian Investors.” April 30, 2022.

2 “The 2021 Geography of Cryptocurrency Report” (Chainalysis, October 2021), <https://go.chainalysis.com/rs/503-FAP-074/images/Geography-of-Cryptocurrency-2021.pdf>.

3 “Central Bank Digital Currency Tracker,” Atlantic Council, accessed August 24, 2022, <https://www.atlanticcouncil.org/cbdctracker/>.

4 The tracker categorizes 6 levels of exploration: Launched, Pilot, Development, Research, Inactive and Canceled. The advanced stage of CBDC exploration refers to countries in launch, pilot, and development stages.

5 Yoshinaga et al., “Behind the Scenes of Central Bank Digital Currency: Emerging Trends, Insights, and Policy Lessons,” IMF, February 9, 2022, <https://www.imf.org/en/Publications/fintech-notes/Issues/2022/02/07/Behind-the-Scenes-of-Central-Bank-Digital-Currency-512174>.

6 Ibid, 4-7.

7 Ibid, 4-7.

8 “Jamaica’s Central Bank Digital Currency and the Problems It Hopes to Solve,” Cointelegraph, March 25, 2022, <https://cointelegraph.com/news/jamaica-s-central-bank-digital-currency-and-the-problems-it-hopes-to-solve>

9 Asli Demirgüç-Kunt et al., “The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19,” World Bank Group, (June 29, 2022), <https://www.worldbank.org/en/publication/globalfindex/Report>.

10 Ibid, Annex 2, 194.

11 “Design Paper for the eNaira: Same Naira. More Possibilities” (The Central Bank of Nigeria, October 2021), <https://enaira.gov.ng/about/design>.

12 “History of the Sand Dollar,” The Sand Dollar, accessed August 20, 2022, <https://www.sanddollar.bs/about>.

13 Ananya Kumar, “A Report Card on China’s Central Bank Digital Currency: The e-CNY,” Atlantic Council, March 1, 2022, <https://www.atlanticcouncil.org/blogs/econographics/a-report-card-on-chinas-central-bank-digital-currency-the-e-cny/>.

14 Asli Demirgüç-Kunt et al., “The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19,” World Bank Group, (June 29, 2022), <https://www.worldbank.org/en/publication/globalfindex/Report>.

15 Ibid, Annex B, 193-196.

16 “Central Bank Digital Currency Tracker,” Atlantic Council, accessed August 24, 2022, <https://www.atlanticcouncil.org/cbdctracker/>.

17 Asli Demirgüç-Kunt et al., “The Global Findex Database 2021: Financial Inclusion, Digital Payments, and Resilience in the Age of COVID-19,” World Bank Group, (June 29, 2022), <https://www.worldbank.org/en/publication/globalfindex/Report>.

18 Ibid, 34.

19 “Central Bank Digital Currency Tracker,” Atlantic Council, accessed August 24, 2022, <https://www.atlanticcouncil.org/cbdctracker/>.

20 “Central Bank Digital Currency Tracker,” Atlantic Council, accessed August 24, 2022, <https://www.atlanticcouncil.org/cbdctracker/>.

21 Fabio Panetta and Christine Lagarde, “Key Objectives of the Digital Euro,” The ECB Blog, July 13, 2022, <https://www.ecb.europa.eu/press/blog/date/2022/html/ecb.blog220713~34e21c3240.en.html>.