



# Central Bank Digital Currency

**KPMG Israel**

**Financial Risk Management**

—  
**May 2022**

# What is Central Bank Digital Currency (CBDC)?

As cryptocurrencies and stablecoins have become more popular, the world's central banks have realized that they need to provide an alternative—or let the future of money pass them by.



Virtual currency **backed and issued by a central bank**



The digital payment is a **liability of the central bank towards its holder**



The value is determined in a **direct conversion ratio (1:1) to the FIAT currency of that country.**



**Regulated by a country's monetary authority**

# CBDC Benefits

A currency issued by a central bank will make it possible to enjoy, on the one hand, the security of using the money issued by the central bank, and, on the other hand, the convenience and progress inherent in digital money.

## Decreased Payment Costs



- Reduce costs and improve ease of cross-border transactions
- Improve bank liquidity
- Reap benefits of instant settlements
- Provide ease of government aid distribution

## Stability



- Provides a country's central bank with the means to implement monetary policies to control growth and influence inflation
- Reduce the risks of using digital currencies in their current form, which are highly volatile
- Reduce the risks of using un-supervised stablecoins (e.g. UST)

## Stimulate Innovation



- Help ensure open payment platforms and a competitive level playing field
- Support competition and innovation in payments
- Encourage a virtuous circle of greater access, lower costs and better services

## Improved AML & Compliance Monitoring



- Enhance monitoring and traceability of transactions
- Avoid risks of new forms of private money creation
- Multi-CBDC arrangements could surmount the hurdles of sharing digital IDs across borders, but will require international cooperation

# CBDC Benefits- Stability

Only recently we have seen the effect of unsupervised use of cryptocurrencies that seek to create "stability" in their value through an algorithm.

## What are algorithmic stablecoins?

In crypto, an algorithm refers to pieces of code on the blockchain, as encoded in a set of smart contracts.

Algorithmic stablecoins typically rely on two tokens – one stablecoin and another cryptocurrency that backs the stablecoins – and so the algorithm (or the smart contract) regulates the relationship between the two.

**The stablecoin is not backed by USD**

## Top algorithmic stablecoins and market cap as of May 22:



Dai - \$6.5B



Magic Internet Money - \$1.9B



Frax - \$1.4B



Neutrino USD - \$836M



MAI- *market cap information not currently available*

# CBDC Benefits- Stability- Terra Luna

Terra Luna collapsed in May 2022.

“TerraUSD was a so-called stablecoin, which means it was supposed to keep a constant value of \$1. But it dropped below \$1 and kept falling, and Luna tokens, once worth more than \$100, crashed to below a penny, all but erasing a combined market value that had topped \$60 billion.”

The screenshot shows the Bloomberg Businessweek website. The main article is titled "A \$60 Billion Crypto Collapse Reveals a New Kind of Bank Run" by Zeke Faux and Muyao Shen, dated May 19, 2022. The article's lead paragraph states: "Terra's coins were supposed to be the future of money. But they relied on confidence—which can vanish in an instant." The article features a 3D illustration of a globe made of colorful, translucent blocks. To the right of the article is a live broadcast banner for "LIVE ON BLOOMBERG" with options to "Watch Live TV" and "Listen to Live Radio". Below the banner is an advertisement for Grayscale's GFOF, with the text "The digital economy is here." and "INVEST NOW".

**Bloomberg**  
US Edition

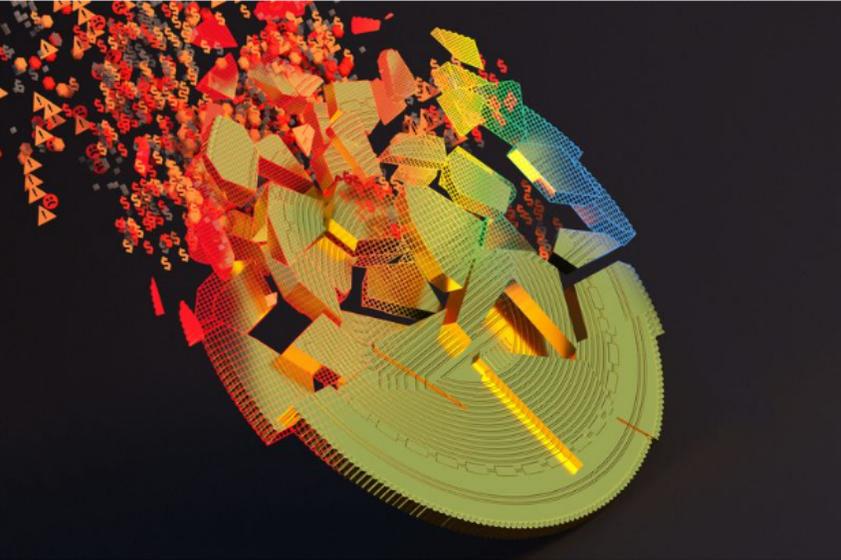
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**Businessweek**  
Finance

## A \$60 Billion Crypto Collapse Reveals a New Kind of Bank Run

Terra's coins were supposed to be the future of money. But they relied on confidence—which can vanish in an instant.



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Investing involves risks and the possible loss of principal. GFOF is distributed by Foreside Fund Services, LLC and Grayscale Advisors, LLC is the adviser.

*Illustration: Maria Chimishkyan for Bloomberg Businessweek*

By [Zeke Faux](#) and [Muyao Shen](#)  
May 19, 2022, 12:00 PM GMT+3

# El Salvador – Bitcoin as a Legal Tender – Recent Crash

## Summary of Events:

- **In 2021**, El Salvador president, Nayib Bukele, **passed a law naming Bitcoin as a legal tender, alongside the U.S. dollar**, even though there was a clear majority of the public opposing this
- Advised by Strike CEO Jack Mallers, Bukele's government **rolled out a digital crypto wallet in app form, called Chivo, which came preloaded with \$30 of Bitcoin to encourage adoption**
  - Many who downloaded it found it confusing and buggy, or that their \$30 had already been stolen by identity thieves.
  - A study by economists at the University of Chicago, Penn State and Yale found that of those who managed to access it, most cashed out their \$30 and didn't use Chivo again.
- **El Salvador discovered that Bitcoin as a tender failed because it does not fulfill these three main things that currencies should fulfill:** a relatively stable store of value, a commonly understood unit of account, and a widely accepted medium of exchange.
- **The bubble burst in May 2022, as the stablecoin Terra proved to be far less stable than advertised and crashed**, precipitating a wider freefall in crypto markets which **wiped out \$400 billion in market capitalization**
- **El Salvador is on the verge of defaulting on its debts, which amount to close to 100% of its gross domestic product.** This is exacerbated by the loss of value of the country's Bitcoin holdings, which Bukele bragged he would trade with public funds on his phone while in the bathroom.

Source: <https://slate.com/technology/2022/05/el-salvador-bitcoin-crash-nayib-bukele.html>

TECH

# El Salvador bought \$21 million of bitcoin as it becomes first country to make it a legal currency

PUBLISHED TUE, SEP 7 2021-1:36 AM EDT | UPDATED TUE, SEP 7 2021-10:14 PM EDT



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# Bitcoin crash erases \$36 million in value from El Salvador government's massive crypto investment as national debt grows

Hannah Towey May 13, 2022, 11:12 AM



Your Market View

NAME / PRICE	+/-	%	DATE
▲ TSLA 663.90	-45.52	-6.42%	05/20/22 11:00 PM
▼ AAPL 137.59	0.24	0.17%	05/20/22 11:00 PM
▲ MSFT 252.56	-0.58	-0.23%	05/20/22 11:00 PM
▼ NFLX 186.35	2.87	1.56%	05/20/22 11:00 PM
▼ SPOT 107.19	1.40	1.32%	05/20/22 11:00 PM

# CBDC in the News

## Central bank digital currencies may not replace crypto, BIS says

The [BIS report](#) reflects growing anxiety among policymakers that the rapid growth of cryptocurrencies and private sector initiatives around payments could lead to central banks losing control of their money. The report is an update on the foundational principles of central bank digital currencies set out by a group of 7 central banks in October last year and its latest findings:

- The central banks have already identified that a CBDC could be an important instrument for ensuring that they can continue delivering their public policy objectives even as the financial system evolves.”
- **Private digital assets could coexist with potential CBDC.**
- CBDC could impose some costs via different channels, such as lower bank profitability (and in turn, bank resilience), higher bank lending rates or reduced lending - although this work does not consider how these costs compare to the potential welfare benefits of a CBDC. Moreover, similar effects could emerge in case of a large take up of new forms of private money, such as stablecoins.”

Fast-growing stablecoins — the biggest of which are Tether (USDT) and Circle (USDC) Coin — are worth nearly **\$140bn**, according to coinmarketcap.



# CBDC in the News

## BIS Innovation Hub to focus on CBDC, payments, DeFi and green finance in 2022 work programme



Press release | 25 January 2022

- New initiatives also focus on regulatory and supervisory technology and cyber security.
- First projects to be launched in the new London and Stockholm centres.
- Several projects will support broader Group of 20 (G20) efforts to improve cross-border payments.

In 2022, the Bank for International Settlements (BIS) Innovation Hub will launch new projects into central bank digital currencies (CBDCs), next generation payments systems and Decentralised Finance (DeFi), expanding its portfolio of explorations seeking to develop new technological public goods for central banks. The [Innovation Hub's work programme](#) will also see new projects in green finance, regulatory and supervisory technology and cyber security.

This year marks a new phase in the Innovation Hub's expansion, with the first projects in the London and Nordic Hub Centres; the expected opening of the Eurosystem and Toronto centres; and the advancement of the strategic partnership with the Federal Reserve System.



BRIEFING ROOM

## FACT SHEET: President Biden to Sign Executive Order on Ensuring Responsible Development of Digital Assets

MARCH 09, 2022 • STATEMENTS AND RELEASES

The executive order aims to:

- **Protect U.S. Consumers, Investors, and Businesses**
- **Protect U.S. and Global Financial Stability** and Mitigate Systemic Risk
- **Mitigate the Illicit Finance** and National Security Risks **Posed by the Illicit Use of Digital Assets**
- Promote U.S. Leadership in Technology and Economic Competitiveness to **Reinforce U.S. Leadership in the Global Financial System**
- **Promote Equitable Access to Safe and Affordable Financial Services**
- **Support Technological Advances** and Ensure Responsible Development and Use of Digital Assets
- **Explore a U.S. Central Bank Digital Currency (CBDC) – by promoting Federal Reserve continued research and plan development**

# Biden takes big step toward government-backed digital currency

The Biden administration is throwing its support behind further study and development of what would be known as a U.S. Central Bank Digital Currency.



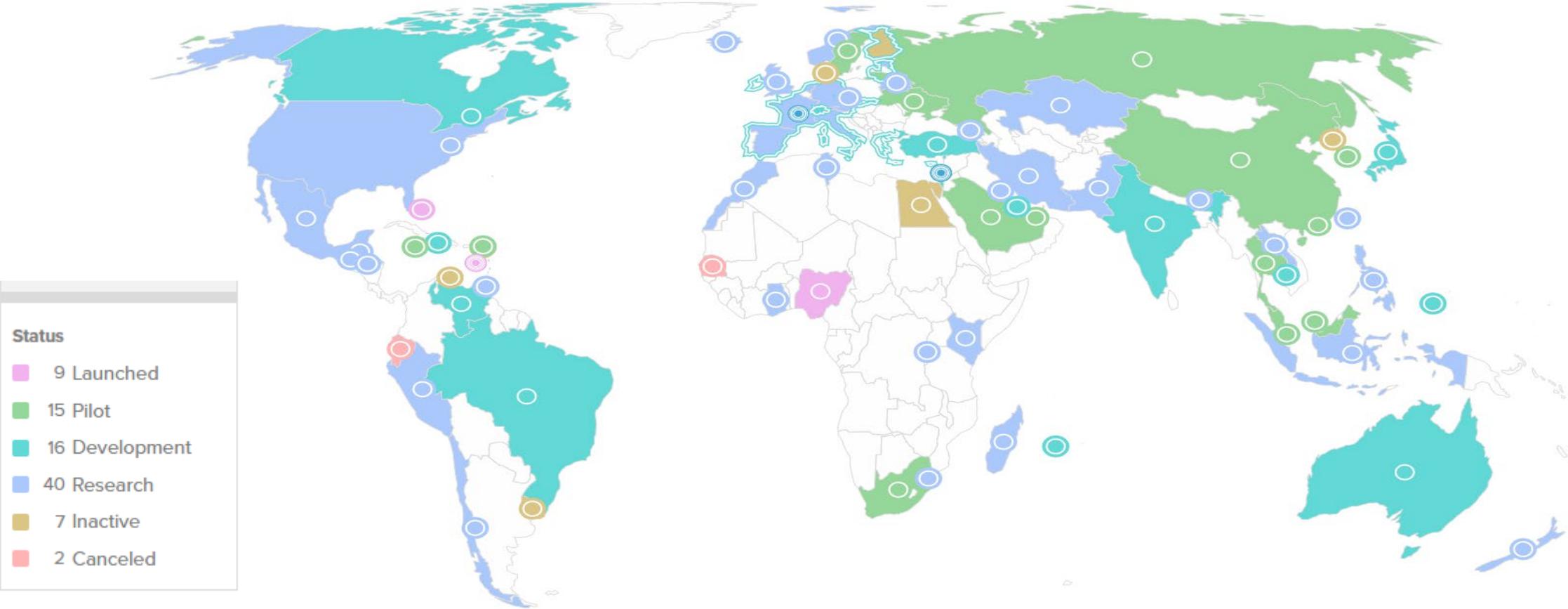
March 9, 2022, 1:01 PM IST / Updated March 10, 2022, 2:40 PM IST

By Jason Abbruzzese and Kevin Collier

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# CBDC Global tracker - May 2022

**87 countries** (representing over **90 percent** of global GDP) are exploring a CBDC. In May 2020, only 35 countries were considering a CBDC.



# Global CBDC - Leading Country Snapshots

## The Bahamas

In October of 2020, the Central Bank of the Bahamas issued the Sand Dollar. It was the world's first CBDC that covered an entire country.



## Nigeria

In October 2021, Nigeria became the first African country to establish a CBDC. The eNaira is kept in a digital wallet and can be used for in-store contactless payments as well as money transfers.



## India

India's government has announced that digital rupee will be introduced by 2022-23. Currently, it's under development status.



## Russia

In February 2022, the Bank of Russia completed initial trials of their CBDC, Digital Ruble. In February 2022, the Bank began testing the Digital Ruble platform after successfully completing transactions using the prototype platform.



## China

In April 2020, China became the world's first major economy to pilot a digital currency, e-CNY. As of February 2022, the pilot is operational in 11 regions, including the Olympic venues in Beijing and Zhangjiakou. During the Olympic Games, both foreign and domestic visitors could use the e-CNY wallet.



## Sweden

Sweden has been at the forefront of CBDC development, and is currently in the testing stages of its e-krona currency.



# Detailed Country Updates - Sampling





## CBDC Project

- Project Name – Sand Dollar
- Status – LAUNCHED
- Purpose – Retail
- Infrastructure – Blockchain DLT and Conventional
- Technology – NZIA Limited

### Description:

In December 2019, the Central Bank of the Bahamas launched the Sand Dollar project on the island of Exuma. After the successful pilot in Exuma, the digital currency fully launched across the country in October 2020. The sand dollar is the first ever nationwide Central Bank Digital Currency in the world. Now, the Central Bank is working on achieving full interoperability between its various wallet providers

## Key Developments and IT

- In October 2020, the Sand Dollar became the **first CBDC in the world to go beyond the pilot stage and achieve an official launch.**
- The digital currency became **available for use by all Bahamian citizens upon release**
- **However, integration with the commercial banking system has been subject to a gradual rollout.** The completion of that integration is now imminent, according to the bank.
- The motivations for the CBDC pilot **include improving financial inclusion and strengthening security against money laundering** or illicit economic activities.
- In its statement announcing Project Sand Dollar, the Central Bank of the Bahamas noted that it will "simultaneously **promote the development of new regulations** for the digital currency, and **strengthen consumer protection**, especially around data protection standards" as the pilot in Exuma progresses.
- **The Central Bank is now working on achieving full interoperability between its various wallet providers.**

Source: [Central Bank Digital Currency Tracker - Atlantic Council](#)

# Central Bank of Bahamas Launches Landmark 'Sand Dollar' Digital Currency

The Bahamas has officially launched the world's first national digital currency, the sand dollar.

By Sebastian Sinclair ⌚ Oct 21, 2020 at 11:51 a.m. Updated Sep 14, 2021 at 1:12 p.m.





## CBDC Project

- Project Name – eNaira
- Status – LAUNCHED
- Purpose – Retail
- Infrastructure – Blockchain DLT
- Technology – Fabric

### Description:

In October 2021, President Buhari launched the e-Naira, Africa's first CBDC. The launch comes only a few months after CBN instated a ban on other cryptocurrency activity in Nigeria.

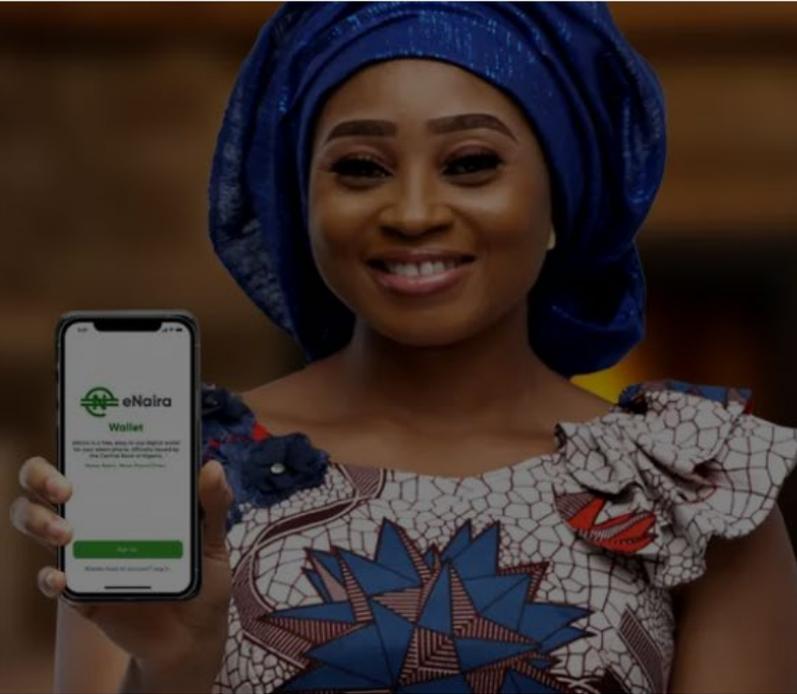
## Key Developments and IT

- At the launch of e-Naira, the Central Bank of Nigeria governor, Godwin Emefiele, said 500 million eNaira (\$1.21 million) had already been minted.
- **Currently only bank account holders can access the e-Naira by signing up with Nigeria's BVN bank identity.**
- **The next phase of the rollout will include the unbanked using Nigeria's national identity NIN, which has now reached 60 million signups.**
  - **Based on the level of identity provided, a higher transaction limit for the eNaira is allowed.**
  - **With a phone number and verified national identity,** users can make payments of up to 50,000 Naira (\$121) a day, rising to 200,000 (\$484) for the lower level of bank-approved account.

Source: [Central Bank Digital Currency Tracker - Atlantic Council](#)

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## About eNaira



### The eNaira Story

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## Not Just Another CBDC!

With 81 countries and more on the race to develop own their Central Bank Digital Currencies, let it be very clear that we are not just another CBDC, we are a people-oriented digital currency leveraging technology to connect individuals and businesses for easy trading and financial inclusion. We push the boundaries, bridge the gaps, and tell actual humane stories. We are the foremost audience-centric digital currency brandishing a face.



## CBDC Project

- Project Name – e-CNY
- Status – PILOT
- Purpose – Retail
- Infrastructure – Blockchain DLT and Conventional
- Technology – Undecided

### Description:

In April 2020, China became the world's first major economy to pilot a digital currency. As of February 2022, the pilot has been operational in 11 regions, including the Olympic venues in Beijing and Zhangjiakou. During the Olympic Games, both foreign and domestic visitors could use the e-CNY wallet.

## Key Developments and IT

- **In 2017, China launched project Digital Currency Electronic Payments, or “DCEP.”**
- **In April 2020, China piloted the digital currency** in four cities. In August, the pilot program expanded to 28 major cities, across 10 regions.
- **As of June 2021, the PBOC announced that more than 20.87 million personal and 3.51 million corporate digital yuan wallets had been opened**, with a total transaction value of around \$5.39 billion.
  - According to October 2021 numbers, **123 million individual wallets and 9.2 million corporate wallets** had been opened.
- **The PBOC aimed circulation e-CNY for cross-border transactions by 2022.**
  - **In February 2021, the PBOC joined central banks from Thailand, the United Arab Emirates, and Hong Kong to explore a cross-border wholesale CBDC project named Multiple Central Bank Digital Currency (m-CBDC) Bridge.**
- In July 2021, the PBOC announced that **foreign travelers to China will be able to use e-CNY even without domestic bank accounts** if they provide their passport information.
- The e-CNY offers **offline functionality** and different levels of anonymity standards **corresponding to transaction and balance limits.**
- In February 2022, visitors to the **Olympic Games venues in Beijing and Zhangjiakou were able to use the software e-CNY application and the hardware e-CNY card.** Daily transactions were around "a couple of million RMB" or over \$300,000.

Source: [Central Bank Digital Currency Tracker - Atlantic Council](#)

# China's digital yuan—premiering globally at the Beijing Olympics—could become a model for other countries

BY ESWAR PRASAD

February 2, 2022 2:30 AM GMT+2



Eswar Prasad, author of "The Future of Money," notes how China's digital yuan might transform the country's domestic finances—and may serve as a template for other countries.



### CBDC Project

- Project Name – Digital Ruble
- Status – PILOT
- Purpose – Retail
- Infrastructure – Blockchain DLT and Conventional
- Technology – Undecided

#### Description:

The Bank of Russia first released a report analyzing a possible ruble-backed CBDC in October 2020. In September 2021, the deputy chairwoman of the Bank of Russia announced that they will start testing the digital ruble with a pilot in January 2022 and that they see no obstacle to its eventual launch. In February 2022, Bank of Russia began testing the digital ruble platform after successfully completing transactions using the prototype platform.

### Key Developments and IT

- In **October 2020** the **Bank of Russia** announced plans to release a prototype CBDC in 2021. The Bank plans to draft regulatory norms for the **currency's integration in 2022**.
- The proposed digital ruble would be **built on a hybrid platform with distributed ledger technology, likely using open-source code**.
- The Bank of Russia has also stated that launching a CBDC will **decrease their dependence on the US dollar and potentially help in side-stepping US sanctions**.
- In **June 2021**, the **Bank** announced a partnership with **12 banks**
- In **February 2022**, the Russian central bank announced that it had created a **prototype of the digital ruble platform**, and that **two partner banks had successfully completed a full cycle of digital ruble transfers through mobile banking applications**.
- The bank also announced a **phased development of the pilot**, focusing on different features across the testing process.
- At the end of the testing period, Bank of Russia seeks to **create a roadmap for the launch of the digital ruble for the year 2022-23 also levied at 30% on private cryptocurrencies**

Source: [Central Bank Digital Currency Tracker - Atlantic Council](#)

# Bank of Russia to continue with trials of Digital Ruble payments this year

TIMESOFINDIA.COM / Apr 22, 2022, 11:27 IST



## As Russia Tests Digital Ruble, Plans for Broader Crypto Regulation Are Uncertain

The country's finance minister reportedly hopes bill detailing crypto regulation will pass by end of year



The Central Bank of Russia recently stated that it's not going to delay research in the creation of CBDC and will move ahead with its digital ruble project. The First Deputy Chairman of the Bank of Russia, Olga Skorobogatova stressed the extreme importance and necessity of digital ruble for Russia and the regulator will not delay the upcoming tests of the prototype currency platform further.



## CBDC Project

- Project Name – Digital Rupee
- Status – DEVELOPMENT
- Purpose – Retail and Wholesale
- Infrastructure – Blockchain DLT and Conventional
- Technology – Undecided

### Description:

In February 2022, India's Finance Minister, Nirmala Sitharaman announced that a "digital rupee" will be introduced by 2022-23. In July 2021, the Reserve Bank of India announced that it was working towards a phased implementation of a digital rupee. Shri T Rabi Sankar, Deputy Governor, also stated that "CBDCs are likely to be in the arsenal of every central bank going forward."

## Key Developments and IT

- In **mid-2019**, a government panel recommended **banning all private cryptocurrencies**, with a jail term of up to 10 years and heavy fines for anyone dealing in digital currencies.
  - The panel did, however, ask the government to **consider the launch of an official government-backed digital currency in India**, to function like bank notes through the RBI.
- In July 2021, the RBI announced that it considering a series of pilot studies for an eventual **"phased" rollout of a CBDC**.
- In early 2022, India's Finance Minister, Nirmala Sitharaman announced that **the "digital rupee" will be introduced by 2022-23**, and will be backed by the Reserve Bank of India.
  - She cited the benefits offered by digital currencies through **faster payments system and efficient currency management options**.
  - **She did not clarify the underlying technology for the CBDC, and said it could be based on blockchain or other technology.**
  - The new **budget for the year 2022-23 also levied at 30% on private cryptocurrencies**

Source: [Central Bank Digital Currency Tracker - Atlantic Council](#)

# India says it will launch digital rupee as soon as this year

2 February



## India's Digital Rupee Will Be Like 'Dematerialised Bank Notes', Says SC Garg

S.C. Garg believes that the India's digital rupee or CBDC will be more like 'dematerialised bank notes' as it has been clarified in Parliament that RBI does not issue a cryptocurrency



GETTY IMAGES



International.



### CBDC Project

- Project Name – E-krona
- Status – PILOT
- Purpose – Retail
- Infrastructure – Blockchain DLT
- Technology – Undecided

#### Description:

Sweden has been at the forefront of CBDC development, and is currently in the testing stages of its e-krona currency.

### Key Developments and IT

- In a continuation of the Riksbank's testing of digital currency, the **e-krona will advance from only simulated participants to a testing environment with external participants.**
- **The Riksbank announced in April 2021 that it would involve commercial banks, including Svenska Handelsbanken, in the next phase of the CBDC project in order to evaluate the e-krona's use for large commercial and small retail payments.**
- **In 2022**, the Riksbank will continue its work on:
  - Investigating the need for and effects of an e-krona on the Swedish economy.
  - **Testing the technical solution for the e-krona within the e-krona pilot.**
  - Investigating whether and if so how an e-krona would affect Swedish legislation and the Riksbank's task.
  - Comparing different technical solutions and a models for an e-krona.
  - **Preparing for a possible procurement of an issuable e-krona.**

Source: [Central Bank Digital Currency Tracker - Atlantic Council](https://www.riksbank.se/en-gb/payments--cash/e-krona/), <https://www.riksbank.se/en-gb/payments--cash/e-krona/>



NEWS

## Sweden completes phase two of e-krona pilot

Sweden's central bank is well into its second year of testing a new digital currency, but so far, no firm decision has been made by the government to adopt it



By Pat Brans, Pat Brans Associates/Grenoble Ecole de Management

## Sweden Casts Around for Potential E-Krona Suppliers

The country's central bank says it wants to understand the technical options before taking a decision on issuing a CBDC.

By Jack Schickler ⌚ Apr 7, 2022 at 7:00 p.m. Updated Apr 7, 2022 at 7:09 p.m.

