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Original Research Article

Effectiveness of Central Bank Digital Currency: A Survey*

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Technological advancement in recent years has compelled central banks to look for new ways to effectively provide payment systems that are fast and more convenient compared to traditional paper-based payment systems. It has led to the birth of the concept of digital currencies issued solely by central banks called Central Bank Digital Currency (CBDC). As this concept is relatively new, there is ongoing research being conducted by several central banks worldwide, and while the research work done thus far has answered many questions, there remains a number of unsettled issues and questions. This paper aims to delve into the literature on this concept and focus on several key questions like the reasons for issuing digital currency, payment systems efficiency, and the advantages and disadvantages of digital currencies issued by central banks. Answering these questions could substantially help figure out the usefulness of creating a new payment method alongside the current payment system. However, extensive future research is required for a comprehensive understanding the effectiveness and usefulness of digital currencies.

Keywords: Central Bank Digital Currency, CBDC, Digital Innovation, Payment System, Safety and Efficiency.
JEL Classification*:* E42, E58, O3

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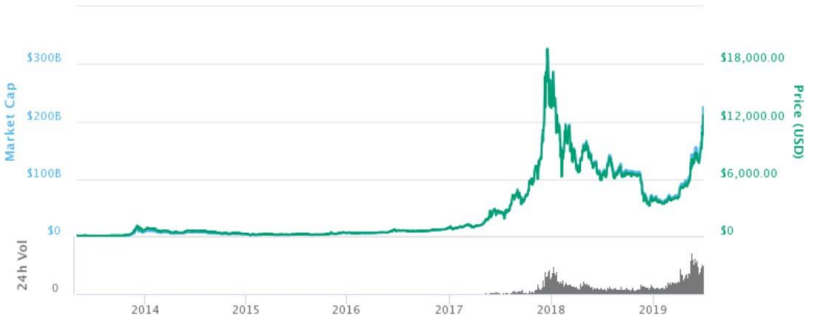
1 Introduction

Over the last decade, advancements in the digital world have made innovations and developments in other areas, including payments and smart contracts, more feasible. The development of digital currencies is one of the major and notable examples of such advancements within the payment system industry. Digital currency, suggested by its name can be defined generally as digital/electronic currency of a country with capability of being produced in various forms (Ali et al., 2014). The advent of digital currencies have prompted researchers to conduct numerous studies on different aspects of such currencies in recent years (Hoang et al., 2023). Crypto-currencies are considered to be a particular though widespread form of digital currencies. Bitcoin as the most well-known and other crypto-currencies (Altcoins) have become more popular as an asset class and as a means of payment with limited acceptability across the world.[1] Academics and central banks are predicting transformative or cumbersome implications for payments, banks, and the financial system at large.[2] In contrast to conventional currencies, Bitcoin and Altcoins are neither produced by the central banks nor any other government bodies and thus are not subject to monitoring and control of the central banks (Auer et al., 2022). In some countries central banks are weighing the possibility of introducing a specific version of their own digital currency known as CBDC (Central Bank Digital Currency). Although there has been extensive research and arguments around the concept of CBDC for several years (Ozili, 2023), currently there is no consensus on the definition and design choices for it. Several factors play into this lack of consensus; first, the

[1] Launched in 2009, the price of 1 bitcoin remained a few dollars for its first few years. The price reached a peak of nearly $20,000 per bitcoin in late-2017, and has since fluctuated quite widely, settling at around late-2021.



[2] See Andolfatto (2018), Broadbent (2016), Raskin and Yermack (2018) and Skingsley (2016).

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definition and applications of CBDC are not crystal clear (Lee et al., 2021). Second, execution of CBDC is highly dependent on the central bank's targets for issuing it and substantially affected by the country's (region) economic conditions (Keister and Sanches, 2023). Third, CBDC issuance policies are in the hands of the central bank and the other government branches, including the judicial and legislative and agencies such as the national tax authority have their influence and input in its formative process (Wang, 2020). As a result, there are several opinions regarding finding the most suitable definition of CBDC and even in response to a general question that why the creation of CBDC is deemed essential or even desirable for central banks?

It is of high importance for central banks to scrutinize the effects of the introduction of CBDC on the safety and efficiency of payments systems. Based on a comprehensive research and literature review conducted, this paper aims to answer several questions regarding CBDC to check out the effectiveness of issued digital currency on payment system efficiency. The following questions are considered; what exactly CBDC is? What are the concepts and the types. What has prompted the academic community and central banks to further research this concept? What does payment efficiency imply in the context of CBDC? What would be the advantages and disadvantages of digital currencies issued by the central bank.

The remainder of this article is organized as follows. Section 2 and 3 introduce the basics and characteristics of CDBC. Section 4 outlines reasons to research about CBCD and its applications. Section 5 discusses the possible effects of issuing central bank digital currency to improve the safety and efficiency of the payment system. Section 6 introduces central Bank Digital currency versus private digital currency. The final section concludes the paper.

2 What is Central Bank Digital Currency (CBDC)?

Payment systems are evolving over time, focusing on convenience in carrying out transactions, and the digital transformation in recent years has been a major breakthrough. The technological changes offered by CBDC, on the one hand, has made it possible for the companies to bypass central banks for settlement by developing various payment systems, and on the other hand it has become possible for central banks to offer innovative forms of retail payment channels bypassing the intermediaries (Kahn and Roberds, 2009). To provide a clear definition, CBDC is an electronic money issued by central bank that can be broadly accessed compared to reserves. It has tremendously more functionality than cash in retail transactions, encompassing a distinct separate structure with respect to other types of central bank currencies aiming

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to define and serve a different purpose, and also under realistic conditions it can be interest bearing (Kumhof and Noone, 2018). For a better understanding of the concept, other definitions and explanations of CBDC found in the literature is presented below.

There are several definitions of CBDC within the literature. However, no single universally accepted definition exists. In the 2018 report by the Committee on Payments and Market Infrastructures (CPMI) and the Markets Committee (MC), CBDC is defined as a "central bank liability, denominated in an existing unit of account, which serves both as a medium of exchange and a store of value"[1]. Meaning, Dyson, Barker, & Clayton (2018, p. 4) describe "central bank digital currency simply as an electronic, fiat liability of a central bank that can be used to settle payments or as a store of value".[2]According to Mancini et al. (2018): "CBDC is a digital form of existing fiat money, issued by the central bank and intended as legal tender. It would potentially be available for all types of payments and could be implemented with a variety of technologies." Bech & Garratt (2017) developed a new taxonomy of money mapping real-world digital currency experiences from various countries on to the "money flower" model (Figure 1). Four different sub-segments, are introduced by this model defining the nature of money along four axes:

Issuer: Issued by central bank or not: public legal tender versus a private currency.

Form: Electronic versus physical form.

Accessibility: Widely accessible or limited access: currency being for society in general versus for restricted society (non-financial).

Token-based or account-based: transfer mechanism, transactions occurring directly between the payer and the payee versus a need for a central intermediary (centralized or decentralized, meaning peer-to-peer).

[1] CPMI-MC 2018, Bank for International Settlements.p.3

[2] According to them, CBDC can be universally accessible to society (such as households and non-financial businesses) in general ("general purpose" or "retail" CBDC) or a less widely accessible variant of "wholesale" CBDC, which could "be used as a settlement asset in financial markets by firms that do not currently have access to central bank reserves".

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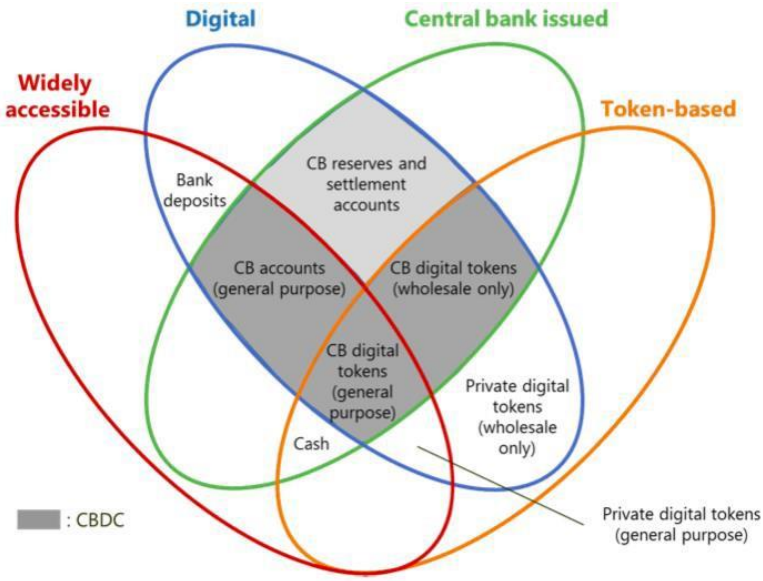

Figure 1. The money flower: a taxonomy of money. (Adapted from " Bech, M. L., & Garratt, R. (2017). Central bank cryptocurrencies. BIS Quarterly Review September.)

Four kinds of CBDC can be expressed considering this taxonomy of money:

1) Central Bank accounts (general purpose): Central bank accounts with general access to the public.
2) Central Bank reserves and settlement accounts: accounts with restricted access. Central bank reserves and settlement accounts would fit into this definition, with banks being the only institutions with access to central bank money. It is the common model we have today. However, the access could be widened to other institutions, for example, big corporations.
3) Central Bank digital tokens (general purpose): digital tokens with general access for the public linked to a physical technology making payments possible only if the device where the tokens are stored be in contact with the device where the tokens are to be transferred. A card reader is an example of this physical technology.
4) Central Bank digital tokens (wholesale only): digital token with limited access is one possiblity.

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3 CBDC Characteristics

To depict a clear picture of CBDC properties, the above broad differentiation is not sufficient, therefore additional design features are introduced in the following section. As previously mentioned, CBDC is defined as a digital form of money issued by the central bank allowing peer-to-peer transactions. There are also a number of other optional characteristics that a CBDC can have that defines a particular kind of central bank digital currency. Accessibility, technical form, and applied interest rate, are among the most widely discussed optional characteristics.

3.1 Accessibility: Retail CBDC and Wholesale CBDC

Based on the users' access to CBDC, there are two types of currencies; wholesale and retail or general purpose.

3.2 Retail or General Purpose CBDC

A retail or general purpose CBDC is issued for the general public and can be accessible to everyone. Based on Distributed-Ledger-Technology (DLT), anonymity, traceability, availability 24 hours a day and 365 days a year, and the feasibility of an interest rate application are among the features of this type of CBDC.[1]

3.3 Wholesale CBDC

This type of CBDC would allow restricted-access and is designed for financial institutions holding reserve deposits with a central bank. The wholesale CBDC can be used to improve payments and securities settlement efficiency, as well as reducing counterparty credit and liquidity risks making wholesale cross-border transactions more effective.[2]

For both the wholesale and general purpose CBDC, all types of technological applications can be considered such that the distinction of CBDC into wholesale and retail does not cover any particular technological application or other CBDC features outside the distinction based on type or classification.

[1] In fact, the attribute of universal accessibility is one of the defining characteristics of money and the variant of restricted accessibility is not considered as a form of money at all.

[2] Bech & Garratt (2017) suggest this variant would be accessible only to financial institutions. Others assume that wholesale CBDC could be offered not only to commercial banks and other financial institutions, but also corporates.

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3.4 Technical form: Token and account based CBDC

Technological solutions form another unique distinction of CBDC; token and account based CBDC. Peer-to-peer transactions are allowed by the token-based money. A token would be an asset such that the transactions between the sender and receiver can be completed without the help of intermediaries. On the other hand, a central counterparty for settlements i.e. a central bank is required for the account-based CBDC. Applications of the recent technological advancements, allow token-based CBDC to be based on some sort of distributed ledger technology (Bordo & Levin, 2017). In comparison with the token based CBDC, within the account-based version, there does not necessarily exist a considerable shift from the current technological setup of central bank. In this type of CBDC a higher number of user accounts are required by the central bank within its structure. However, technological improvements are highly needed dealing with hundreds of millions of accounts as this could be the case in the retail account- based CBDC.

3.5 Interest rate: Interest-bearing and non-interest-bearing CBDC

Interest payment, positive or negative in real terms, is a technically feasible consideration on both token and account based CBDCs as is the case for other forms of digital central bank liabilities. Whether deciding to promote the use of CBDC or not, an existing policy rate can be applied for the interest rate or it can be otherwise set at a different level. Within the retail or wholesale payment transactions, interest bearing and non-interest bearing accounts can be both applied. The attractiveness of an instrument that also serves as a store of value would likely be enhanced by payment of positive interest.[1]

After all of the discussions around CBDC, it's important to note that there are two key observations to be considered for properly assessing the various aspects of CBDC. Firstly, CBDCs are different from other digital currencies such as Bitcoin and the technical platform namely DLT is the only feature that could be shared among them. Comparing to banknotes CBDCs would be a

[1] This feature of CBDC is not dependent on a particular choice of CBDC technical implementation or user base. This discussion stems from the needs of monetary policy. Levin & Bordo (2017) suggest that an interest-bearing CBDC could serve as "a secure store of value, with a rate of return in line with other risk-free assets such as short- term government securities", (p. 2). The discussion on interest-bearing CBDC stems from the needs of monetary policy since "the CBDC interest rate could serve as the main tool for conducting monetary policy" (Levin & Bordo 2017). See also Barrdear, & Kumhof, (2022).

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central bank liability and the trust is the main underpinning factor. Secondly, central banks' digital money has always been in reserves format. According to Committee on Payments and Market Infrastructures (CPMI (2018) study, some central banks CBDC is considered as token-based and on the other hand, balances in reserve accounts and most forms of commercial bank money are considered to be account. In addition to technological opportunities, the gradual dwindling of cash usage and simultaneous long-term increase of card payments are the key drivers of CBDC (Olson, 2018). However, development of an alternative payment method and value storage not abolishing cash is the main intent of central banks to create CBDC.

4 Issues Motivating Further Research On CBDC

Moves by central banks to issue a digital currency has prompted central banks and academic researchers to further focus on this subject. First and foremost, the application of CBDC results in a significant plunge in the use of cash by the public. It means that there would be no paper money (i.e., issued notes) nor coins readily available to the public and all transactions would be in a digital format. It is important to note that world economies have started working towards a cash-less society over the last decades by encouraging and promoting bank cards, including debit and credit cards and apps. The elimination of cash saves central banks enormous money every year by cutting the costs related to publishing notes and coins, transportation, handling, and security issues. Furthermore, CBDC can be used among businesses and financial institutions to make payments and it would also change the way large-value payments are processed.

Secondly, the transparency level in transactions can be tremendously increased and subsequently impose more control on money laundering and tax evasion through easier traceability of transactions. This level of transparency could be an important leverage for the central banks. However, side effects such as finding alternative methods of payments rather than CBDC for less transparency by many sectors should also be considered. Thus, several social factors should be considered in the design of CBDC.

Third, CBDC can be used as a competitor to crypto-currencies. Peer-to-peer money transfers in the traditional monetary system are only possible with cash, not the deposit currency, can be processed using crypto-currencies. In non-cash transactions, intermediaries such as banks and central banks exist, and CBDC can be designed to allow for peer-to-peer money transfers eliminating banks as intermediaries, and central bank acts as the only intermediary in the transactions. It can be viewed as huge leverage for the

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central bank competing with crypto-currencies. The rise of Bitcoin has had a significant impact on compelling central banks to conduct research and development to create CBDC.

Fourth, the safety and effectiveness of both retail and large-scale payments can be substantially improved through CBDC. On the retail side, the main focus is on improving the efficiency of payments using digital currency. The peer to peer (P2P), point of sale (POS), and online are some examples of payment methods. CBDC can also better facilitate faster settlement and extended settlement hours within wholesale and interbank payments.

A study conducted by the Central Banks of Canada, United Kingdom, and Singapore on wholesale version of CBDC emphasizes the potential of CBDC on cross- border interbank payments and settlements to improve counterparty credit risk for only financial institutions and markets.

Commercial interbank obligations must settle in the current model used for cross-border payments that relies on how central banks operate RTGS[1] infrastructure. There exists restrictions to this system as cross-jurisdictional payments may encounter time lags, exposing counterparties to credit and settlement risk from their correspondents.

According to a analysis conducted by BIS, the importance of payment efficiency as a motivation for central bank to issue CBDC can also be observed. In this study by BIS, 63 central banks were surveyed on their motivation for issuing CBDC and it shows the two most important motivating factors are payment safety and domestic efficiency for retail and wholesale CBDCs in both advanced and emerging economies. Figure 2 demonstrates the motivations of central banks for issuing a CBDC, ranked by the level of importance.

[1] Real Time Gross Settlement

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Figure 2. Motivations of central banks for issuing a CBDC, ranked by the level of importance. (Adapted from Central bank survey on CBDCs, Bank for International Settlements, 2019.)

Figure 3 illustrates various motivations for issuing retail or general-purpose CBDCs ranked by the level of importance. According to this figure emerging economies value payments efficiency (domestic) the most and the payments efficiency (cross-border) the least. On the other hand, payments safety and financial stability are the most valued factors by advanced economies, and conversely financial inclusion is clearly valued the least.

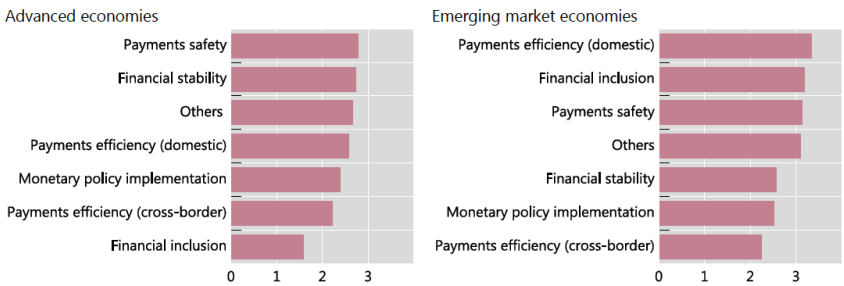

Figure 3. Motivations for issuing general-purpose CBDCs, ranked by the level of importance. (Adapted from Central bank survey on CBDCs. Bank for International Settlements, 2019.)

Figure 4, demonstrating the motivations for issuing wholesale CBDCs, ranked by the level of importance, shows that payments safety and payments efficiency are the most important motivating factors in both advanced and emerging economies. It should be noted that financial inclusion is considered

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to be the least important factor for wholesale CBDCs for all central banks from the advanced and emerging economies.

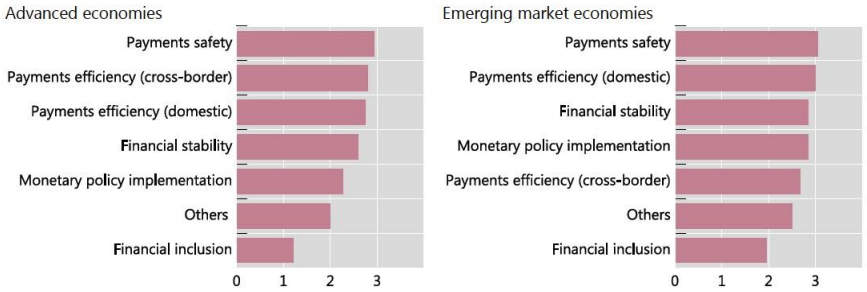

Figure 4. Motivations for issuing wholesale CBDCs, ranked by the level of importance. (Adapted from Central bank survey on CBDCs. *Bank for International Settlements, 2019*.)

In the next section, the payment efficiency and payment safety considered to be among highly important factors for issuing CBDC are studied in detail.

5 Why Digital Currency Should Be Considered by Central Banks for Improvement of Safety and Efficiency of The Payment System?

Following the previous section elaborating the importance of payment safety and efficiency in the context of CBDC, in this section the important reasons as to why central banks should take into account digital currency for improvement of the safety and efficiency of the payment system are studied in detail.

Central banks, in general, have always been looking for ways to improve the safety and efficiency of transactions and minimize the risks associated with various types of transactions (Fung and Halaburda, 2016). As an example, let's consider banknotes as a way of conducting transactions. As in many countries the sole issuer of the bank notes is the central bank of the country, supplying bank notes that people can use with confidence and the central bank is in charge of the design, production, distribution and destruction of bank notes Therefore, the central banks constantly look for ways to reduce the costs associated with cash handling and to improve the efficiency of this type of transaction. The birth of electronic payment systems has significantly

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improved the safety and efficiency of payments, as transactions can be made within seconds with high security increasing the reliability of this type of payment system[1].

Over the past few years with all the technological advances it has become crucial for central banks to explore ways for further improving the security and efficiency of transactions through future generations of bank notes in digital form. The payments efficiency and safety can be substantially improved through CBDC on both retail and large-scale transactions. On the retail side, the main focus is on improving the efficiency of payments using digital currency. The peer to peer (P2P), point of sale (POS) and online are some examples of payment methods. CBDC can also better facilitate faster settlement and extended settlement hours within wholesale and interbank payments[2]. Increasing efficiency in cross-border interbank payments and in interbank securities trading and settlement are the leading cases for wholesale CBDC.

Furthermore, for innovations in payment systems including privately issued digital currency with possibility of impairing central banks' power to reach its monetary policy targets and to implement policies that promote financial stability, a CBDC can be an appropriate and decisive policy response[3]. For example, the transmission of monetary policy and the central bank's capability to be the lender of last resort could be dramatically affected by the widely adopted private cryptocurrencies.

To promote the safety and efficiency of payment systems, central banks play three distinctive roles; facilitator or catalyst, overseer, and operator or direct provider[4]. Based on the institutional structures, legislative authorities, and performance history, the action taken by the central banks to intervene varies.

If the overall benefits are more than the overall costs in introducing a new payment system replacing with the existing alternatives, the new system is considered to be more efficient There are several factors that can provide easy access to new payment systems including economic and technological, and also improvements such as increasing protection of private data which the benefits of these systems are tremendously increased for customers.

[1] See, for example, Shin, H. S. (2018).
[2] See, for example, CPMI-MC (2015).
[3] See, for example, CPMI-MC (2015) and also Bordo & Levin (2019). Their analysis indicates that digital cash could significantly enhance the stability of the financial system.
[4] See Fung, Molico and Stuber (2014) for a discussion of the role of the central bank concerning e-money.

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After discussing important points in the context of issuing CBDC, some fundamental questions are brought up and tried to find answers within the literature. These questions encompass significant points with respect to the effects of issuing CBDC on payment efficiency. These questions are as follow:

Would a digital currency improve efficiency more than the existing payment systems? If the answer is "no", then there is no need for digital currency to be issued by the central bank. It is of high importance to analyze the public or private costs to provide particular a digital currency. If the benefits are simply less than the costs, then issuing a digital currency is not rational. On the other hand, if the benefits of such currency outweigh the costs of providing, operating, and maintaining the digital currency, then the ability of the market to deliver such an efficiency-improving currency should be studied. Would privately issued digital currencies deliver efficiency improvement by themselves arrive at an efficient outcome without government intervention? If the answer is "yes", then issuing a CBDC in the context of improving the efficiency of the retail payment system is not justified. However, the government can potentially apply rules and regulations and monitor compliance. Would issuing such currency by a central bank result in efficiency improvement, or would there be other ways a central bank can contribute? If efficiency could be improved by a digital currency but not through the private ones, then the central bank could play an important role in facilitating or regulating.

6 Central Bank Digital Currency Versus Private Digital Currency

There are some advantages and disadvantages with respect to a digital currency issued by a central bank versus a private one.

6.1 Advantages

First, the central bank controls exchanging its digital currency with legal tender (banknotes and central bank deposits). In contrast, private digital currencies do not have a fixed exchange rate and cannot always guarantee to trade with legal tender. Bitcoin would be a good example of a highly volatile digital currency with up to 15% fluctuations in a single day[1].

[1] Bolt and Oordt (2020) argue that the initial volatility of the Bitcoin exchange rate is typical for a new currency and the exchange rate will stabilize over time.

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Second, each cryptocurrency has its own unit of account but the central bank digital currency has a unit of account that can be used in all sectors. To this point, Bitcoin's exchange rate has been highly volatile against major currencies such as the US dollar. In this case, people may best use Bitcoin or other cryptocurrencies to make payments electronically at a relatively low cost and high speed and the coins will only be used when the payment shall take place and as soon as they receive Bitcoins, they switch back to their local currency.

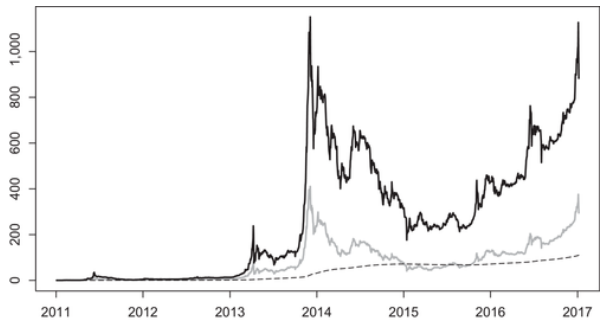
6.2 Disadvantages

However, there exists some disadvantages for a central bank to issue its own digital currency. First, in case of any security issues affecting the CBDC, the central bank's reputation in other areas such as conducting monetary and financial stability policies could be in jeopardy[1].

Second, considering the lack of market and technical expertise, it would be an enormous challenge for the central bank to compete with the private sector[2].

Third, issuing a CBDC could make it more difficult for future innovations in this area as the incentive for private investments is highly diminished.

Speculation and the Exchange Rate of Bitcoin, USD: (X-Axis Label: Years, Y-Axis Label: Value.)



The graph demonstrates the value of a unit of the private digital currency Bitcoin. Exchange rate. The solid black line. The dashed line provides an impression of the potential exchange rate in the absence of speculation and is a strongly smoothed average of the gray line.

[1] CBDC may also increase the risk of reputation loss due to conflict of interests, as central bankers would now be tasked with monetary policy, financial supervision, as well as providing banking services themselves (Engert & Fung, 2017).

[2] Research indicates that a central bank's reputation for reliability is crucial for its regulatory and supervisory operations, but this reputation may come into question due to policy errors and/or technical failure (Engert & Fung, 2017).

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Extensive research is required on how this might happen and also finding ways to prevent potential complexities.

Regarding the potential costs and benefits of improving the payment system by issuing a CBDC there are some questions: Is a digital currency able to function at lower costs than existing payment needs? How much does it cost to provide a digital currency? How much operating a digital currency system would cost? Are existing transactions inevitable, considering providing those kinds of transaction costs are more than the benefits? What would be the estimated number and value of new digital transactions?

Answering these questions could substantially help to figure out the effectiveness of creating a new payment method on the current payment system. As mentioned before, if the overall benefits are more than the overall costs of introducing a new payment system, it is considered effective. In the following, it is tried to identify some potential costs and benefits of digital currencies. Determining the costs associated with issuing a CBDC is a complex task. It depends on the specific characteristics that it would have and should be considered when designing and providing a digital currency. There is ongoing research on evaluating the potential costs of issuing a digital currency by central banks.

However, there are several benefits identified as processing regular transactions; as the existing payment instruments have challenges in combating frictions in the marketplace, CBDC would enable transactions that are regularly occurring. These kinds of transactions that increase the economy's overall output are highly important and beneficial to the well-being of transacting parties. Thus, a CBDC allowing for more transactions to go through helps the economy improve efficiency. Reducing the costs associated with already occurring transactions; by decreasing the costs of transactions, the efficiency of the payment system could be improved. Thus, it is crucial to estimate the possible cost savings associated with the digital currency payment system.

7 Conclusion and Further Questions

Issuing banknotes and promoting the safety and efficiency of payment systems are of primary responsibilities of central banks. In this paper, we raised some key questions regarding the concept of CBDC and its advantages and disadvantages. We answered these questions by conducting a thorough survey on the available studies in this field with respect to the issuance of CBDC and the potential efficiency that can be brought to the payment systems.

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First, we proposed a more concise yet comprehensive definition for CBDC and reviewed its different types based on the most prominent studies on the subject. Then, we investigated the actual reasons behind the increase in the interest of researchers and central banks for better understanding of CBDC and its applications. We established that payment safety and domestic efficiency are the two most important factors for central banks to opt for CBDC. Finally, we discussed the advantages and disadvantages of CBDC. We concluded that CBDC can provide a legal channel to use digital currencies as opposed to private currencies. Also, CBDC provides a unit of account that can be used in all sectors. However, security issues can undermine the reliability of CBDC and the bank that issues it. Additionally, although it is an enormous challenge for the central bank to compete with the private sector at first, but in the long run, CBDC can remove private sector currencies and inhibit the innovative potential of digital currencies in the future.

However, there still remains many unanswered questions on CBDC which include: How much operating a digital currency system would cost? What measures should be taken to improve the acceptance of CBDC in terms of digital infrastructure? How about payment infrastructure? Would digital currencies that are privately issued deliver efficiency improvement by themselves arriving at an efficient outcome without government intervention? Answering these questions could substantially help to figure out the effectiveness of creating a new payment method on the current payment system. Hence, extensive future research is required to provide thorough answers for these questions.

CBDC has attracted the attention of the world's central banks and researchers at the international level for different reasons, such as the competition of public and private money in the field of digitalization, achieving a more effective payment system. Along with the developments in the international arena, the outlook of the CBDC by the Central Bank of the Islamic Republic of Iran has also received attention due to the changes in payment methods, the expansion of electronic banking and the change in people's behavior after the outbreak of the recent pandemic. The Central Bank of the Islamic Republic of Iran, has put the development of its digital currency called the Digital Rial on the agenda as the custodian of the issuance of the national currency, in line with its goals in the payment system and the performance of the national currency. From the perspective of the Central Bank of the Islamic Republic of Iran, what special role this type of digital money will play and what new and distinctive services it can provide that are not covered by the current payment systems, is an uncertain matter and is

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being studied and investigated. So far, the potential benefits of introducing CBDC in Iran's payment ecosystem have not been evaluated to solve the significant challenges that this new payment method brings.

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