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The Potential Impact of Issuing CBDC in USA on Interest Rate

Prof Dr Gaber M M Abdel Gawad

Professor of Economic and International Trade, Faculty of Commerce, Capital University(Helwan Previously)

Egypt

E-Mail: gabergagm@yahoo.com

Abstract

The relationship between central bank digital currencies (CBDC), and interest rate in tow ways. But we focus our analysis on one direction of potential impacts from CBDC to interest rate in USA to help police maker in take a wright decision for issue CBDC or not in one hand, and control on determining of interest rate in the future on the other hand. This paper found that the potential effects of CBDC on interest rate depend on how many the total amount of expected issue of CBDC and the relative size of this currency in M1, and the potential impact of it on the current and saving deposits on traditional paper money. The potential issue of CBDC will increase the effectiveness of monetary polices in controlling in money supply, which effect directly on interest rate.

Keywords: *Central Banke Digital Currencies (CBDC), interest rate in USA, and deposit of traditional money.*

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Introduction

The introduction of Central Bank Digital Currency (CBDC) in the USA could have significant implications for interest rates. The design and implementation of CBDCs play a crucial role in how they affect monetary policy transmission. Here are some key points to consider:

Monetary Policy Transmission: CBDCs can enhance the transmission of monetary policy by providing a more direct and efficient means of communication between central banks and the economy. This can lead to quicker adjustments in interest rates to respond to economic conditions.

Interest Rate Setting: The interest rate on CBDCs can influence the overall interest rate environment in the economy. If CBDCs are designed to be convenient and pay interest, they could potentially increase the demand for CBDCs, leading to higher deposit rates and a more responsive monetary policy.

Bank Disintermediation: The introduction of CBDCs may lead to bank disintermediation, where banks are less likely to lend to customers who have their deposits in CBDCs. This could result in a contraction in bank credit and a reduction in lending to businesses, which in turn could impact investment and production.

Market Composition: CBDCs can level the playing field in the financial system, potentially reducing the competitive advantage that large banks have over smaller ones. This could lead to more competitive deposit markets and a more responsive monetary policy.

The potential impact of issuing CBDCs on interest rates in the USA is complex and depends on various factors, including the design of the CBDC, the design of the monetary policy framework, and the overall economic conditions. It is essential for central banks to carefully consider these factors when planning the introduction of CBDCs to ensure they align with their monetary policy objectives and do not inadvertently create new challenges[1].

Literature Review

Sebastian Infante (et al.,) (2022) wrote the paper about "The Macroeconomic Implications of CBDC: A Review of the Literature", which provided an overview of the literature examining how the introduction of a CBDC

[1] The Potential Impact of Issuing CBDC in USA on Interest Rate - Search (bing.com), It was seen on Saturday Oct., 18, 2025.

would affect the banking sector, financial stability, and the implementation and transmission of monetary policy in a developed economy such as the United States. A CBDC has the potential to improve welfare by reducing financial frictions in deposit markets, by boosting financial inclusion, and by improving the transmission of monetary policy. However, a CBDC also entails considerable risks, including the possibility of bank disintermediation and associated contraction in bank credit, as well as potential adverse effects on financial stability. A CBDC also raise important questions regarding monetary policy implementation and the footprint of central banks in the financial system. Ultimately, the effects of a CBDC depend critically on its design features, particularly remuneration[1].

John B and Michael K (2022) wrote the paper about "The macroeconomics of central bank digital currencies", they found that CBDC issuance of 30% of GDP, against government bonds, could permanently raise GDP by 3%, due to lower real interest rates, distortionary taxes, and monetary transaction costs. Countercyclical CBDC policy rules, as a second monetary policy tool, could substantially improve the central bank's ability to stabilize the business cycle. Risks to banks can be minimized through appropriate issuance arrangements[2].

BIS (2022) decisioned working paper about "The case for convenience: how CBDC design choices impact monetary policy pass-through", which showed that, Banks of different sizes respond differently to interest on reserves (IOR) policy. For low IOR rates, large banks are non-responsive to IOR rate changes, leading to weak pass-through of IOR rate changes to deposit rates. In these circumstances, a central bank digital currency (CBDC) may be used to provide competitive pressure to drive up deposit rates and improve monetary policy transmission. We explore the implications of two design features: interest rate and convenience value. Increasing the CBDC interest rate past a point where it becomes a binding floor, increases deposit rates but leads to greater inequality of market shares in both deposit and lending markets and can reduce the responsiveness of deposit rates to changes in the IOR rate. In contrast, increasing convenience, from sufficiently high levels, increases deposit rates, causes market shares to converge and can increase the responsiveness of deposit rates to changes in the IOR rate[3].

Surpiah, S (et al.,) (2025) wrote study about (The Future of Central Bank Digital Currencies (CBDCs): Implications for Monetary Policy). This study investigates the implications of Central Bank Digital Currency (CBDC) implementation and fintech adoption on the effectiveness of monetary policy, emphasizing the mediating role of financial system stability and the moderating influence of public trust in central banks. The research addresses a pressing issue in the digital transformation of global finance: whether digital currencies issued by central banks can enhance policy responsiveness in increasingly cashless and decentralized economies. Using an exploratory qualitative method, this study integrates a systematic review of post 2020 academic literature and central bank reports from The Bahamas, Nigeria, and China. A conceptual framework is developed to examine causal relationships among CBDC design, fintech integration, institutional trust, and policy effectiveness. The findings reveal that CBDC impact is highly context dependent; programmable and inclusive designs, such as China's Digital Yuan, significantly enhance monetary transmission, whereas technical and social barriers, such as in Nigeria, limit policy effectiveness. The Bahamas serves as an intermediate case where offline and identity linked digital currency supports inclusion and moderate policy gains. The analysis confirms that financial stability mediates the relationship between digital innovation and policy outcomes, while public trust either strengthens or diminishes policy reach. This research contributes to the understanding of CBDC as a policy tool by highlighting institutional, technological, and behavioral factors that determine its success. Implications suggest that policymakers must adopt a multidimensional approach that combines digital infrastructure readiness with strong governance and trust building measures[4].

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[1] Infante, S. (et al.,) (2022), "The Macroeconomic Implications of CBDC: A Review of the Literature***", Finance and Economics Discussion Series,*** Federal Reserve Board, Washington, D.C., ISSN 2767-3898, 2022-076. See: The Macroeconomic Implications of CBDC: A Review of the Literature (federalreserve.gov).

[2] Barrdear, John and Michael K (2022), "The macroeconomics of central bank digital currencies", Journal of Economic Dynamics and Control, Vol 142, September 2022, 104148. See: The macroeconomics of central bank digital currencies - ScienceDirect

[3] Garratt, R. (et al.,) (2022), "The Case for Convenience: How CBDC Design Choices Impact Monetary Policy Pass-Through", BIS Working Papers (No 1046), Monetary and Economic Department, P 1, See: https://www.bis.org/publ/work1046.pdf

[4] Surpiah, S (et al.,) (2025), "The Future of Central Bank Digital Currencies (CBDCs): Implications for Monetary Policy", see: https://www.researchgate.net/publication/392729650_The_Future_of_Central_Bank_Digital_Currencie

Carapella, Francesca, Jin-Wook Chang, Sebastian Infante, Melissa Leistra, Arazi Lubis, and Alexandros P. Vardoulakis (2024). Wrote "Financial Stability Implications of CBDC"[1], which showed that, this principle arose from a recognition that while a **CBDC** has the potential to provide benefits to the operation and resilience of the financial system (particularly regarding payment services), a **CBDC** could also affect existing financial market structures and business models, which may pose risks to **financial stability** as the financial system evolves, particularly via the potential disintermediation of banks.

Carapella, F. (et. Al.,) discussed that A Central Bank Digital Currency (CBDC) is a form of digital money that is denominated in the national unit of account and constitutes a direct liability of the central bank. They examined the financial stability risks and benefits of issuing a CBDC under different design options. There analysis is based on lessons derived from historical case studies as well as on an analytical framework that allows them to characterize the mechanisms through which a CBDC can affect financial stability. They further discuss various policy tools that can be employed to mitigate financial stability risks.

Xiang, L. (et. al.,) (2024), study "The impact of central bank digital currency on macroeconomic dynamics: A DSGE analysis". This study investigates the impact of Central Bank Digital Currency (CBDC) on macroeconomic fluctuations under various external shocks, expanding the research on macroeconomic effects of CBDC issuance. We develop a dynamic stochastic general equilibrium (DSGE) model to examine the effects of different external shocks on the macroeconomy under three scenarios with varying CBDC rules. Our analysis reveals that, in the presence of CBDC, macroeconomic variables are generally more volatile after exogenous shocks than in the absence of CBDC, while highlighting the crucial role of monetary policy in stabilizing the macroeconomy. Liquidity and substitution effects are identified as main drivers of the results. These findings offer new insights into the welfare improving effect of interest-bearing CBDC, carrying significant implications for the effective implementation of monetary policy[2].

FEDS Notes (2024) about "Implications of a U.S. CBDC for International Payments and the Role of the Dollar", showed the relationship between CBDC and remuneration that: As long as a U.S. CBDC is seen as more appealing than a foreigner's own currency, it will be attractive to foreigners as a store of value. All else equal, the higher is the expected rate of return on an asset the higher will be its demand. In the context of CBDC, demand would be higher for the CBDC paying the higher (exchange-rate adjusted) remuneration rate. At the margin, positive interest payments (if allowed) could enhance the appeal of a U.S. CBDC and therefore the use of the dollar, though negative interest payments (if allowed) could have the opposite effect[3].

Binghui Wu & Mengjiao Zhang (2024) investigated "The impact of central bank digital currency on monetary policy effectiveness", which showed that the emergence of central bank digital currency (CBDC) is a historic event in the transformation of traditional legal monetary forms. Its issuance and circulation change the existing monetary hierarchy and monetary system. From the perspective that CBDC affects the monetary policy effectiveness, we introduce CBDC, quantity rule, and price rule into the traditional dynamic stochastic general equilibrium model, and propose a new DSGE model including households, manufacturers, the government, and the central bank. The impacts of CBDC on the effectiveness of quantity-based and price-based monetary policies are discussed separately, and three conclusions are drawn. First, the technology shock has better policy effects under the price rule. Second, the response of economic variables to the price rule shock is more significant. Third, the CBDC interest rate shock produces desirable policy effects on economic variables[4].

The relationship between CBDC and interest rate

s_CBDCs_Implications_for_Monetary_Policy

[1] Carapella, Francesca, (et, al.,) (2024). "Financial Stability Implications of CBDC", Finance and Economics Discussion Series 2024-021. Washington: Board of Governors of the Federal Reserve System, https://doi.org/10.17016/FEDS.2024.021.

[2] Xiang, L. (et. al.,) (2024), "The impact of central bank digital currency on macroeconomic dynamics: A DSGE analysis", ***Economic Modelling***, Vol 141, December 2024, 106930, See:https://www.sciencedirect.com/science/article/abs/pii/S0264999324002876

[3] Flemming, Jean and R Judson (2024), "Implications of a U.S. CBDC for International Payments and the Role of the Dollar", ***FEDS Notes***, February 16, 2024, ***Board of Governors of the Federal Reserve System***, see: The Fed - Implications of a U.S. CBDC for International Payments and the Role of the Dollar

[4] Wu, Binghui & Mengjiao Zhang (2024), "The impact of central bank digital currency on monetary policy effectiveness", ***Economic Change and Restructuring***, Volume 57, article number 135. See : https://link.springer.com/article/10.1007/s10644-024-09720-y

The relationship between CBDC and interest rates is complex and multifaceted. A CBDC can lower the interest rate on banks' deposits, which is particularly binding on large banks, and can enhance monetary policy pass-through by raising deposit interest rates. However, a higher CBDC interest rate can reduce the small bank's deposit market share and lending volume. The design features of a CBDC, such as remuneration, play a critical role in determining its effectiveness as a digital asset in the 21st-century macroeconomy[1].
The effect of interest rate of CBDC on banking sector is. A CBDC can lead to bank disintermediation if its interest rate is high enough, but a non-interest-bearing CBDC, or a CBDC with a rate that is low, might have insignificant effects on bank intermediation. A rate paid on CBDC that lies in an intermediate range could even promote bank intermediation, depending on the competitive structure of the banking sector[2].

A CBDC that pays no interest is consigned to the role of a medium of exchange; its value would be determined almost entirely by the convenience it would render. Or at least that would be the case when market interest rates are above the effective lower bound on nominal interest rates; different considerations come into play when a panoply of interest rates are clustered around zero. A remunerated CBDC, on the other hand, would be more attractive as a store of value, and its rate of remuneration could serve as an additional policy tool. Our reading of the literature suggests that a remunerated, intermediated, widely available CBDC has the prospect of garnering network externalities for the public—as opposed to allowing banks and fin-techs appropriate rents—as well as limiting disruptions to the financial system stemming from the shifting fortunes of various competing private monies. If a CBDC were contemplated, adding some combination of ceilings on CBDC holdings, limits on the amount users can transact, or tiered remuneration might be helpful to combat any financial instability issues. All that said, the plethora of models in the literature and the myriads of conclusions that fall out of those models argue for humility. There are enough uncertainties and contingencies that it seems likely that there will always be an element of a leap of faith in any decision to move forward[3].

We will put some questions about setting interest rate on CBDC to study imposing or not imposing it on the potential CBDC in USA.

is it preferring impose CBDC remunerate to enhance the net effect of issues CBDC ?
In general, the **effects** of **CBDCs** on monetary policy transmission are expected to be relatively small in normal times; however, these effects can be more significant in an environment with low interest rates or financial market stress[4].

Is it better to impose an interest rate for the holder of the central bank digital currency in order to maximize the expected return from central bank digital currencies?
We study the optimal design of a **digital currency** in this setting, including whether it should pay **interest** and how widely it should circulate. We highlight an important policy, **bank** deposits, raises **banks**' funding costs, and decreases investment. Despite these effects[5],

the decision to impose an interest rate for the holder of the central bank digital currency (CBDC) is complex and depends on various economic factors. Here are some considerations:

[1] the relationship between cbdc and interest rate - Search, It was seen on Monday, December 1, 2025.
[2] Infante, S. (et al.,) (2022), "The Macroeconomic Implications of CBDC: A Review of the Literature", Op Cit, P 6.
[3] Ibid, P 45.
[4] https://www.bing.com/search?q=is+it+prefer+imose+cbdc+remunerate+to+enhance+the+net+effect+of+issues+cbdc+or+not+to+be&qs=NWB&pq=is+it+prefer+imose+cbdc+remunerate+to+enhance+the+net+effect+of+issues+cbdc+or+not&sk=NWB3&sc=9-82&cvid=27B45B5D9A284F7E8E3830C03C3FA08C&FORM=QBRE&sp=4&ghc=1&lq=0 . it was seen on dec., 08, 2025.
[5] https://www.bing.com/search?q=Is+it+better+to+impose+an+interest+rate+for+the+holder+of+the+central+bank+digital+currency+in+order+to+maximize+the+expected+return+from+central+bank+digital+currencies+or+not%3F&form=ANNTH1&refig=693636026043428ab6e0924a5a5e5286&pc=U531&ntref=1 . It was seen on Dec., 08,2025.

- ***Welfare Gains**:* Introducing a CBDC with interest can provide significant welfare gains by offering an additional secure and convenient savings option and competing with traditional bank deposits. This can lead to better deposit rates from banks to retain customers.

- ***Monetary Policy PassThrough***: A higher CBDC interest rate can enhance monetary policy passthrough by raising deposit interest rates, which may benefit the economy. However, it can also reduce the small bank's deposit market share and lending volume.

- ***Interest Rate Setting***: Central banks should set the interest rate on CBDCs to either 0% or 1% below the current policy rate, whichever is higher, to balance the potential benefits and drawbacks of CBDCs.

- ***Economic Conditions***: The impact of CBDC introduction varies with the interest rate paid on CBDC, and a unique optimal CBDC rate may imply a welfare improvement for the overall economy.

In conclusion, imposing an interest rate on the holder of the CBDC can be beneficial, but it must be carefully balanced with the potential drawbacks and the overall economic conditions. The decision should be based on a thorough analysis of the implications for the economy and the specific design of the CBDC[1].

What is the optimal policy to enhance the net effect of imposing interest rate on CBDC?
The optimal policy to enhance the net effect of imposing interest rate on CBDC involves a careful balance between stimulating economic activity and maintaining financial stability. Central banks must consider the following factors when formulating their interest rate policy:

- **Economic Conditions**: Assess the current economic environment, including inflation, growth, and potential risks to financial stability.

- **Market Sentiment**: Monitor the market's response to interest rate changes and adjust accordingly to avoid adverse effects on economic activity.

- **Financial Stability**: Ensure that the interest rate policy does not lead to excessive risk-taking or financial instability.

- **Long-term Growth**: Aim to stimulate long-term economic growth by setting interest rates that encourage investment and consumption.

- **Consumer Confidence**: Maintain consumer confidence by ensuring that the interest rate policy is not perceived as a sign of impending deflation.
Central banks should also consider the potential for negative interest rates to affect banks' profitability and lending, and the long-term implications of such policies on the financial sector. It is essential to balance the benefits of interest rate policy with the risks associated with negative rates to achieve the desired net effect on CBDC[2]

do impose or not impose interest rate on CBDC? to enhance the positive net effect of imposing interest rate on CBDC

[1] Is it better to impose an interest rate for the holder of the central bank digital currency in order to maximize the expected return from central bank digital currencies ? - Search on January 4, 2026.
[2] https://www.bing.com/search?q=++what+is+the+optimal+policy+to+enhance+the+net+effect+of+imposing+interest+rate+on+CBDC%3F&form=ANNTH1&refig=69364561b05c4b85b833e84c21bc8e7c&pc=U531 . It was seen on Dec., 08, 2025.

The economy's response to an increase in the interest rate on CBDC depends on the monetary policy framework: such a change is expansionary when policy targets the reserve interest rate and contractionary when it targets the CBDC interest rate[1].

what is the mechanism of setting interest rate on CBDC?

The mechanism of setting interest rates on CBDC involves the central bank's decision to charge interest on loans to entrepreneurs and pay interest on deposits of CBDC. This interest rate is crucial for monetary policy impleme ntation and transmission, as it influences the quantity of CBDC and the associated monetary operations. The cent ral bank can set the lending and deposit rates for CBDC, as well as collateral and quantity requirements, to steer t he quantity of CBDC. A positive interest spread on CBDC or stricter collateral or quantity constraints can reduce welfare but can contain bank disintermediation, especially if the elasticity of substitution between bank deposits and CBDC is small[2].

Which the potential factors that effect on interest rate on CBDC in USA?

The potential factors that could affect the interest rate on CBDC in the USA include:

Central Bank Policy: The Federal Reserve's monetary policy decisions, including interest rate adjustments, can influence the interest rate on CBDC.

Economic Conditions: The overall economic health, inflation, and economic growth can impact the interest rate on CBDC.

Market Demand: The demand for CBDC can affect its interest rate, as higher demand may lead to a higher interest rate to accommodate the increased supply.

Design Features: The design of the CBDC, such as its remuneration and substitutability with bank deposits, can influence the interest rate.

Monetary Operations: The central bank's monetary operations, including the supply and demand for reserves and short-term interest rates, can also affect the interest rate on CBDC.

These factors highlight the complexity of determining the interest rate on CBDC in the USA and the importance of considering various economic and policy considerations[3].

Which the macroeconomics factors that, potential interest rate on CBDC in USA will be effect on its?

The macroeconomic factors affecting the potential interest rate on Central Bank Digital Currency (CBDC) in the USA include:

Welfare Gains: Introduction of a CBDC can lead to substantial welfare gains, particularly if the interest rate is set optimally, such as at 0% or slightly below the policy rate.

Monetary Policy Implementation: Central banks must balance the benefits of CBDCs, such as improved financial inclusion and reduced financial frictions, with risks like bank disintermediation and potential adverse effects on financial stability.

Interest Rate Setting: The interest rate on CBDCs should be calibrated to reflect broader economic conditions, including existing interest rates and economic shocks.

Banking Sector Dynamics: Changes in the banking sector, such as the need for banks to offer better deposit rates to retain customers, can influence the demand for CBDCs and their associated interest rates.

These factors collectively influence how the interest rate on CBDCs in the USA is set and implemented[4].

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[1] https://www.bing.com/search?q=do+impose+or+not+impose+interest+rate+on+CBDC%3F+to+enhance+the+positive+net+effect+of+imposing+interest+rate+on+CBDC&form=ANNTH1&refig=69364566922142a0940b27305753379f&pc=U531 . It was seen on Dec., 08, 2025.

[2] https://www.bing.com/search?q=what+is+the+mechanism+of+setting+interest+rate+on+CBDC%3F+PDF&form=ANNTH1&refig=693638e4872c48bbb4252dc66326e5e0&pc=U531 it was seen on Dec., 08, 2025.

[3] which the potential factors that effect on interest rate on cbdc in usa? pdf - Search, It was seen on Dec., 13, 2025.

Determinations of the interest rate

The determination of interest rates is influenced by several key factors, including the balance between the demand for and supply of credit, inflation, and the central bank's monetary policy. Central banks can raise or lower interest rates using tools like open market operations, discount rates, and required reserve ratios. The demand for money is influenced by transaction demand for money, precautionary demand for money, and speculative demand for money. When the money supply rises, the equilibrium interest rate falls, and when the price level increases, the equilibrium interest rate rises. The money market model connects with the goods market model, where GDP, the money supply, and the equilibrium interest rate are interconnected[1].

Understanding Interest Rates and Their Impact

Interest rates are the cost of borrowing money or the return on investment for lending money. They are expressed as a percentage and can either be fixed or variable. Understanding interest rates is essential because they directly impact financial decisions and the broader economy. Factors influencing interest rates include central bank policies, inflation, economic growth, and global economic conditions. Central banks, such as the Federal Reserve in the United States, play a crucial role in setting short-term interest rates. They use various tools, such as adjusting the benchmark interest rate or conducting open market operations, to influence borrowing costs and stimulate or cool down the economy[2].

How is the interest rate determining today in real world in Egypt?

The interest rate in Egypt is determined by the Central Bank of Egypt (CBE) based on the relationship between the interest rates at which money can be borrowed and the total supply of money. The CBE sets policy rates such as deposit rates, Lombard rates, rediscount rates, and reference rates, which influence economic growth, inflation, exchange rates, and unemployment. The CBE's decisions are crucial for managing the country's monetary policy and are expected to trend around 13.00 percent in 2027 and 11.50 percent in 2028[3].

why is the interest rate in USA is low and in Egypt is high?

The low interest rate in the USA is due to the Federal Reserve's efforts to combat high inflation, which has led to a tightening monetary policy. This includes a reduction in the benchmark interest rate to lower borrowing costs and stimulate economic growth. In contrast, the high interest rate in Egypt is attributed to the Central Bank of Egypt's efforts to cool double-digit inflation and stabilize the economy. The CBE has raised interest rates to combat inflation, which has accelerated to nearly 19% in recent readings. These adjustments are part of the central bank's strategy to maintain stability and support economic growth in their respective countries[4]

The potential impact of issuing CBDC in USA on interest rate

The introduction of Central Bank Digital Currencies (CBDCs) in the USA is expected to have a significant impact on interest rates and monetary policy. CBDCs are anticipated to improve the transmission of monetary policy by reducing financial frictions in deposit markets and boosting financial inclusion. However, they also carry risks, such as bank disintermediation and potential adverse effects on financial stability. The design features of CBDCs, particularly their remuneration, will critically influence their effects on interest rates and monetary policy[5].

Banks of different sizes respond differently to interest on reserves (IOR) policy. For low IOR rates, large banks are non-responsive to IOR rate changes, leading to weak pass-through of IOR rate changes to deposit rates. In these circumstances, a central bank digital currency (CBDC) may be used to provide competitive pressure to

[4] Which the macroeconomics factors that, potential interest rate on CBDC in USA will be effect on its? - Search, , It was seen on Dec., 13, 2025.

[1] how is the interest rate determine - Search, it was seen on March 26, 2026.
[2] how is the interest rate determine today in real warld - Search, it was seen on March 26, 2026.
[3] how is the interest rate determine today in real warld in Egypt? - Search, it was seen on March 26, 2026.
[4] why is the interest rate in USA is low and in Egypt is high? - Search, it was seen on March 26, 2026.

[5] Das, Mitali (et all) (2023), "***Implications of Central Bank Digital Currencies for Monetary Policy Transmission***", IMF, Fintech notes, see: https://www.imf.org/en/publications/fintech-notes/issues/2023/09/15/implications-of-central-bank-digital-currencies-for-monetary-policy-transmission-538517 , it was seen on April 23, 2026 .

drive up deposit rates and improve monetary policy transmission. We explore the implications of two design features: interest rate and convenience value. Increasing the CBDC interest rate past a point where it becomes a binding floor, increases deposit rates but leads to greater inequality of market shares in both deposit and lending markets and can reduce the responsiveness of deposit rates to changes in the IOR rate. In contrast, increasing convenience, from sufficiently high levels, increases deposit rates, causes market shares to converge and can increase the responsiveness of deposit rates to changes in the IOR rate[1].

A 2023 BIS working paper modeled CBDCs' effects under various policy rules and found that interest-bearing CBDCs reduce policy lags but increase volatility if not managed alongside regulatory safeguards[2].

What effect would a retail central bank digital currency (CBDC) have on monetary policy implementation in the euro area, and how would this shape the macroeconomic effects of a CBDC? The introduction of a CBDC could affect the operational framework of monetary policy and the conditions in interbank markets if it brings about a sufficiently large decrease in excess reserves due to the reduction in bank deposits. This, in turn, could have important macroeconomic implications, both in the long run and during the CBDC adoption phase[3].

How USA can calculate the interest rate on CBDC?

The interest rate on a U.S. CBDC would be determined by the Federal Reserve using monetary policy objectives, interbank market dynamics, and CBDC design features such as tiered remuneration and holding limits.

Key Considerations for Setting a CBDC Interest Rate

1. Monetary Policy Alignment

The CBDC interest rate would likely be aligned with the Federal Reserve's policy rate to influence overall economic activity. By adjusting the CBDC rate, the Fed could affect the demand for CBDC relative to bank deposits, thereby influencing liquidity, consumption, and investment in the economy.

2. Interbank Market Effects

CBDC issuance impacts bank reserves. If CBDC uptake increases, banks may hold fewer deposits, potentially raising interbank lending rates. The Fed could offset this by supplying additional reserves or adjusting the CBDC interest rate to maintain stability in the interbank market. **3. Tiered Remuneration and Holding Limits**

The Fed could implement a **tiered interest system**, where small CBDC balances earn a lower or zero rate and larger balances earn higher rates. This approach helps prevent excessive disintermediation of commercial banks while still providing incentives for CBDC adoption. Holding limits can also reduce upward pressure on interbank rates and maintain financial stability.

4. Risk and Demand Considerations

The interest rate must consider the relative safety and attractiveness of CBDC compared to traditional deposits. A higher rate could increase demand for CBDC, while a negative rate could discourage holding large balances. The Fed would need to balance these effects to avoid destabilizing bank funding or triggering a flight to CBDC during market stress.

5. Legal and Operational Framework

The Fed would need a robust legal and regulatory framework to support interest payments on CBDC, including mechanisms for automated calculation, distribution, and compliance with anti-money laundering and capital flow regulations.

Practical Calculation Approach

1. **Determine the policy target rate** (e.g., the federal funds rate).
2. **Adjust for CBDC-specific factors** such as expected demand, holding limits, and tiered remuneration.

[1] Carratt, Rodeny (2022), "The Case for Convenience: How CBDC Design Choices Impact Monetary Policy Pass-Through**". BIS Working Papers,** No 1046, P 1**, see: https://www.bis.org/publ/work1046.pdf, it was seen on April 23, 2026.**

[2] https://www.bing.com/search?q=A%202023%20BIS%20working%20paper%20modeled%20CBDCs%E2%80%99%20effects%20under%20various%20policy%20rules%20and%20found%20that%20interest-bearing%20CBDCs%20reduce%20policy%20lags%20but%20increase%20volatility%20if%20not%20managed%20alongside%20regulatory%20safeguards.%20CBDCs%20could%20fundamentally%20alter%20the%20structure%20of%20financial%20%E2%80%A6&form=IPRV10 it was seen on April 23, 2026.

[3] https://www.bis.org/publ/work1126.htm , it was seen on April 23, 2026.

3. **Simulate interbank market impacts** to ensure that CBDC adoption does not destabilize bank funding or lending.
4. **Iterate and calibrate** using pilot programs and economic modeling to refine the rate before full-scale issuance.

By combining these considerations, the Federal Reserve can calculate a CBDC interest rate that supports monetary policy goals, maintains financial stability, and encourages adoption without undermining the banking system[1].

What the meaning of APR?

APR stands for Annual Percentage Rate, representing the yearly cost of borrowing or the return on an investment, including interest and certain fees.

Definition and Purpose

APR, or Annual Percentage Rate, is the **annualized rate that reflects the total cost of borrowing money or the return on an investment**, expressed as a percentage. It includes not only the interest rate but also additional fees such as loan origination fees, processing fees, or points on a mortgage, giving a more complete picture of the cost compared to the nominal interest rate alone (Finance Strategists, WalletHub, Upgrade).

How APR Works

For example, if you borrow $10,000 at a 5% interest rate and pay a $200 fee, the APR accounts for both the interest and the fee, showing the **true yearly cost of the loan**. This allows borrowers to compare different financial products, such as credit cards, personal loans, or mortgages, on a standardized basis (ExplainCharges, Finance Strategists).

Types of APR

- **Nominal APR**: The simple interest rate for a year without compounding.
- **Effective APR (EAPR)**: Includes fees and compound interest, providing a more accurate reflection of the total cost over a year (Wikipedia).
- **Introductory or Promotional APR**: Often used for credit cards, such as 0% APR for a limited period.

  APR vs Interest Rate

  While the interest rate shows the cost of borrowing the principal, **APR includes additional costs**, making it a better tool for comparing loans or credit offers. A lower APR generally indicates lower overall borrowing costs, while a higher APR means higher costs over time (Upgrade, WalletHub).

  Legal Requirement

  In many countries, including the United States, lenders are required to disclose the APR to borrowers before signing agreements, ensuring transparency and helping consumers make informed financial decisions (Finance Strategists, Wikipedia).

In summary, APR is a standardized measure of the yearly cost of borrowing or earning, combining interest and fees, which helps consumers compare financial products effectively[2].

The expected impact of CBDC on interest rate in the future

The potential impact of issuing a Central Bank Digital Currency (CBDC) in the USA on interest rates in the future is a topic of significant interest. While the effects of CBDCs on monetary policy transmission are expected to be relatively small in normal times, these effects can be more significant in an environment with low interest rates or financial market stress. The level of global interest in CBDCs is unprecedented, with 93% of central banks exploring CBDCs, and 58% likely to or might issue a retail CBDC in the short or medium term. The implications of CBDCs for monetary policy transmission are expected to be relatively small in normal times, but can be more significant in low interest rate or financial market stress environments[3].

[1] How USA can calculate the interest rate on CBDC? - Search, It was seen on April 25, 2026.
[2] what the meaning of APR - Search, It was seen on April 25, 2026.
[3] The Potential Impact of Issuing CBDC in USA on Interest Rate in future - Search, it was seen on Sunday 26,

Conclusion

From the previous perspective, we can conclude the topic in some point.

1- USA is the leader and pioneer in every fields forever.
2- CBDC in USA is not issue until now.
3- The expected effect of CBDC on interest rate in USA depends on effectiveness of monetary policy, and the ability of federal reserve bank on control of issue CBDC, and some monetary and macroeconomic results like.
4- Control on inflation and prevent some economic crime like money laundering.
5- Increase financial inclusion
6- Increase the ability of Federal reserve bank to enhance tax compliance.

The Future Studies

How will the Federal Reserve Bank determine interest rate on CBDC.
What are the potential impacts of interest rate on CBDC on some macroeconomics variables.

2025.