

An Analysis and Evaluation of Central Bank Introducing Digital Currency

Yangneng Su

Master of Banking And Finance Monash University Melbourne, Clayton, 3168

Abstract: This report evaluates many aspects of the central bank's introduction of digital currency. It stated definition of digital currency and reasons for central bank to introduce in the first part. And then benefits and challenges have illustrated in the following pages to analyze digital currency. Furthermore, many charts and figures have added to fully applied the content well. Finally, conclusion can be obtained that it is a wise decision for central bank to introduce digital currency.

keywords: Central bank; Digital currency; Security

1. Introduction

1.1 Current issues

According to the Money drought happened in 2013, the bank's interbank interest rates soared to 30%, the bank and the bank won't lend money to each other, between bank liquidity suddenly nervous, in July 2013 money shortage has reached the peak, and then in 2014, the central bank has begun to start the research of digital currency, although the money shortage duration is very short, but also give the central bank to knock a wake-up call. At present, China is in the era of rapid economic development. In this era, payment methods are also constantly changing. Just like now, whether you eat, go shopping or take a taxi without cash, the need for cash throughout the system is decreasing. Also, the national Two Sessions in China has highlighted that digital currency might be an irreversible trend in the future, which should push central banks to introduce a digital currency soon. That definition could turn into time, as regulated companies in the banking industry start to think about creating their own corporate digital currencies. (Kraus, P., Giordano, Jaclyn, & Bonomo, Bob. 2017)

1.2 Definition of digital currency

Digital currency is currency, which is out of regulation. And it usually introduced and managed by developers and accepted and used by groups of specific virtual communities. It will be stored in a distributed database. Cryptocurrency bitcoin might be the most successful and widely used form of digital currency. In some cases, digital money can be used to purchase goods and services in, but sometimes it can only be used for specific purposes.

2. Main reasons of launching digital currency

2.1 Security and currency circulation easily

To begin with, the existing M0 (notes and coins) are easy to be forged anonymously and carry risks such as money laundering and terrorist financing. If DCEP (the same as CBDC--central bank digital currency) is used to replace notes and coins, which can largely decrease the cost of producing cash. Although the above risks still exist, the regulatory authorities can use big data for processing. Although DCEP trades are anonymous, there are still behavioral characteristics that can be used to target the individuals involved, making it less difficult to monitor than notes and coins. So, it is largely cut down the risk for currency circulation. Also, it can protect consumers' account efficiently.

Today, CBDC transactions based on the account is possible to convey with commercial banks, but the account may be stored in the central bank. The payer registers in an account at the central bank such as transferring funds to the recipient's account, also at the central bank, via a Web page or application on the handheld device. The central bank will ensure settlement by updating the main ledger, but only after confirming the payer has access to use the account, ample funds are available, and the account of the payee is authentic. Therefore, the exchange of information may be important. (Mancini Griffoli et al., 2018) Due to more and more frequently mobile payment, cash is being used much less often, and people are generally reluctant to carry cash whenever mobile payments are available.

2.2 Reshape the trade clearing and settlement system and promote the internationalization of RMB

According to the Bank for International Settlements' (BIS) November 2015 "Digital currencies" report, the asset was showed in a digital formal and have digital characteristic. Digital currencies that are distributed or automatically issued in their own units of value

will be considered virtual currencies. Before the launch of the RMB Cross-border Payment System (CIPS), the RMB cross-border clearing and settlement was highly rely on the SWIFT system and CHIPS of the US. However, it may face risks associated with the high dependence on SWIFT and CHIPS. This is neither in our national interest nor conducive to the stability of the global financial system. The establishment of new clearing and settlement networks has agreed by many countries by using the big data platform and block chain technology.

2.3 Financial inclusion

Central banks are like public utilities, which is different from commercial banks. Several central banks may print money and save billionaires every few years, but none of them make any money. As a result, central Banks generally have little reason to offer accounts directly to retail customers. Therefore, it is not for making money just introducing digital currency for customers to use fast and comprehensive payment system.

	Diminishing Cash Usage				
	Monopoly Distortions	Operational Risks	Cost Efficiency	Financial Inclusion	Other
Bahamas				X	Countering derisking
Canada	X				
China	X	X	X	X	
CBCS		X	X	X	
ECCB		X	X	X	
Ecuador			X		
Norway	X				
Senegal				X	
Sweden	X	X			
Tunisia				X	
Uruguay			X	X	

Monetary policy was not cited as a rationale by any of the central banks surveyed. It was not possible to ascertain the rationales, based on publicly available information, for Australia, Bahrain, Denmark, the European Union, Hong Kong SAR, India, Indonesia, Jamaica, South Korea, and Switzerland.

Sources: Central banks or various news sources (as indicated in italics) per hyperlinks in Table 1. Information has not been verified through official channels.

Note: CBCS = Central Bank of Curaçao and Sint Maarten; ECCB = Eastern Caribbean Central Bank.

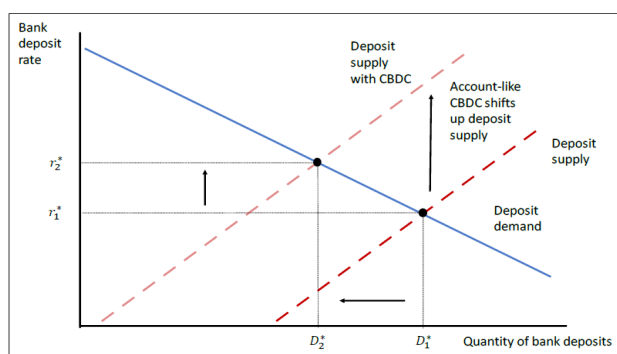
According to the Table 2, it concluded these and other objects of central bank. The main reason for advanced economies seems to be to curb the growth of private money (operational risks and monopoly distortions) and reduce costs of cash management. For example, Sweden points out that the risk of single-point payment will increase which is associated with decreasing cash. In emerging market economies, it seems that the main interest in CBDC (central bank digital currency) is contributing financial inclusion by approaching those people who do not have bank accounts. Only China cites monopoly distortions as a reason and still reduces the costs and risks associated with the distribution of physical cash. (Mancini Griffoli et al., 2018)

3. Benefits and challenges

3.1 Benefits

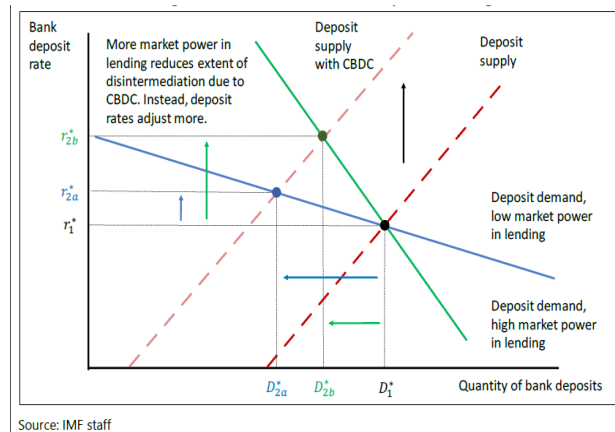
It is true that credit cards fees can be very high, especially when used internationally. People always trade from 2% to 5% or more. However, using central banks digital currency (CBDC) can lower transactions fees. It can reduce transaction costs for retail and institutional payments. It will promote customers to use digital currency more frequently. Also, it can improve access to Numbers payments from households without bank accounts. Payments clear almost instantly. (Mullan, P. 2014). Given that some consumers don't have bank accounts - a prerequisite you can use an existing digital payment tool, CBDC let them use these tools at minimum or zero cost. (Koumbarakis and Dobrauz-Saldapenna, 2019) CBDC is an innovative payment system, which is largely different from traditional payment. So, it will enhance competition in payment systems and require private actors to perform innovation; Meanwhile, it could lead to increased competition between banks in order to attract bank deposits which is likely to be transferred to the asset in central bank. (Koumbarakis and Dobrauz-Saldapenna, 2019) On the other hand, by using digital currency as a transaction tool, central can increase their trust in their consumers.

Figure3:



Source: IMF staff

Figure 4:



The introduction of CBDC moved deposits (Chiu et al., 2019) away from Banks, causing the deposit supply curve to move up (Figure 3). Through raising deposit rates will help banks to offset some of the impact on the deposit base (Figure 4). In addition, Banks transfer a portion of the increase in deposit rates to their lending rates. Despite developments in the Mozambican settlement system, such as its use with the advent of checks, credit cards, ATMs, and cash transfer services based on mobile, capital needs (with an average weighting of 59%) continues to dominate, rather than bank deposits (See Figure 5). (Nhapulo, G., & Nicolau, J. 2017). Therefore, transferring from cash to digital currency is a wise decision. When Banks have more market power in lending (reflected in the steepness of the deposit demand curve), they can use higher deposit rates to better insulate their profits. (Mancini Griffoli et al., 2018).

3.2 Challenges

Issuing CBDC will incur much construction cost, which is a large amount of money. Central Banks need to invest in new infrastructure to create, issue and safeguard a digital currency network. The cost of this installation is unknown and can be high. Under the law, the central bank may need to monitor the use and payment of its digital currency to prevent problems such as fraud. Because of the centralized design of traditional digital currencies, they are in theory easier to monitor, while cryptocurrencies may be harder to monitor because of the anonymity and dispersal of distributed ledgers. If there is no extra restrict regulation and encryption measures, it will have a side effect on customers losses. Therefore, only in restrict regulation can guarantee customers' currency security.

Another potential problem could be the influence of CBDC on the risk of bank runs. Digital cash and bank deposits could more approachable to alternatives than notes and deposits. As a result, bank customers are likely to transfer from deposits to central bank funds for smaller reasons than before. The higher risk of a bank run should be taken into account, for example, under bank liquidity rules: retail deposits will no longer be as reliable and stable as they usually are. In another way, it must be noted that modern deposit guarantee schemes have prevented bank runs effectively. (Grym, A., 2017).

4. Opinion and conclusion

4.1 Opinion

According to the above-mentioned situation, in my opinion, central bank should introduce digital currency. The benefits of digital currency outweigh its drawbacks. With the advanced technology, replacing cash with digital currency might be an irreversible trend in the future. It largely increases the speed of transaction and is convenient for customers not to carry too much cash every day, which has risk of being stolen. Therefore, with the digital currency introducing to the society, it also cut down the risk of being stolen the money. More and more customers use digital currency, which largely reduces transaction cost. It can contribute the global economy too. It is necessary for central bank to introduce digital currency.

4.2 Conclusion

The primary function of a central bank is to implement monetary and credit policies to promote sustainable economic growth and avoid serious inflation. Most central Banks do this by adjusting the legal reserves of the banking system, interest rates and the relative value of local currencies in foreign exchange markets. (Edirisuriya, P. 2014). Therefore, introducing digital currency might be a trend in the future for customers to use in daily life conveniently instead of using cash anymore. Although, it has both benefits and challenges, I believe it will have a grander prospect. Central banks could be act well and solve as much drawbacks of digital currency as possible and contribute CBDC more popular.

Reference

- [1] Chiu, J., Davoodalhosseini, S., Hua Jiang, J., & Zhu, Y. (2019). Central Bank Digital Currency and Banking. SSRN Electronic Journal. <https://doi.org/10.2139/ssrn.3331135>
- [2] Edirisuriya, P. (2014). International banking and finance.
- [3] Grym, A., Heikkinen, P., Kauko, K., & Takala, K. (2017). Central bank digital currency.