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Macro-Economic Analysis of Some Countries (Which Issued Digital Currencies), with USA and UK to Transfer them to Digital Currencies in Digitalization Era

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Abstract
This paper analysis macroeconomic indicators in some countries, which issued digital currencies [like Bahamas, Nigeria, Jamaica, Eastern Caribbean (like Saint Lucia, Grenada, etc.), and China with USA and UK] through period 2020 to 2025 to transfer USA and UK to digital currencies in digitalization era, the research found that applied digital currencies in that countries which issued digital currencies effect on money supply especially in M1 measurement where M1 equal banknotes and coins in circulation outside the Bank + Demand deposit money + prepaid credit and debit cards + digital currencies, so issues digital currencies may be effect on inflation rate in these countries (this is the main hypothesis in the future research). UK and USA study to issues digital currencies or central bank digital currency (CBDC) and control dealing of cryptocurrency so UK investigate and study how to maximization the benefit from CBDC and USA is the leader and pioneer in every field of the world forever.
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I- Introduction

The world is moving rapidly toward a digital future, raising questions and challenges for central banks. Digital technologies have advanced faster than any innovation in human history, and the COVID-19 pandemic accelerated this pace. To keep up with this trend and harness its significant economic benefits, UK, USA and other governments are adopting digitalization strategies to transform public services and increase their efficiency. With payments becoming increasingly digitalized, one question is whether a structural shift from a reliance on cash to digital currencies could materialize. Many central banks are reflecting on how to achieve their policy objectives in this changing landscape. One option to preserve the key role of central bank-issued money in a digital world is to adopt a central bank digital currency (CBDC). A CBDC is a digital liability of the central bank used as a means of payment by the population (retail) or financial institutions (wholesale). UK study to issue digital pound and USA researches and development how to organize and control dealing with cryptocurrencies and issue digital Dollar, so we study the experiences of the countries which issued digital currencies and its effects on money supply in these countries.

The countries, that issued digital currency until April 2025 are Bahamas, Nigeria, Jamaica, Eastern Caribbean (like Saint Lucia, Grenada, etc.), and China. These countries are applied different system to control money supply, we study these experiences to useful from them in issued (Digital Pound) Brit-coin in UK, and Digital US Dolar in USA.

America is the leader and pioneer for the world in every field forever, so America study and research how to organize and control cryptocurrency and how it issues digital dollar like UK study and research how it issues digital pound.

The United States has emerged as a leader and pioneer in the field of cryptocurrencies and digital currencies due to a combination of historical, economic, technological, and cultural factors. Here are the key reasons:

why America is the leader and pioneer in field of cryptocurrencies and digital currencies?

1. Technological Leadership and Innovation Culture

- **Silicon Valley**: As the global hub of tech innovation, Silicon Valley (and other tech ecosystems in the U.S.) fosters an environment of rapid experimentation, risk-taking, and entrepreneurship.

- **Talent Pool**: The U.S. attracts top talent in computer science, cryptography, and finance from around the world.

- **University Research**: Leading institutions (e.g., MIT, Stanford, Berkeley) have played major roles in blockchain research and development.

2. Early Adoption and Development

- **Bitcoin's Key Developers**: Although Bitcoin itself was created under the pseudonym *Satoshi Nakamoto*, many of its earliest developers and advocates were based in the U.S.

- **Startups and Infrastructure**: Early exchanges (like Coinbase), mining companies, and wallet providers started in the U.S., giving it a first-mover advantage.

3. Venture Capital and Financial Ecosystem

- **Strong VC Backing**: U.S.-based venture capital firms were among the first to fund blockchain and crypto startups at scale.

- **Financial Sophistication**: The U.S. financial system and its deep capital markets enabled crypto innovation (e.g., crypto ETFs, institutional custody services).

4. Global Influence and Dollar Dominance

- **USD as Global Reserve Currency**: The dollar's dominance makes the U.S. central to global financial flows. Crypto projects often benchmark against the USD or are USD-pegged (like USDC and USDT).

- **Regulatory Impact**: U.S. regulations and legal decisions influence global crypto behavior because of the size of its economy and financial system.

5. Legal and Regulatory Environment (Despite Challenges)

- **Legal Protections for Innovation**: The U.S. generally protects property rights, intellectual property, and entrepreneurial activities.

- **Regulatory Clarity Emerging**: Although there has been confusion and enforcement-driven regulation, agencies like the SEC, CFTC, and others are gradually shaping clearer frameworks.

- **State-Level Experimentation**: States like Wyoming have passed crypto-friendly laws, creating regulatory "sandboxes."

6. Public and Institutional Adoption

- **Retail Adoption**: The U.S. has one of the highest per-capita rates of crypto adoption.

- **Institutional Involvement**: Major U.S. firms like BlackRock, Fidelity, and Goldman Sachs have entered the space through crypto investments, ETFs, and custody solutions.

7. Media and Cultural Influence

- **Thought Leadership**: Influential voices, forums (like Reddit and Twitter), and publications from the U.S. shape the global crypto narrative.

- **Freedom of Speech and Press**: Open dialogue about technology, policy, and innovation enables faster dissemination and debate of ideas.

Summary

America's leadership in cryptocurrencies stems from its **technological innovation**, **financial power**, and **cultural support for entrepreneurship**. While regulation is still evolving, the ecosystem built over the last decade gives the U.S. a strong leadership position globally.

II- Literature Review

Bahamas

The operation of the Sand dollar

The Bahamas is an island state consisting of over three thousand islands - thirty of which are inhabited - and has over four hundred thousand inhabitants (Bahamas, n.d.). The size of the economy is 13.7 billion U.S. dollars and the per capita income is 35.5 thousand U.S. dollars per year (IMF, 2022). The Bahamian dollar (B$) is the official currency of the Bahamas and is pegged to the U.S. dollar (US$). Since the Sand dollar is the digital representation of the Bahamian dollar, the exchange rate of the Sand dollar is linked one-to-one to the value of the U.S. dollar.

94.3% of residents have access to a deposit facility (bank account or credit union) (CBOB, 2021). A persistent problem within the archipelago is that some remote groups have difficulty accessing financial services. The dispersion of the population across several islands makes managing the physical money supply a significant cost to the CBOB (IMF, 2022). The Sand dollar could significantly improve the efficiency of the payment system (objective 1).

After several pilots, the Sand dollar became the first CBDC legal tender in 2020. The first pilot took place on the island of Exuma in December 2019. The Bahamian central government expanded the pilot to the Abaco Islands in February 2020 when they were hit by Hurricane Dorian and regular payment traffic was severely hampered. The implementation of the Sand dollar was part of a support program for affected areas (IMF, 2020). The Sand dollar proved to be a useful and well-functioning alternative for financial transactions in the hurricane-disrupted area (Robards, 2020). After positive results from these pilots, the government decided to launch the Sand dollar nationwide (Prasad, 2021). Any Bahamian citizen or business can download a digital wallet (eWallet) since October 2020, allowing them to access a deposit account at the CBOB and payment services. The Sand dollar is an "account-based" CBDC, meaning that the identity of the payer must be verified, as opposed to a "token-based" CBDC where the object used to pay must be verified (Garratt, Lee, Malone, & Martin, 2020) (van der Linden 2022: 51-61). An example of a tokens-based system is current physical money, here it is determined whether the object (banknote or coin) is authentic. In an account-based system, transactions can only be made from verified accounts, so there is a verification step built into the system where verification must be granted to a central party. The CBOB does not charge a fee for holding an eWallet or for using the Sand dollar and no interest is paid. Because the Sand dollar is a legal tender, Bahamian citizens can pay their taxes through their e-Wallet (Knight, 2022). The Sand dollar can currently only be used within the Bahamas. However, member payment service providers are authorized to make foreign currency exchangeable for Sand dollars and vice versa (CBOB, 2023). The entire Sand dollar infrastructure is based on a blockchain structure, or 'distributed ledger technology' (DLT). This means maintaining a "real-time" digital ledger of Sand dollar assets and transactions. The ledger is managed and funded by the CBOB (IMF, 2022). Thus, through this system, the CBOB aims to reduce the overall cost of payment transactions (objective 1).

Nigeria

Abstract The dwindling use of cash, rise in electronic commerce, and advent of private digital currencies seem to have spurred central banks to consider issuing Central Bank Digital Currencies (CBDCs). The Central Bank of Nigeria (CBN) has led the way in this regard by issuing Africa’s first CBDC. This paper, therefore, identifies the benefits and risks of issuing this form of currency. It notes that issuing a CBDC in Nigeria offers many benefits, including expanding financial inclusion, cash management cost-reduction, improving tax collection, boosting cross-border trade and remittances, and engendering economic growth. It also discusses some potential risks that policymakers must consider while highlighting some insightful lessons from the issuance and adoption of the eNaira in Nigeria.

But first, what is a Central Bank Digital Currency (CBDC)? By way of conceptual clarification, a central bank digital currency is the digital equivalent of paper money, and it is a liability of the issuing central bank (Jabbar et al., 2023). It is an electronic version of cash, and it is intended to serve all the purposes of money, as we know it today. The issuance of the eNaira by the CBN on the 25th of October 2021 led to mixed reactions around the world. There were positive reactions from other central banks and such institutions as the International Monetary

Fund (IMF) and the Bank of International Settlement (BIS), while it attracted some negative reactions from cryptocurrency enthusiasts and among those who do not think that central banks should be innovative with money in the digital age. These reactions are expected and normal, especially when a developing country, such as Nigeria, is among the first countries to issue a central bank digital currency, which most advanced countries are yet to issue. The mixed reactions to Nigeria's CBDC are not unique to Nigeria, because the academic literature on central bank digital currencies also presents several arguments for and against issuing a central bank digital currency.

Jamaica

The Bank of Jamaica, BOJ, plans to test a digital currency as an alternative to cash later in 2020.

The Central Bank Digital Currency, or CBDC, would be additional to banknotes and coins, and backed by the Central Bank as legal tender. It will be tenable in Jamaica only. According to the BOJ, the digital currency will be issued to licensed banking institutions in the same manner as physical currency.

The CBDC will not be tradeable against physical cash, as is the case for cryptocurrencies such as bitcoin, which can be exchanged for hard currency at a transacted value. That's due in part to the differences between a digital currency, which is backed by a central bank and government, and a cryptocurrency, which is privately issued, generally not backed by a central authority, and does not perform all the essential functions of money.

However, the amount of digital currency for initial issue is still to be determined. Electronic payments in Jamaica topped $7.3 trillion in 2019. The introduction of digital money would become the latest means to facilitate greater financial inclusion through technology. (JG)

On Monday August 9, 2021. BOJ minted Jamaica's first batch of central bank digital currency (CBDC), a total of J$230 million, soon to be issued to deposit-taking institutions and authorized payment service providers for the CBDC pilot which ends in December.

Saint Lucia

St. Lucia's tourism-dependent economy has normalized after the pandemic. GDP growth is expected at 3.7 percent in 2024, on strong tourism, construction, and manufacturing activity. Unemployment has dropped to decade lows but remains elevated at 14 percent. The authorities recently introduced a minimum wage, increased minimum pensions, and plan to implement an unemployment insurance scheme. Inflation, which peaked at 6.4 percent y/y in 2022, fell to 0.8 percent in June, driven by utilities and energy prices, as well as a VAT reduction. The current account deficit narrowed to 1.9 percent of GDP in 2023 with the rebound in tourism, even as the fiscal deficit widened to 2.6 percent of GDP and debt ticked up to 74.5 percent of GDP. Banks are liquid and profitable, but credit growth is weak, although credit unions are growing rapidly. Over the medium term, once planned infrastructure and hotel investments approach completion, growth is projected to slow to a modest 1.5 percent over the medium term. Inflation is expected to rise to 2 percent over the medium term as global input costs normalize. The deficit excluding natural disasters costs is forecast to narrow to 1.3 percent of GDP in FY2024 but widen thereafter to 2.2 – 2.9 percent of GDP on the back of higher capital expenditures. Debt is projected to stabilize around 74 percent of GDP, well above the regional debt ceiling of 60 percent of GDP. The current account deficit is anticipated to narrow further over the medium term on account of stronger tourism and lower fuel prices. Bank credit to the private sector is projected to remain anemic because of high NPLs, the lack of foreclosure legislation, and concerns about the fiscal outlook.

The Digital EC Dollar Pilot Project is a strategic initiative of the Eastern Caribbean Central Bank (ECCB) aimed at advancing the socio-economic transformation of our region. It involves the development of a blockchain-based, digital version of our EC currency. The introduction of a digital version of the EC currency (DCash) offers a range of benefits to the citizens and residents of the ECCU. DCash is a faster, cheaper and safer payment option to physical cash and other payment channels.

A huge motivation and big benefit of DCash is the **significant reduction in the cost of financial transactions**. As Table 1 demonstrates, the cost of transacting, and by extension the cost of doing business, using existing payment channels is relatively high. This lived reality for individuals and especially small businesses acts as a disincentive and deterrent and often renders them financially excluded.

Since the inception of the pilot in late March 2019, extensive work has been done towards the development and testing of the applications (apps) through which the DCash will be issued by the ECCB. These apps have benefitted from feedback provided through extensive collaborative engagements with various key stakeholders including financial institutions, merchants, government agencies and focus end-user groups.

The live pilot, scheduled to be launched publicly by the end of March 2021, will be initially rolled out in four (4) ECCU member countries, namely, **Antigua and Barbuda, Grenada, Saint Christopher (St Kitts) and Nevis and Saint Lucia**. Later this year, it will be rolled out in the remaining four (4) member countries. With all member countries onboard, DCash users will have the ability to send funds to anyone, anywhere in the ECCU at a fraction of current costs.

Grenada

The Caribbean Digital Transformation Project (CARDTP) is a US$ 94 million project funded by the World Bank. The main objective of the project is to accelerate digital transformation by increasing access to digital services, technologies and skills by governments, businesses and individuals in the participating Eastern Caribbean countries namely: the Commonwealth of Dominica, Grenada, Saint Lucia and Saint Vincent and the Grenadines.

The CARDTP Project is coordinated by the organization of Eastern Caribbean States, in partnership with the World Bank, the Eastern Caribbean Telecommunications Authority (ECTEL), the Eastern Caribbean Central Bank (ECCB), The Caribbean Community Implementation Agency for Crime and Security (CARICOM IMPACS) and the Caribbean Telecommunications Union (CTU).

The Caribbean Digital Transformation Project was launched in November 2020 and should be completed by 2025

China

China's Central Bank, the People's Bank of China (PBOC), has developed its own digital currency. The electronic China Yuan, or e-CNY, results from a six-year effort and follows a crackdown on private cryptocurrency trading and mining in 2021. Authorities view private cryptocurrency as a threat to financial stability. While digital payments are popular in China, the rollout of a national digital currency puts the government in a space that had been designed to thwart central control. e-CNY also is a key part of China's efforts to digitize its domestic economy to, in part, expand state control while also strategically positioning China to influence the global financial system.

Piloting the currency in four cities in April 2020, usage of e-CNY is rapidly expanding within China. The Beijing Winter Olympics was an opportune time to showcase the currency's scalability by piloting it in 10 regions across China in February 2022. The People's Bank of China has not disclosed the number of adopters of the e-CNY since October 2021, but its unofficial estimates are around 261 million wallets[1] with total transaction values of more than RMB 87 billion (approximately $13.75 billion).[2] These include both individual and corporate wallets, but it is uncertain if all the wallets are in use. According to the Digital Currency Institute, as of August 2022, more than 5.6 million merchants are accepting payment with the digital currency. Authorities allowed residents to use digital currency to pay utility bills and collect tax refunds and health insurance reimbursements.

USA

America is the leader and pioneer forever

Currency digital edge in America

The unemployment rate declined to 4.0 percent in January 2025, while payroll job gains were solid. The Census Bureau recently released its new population estimates, and the updated monthly resident population plus armed forces overseas went up from 337.7 million to 341.2 million for December 2024. **Fertility rate:** 1.66 births per woman (2022) World Bank. Progress on inflation has been bumpy recently. Month-to-month CPI inflation jumped above a 5.0 percent annualized rate in January 2025. Core PCE inflation, a key metric for forecasting future inflation, stood at 2.8 percent year over year in December 2024. This metric has been stuck between 2.6 and 2.8 percent since May 2024.

GDP growth rate: 2.9% annual change (2023), **Gross domestic product:** 27.72 trillion USD (2023), **GDP per capita:** 82,769.41 USD (2023), and **Gross national income:** 27.58 trillion PPP dollars (2023) World Bank, GDP growth is forecast to slow to 1.9% in 2025, according to FactSet. That's down from 2.8% in 2024.

Table 1. Gross domestic product

	Q1 2025	**Q4 2024**
Size of the U.S. Economy		
Nominal GDP	**$29.978T**	**$29.724T**
Real GDP	$23.526T	$23.542T

Source:https://www.google.com/search?q=world+bank+GDP+of+US+2024&rlz=1C1GCEA_enEG1140EG1140&oq=world+bank+GDP+of+US+2024&gs_lcrp=EgZjaHJvbWUyBggAEEUYOTIICAEQABgWGB4yDQgCEAAYhgMYgAQYigUyDQgDEAAYhgMYgAQYigUyCggEEAAYgAQYogQyBwgFEAAY7wUyCggGEAAYgAQYogQyCggHEAAYgAQYogTSAQo2NzY2OWowajE1qAIMsAIB8QVOjuEnhIq5ig&sourceid=chrome&ie=UTF-8

Money Supply in USA

Before May 2020, M2 consists of M1 plus (1) savings deposits (including money market deposit accounts); (2) small-denomination time deposits (time deposits in amounts of less than $100,000) less individual retirement account (IRA) and Keogh balances at depository institutions; and (3) balances in retail money market funds (MMFs) less IRA and Keogh balances at MMFs.

Beginning May 2020, M2 consists of M1 plus (1) small-denomination time deposits (time deposits in amounts of less than $100,000) less IRA and Keogh balances at depository institutions; and (2) balances in retail MMFs less IRA and Keogh balances at MMFs. Seasonally adjusted M2 is constructed by summing savings deposits (before May 2020), small-denomination time deposits, and retail MMFs, each seasonally adjusted separately, and adding this result to seasonally adjusted M1.

Money supply M2 was increased from 20,876.3 billion of dollars in march 2023 to 20,901.4 billion of dollars in Mar 2024 and reach to 21,762.5 billion of dollars in Mar 2025.

UK

Gross domestic product (GDP) and productivity

GDP is estimated to have grown by 0.6% in December 2024 to February 2025 compared to the previous three-month period (September to November 2024). Eurozone GDP grew by 0.2% in October to December 2024.

Services output was up by 1.8% in December 2024 to February 2025 compared to the previous year.

Manufacturing output fell by 0.4% over the same period.

Productivity across the whole UK economy increased by 0.7% in Q4 2024 compared with the previous quarter. Compared with the previous year, it was down by 0.8%.

Inflation and interest rates

CPI inflation was 2.6% in March 2025, down from 2.8% in February. Inflation in the Eurozone was 2.2% in March 2025, down from 2.3% in February.

The Bank of England's Monetary Policy Committee (MPC) left interest rates unchanged at 4.50% on 20 March. The MPC last reduced rates in February 2025.

Earnings and employment

Average wages excluding bonuses were 5.9% higher in the three months to February 2025 compared with the year before, and 3.0% higher after adjusting for inflation. CPI inflation for this period was 2.8%.

34.0 million people were in employment in December 2024 to February 2025, up 680,000 from a year before. The employment rate was 75.1%, up from 74.6% the previous year.

1.57 million people were unemployed in December 2024 to February 2025, up 114,000 from the year before. The unemployment rate was 4.4%. The UK harmonized unemployment rate for Q4 2024 was 4.4%, above the rate of Germany (3.4%) and the US (4.1%) but below that of France (7.3%).

Public finances

Government borrowing in the 2024/25 financial year was £152 billion, £21 billion more than in 2023/24.

At the end of March 2025, public sector net debt was equivalent to 95.8% of GDP, compared to 95.6% a year before.

Trade and exchange rates

The UK had a trade deficit of £4.8 billion in the three months to February 2025, compared to £8.9 billion in the three months to November 2024.

The current account deficit was £21 billion in Q4 2024 (2.9% of GDP), up from £12.5 billion in Q3 2024 (1.7% of GDP).

The value of sterling fell by 2.2% between February and March 2025, having risen by 1.1% between January and February 2025. Compared with a year ago, it is 2.4% higher.

Retail sales and consumer confidence

The volume of retail sales rose by 1.6% in the three months to March 2025 compared with the previous three months, and increased by 1.7% compared with the previous year.

GfK's Consumer Confidence Index, which measures consumer attitudes, was at -23 in March 2025, down by four points from March.

House prices

House prices increased by 5.4% in the year to February 2025.

Household debt

Household debt stood at 118.1% of disposable income in Q4 2024. This was its lowest level since at least 2007.

Money Supply in UK

The UK's money supply, as measured by M2, reached approximately 3.131 trillion GBP in March 2025, up from 3.096 trillion GBP the previous month and 3.042 trillion GBP a year ago, according to YCharts. This represents a 1.15% increase from last month and a 2.96% increase from the same period last year.

Money Supply M2 in the United Kingdom increased to 3120664 GBP Million in March from 3114423 GBP Million in February of 2025. Money Supply M2 in the United Kingdom averaged 1461865.23 GBP Million from

1986 until 2025, reaching an all time high of 3227417.00 GBP Million in September of 2022 and a record low of 167373.00 GBP Million in December of 1986. source: Bank of England

What is the situation of USA and UK from cryptocurrencies and digital currencies?

As of 2025, the United States and the United Kingdom both maintain cautious but evolving approaches toward cryptocurrencies and central bank digital currencies (CBDCs). Here's a breakdown of their current situation:

US United States:

Regulation of Cryptocurrencies

- **Regulatory Fragmentation:** Multiple agencies (SEC, CFTC, FinCEN, IRS) oversee aspects of crypto, creating a fragmented regulatory environment.
- **SEC Actions:** The SEC has taken legal action against several major crypto platforms (e.g., Coinbase, Binance) over unregistered securities offerings.
- **CFTC vs SEC Debate:** There's ongoing debate over whether cryptocurrencies like Ethereum are commodities (CFTC) or securities (SEC).

CBDC – Digital Dollar

- **No Launch Yet:** The U.S. has not launched a digital dollar.
- **Research Phase:** The Federal Reserve is actively researching the implications of a CBDC, focusing on privacy, security, and financial stability.
- **Public Concerns:** There's political and public concern over privacy and government surveillance if a CBDC were introduced.

Innovation and Industry

- The U.S. remains a hub for crypto innovation (e.g., venture capital, blockchain startups), especially in cities like Miami, New York, and San Francisco.

GB United Kingdom:

Regulation of Cryptocurrencies

- **More Centralized Approach:** The UK government and the Financial Conduct Authority (FCA) have clearer frameworks than the U.S.
- **Licensing Regime:** Firms offering crypto services must register with the FCA and meet anti-money laundering (AML) requirements.
- **Stablecoin Regulation:** The UK is actively working to bring stablecoins under financial services regulation.

CBDC – "Britcoin"

- **In Development:** The Bank of England, in coordination with HM Treasury, is developing plans for a potential digital pound (often referred to informally as "Britcoin").
- **No Launch Yet:** A digital pound has not been launched, but a consultation process has taken place, and a prototype phase may begin before the end of the decade.

- **Goals:** Enhance payment efficiency and financial inclusion without replacing cash.

Industry Focus

- The UK aims to be a **"global hub for crypto asset technology,"** promoting innovation while ensuring consumer protection.

Summary Comparison:

Feature	**USA**	**UK**
Crypto Regulation	Fragmented, aggressive enforcement	Centralized, AML-focused
CBDC Status	Research phase only	In development/planning phase
Regulatory Clarity	Low to moderate	Moderate to high
Innovation	Strong tech/startup presence	Government aims to attract innovation

III- Data analysis

Table 4 : Money Supply in Selected Countries with USA and UK from 2020 to 2023

(Broad Money % of GDP)

Years / Countries	**2020**	**2021**	**2022**	**2023**
Bahamas	**84.1**	**76.9**	**72.7**	**72.7**
Nigeria	**25.2**	**25.2**	**25.2**	**32.0**
Jamaica	**71.8**	**72.5**	**66.3**	**64.9**
China	**211.9**	**203.8**	**217.1**	**228.0**
Saint Lucia	**77.1**	**71.1**	**59.0**	**63.1**
Grenada	**94.4**	**95.1**	**95.9**	**90.3**
USA	**109.1**	**115.0**	**103.8**	**99.1**
UK	**163.9**	**165.5**	**162.6**	**147.1**

Source: https://www.ceicdata.com/en/bahamas/money-supply

https://tradingeconomics.com/nigeria/broad-money-percent-of-gdp-wb-data.html#:~:text=Broad%20money%20(%25%20of%20GDP)%20in%20Nigeria%20was%20reported%20at,compiled%20from%20officially%20recognized%20sources. https://tradingeconomics.com/jamaica/broad-money-percent-of-gdp-wb-data.html

https://tradingeconomics.com/china/broad-money-percent-of-gdp-wb-data.html#:~:text=Broad%20money%20(%25%20of%20GDP)%20in%20China%20was%20reported%20at,Bank%20on%20April%20of%202025. https://tradingeconomics.com/grenada/broad-money-percent-of-gdp-wb-data.html https://data.worldbank.org/indicator/FM.LBL.BMNY.GD.ZS

https://tradingeconomics.com/united-states/broad-money-percent-of-gdp-wb-data.html
https://data.worldbank.org/indicator/FM.LBL.BMNY.GD.ZS

https://tradingeconomics.com/united-kingdom/broad-money-percent-of-gdp-wb-data.html
https://data.worldbank.org/indicator/FM.LBL.BMNY.GD.ZS

what the effect of digital currencies on money supply in those countries which applied digital currencies?

The introduction of digital currencies—especially Central Bank Digital Currencies (CBDCs)—can have several significant effects on the money supply in countries that adopt them. Here's a breakdown of the potential impacts:

1. Redefining Components of Money Supply (M0, M1, M2)

- **CBDCs** are typically considered part of **M0 or M1**, depending on their design.
- If CBDCs replace physical cash, **M0 remains constant**, but the composition changes.
- If CBDCs are introduced **in addition to cash**, **M0 may increase**.
- Depending on whether CBDCs are interest-bearing or not, they might **substitute for bank deposits**, impacting **M1 and M2**.

2. Central Bank Control and Policy Transmission

- Digital currencies allow **central banks more precise control over monetary policy**, as they can:
  - **Adjust interest rates directly** on digital currency holdings.
  - Use **programming features** (e.g., expiring money) to influence spending behavior.
- This can **enhance or modify the money supply transmission mechanisms**.

3. Reduced Role of Commercial Banks in Money Creation

- If people shift their deposits from commercial banks to CBDCs, banks may:
  - Have **less base money to lend**, reducing their **credit creation capacity**.
  - Be forced to offer **higher interest rates** to retain deposits.
- This can **slow down the endogenous money creation** by private banks.

4. Potential for Greater Financial Inclusion

- With increased access to digital wallets and digital currencies, more people may enter the formal financial system.

- This could **increase the velocity of money** and alter how money supply indicators behave in practice.

5. Effects on Monetary Aggregates

- The **money multiplier** may decrease if CBDCs are held more as savings than spent.
- Conversely, if CBDCs encourage spending (e.g., via negative interest rates or expiry dates), the **velocity of money** may rise.

6. Risk of "Digital Bank Runs"

- In crises, people may **quickly move funds from bank deposits to CBDCs**, causing sudden liquidity issues.
- This would affect **short-term money supply dynamics** and **financial stability**, necessitating central bank intervention.

7. Substitution of Cryptocurrencies or Stablecoins

- In some countries, CBDCs may **crowd out private digital currencies**, concentrating the control of money supply back into the hands of central banks.

Summary Table:

Effect	**Direction of Impact**
M0 Supply	↑ (if CBDC added, not substituted)
Bank Deposits (M1/M2)	↓ (if funds shift to CBDC)
Money Multiplier	↓ (fewer bank-created deposits)
Policy Effectiveness	↑ (more tools for central banks)
Financial Inclusion	↑ (if well-designed CBDC)

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what the effect of digital currencies on supply of money in a country that has implemented a CBDC, like China (e-CNY) or the Bahamas (Sand Dollar)?

The effects of digital currencies on the **money supply** in countries that have **implemented Central Bank Digital Currencies (CBDCs)**—such as **China (e-CNY)** and **The Bahamas (Sand Dollar)**—are best understood by looking at their **design choices** and **monetary policy contexts**. Here's an analysis based on those two countries:

CN China – e-CNY (Digital Yuan)

Overview of Implementation

- The e-CNY is a **retail CBDC** issued by the People's Bank of China (PBoC).
- It's **not interest-bearing**, and it's designed to **coexist with cash and bank deposits**, not replace them.
- Distribution follows a **two-tier system**: PBoC issues e-CNY to commercial banks, which then distribute it to users.

Effects on Money Supply

Effect Area	Explanation
M0 (Cash in coins)	+ The e-CNY is counted as part of **M0**, and is intended to **replace some physical cash**. So, **M0 remains stable**, but its **composition shifts** from paper cash to digital form.
M1/M2	Since e-CNY does **not pay interest**, it hasn't significantly displaced bank deposits yet. So, **M1 and M2 remain largely unaffected** in the early stages.
Money Multiplier	Minor downward pressure if funds shift from bank deposits to CBDC. But because usage remains limited and cautious, the **impact is currently marginal**.
Policy Transmission	Improved ability to **track transactions and enforce monetary policy**. Future versions could allow **more direct control** (e.g., time-limited CBDC for stimulus).
Financial Inclusion	Marginal improvement in financial inclusion, but China already has high digital payment penetration through Alipay and WeChat Pay.

Summary:

In China, e-CNY has **not significantly changed the overall money supply** yet, but it has begun to **digitize M0** and may improve **policy precision** in the future.

BS The Bahamas – Sand Dollar

Overview of Implementation

- The Sand Dollar is a **retail CBDC** launched in 2020 by the Central Bank of The Bahamas.
- It is aimed at **improving financial inclusion** across its many islands.

Effects on Money Supply

Effect Area	Explanation
M0 (Currency in circulation)	Sand Dollar is treated as a **digital replacement for cash** (M0). It has **digitized part of M0**, but overall volume remains small.

Effect Area	Explanation
M1/M2	Minimal substitution effect. The economy is small and the CBDC is seen as a **complement to existing banking services**. No major reduction in bank deposits observed.
Money Multiplier	Limited data so far, but small scale of the economy and low banking penetration mean **minimal impact** on broader money creation.
Policy Transmission	Increases the potential for **targeted aid and social benefits** to be delivered efficiently, improving monetary policy delivery.
Financial Inclusion	**Significant impact**, especially in remote areas with limited banking infrastructure. Increased access to digital payments and services.

Summary:

In The Bahamas, the Sand Dollar has **digitized M0** and **expanded financial inclusion**, but its **impact on the overall money supply is minimal** due to thae small scale and cautious rollout.

Final Takeaway

In both China and The Bahamas, **CBDCs have not drastically altered total money supply**, but they **shift the structure and composition of M0**, while potentially improving **financial inclusion** and **policy efficiency**.

Conclusion

1- America is the leader and pioneer forever in every field
2- USA and UK started to apply CBDCs from a long time but research, investigate and develop the best method to issue digital US Doller and UK digital Pound
3- All countries that applied digital currencies still in new experience with this system and affected by applying it
4- Digital currencies will affect on money supply and need high technological infrastructure
5- There are differences among cryptocurrencies, digital currencies, and electronic money
6- Digital currencies may be affected on inflation rate, but under control of central banks, cryptocurrencies lead to increase inflation rate, so this topic will be the future study in next research.

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