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# Thinking Fast and Slow about Central Bank Digital Currencies

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## Abstract

Central banks are considering the issuance of a central bank digital currency to serve as a payment tool to support economic activities. A central bank digital currency can also serve secondary purposes that are related or unrelated to the statutory objectives of a central bank which is monetary and price stability. Many central banks are thinking too fast about central bank digital currencies – they are very optimistic about the potential benefits of central bank digital currencies. While such optimism is good, central banks also need to think slowly about central bank digital currency by paying serious attention to known risks and whether there is a unique use case for CBDC. This calls for cautious optimism and a need for central banks to think fast and slow about central bank digital currencies.

**Keywords:** CBDC, central bank digital currency, cryptocurrency, digital payment, thinking fast and slow.

**JEL code:** E51, E58

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## 1. Introduction

Money is constantly evolving and the agents responsible for producing and managing money must evolve with the times. Money and payments have evolved from trade by barter to coins, from coins to banknotes, and from banknotes to private digital currencies which are commonly used for digital payments. The growing addiction to digital payments is raising the question of whether central banks should issue its own digital currency for retail and wholesale use, also known as a central bank digital currency (Wong and Maniff, 2020; Bofinger and Haas, 2020; Fatas, 2021).

But first, what is a central bank digital currency? A central bank digital currency is a new type of digital money issued by a central bank for everyone to use for in-store or online payments (Piazzesi and Schneider, 2020; Wang and Gao, 2024). A central bank digital currency is essentially a digital banknote which individuals may use to make payments (i.e., a retail CBDC), while financial institutions may use it to settle transactions in financial markets (i.e., a "wholesale CBDC"). A central bank digital currency is dominated in the local currency unit and its value is stable at 1:1 with physical cash, meaning that a digital five dollar would be equivalent to a \$5 physical currency note. A central bank digital currency is not a private cryptocurrency or crypto asset which is privately issued by unknown non-state actors, rather, a central bank digital currency is issued by the central bank and is backed by the central government.

Having defined what a central bank digital currency is, it is important to point out some frictions and problems inherent in the current monetary system that require a lasting solution, and, who knows, central bank digital currency might be a solution! Moving on to the problems. The first problem is that some payments are expensive and slow. Also, many people lack full access to the financial system due to high transaction costs. Thirdly, private financial institutions wield significant power in the current monetary system due to the financialization of the economy. This arises from the fact that private financial institutions, including banks, are the largest lenders and the largest payment processors in most economies, and commercial bank deposits constitute the most abundant form of money available today because banks create money from their credit or lending operations. Furthermore, banks have a huge influence over the transmission of monetary policy because

changes in central bank interest rate takes effect in the economy through changes in the size of bank lending to households, firms, and government. Therefore, central banks can only steer the economy in collaboration with commercial banks and other financial institutions. This makes financial institutions very powerful. Central banks are contemplating the issuance of a central bank digital currency to reduce the power of private financial institutions in the current monetary system. These problems, together with other central bank motivations for issuing a central bank digital currency, are steering central banks to issue a central bank digital currency to address these problems and upgrade the monetary system to become the monetary system of the future.

There is significant evidence that central banks around the world are preparing for a CBDC-led monetary system. For instance, a 2020 and 2021 BIS survey show that over 85 percent of central banks around the world are researching, developing, and piloting central bank digital currencies. Very few central banks, such as Australia and Kenya, have indicated that they will not issue digital currency now because there is no compelling case to issue a central bank digital currency. As of 2024, only few central banks have issued a central bank digital currency, namely the Bahamas (Sand Dollar), Nigeria (eNaira), Jamaica (Jam-Dex) and the Eastern Caribbean Currency Union (DCash), while countries like the US, UK, Canada, New Zealand and Australia have no intention of issuing CBDC now.

In the academic literature, many scholars have argued that central banks are hastily developing a central bank digital currency to counteract the sudden rise of private cryptocurrencies and their growing dominance in the domestic payment system (Laboure et al., 2021; Cong and Mayer, 2022; Blakstad et al., 2018; **Yang et al, 2024**), while other scholars argue that the issuance of a central bank digital currency may bring an end to the anonymity of money and reduce user privacy even though they accept that a central bank digital currency would deliver a safer financial and monetary system (Rennie and Steele, 2021; Gross et al., 2021). This suggests that the idea of issuing a central bank digital currency is not really bad as long as some safeguards are put in place to preserve privacy and the anonymity of digital money.

It is also common knowledge that developing a central bank digital currency is a complex task. Despite been a complex project, some central banks are thinking too fast about central bank

digital currencies. By this, I mean they are very optimistic about the potential benefits of central bank digital currencies without paying serious attention to the known risks. Central banks who are thinking too fast about central bank digital currency may find a lot of surprises after issuing a central bank digital currency and may spend a lot of time and resources in quelling many risk-fires after issuing a central bank digital currency. On the other hand, some central banks are choosing to think slowly about central bank digital currency – they do not want to hastily join the CBDC bandwagon, they want to be cautious, and want to fully understand the benefits and risks of issuing a CBDC before deciding whether to develop a central bank digital currency pilot test or not. Therefore, this paper is about the advantages of thinking fast and slow about CBDCs. I shed light on some salient issues that central banks should think about regarding central bank digital currency.

The discussion in the paper contributes to the literature that examines the development and motives for issuing a central bank digital currency. This study adds to this literature by emphasizing the need for cautious optimism about central bank digital currency among central banks. The discussion in this paper also adds to the literature that analyses the risks and benefits of issuing a central bank digital currency. This study adds to this literature by highlighting the various benefits and risks that may arise from issuing a central bank digital currency. Finally, policymakers and central banks who are in the process of developing a central bank digital currency would gain valuable insights from the discussion in this paper.

The rest of the paper is structured as follows. Section 2 discusses the idea of thinking fast about central bank digital currencies. Section 3 discusses the idea of thinking slow about central bank digital currencies. Section 4 presents the conclusion of the paper.

## 2. Thinking fast about central bank digital currencies

Thinking fast about central bank digital currencies means being very optimistic about the rewards or benefits of issuing a CBDC. Many factors are causing central banks to think fast about issuing a central bank digital currency. One of such factors is that central banks want to remain relevant in the digital world and central bank digital currencies present an opportunity for them to be relevant in the digital world by transforming the nature of money,<sup>1</sup> and creating a digital version of cash that is issued and regulated solely by central banks (Ward and Rochemont, 2019; Ozili, 2023a).

Another factor that is causing central banks to think fast about central bank digital currencies is the declining use of cash. Many people are not using cash to make payment as much as they used to. This is because digital payments are becoming more common. This tells us that the future of money is digital. Central banks are responding to this trend by issuing a central bank digital currency that will support banknotes whose use is already declining and to provide more payment options for people (Khiaonarong and Humphrey, 2019; Taskinsoy, 2021; Perkins, 2020; Abad et al, 2024). Central banks want cash to remain available in the future and for as long as people want to use cash, but they want to create a digital version of cash, or a CBDC, that will co-exist with cash, offer a reliable public means of payment, and complement existing payment options (Rösl and Seitz, 2022). The goal is to ensure that the CBDC is accepted for purchases anytime, anywhere, and is accessible to all and easy to use; and more importantly, to ensure that a CBDC can serve as a fall-back payment system that would allow payments to continue when other payment systems fail temporarily.

Another factor that is causing central banks to think fast about central bank digital currencies is the differing motives for exploring and issuing CBDCs which includes the need to promote financial inclusion, create a resilient domestic payment system, improve access to central bank money, increase efficiency in payments, reduce transaction costs, improve transparency in money flows, and increase cross border remittance inflow (Calle and Eidan, 2020; Popescu, 2022). There is also the belief that issuing a central bank digital currency would preserve the

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<sup>1</sup> Private money innovations like cryptocurrencies are threatening the relevance of central banks in the digital payment market as cryptocurrencies allow peer-to-peer payments without involving formal financial intermediaries, thereby weakening the ability of central banks to monitor financial transactions involving cryptocurrency.

sovereignty of fiat money in a digital world, increase the contestability of payments, enhance monetary policy transmission, give the general public direct access to central bank reserves, and enable the disbursement of social welfare transfers directly from the government to citizens (Ward and Rochemont, 2019; Zhu and Hendry, 2021; Ozili, 2023a; Ozili, 2024).

Central banks are also thinking fast about the design of CBDC and are doing everything possible to ensure that the issued central bank digital currency has design features that support central bank objectives particularly monetary and price stability. For instance, every central bank would strive to issue a minimally invasive CBDC – one that does not disrupt the functioning of the financial system. Preference would be given to a central bank digital currency that is purely a convenient medium of exchange rather than an attractive form of investment. Central banks want central bank digital currency to be a convenient means of payment so that individuals can use it to make digital payments easily.

However, the widespread use of central bank digital currency for retail payments could lead to bank disintermediation which may occur when people prefer CBDC as a means of payment and convert large amounts of bank deposits to CBDC, thereby disintermediating banks. Central banks have dampened any fears of bank disintermediation by stating that they will place both price and quantitative controls on the amount of CBDC that can be held by individuals in order to discourage excessive holdings of retail CBDC, prevent bank disintermediation and preserve financial stability (Wenker, 2022; Whited et al., 2022; Ozili, 2023b; Schilling et al, 2024). Other central banks have considered the prospect of issuing a non-renumerated CBDC to disincentivise excessive CBDC holdings and reduce the risk of bank disintermediation (Pirgmann, 2022; Bibi and Canelli, 2023). These precautionary steps taken by central banks shows that many central banks are determined to issue a central bank digital currency. Many central banks have reached an advanced stage in CBDC pilot tests and will issue a central bank digital currency soon.

### **3. Thinking slow about central bank digital currencies**

The perceived potential benefits of a central bank digital currency can entice a central bank to join the race to issue to a national central bank digital currency. However, a careful observation of some negative public sentiments about a central bank digital currency will show that many people are not excited or happy about central banks issuing a central bank digital currency (Ozili and Alonso, 2024). And they have good reasons for being pessimistic about issuing a central bank digital currency! For example, many commentators have pointed out that issuing a central bank digital currency will erode people's privacy (Lee et al., 2021), it will strengthen state surveillance of citizens' financial and economic activity (Tsang and Chen, 2022), it would create unnecessary and needless competition between the central bank and commercial banks in the payment space (Fernández-Villaverde et al., 2021; Wang and Gao, 2024), it would make the centralised CBDC ledger a target for attack from hostile state and non-state actors (Tian, Zhao and Olivares, 2023), it will give excessive powers to unelected central bankers, it would make the central bank become both a regulator and a competitor in the financial system thereby giving the central bank absolute competitive advantage over regulated payment service providers and financial institutions in the market, and it will increase the central bank's role in the economy beyond its statutory function of monetary and price stability. These are few of the many concerns that have been raised. These are very strong concerns that should cause a central bank to be cautious about issuing a central bank digital currency, especially the central banks that have not issued a central bank digital currency yet.

Central banks need to think very slowly about issuing a central bank digital currency – this is a term I use to describe being cautious about issuing a central bank digital currency. Central banks need to think slowly (i.e., be cautious) about issuing a central bank digital currency because the consequences of issuing a central bank digital currency that ends up failing is irreparable. Not only will it lead to loss of taxpayers' money that was invested in the CBDC project, it will also lead to loss of reputation for the central bank and the country. Therefore, a central bank should be careful when thinking about issuing a central bank digital currency. They should assess all the known risks associated with issuing a central bank digital currency and ensure that they have the capabilities, infrastructure, policy tools and frameworks that

can mitigate all the known risks associated with CBDC before issuing a central bank digital currency. For example, every central bank should:

- think slowly and very cautiously about the right technology for deploying a central bank digital currency such as using blockchain or other distributed ledger technologies.
- determine whether the existing digital payment infrastructure can be used to deliver a central bank digital currency.
- determine whether there is a need to overhaul the existing legal framework guiding the current monetary system or whether there is a need to establish a new legal framework that supports and enables the operationalisation and widespread adoption of CBDC by members of the public.
- consider how to introduce or develop strong cyber security frameworks to protect CBDC users from hackers and digital criminals, prevent loss of funds and prevent unauthorised access to sensitive information in CBDC wallets.
- develop a policy framework that encourage collaboration between commercial banks and central banks when a two-tiered CBDC is deployed.
- determine the set of key principles that will provide a foundation for CBDC interoperability or the principles that can serve as a basis for interoperable CBDC design.

While these considerations can help a central bank to prepare for CBDC issuance, central banks still need to be cautious about issuing a central bank digital currency because there is the risk that the issuance of a central bank digital currency may be a solution in search of a problem especially when the proposed benefits of issuing a central bank digital currency are perceived to be overstated or when the problems that CBDC aim to solve can be solved by existing payment alternatives or when the CBDC is perceived to present too many risks with very little benefits. Therefore, a central bank that intend to continue with its ambition to issue a central bank digital currency should think slowly, or cautiously, about issuing a central bank digital currency. The central bank should (i) identify or determine the best use case of a central bank digital currency in the country, (ii) determine whether there is a compelling motivation for issuing a central bank digital currency, and (iii) determine whether the CBDC will proffer

solution(s) to a distinct problem in the monetary system that is not been solved, or cannot be solved, by existing payment alternatives.

Another area where central banks need to tread cautiously is the claim by CBDC enthusiasts that a central bank digital currency is the most effective tool that central banks can use in addressing the problem of financial exclusion in developing countries, reducing the high cost of cash management, improving the transmission of monetary policy, and resolving payment inefficiency issues in the digital age. Such claims could be easily dismissed as bogus claims because there are other ways to tackle these problems without issuing a central bank digital currency. Therefore, a central bank digital currency should not be seen as a first-best option to address the problems above, rather it should be seen as a fall-back option that should only be activated if it becomes obvious that existing private sector digital payment solutions cannot resolve these problems either due to corporate interests or other reasons.

#### **4. Conclusion**

This study presented a discussion on central bank digital currencies. The study showed that central banks are thinking fast and slow about central bank digital currency and argued that central banks cannot ignore the ongoing rapid digitalisation of payments in the world today and this, indeed, is a motivation for issuing a central bank digital currency.

There is the belief that central bank digital currencies are necessary to preserve the stability of the economic, monetary, and financial system in the digital world. There is also the belief that central bank digital currencies will improve the conduct of monetary policy, increase financial inclusion, improve payments efficiency, and preserve financial stability. Central banks that accept these beliefs are already thinking fast about central bank digital currencies – they are not deeply bothered about the risks of issuing a central bank digital currency, rather, they are very optimistic about the potential benefits of issuing a central bank digital currency, they have accelerated their efforts towards central bank digital currency pilot tests, and they aim to issue a central bank digital currency in the near future.

Such fast thinking, although very much needed, could lead to the issuance of a central bank digital currency that is less resilient to cybersecurity risks, provide little value for users, crowd

out private innovation, promote unhealthy competition with regulated financial institutions, and increase risks to financial stability, especially when the risks of central bank digital currencies are not given much attention compared to the great emphasis on the benefits of issuing a central bank digital currency. Central banks that have carefully identified, assessed and understood the known risks of a central bank digital currency will be compelled to think slowly about central bank digital currencies and think about how to deploy a central bank digital currencies that really works and offer value to society, rather than issuing a central bank digital currency that is a solution in search of a problem or issuing a central bank digital currency that fails after few months or few years in operation, or issuing a central bank digital currency because other central banks are issuing it.

Finally, designing and issuing a central bank digital currency will not be easy for any central bank because it is an ambitious and complex project. However, the central banks that get it right will be comforted in their ability to use the central bank digital currency to promote financial and monetary stability and inclusive growth in their economies for the benefit of the present and future generations.

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