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Abstract

This paper presents the arguments for and against central bank digital currency increasing financial inclusion. Financial inclusion is arguably one of the many reasons for issuing a central bank digital currency. The arguments in support of CBDC increasing financial inclusion are that CBDC can digitize value chains, CBDCs can improve access to digital financial services, CBDC can help to enlarge the digital economy, CBDC can enhance the efficiency of digital payments, CBDC can be used offline when there is no internet coverage, and CBDC offer low transaction costs. The arguments against CBDC increasing financial inclusion are that CBDC may not prioritize financial inclusion, the high cost to purchase digital devices for holding a CBDC, non-interest bearing CBDC, the strong preference for cash over digital currency, the burdensome identification and regulatory requirements, and the imposition of transaction costs. The arguments presented in this paper shows that there is still disagreement over whether a central bank digital currency can increase financial inclusion. Nevertheless, in the light of recent events, many central banks are determined to issue a central bank digital currency for many reasons. Even though a central bank digital currency does not achieve the intended financial inclusion objective, at least, the other objectives for issuing a central bank digital currency can be achieved such as the reduction in cash management costs and the effective conduct of monetary policy.

JEL Codes: G2, G50, E41, E42, E58, E63

Keywords: financial inclusion, central bank digital currency, CBDC, debate, arguments, digital currency, monetary policy, cash.

1. Introduction

Central bank digital currency (CBDC) is a legal tender in digital form or a fiat digital currency. Financial inclusion is one of the many benefits of issuing a central bank digital currency. Financial inclusion involves bringing unbanked adults into the formal financial sector so that they can have access to basic financial services which they can use to improve their welfare (Ozili, 2021a; Ozili, 2018). There have been propositions that central bank digital currencies can increase financial inclusion in societies that have a large unbanked population (see for example, Dyson and Hodgson, 2016; Lee, 2018). This might be true especially when we consider the way central bank digital currencies are designed with features that make it easy to onboard people who do not have a bank account. I am also aware that some have expressed concern that a central bank digital currency may not increase financial inclusion, especially when central bank digital currency is delivered through traditional financial intermediaries that have contributed to financial exclusion in society. These diverging views suggest that there are two arguments as to whether central bank digital currencies can increase financial inclusion – those who strongly believe that CBDC can increase financial inclusion and those who do not believe that CBDC can increase financial inclusion.

At this point, I will like to detail the arguments for, and the arguments against, central bank digital currency increasing financial inclusion. My goal in this presentation is not to take sides in the debate. Rather, my goal is to state the arguments for and against, and allow you to reflect on the two sides of the arguments. Both arguments have important merits which central banks need to consider when designing and re-designing a central bank digital currency. I think it will be a mistake to write-off the arguments we don't like and call them criticisms. Rather, the arguments should be viewed as feedback to help us improve the design of central bank digital currency to ensure that CBDC helps to increase the level of financial inclusion.

This paper contributes to the literature that highlight the many benefits of a central bank digital currency (see, for example, Mancini-Griffoli et al (2018), Koumbarakis and Dobrauz-Saldapenna (2019), Ozili (2021b), and Fernández-Villaverde et al, (2021)). The discussion in this paper can increase our understanding of why there are many proponents and critics of a central bank digital currency and its contribution to financial inclusion.

2. Literature

Financial inclusion is an important development policy goal in many countries. Financial inclusion, which involves bringing the unbanked population into the formal financial sector, has received a lot of attention in the literature. Huang et al (2021) show that greater financial inclusion, in the form of greater access, depth and efficiency of financial institutions, has a significant positive impact on economic growth. Ozili (2018) shows that digital finance can improve the level of financial inclusion and stability by increasing the number of banked adults and increasing the number of deposits which can help to improve the stability of banks in bad times. Meanwhile, Ofosu-Mensah Ababio et al (2021) show that human development is a catalyst for financial inclusion. The authors conclude that low human development is the underlying cause of low financial inclusion. Ozili (2021a), in a review of financial inclusion studies, identifies some determinants of financial inclusion which include the level of financial innovation, poverty-levels, the stability of the financial sector, the state of the economy, financial literacy, and regulation.

Central bank digital currency has also received a lot of attention recently. The literature show that a central bank digital currency is a monetary value stored electronically that represents a liability of the central bank and can be used to make payments (see, for example, Bordo and Levin, 2017; Engert and Fung, 2017; Ozili, 2021b). There are several motivations for issuing a CBDC such as to support unconventional monetary policy (Bordo and Levin, 2017; Engert and Fung, 2017), improve financial stability (Engert and Fung, 2017), increase the contestability of payments (Engert and Fung, 2017), promote financial inclusion (Ozili, 2021b; Engert and Fung, 2017), inhibit criminal activity (Engert and Fung, 2017), among others. Bordo and Levin (2017) show that CBDCs can be used as an efficient medium of exchange, a secure store of value, an alternative unit of account, it can lead to a decrease in the demand for paper currency and can enhance monetary policy. Agur and Dell'Ariccia (2021) show that CBDC can have cash-like attributes and can be interest-bearing to enable it compete with paper money.

Several studies in the central bank digital currency literature analyse the relationship between central bank digital currency and financial inclusion. Barontini and Holden (2019), in their analysis of a CBDC survey, show that one of the reasons why central banks are issuing a central bank digital currency is to broaden their financial inclusion goals. They show that even though many central banks are not yet convinced that the benefits of a central bank digital currency will outweigh the costs, emerging countries appear to be interested in the financial inclusion benefits of retail central bank digital currency. Engert and Fung (2017) point out that, although central bank digital currency may promote financial inclusion, financial inclusion is not a major problem in advanced countries. This makes financial inclusion a very weak argument for adopting a central bank digital currency in advanced countries but may be an important consideration for adopting a central bank digital currency in emerging countries. Mancini-Griffoli et al (2018) argue that a central bank digital currency can help encourage financial inclusion only if it is attractive as an alternative form of money, and the demand for CBDCs will not be very high when there is low aversion to use formal finance. Maniff (2020) argues that a central bank digital currency created for financial inclusion purposes should complement cash and not replace cash. They point out that a central bank digital currency designed to maximize financial inclusion may be less effective in achieving other payments goals. Didenko and Buckley (2021) argued that a well-designed and implemented central bank digital currencies can offer a viable solution to the financial inclusion problems in the Pacific region. However, they urge regulators in the Pacific region to spend more time in studying CBDC to build specific knowledge and expertise to issue a well-designed central bank digital currency. Andolfatto (2021) argue that an interest-bearing central bank digital currency may reduce the demand for cash and encourage increase financial inclusion while Ozili (2021b) show that central bank digital currency can promote financial inclusion when a central bank digital currency is designed to make people hold amounts of central bank digital currency without needing a bank account. Foster et al (2021) argue that a central bank digital currency can accelerate financial inclusion in excluded populations by giving people access to amounts of central bank currency in a wallet issued by a Fintech so that the very poorest are able to avoid the high costs charged by banks and mobile money providers.

Despite the much studies on CBDC, no study in the literature has examined the arguments for and against financial inclusion. Prior studies have suggested that financial inclusion is a benefit of CBDC (e.g, Barontini and Holden, 2019; Engert and Fung, 2017; Mancini-Griffoli et al, 2018; Maniff, 2020; Didenko and Buckley, 2021; Andolfatto, 2021; Ozili, 2021b; Foster et al, 2021), but these studies do not offer a critical perspective on such expectation. This study fills this gap by presenting both the arguments in support of CBDC for financial inclusion and the arguments against CBDC for financial inclusion.

Arguments for CBDC increasing financial inclusion

There are several arguments in support of the view that central bank digital currency can increase financial inclusion. For instance;

1. Digitizing the value chains in the economy. A central bank digital currency may facilitate the digitization of value chains in the economy. Businesses will have access to wholesale CBDC and will be encouraged to bring their activities into the digital financial system. This will not only increase financial inclusion for businesses, it will also illuminate the financial linkages in business activities from production, distribution, sales and post-sales activities.

2. **There is the argument that CBDCs can lead to improved access to digital financial services.** Proponents argue that holding fiat digital money will enable participation in the digital economy. With CBDCs, people can access a wide range of digital financial products and services that are not easily accessible when using cash. Customers can pay for goods and services using a CBDC through their digital devices in a convenient manner.

3. **There is the argument that CBDCs can help to enlarge the digital economy.** With CBDCs, many businesses such as real estate companies, energy providers and health care providers will be able to develop APIs which can be used to offer valuable health and real estate service to customers on a real time basis.

4. **There is the argument that CBDCs can enhance the efficiency of digital payments.** Proponents argue that central bank digital currencies, depending on their design, allows faster and more transparent spending while ensuring settlement finality with the highest level of transparency.

5. **There is also the argument about CBDC offline features.** Proponents suggest that CBDC's offline features is instrumental in increasing financial inclusion. Some central bank digital currencies are designed to have offline features. A central bank digital currency with offline features allows the continued use of central bank digital currency when users do not have internet connection. The CBDC offline features also allows the continued use of a central bank digital currency in remote areas where there is no internet coverage.

6. **There is the argument regarding low transaction cost.** Proponents argue that central bank digital currencies can reduce transaction costs for digital payments and transfers which can ultimately lower the cost of digital payments. It can offer a cheaper alternative for making digital payments and transfers. As a result, it can increase competition among banks and other payment service providers while providing convenience to users.

Arguments against CBDC increasing financial inclusion

The other side of the debate show arguments against central bank digital currency increasing financial inclusion. Proponents of this debate believe that issuing a central bank digital currency do not increase financial inclusion. For instance;

1. **There is the argument that digital devices are costly for poor and low-income people.** Some poor people do not have enough money to live on, much less the money to buy digital devices that can be used to access the central bank digital currency. It may be costly to purchase a smart phone, laptop, computers, etc. Digital devices may be too costly for poor people, especially poor people in developing countries. This can hinder their ability to participate or hold CBDCs. Therefore, the argument that CBDCs can increase financial inclusion ignores the fact that holding a central bank digital currency may depend on one's ability to own a digital device, which also depends on whether poor adults can afford to buy a digital device. When poor unbanked adults cannot own a digital device that can be used to hold a central bank digital currency due to

high cost, it is very difficult to see how a central bank digital currency contributes to financial inclusion.

2. **There is the argument that non-interest bearing CBDCs hinders financial inclusion**. Non-interest bearing CBDCs, although intended to bear the exact properties of cash, hinders financial inclusion when it does not offer interest on CBDC deposits. Paying interest on central bank digital currency deposits would attract new entrants into the formal financial sector. Unbanked adults want to take advantage of the savings benefits of interest-bearing CBDCs. But when a central bank digital currency has a non-interest bearing status, it removes the incentive to hold large quantities of CBDCs, and provides almost no incentive for poor unbanked households to hold CBDCs much less to use central bank digital currency to make payments, thereby, decreasing financial inclusion.

3. **The strong preference for cash over digital currency will remain is another argument.** There is still a strong preference to hold cash for many reasons, especially among low income households in emerging markets. There is no evidence that a large number of the population will abandon cash to use central bank digital currency once a central bank digital currency is issued, and there is also no evidence that a CBDC will replace cash among poor and low-income households. Rather, existing research show that cash will exist together with CBDCs (Agur et al, 2021; Davoodalhosseini, 2021), and a shift to CBDC will only occur if CBDC offer benefits that cash do not offer, and even at that, the shift to CBDC will not be absolute.

4. **There is the argument that the identification and regulatory requirements act as barriers to financial inclusion for some individuals.** Most central bank digital currency wallets require proof of identification and other regulatory onboarding requirements to enroll customers. The purpose of these requirements is to ensure anti-money laundering and combating the financing of terrorism (AML/CFT) compliance. These requirements can act as an obstacle to bringing unbanked adults into the formal financial sector, and might be burdensome to unbanked adults. Unbanked adults who are not formally identified (i.e., those do not have a valid means of identification), and feel that the process of getting a valid ID is too cumbersome,

may be discouraged from continuing the process to own a central bank digital currency. This can become a set-back for CBDC-induced financial inclusion.

5. **A low transaction cost is not good enough is another argument.** Proponents argue that a CBDC may not increase financial inclusion when there are transaction costs for using a central bank digital currency to make digital payments or transfers. No matter how low transaction costs are, people want to avoid any form of transaction cost if they have the opportunity to do so. They will prefer to make cash payment to avoid transaction costs if cash is an alternative payment method. Furthermore, when thinking about low transaction cost, a transaction cost may be low for a person living in the city while the same transaction cost may be high for a person living in rural areas. So, how do you determine a transaction cost that is sufficiently low to attract poor unbanked adults in rural areas? Is a transaction cost of $0.5 or $1 per transaction low enough? Can it be much lower say $0.01 per transaction? Why not remove the transaction cost completely and make CBDC transactions free of charge? CBDCs can increase financial inclusion when there are no transaction costs for using a central bank digital currency to make digital payments and transfers. Removing transaction cost from CBDC transactions can attract a large number of users to hold CBDCs including unbanked adults.

6. **High levels of digital exclusion is another argument.** A CBDC may not promote financial inclusion without full digital inclusion. This is because most CBDCs are designed to be used over a smartphone or internet connection. This intrinsic feature of a central bank digital currency makes it impossible to achieve high level of financial inclusion without high levels of digital inclusion. Also, unbanked households are more likely to be digitally excluded than banked households in developing countries where access to the internet is low and costly. Without access to the internet or a smart phone, people may be unable to hold CBDCs conveniently and remotely. The implication is that central bank digital currency will reach only a small segment of the population when there are high levels of digital exclusion.

7. **CBDCs may not prioritize financial inclusion.** Central banks may design a central bank digital currency to facilitate more efficient payments, cross-border transactions and to enhance monetary policy. Such designs do not prioritize financial inclusion and calls into question the

claim that financial inclusion is a significant benefit of central bank digital currency. Expanding the usefulness of central bank digital currency to other areas calls into question whether a central bank digital currency prioritizes financial inclusion.

8. **Digital illiteracy is a barrier.** Many people still do not understand digital finance for many reasons such as lack of technical knowledge of ICT tools, lack of access to internet and computers, lack of education, lack of awareness of digital innovations, etc. When people are digital illiterate, it will be difficult for them to understand what CBDCs are, and how to use a CBDC.

Conclusion

In conclusion, this paper has presented the arguments for and against CBDC increase financial inclusion. The arguments in support of CBDC increasing financial inclusion are that CBDCs can digitize value chains, CBDCs can improve access to digital financial services, CBDCs can help to enlarge the digital economy, CBDCs can enhance the efficiency of digital payments, CBDCs can be used offline when there is no internet coverage, and CBDCs have low transaction costs. Some criticism includes the high cost to purchase digital devices for holding CBDC, non-interest bearing CBDCs, the strong preference for cash over digital currency, burdensome identification and regulatory requirements, and the imposition of transaction costs.

Finally, whether CBDC will eventually increase financial inclusion depends on the way the CBDC is designed. Indeed, making the case for financial inclusion as a benefit of CBDC is not straightforward because it requires explaining the incentives that have been provided to encourage unbanked adults to hold CBDC. A subtle argument which I would not like to delve into is whether the financial inclusion benefits of a CBDC will outweigh the costs of operating the CBDC infrastructure. This is a discussion for another day. In the meantime, central banks are continuously improving their CBDC and modifying the design of the CBDC to reflect current realities. For this reason, I am confident that the shortcomings of CBDCs for financial inclusion will be resolved to ensure that CBDCs can help to increase financial inclusion.

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