Central Bank Digital Currencies and their Impact in China

Introduction

In a world of dwindling resources, constant innovation is the key to achieving long-term financial sustainability. Over time, we have witnessed numerous such innovations that have revolutionized a multitude of industries and sparked the emergence of multiple new markets. Furthermore, several countries see digital finance as an opportunity to create and capitalize on new growth drivers. One such innovation that has the potential to completely alter the conventional banking system is the concept of Central Bank Digital Currencies (CBDC). China, one of the world's most powerful and forward-thinking countries, has further established itself by emerging as one of the first nations to develop and initiate pilot tests of its very own CBDC known as e-CNY.

This article aims to create a deeper awareness of CBDC's implementation in China and its impact on the Chinese economy as a whole by accentuating the nuances of CBDC's and answering the most essential concerns revolving around CBDC's. Some of the notions that will be discussed in depth include: What's distinctive about CBDC's? How do CBDCs differ from crypto currencies and pre-existing traditional payment schemes? And what are some of the significant challenges being faced by nations such as China in their operations regarding the implementation of central bank digital currencies?

While discussing the aforementioned subjects, this piece seeks to present the reader with a sense of clarity on the existing situation of CBDCs in the global economy while focusing on their proclivity to further unearth previously undisclosed implications on the modern financial system.

Analysis

I. What are CBDCs?

CBDCs are unique forms of money that stem from new technologies. They are best thought of as a digital version of central bank money that can be created on decentralized technology like blockchains or distributed ledgers[1]. By their very nature, CBDCs have the power to radically alter the financial landscape as they can be applied to any type of asset; however, they are most relevant in the context of fiat currency as they are issued by a nation's formal monetary institution, or central bank.

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[1] *What Are Central Bank Digital Currencies (CBDCs)?* (n.d.). Gemini. Retrieved October 22, 2022, from https://www.gemini.com/cryptopedia/central-bank-digital-currencies-cbdc

A central bank has mainly 4 functions: providing a unit of account in the monetary system, assuring the finality of wholesale payments, preventing disruptions in payment procedures, and lastly, supervising the payment system's integrity. CBDC's should, effectively, be perceived from this perspective as they cover the same ground.

There are two types of CBDCs: wholesale and retail. Wholesale CBDCs are intended for the settlement of transactions between financial institutions. These are not meant for the public. Retail CBDCs, on the other hand, alter the traditional two-tier monetary structure by making central bank digital money available to the general public in the same way that cash is available[2].

II. What makes them so transformative?

CBDCs will be available both online and offline, and will be accessible 24 hours a day, seven days a week. Its ability to instil faith in the monetary system via safety and integrity is what makes it so powerful. It may also be combined with emerging technologies such as IOT (Internet of Things) and integrated with other tokenized asset markets. As a result, CBDCs are more than simply another electronic payment method; they represent the backbone of a digital economy.

CBDCs, if well built, have the potential to provide higher resilience, safety, availability, and cheaper costs than private forms of digital money. When opposed to unbacked crypto assets, which are intrinsically volatile, this is undeniably true. Even the most carefully controlled and regulated stable coins may fall short of the stability and design of a central bank digital currency. They could, among other things, promote financial inclusion and provide new economic value, especially in cross-border transactions. This is what makes CBDCs so special and what incentivizes countries to adopt them[3].

III. How are they different from traditional payment methods?

While there are a lot of pros to this currency, it is critical to understand that traditional online payment methods like crypto, GPAY, and Alipay differ from CBDCs in a number of important ways. CBDCs are not regarded as cryptocurrencies due to certain technical differences and the fact that they are governed by a central authority, despite the fact that they may share some

[2] *III. CBDCs: an opportunity for the monetary system*. (2021, June 23). Retrieved October 22, 2022, from https://www.bis.org/publ/arpdf/ar2021e3.htm

[3] *Opening Remarks at Peer-Learning Series on Digital Money/Technology: Central Bank Digital Currency and the Case of China*. (2022, July 7). IMF. Retrieved October 22, 2022, from https://www.imf.org/en/News/Articles/2022/07/07/sp070722-central-bank-digital-currency-and-the-case-of-china

architecture with cryptocurrencies. Despite being blockchain-based, CBDCs are still managed by centralized institutions like central banks[4].

As for online payment gateways, the difference is best substantiated by Qu Qiang, assistant director of the International Monetary Institute at Renmin University of China.

"Now to use Alipay, first you have to open a bank account through a normal bank, a traditional bank, then the bank will give you an electronic bank wallet, and then you can upload to your Alipay or WeChat, then you pay it. So basically, you're still using the traditional banking system. But with the digital currency, you don't need it anymore. You just need to install an app, and then you can put the digital currency into your wallet. There's no paper banking notes to back you up in the bank account. So, this is totally new," Qu explained (CGTN, 2020)

IV. Pilot Testing in China

The beta version of China's very own CBDC has been launched in the nation across 23 cities. China's central bank has developed its currency quite a bit over the course of three years of research and experimentation.

As explicated by the PBOC, e-CNY (functioning in the two-tier system) is legal tender. Furthermore, a single e-CNY is worth the same as one yuan in paper, and they both are interchangeable, that is, they can be exchanged for each other.[5]

The data speaks for itself. Total transactions have surpassed 83 billion yuan since 2019[6]. Around 4.6 million suppliers, ranging from cities like Shanghai to Beijing and Shenzhen, have started accepting e-CNY as payment. Residents have been using e-CNY for both personal and business expenses, including those related to dining, shopping, and personal finances (paying taxes and salaries). [7]

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[4] *How is a central bank digital currency different from existing online payment options?* (2020, May 7). Retrieved October 22, 2022, from https://news.cgtn.com/news/2020-05-07/How-is-a-central-bank-digital-currency-different-from-online-payment--QiHTGIXWa4/index.html

[5] Greene, R. (2021, July 1). *What Will Be the Impact of China's State-Sponsored Digital Currency?* Carnegie Endowment for International Peace. Retrieved October 22, 2022, from https://carnegieendowment.org/2021/07/01/what-will-be-impact-of-china-s-state-sponsored-digital-currency-pub-84868

[6] Briefing, C. (2022, September 22). *The Digital Yuan App - All You Need to Know About the New E-CNY Tool*. China Briefing News. Retrieved October 22, 2022, from https://www.china-briefing.com/news/china-launches-digital-yuan-app-what-you-need-to-know/

[7] Writer, S. (2022, August 20). *The challenges ahead for China's digital yuan*. Nikkei Asia. Retrieved October 22, 2022, from https://asia.nikkei.com/Spotlight/Caixin/The-challenges-ahead-for-China-s-digital-yuan

In spite of the several advantages they provide in enhancing the provision of financial services, there exists a myriad of risks associated with CBDCs that limit their potential to revolutionize finance and substitute more widely used currencies. It is imperative to emphasise on its drawbacks.

Firstly, the e-CNY network is quite limited in range. The network mainly supports domestic Chinese transactions. However, a large component of the potential success of CBDCs lies in their ability to ease cross-border transactions, and the majority of pilot tests conducted till now have been unable to overcome this predicament.

Additionally, China has not been able to attract the anticipated number of e-CNY users to Beijing. The widespread adoption of the e-CNY in the domestic market would be consistent with Beijing's push for "financial security" as this will further function as a catalyst for financial risk detection and mitigation. An added benefit of e-CNY or digital currencies is that they "inevitably result in much greater surveillance of financial transactions than the current system." (Greene, 2021) Providing the government with the ability to further exercise dominance and control over the process of monitoring financial flows would allow Beijing to put an end to enterprises that have a history of evading government demands, especially in terms of providing or manipulating financial information. This might allow China to boost its currency research and development efforts, as indicated in the Chinese Communist Party's fourteenth five-year plan.[8]

Another difficulty with which China is now dealing within the pilot testing is a high level of ambiguity about the institutions that will be participating in the present and future of e-CNY. As of now, only commercial banks harness the ability to assist in the purchase of e-CNY; therefore, endemic dominant non-banking sectors, such as the telecom sector, are currently struggling to be included in the CBDC initiation process. A conceivable sequence of events might involve certain commercial banks keeping e-CNY rather than merely issuing them. That is, they would serve as both “issuers and custodians”. According to Zhou Xiaochuan, the unbanked sector will be included in the bottom tier for the time being. However, this highlights possibly China's most pressing unanswered issue: How can these hundreds of institutions and other Chinese banks be included in the e-CNY network's lowest tier?[9]

Furthermore, China's tight zero covid policy narrows the spectrum of central bank digital currencies available to both rural and urban residents. The dynamic changes in China's covid cases, growing in both the rural and urban sectors, makes the implementation of e-CNY maximisation functions problematic. However, it is crucial to point out that the development

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[8] Greene, R. (2021b, July 1). *What Will Be the Impact of China’s State-Sponsored Digital Currency?* Carnegie Endowment for International Peace. Retrieved October 22, 2022, from https://carnegieendowment.org/2021/07/01/what-will-be-impact-of-china-s-state-sponsored-digital-currency-pub-84868

[9] Greene, R. (2021b, July 1). *What Will Be the Impact of China’s State-Sponsored Digital Currency?* Carnegie Endowment for International Peace. Retrieved October 22, 2022, from https://carnegieendowment.org/2021/07/01/what-will-be-impact-of-china-s-state-sponsored-digital-currency-pub-84868

of CBDCs is gaining momentum thanks to the creativeness of central banks. According to the IMF, around 100 countries are involved with CBDC in one way or another. For example, the "riksbank" of Sweden is working on developing a proof of concept that could have major technology implications. Furthermore, the sand dollar has been in circulation in the Bahamas for quite some time now.[10]

Conclusion

V. Corrective Measures

Finding a balance between stimulating innovation and maintaining stability and security for consumers and investors is essential when dealing with any innovative idea or concept, particularly when it has to do with something as intricate and unstable as the current banking system.

While CBDCs harbour the potential to become the foundation of an economy, if they aren't designed in a well-thought out, intricate manner, they could create a frenzy in the market, plummeting confidence in fiat currencies and thus potentially spiking interest rates, which can lead to an economic meltdown.

Perhaps the easiest and most simple manner in which this could be prevented is, of course, through moderation, analysing the importance of central banks as CBDCs revolve around them, and simply coming to the realization that there is no universal case of CBDCs. Depending on the situation and the need for their use, CBDCs can be established for a variety of goals. For example, CBDCs ease the process of physical banking. By removing the obstacle of geography, CBDCs make the transaction process simpler, achieving financial inclusion.

In other conditions, CBDCs can be utilised as a backup payment system in the event that a nation's payment systems collapse. The Eastern Caribbean Central Bank's decision to expand the CBDC pilot to regions affected by a volcano eruption last year serves as a strong illustration of this. Therefore, CBDCs may be more effective if central banks were to develop this technology around the challenges and needs pertinent to the relevant country[11]. This can be seen in the Beijing situation as well (stated above).

Additionally, central banks must be dedicated to minimizing the harm that the stimulus brought on by CBDCs could do to privacy and financial stability. China has taken excellent care of this. By setting limits on the quantity of CBDC holdings, China was able to stop abrupt outflows of bank deposits by setting limits on the quantity of CBDC holdings.

[10] *The Future of Money: Gearing up for Central Bank Digital Currency*. (2022, February 9). IMF. Retrieved October 22, 2022, from https://www.imf.org/en/News/Articles/2022/02/09/sp020922-the-future-of-money-gearing-up-for-central-bank-digital-currency

[11] *The Future of Money: Gearing up for Central Bank Digital Currency*. (2022, February 9). IMF. Retrieved October 22, 2022, from https://www.imf.org/en/News/Articles/2022/02/09/sp020922-the-future-of-money-gearing-up-for-central-bank-digital-currency

As a final step, and arguably the most critical to the success of CBDCs, institutions across the world need to ensure that the policy front of an innovation this large, matches the design front to an extent wherein trust is cultivated in support of the innovation. A CBDC cannot replace the underlying trust that has been developed over many years[12]. However, through the process of developing new legal frameworks, regulations, case laws, and structures, a large amount of trust will be built around CBDCs, and this will help build an economy anew.

Several sceptics may claim that the process of implementing CBDCs and "balancing" their design and legal framework is extremely doubtful and that they stifle the very thing they were intended to enable—financial inclusion, trust, security, and stability. However, if we looked at the financial system through an alternative lens, we would realize that the history of money is entering a new chapter.

Nations are currently attempting to strike a state of equilibrium between using traditional monetary structures and experimenting with new types of the same. This may not be the simplest task to complete, but if we supported and trusted the motivations driving the process, perhaps the final outcome would be better.

12 *The Future of Money: Gearing up for Central Bank Digital Currency*. (2022, February 9). IMF. Retrieved October 22, 2022, from https://www.imf.org/en/News/Articles/2022/02/09/sp020922-the-future-of-money-gearing-up-for-central-bank-digital-currency