

THE PENNSYLVANIA STATE UNIVERSITY
SCHREYER HONORS COLLEGE

DEPARTMENT OF FINANCE

The Influence of Stablecoin and Its Development Trend: Take Libra as an Example

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SPRING 2021

A thesis
submitted in partial fulfillment
of the requirements
for a baccalaureate degrees
in Finance and Economics
with honors in Finance

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ABSTRACT

In recent years, the digital currency market has developed rapidly. Objectively, relatively stable trading media and storage methods are needed. Such a need promotes the emergence of fiat-collateralized (centralized), crypto-collateralized (decentralized) and non-collateralized (algorithmic) stablecoin to achieve relatively stable currency prices. Stablecoins are the product of the development of the blockchain to a certain extent. This article introduces the characteristics of stablecoins and reviews the production conditions of stablecoins as well as the performance requirements of stablecoins in the commercial market.

This research takes the digital currency Libra as an example, discusses the characteristics and design concepts of stablecoins, and looks forward to the application of stablecoins in the world market. Moreover, it also analyzes the classification, influence and development trend of stablecoins. I propose that digital currency with legal and official backing is the most suitable stablecoin for China.

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ACKNOWLEDGEMENTS

I would like to thank my thesis advisor Dr. Jingzhi Huang, whose rigorous and meticulous style has always been an example for me in my work and study. He gives me endless inspiration through his instructive thinking.

I would also like to thank my honor advisor Dr. Brian Davis for his help and guidance. Without his help and teaching, it is almost impossible for me to finish this thesis.

In particular, I would like to thank my girlfriend who always encourages me and stands by me in my last year of college. She gives me strength when I feel like giving up and the power to overcome all the challenges and continue to study.

Chapter 1

Introduction

In the blockchain world, the prices of any cryptocurrencies are rather volatile, even mainstream cryptos like Bitcoin or Ethereum (ETH). It is common to see over 30% fluctuation in less than 24 hours. For example, Bitcoin dropped 37.5% on March 12th, 2020, shown in the graph below. The instability hampers the real-world adoption of those applications built on the blockchain, and institutional investors would rather put big funds into stable, ready-to-invest blockchain ecosystems. The demand for steady cryptos gave birth to stable coins. Stable coins are also cryptocurrencies. They often link up with other stable assets(Moin et al. 2019).

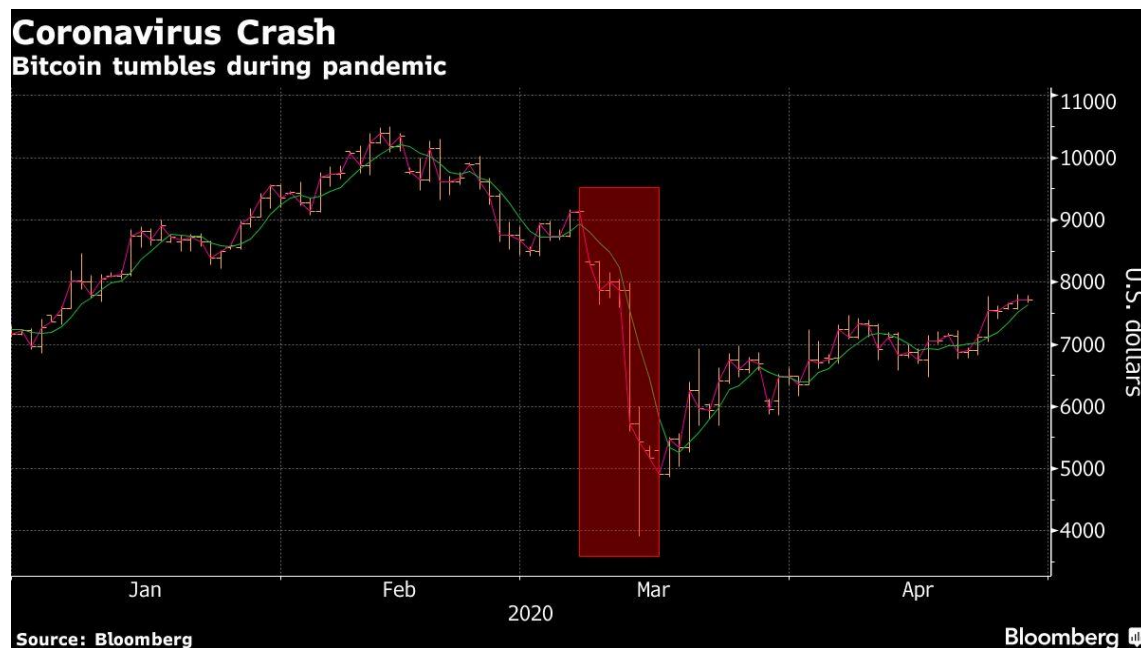


Figure 1: Bitcoin's 'Most Volatile Day' Prompts Exchanges to Make Changes

Source: Kharif 2020

In recent years, with the rapid development of the digital currency, people need trading mediums and storage means with a relatively stable price, so as to promote the emergence of Fiat-collateralized (Centralized), Crypto-collateralized (Decentralized), Non-collateralized (Algorithmic) stablecoin which realize the digital currency with a relatively stable price (Moin et al. 2019). My proposal will analyze the classification, influence and development trend of the stablecoin, and propose that the legal digital currency is the most suitable stablecoin for China.

According to Wang and Li's article published by China Finance, they affirmed the value of stablecoin, Stable coin takes advantage of blockchain technology to the best of its ability, tries not to challenge legal currency, basically bypasses commercial banks, and realizes basic cross-border payment in the global implementation which is not limited by space-time (Wang & Li 2018).

Chapter 2

Characteristics of Stablecoin

Stablecoin has always existed as an auxiliary means of storing value for legal currency. Some countries prohibit the exchange of cryptocurrency and legal currency, so people who want to use cryptocurrency urgently need a new digital currency to act as a bridge to connect ordinary digital currency and legal currency. According to its original definition, this new digital currency should be able to resist market fluctuations and act as an intermediary for the exchange of digital currency and legal currency. There are basically three types of stablecoins on the market, which are collateral, algorithm, and combination.

Collateral stablecoins have several forms of collateral. The first category is the legal currency of various countries. Many digital currencies belong to this type, shown in Table 1, such as Tether (USDT), TrueUSD (TUSD), Paxos Standard (PAX), USD Coin (USDC), Gemini dollar (GUSD), and so on. The second category is certain digital currencies, such as DAI, bitCNY, etc. The third category is traditional futures assets such as gold or oil, such as Digix Gold Token (DGX).

	Standard	Total Supply	Website	Average Total Volume(24h)
USDT	ERC20	4,207,771,504 USDT	https://tether.to/	~\$18 Billion
TUSD	ERC20	160,554,301 TUSD	https://www.trusttoken.com/	~\$150 Million
PAX	ERC20	237,822,906 PAX	https://paxos.com/standard	~\$200 Million
USDC	ERC20	461,632,527 USDC	https://www.centre.io/usdc	~\$300 Million

GUSD	ERC20	4,120,149 GUSD	https://gemini.com/dollar/	~\$3 Million
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Table 1: Tether (USDT), TrueUSD (TUSD), Paxos Standard (PAX), USD Coin (USDC), Gemini dollar (GUSD)

Source: Sam 2020

Stable coins can be divided into two categories according to the type of the mortgaged object. One is the stable coin that only mortgages one asset, such as USDT and DAI 1.0; the other is the digital currency issued by mortgage a series of assets, such as Reserve and DAI 2.0, an upgraded version of DAI 1.0 (Wang and Li 2018)

The stablecoins classified according to the algorithm are based on a certain theory. Some stablecoins are based on the seigniorage theory, such as Celo, Basis and Terra, etc.; while others are designed according to the simple supply regulation, such as Ampleforth. There are also stablecoins based on both the seigniorage theory and the mortgage subject matter in the market, such as Reserve. Celo announced that it is a fast, safe and stable digital payment platform that can be paid to any mobile phone number at a cost much lower than the current level. The mobile phone number is like one's bank account. Celo users can earn cryptocurrency on their smartphone and send payments to anyone anywhere (Celo 2021). The Terracoin Foundation was established to provide Terracoin with stable development, improved security and better community participation. The long-term goal of the TRC Foundation is to make Terracoin a flexible, safe and easy-to-use alternative to Bitcoin and fiat currencies (Terra 2021).

For combined stablecoins, it can be understood as combining a series of stablecoins in proportion to form a new stablecoin, which is equivalent to an index product of stablecoins, such as HUSD and NUSD. The most frequently used by current users should be the stable currency USDT in the Tether project. USDT is secured by the U.S. dollar, and the ratio is 1:1. Users can first purchase USDT with digital currency and then exchange it into U.S. dollars.

This project integrates many platforms, and users can freely buy and sell USDT on many exchanges. The biggest problem with the project is credit, and its financial status lacks transparency. The company's terms of service cannot guarantee that users can exchange USDT for U.S. dollars, and its relationship with U.S. dollars is weak.

There is also a project called Ampleforth. Its theoretical basis is the theory of supply regulation. The actual price of each Ample is anchored to the US dollar. The number of Amples will be adjusted in real time with the fluctuation of the US dollar price, which can maintain the number of dollars supported by the currency remains unchanged. This setting is too idealistic, only considering the arbitrage behavior in the currency market, failing to consider the actual monetary policy changes. In the end, like USDT, it did not solve the credit problem as well, so it is difficult to get the official recognition and support by governments (Qian and Hao 2018).

Chapter 3

Classification of Stablecoin

1. Fiat-collateralized (Centralized): The existing stable coins are mainly secured by fiat money with a 1:1 ratio fixed. The central organization will mortgage the assets that they hold such as US dollars and gold, and issue stable currency that can redeem relevant assets at a fixed rate, representatives are USDT, TUSD, GUSD and PAX. As for investors, for example, if you have one dollar pegged stable coin in your wallets, such as USDT or gemini dollar, you can convert it into 1 USD at any time in the exchange and transfer it into your bank account (Moin et al. 2019).
2. Crypto-collateralized (Decentralized): It is similar to the aforesaid one, but it needs over-collateralization to resist the fluctuation of crypto-asset. The blockchain users will mortgage the digital asset packages they hold on the blockchain. After the blockchain system "locks" the mortgaged assets, it will issue a certain amount of stable currency according to the value of the mortgaged assets. When the value of the mortgaged assets drops, it is necessary to supplement the mortgaged assets in time to ensure the stability of the stable currency price. The representative ones are DAI and bitUSD (Moin et al. 2019).
3. Non-collateralized (Algorithmic): It is based on smart contracts. The stability is guaranteed by the algorithm and the issue relies on the trust mechanism. The smart contract simulates the central bank to increase or tighten the money supply to maintain the relative stability of the price. The representative ones are Basis and Carbon (Moin et al. 2019).

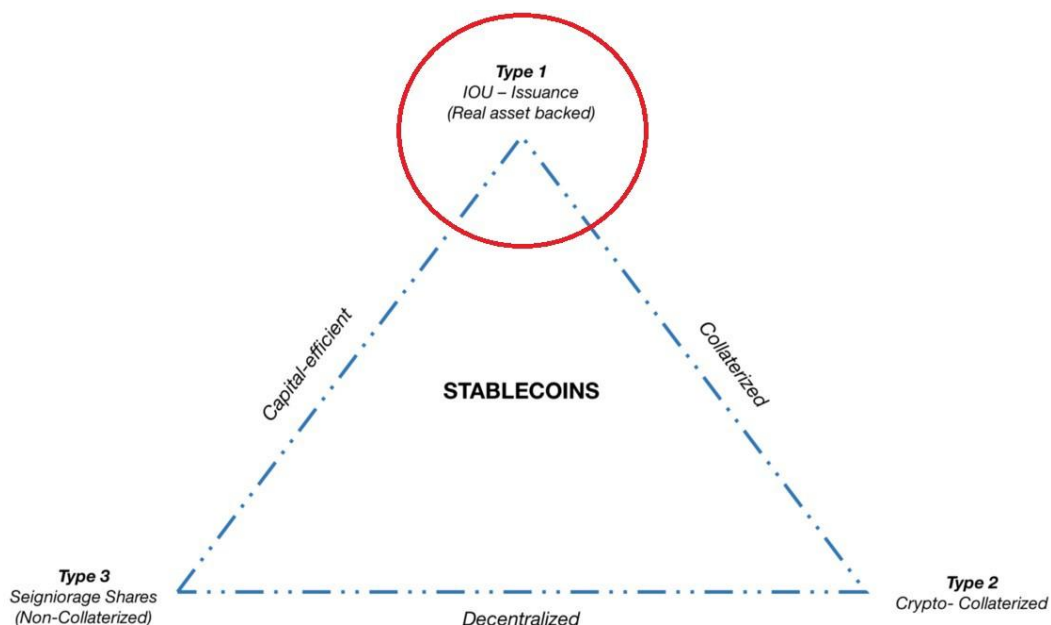


Figure 2: Model adopted and modified from MetaStable Cap

Source: Tan 2018

Among the three types of stablecoins, the idea of algorithmic stablecoin is pretty ideal, but the money supply rules need to have enough foresight and flexibility. It is very difficult to simulate the central bank to create a set of algorithms to increase or tighten the money supply rules. Moreover, it needs a digital asset ecosystem of sufficient scale. Therefore, algorithmic stablecoin is difficult to stand the practice inspection. The stability of crypto-collateralized stablecoin depends on the stability of the value of the mortgaged digital asset. However, at present, the value of digital assets (mainly digital currency) has a high degree of volatility, and what can be mortgaged is only limited to the digital assets on the same blockchain. Hence, the risk is difficult to diversify and offset, and this type of stablecoin is still difficult to maintain sufficient stability at present. From the perspective of demand, the demand for stablecoins mainly starts after the governments of various countries restrict or prohibit the transaction between digital currency and fiat money. Therefore, the most direct and effective way to re-establish the value scale in the field of digital currency is to find a value benchmark from the

existing economic system, that is, to issue stablecoins anchored by fiat money such as the US dollar. In all, stability is not absolute but relative. The stability of money value is always high on the agenda of all countries' central banks (Moin et al. 2019).

Chapter 4

Other kinds of Stable Coin

1. USDT: The Tycoon of the Stable Coin

There are many kinds of stablecoins on the market and they are still increasing, but USDT has a relative monopoly position in the market. USDT is a 1:1 token exchanged with the U.S. dollar launched by Tether, a company registered in the Isle of Man and Hong Kong. Tether claims that users can transfer US dollars via SWIFT to a bank account provided by Tether or exchange for USDT via the Bitfinex exchange. When redeeming USD, the reverse operation is sufficient. Tether will strictly abide by the 1:1 reserve guarantee and will have regular audits. From the perspective of type, USDT is a fiat-collateralized stablecoin.

Since its launch at the end of 2014, USDT's circulation has grown slowly. As of the end of October 2017, the total circulation was less than \$500 million. However, as China banned domestic digital currency transactions from September to October 2017, the trading channels between digital currency and RMB were restricted. In response to the risk of a systematic decline in digital currency prices, the digital currency market's demand for stablecoins has exploded, and the issuance of USDT has accelerated. In February 2018, the circulation had rapidly increased to 2.4 billion U.S. dollars. According to Coinmarketcap statistics, the market value of USDT in 2018 was 2.81 billion U.S. dollars, ranking eighth among all digital currencies, with an average daily turnover of approximately 3.47 billion U.S. dollars, ranking second, second only to Bitcoin (Tether 2020).

2. GUSD and PAX: the first regulated stablecoins

On September 10, 2018, the New York Department of Financial Services (NYDFS) simultaneously approved two stablecoins based on Ethereum, namely Gemini Dollar (GUSD)

issued by Gemini Trust Company, and Paxos Standard (PAX) issued by Paxos Trust Company.

GUSD and PAX are the first regulated stablecoins, which are 1:1 pegged to the US dollar.

GUSD and PAX have many similarities with USDT: they are issued by private companies, based on the public chain, and secured by the US dollar reserves in the company's bank account, and the goal is to anchor the US dollar 1:1; but they also have significant differences: GUSD and PAX are the first stablecoins to be regulated by relevant government regulatory agencies, while USDT lacks transparency and insufficient audit procedures, and doubts about the adequacy of USDT USD reserves have been endless, and some scholars even conducted rigorous academic studies on the issue of whether USDT is over-issued.

GUSD and PAX focus on solving the trust problems encountered by USDT.

Taking GUSD as an example, the issuer Gemini Trust Company is a licensed financial institution (with Charter license, it can engage in other banking services besides deposits and loans). The U.S. dollar corresponding to GUSD is supported by State Street Bank, and a certain amount of insurance is provided through the FDIC deposit insurance plan. BPM, a large audit consulting company ranked among the top 50 in the United States every month, will audit USD deposit accounts and announce the audit results. In addition, the company will implement KYC and anti-money laundering related regulations. If the law enforcement agency finds that there is a problem with the relevant transaction account, it can perform operations such as freezing through law enforcement means. Therefore, the regulated stablecoins GUSD and PAX have greater advantages in transparency and risk control than previous stablecoins. Of course, the price is the loss of anonymity, which is unwilling to the gray economy related entities (Griffin 2019).

3. WIT: China's first "Compliant Stablecoin"

WIT is a stable currency issued based on Ethereum that is anchored 1:1 with offshore Renminbi (RMB), which is the fiat money in China. It claims to have reorganized with a Hong Kong licensed financial institution, but did not disclose the name of the financial institution; claims that an audit institution is responsible for auditing WIT's corresponding offshore RMB reserves, but it is not clear which audit agency; claims to have logged into multiple trading platforms, but the top 100 exchanges and wallets supporting Ethereum tokens have not been listed on the currency after inquiries; claims to be connected with many RMB settlement platforms under the "The Silk Road Economic Belt and the 21st-century Maritime Silk Road." From a technical point of view, the authority of the Owner and CEO set in the WIT smart contract is highly centralized, and the total amount of tokens, account balance, and transfer can be arbitrarily modified, and there is no protection of multiple signatures and offline private keys, which is very weak in aspects of safe and transparent. In summary, WIT can at best be regarded as a stable currency that attempts to anchor the offshore RMB, but it is hard to say that it is "compliant" or "regulated" (China Finance 2019).

Chapter 5

The application value and limitations of stablecoins

The underlying technology of stablecoins is cryptography and blockchain, which have the advantages of both cryptocurrency and fiat money, and have multiple dimensions of application value. However, stablecoins are far from perfect and face structural and security challenges, as well as regulatory challenges.

1. The application value of stablecoins

Compared with other types of cryptocurrencies, the main advantage of stable currency is that the price fluctuation range is smaller, and it is more suitable for cross-border transfers. In countries with hyperinflation and currency instability, it has special value as an alternative to currency and cash. Investors can also use stable coin investments to maintain value and avoid market fluctuations.

a. Cross-border transfer payment.

The emergence of stablecoin such as Libra broke the tradition that cross-border transfers must be handled through layers of banking institutions, which is a time-consuming, labor-intensive and high-cost transfer mechanism. Using stable currency to transfer, the entire process can be completed with just a few clicks of the mouse or a few touches on the mobile phone, which is very convenient and fast. Users can transfer and remit money anytime, anywhere without any other procedures or supporting documents wherever there is a network. They do not need to pay (such as the current Bitcoin network does not charge transfer fees) or only pay a very low fee (such as the current BitCNY network only charges 0.0001 yuan), and does not increase with the transfer

amount. Tens of millions of users save more money transfer and remittance costs, and also save the time to go to bank branches or remittance outlets, and wait in line for remittance (ConsenSys 2019).

b. Deal with hyperinflation.

Take Venezuela as an example. In 2018, the country's inflation rate was as high as 80,000%. In order to deal with currency depreciation caused by hyperinflation, people use cryptocurrency DASH for commodity transactions. Although DASH is also unstable, it is still stable relative to high inflation. Indeed, if stablecoins are used, the public will benefit more. More generally, for countries with weak currencies, consumers can choose stable coins to protect their purchasing power, and companies can also use them to hedge against the risk of rapid depreciation of their currencies (Taylor 2019).

c. Investment preservation.

Investors can use stablecoins to avoid the risk of holding weak currencies, and use stablecoins for risk management (hedging) as a safe haven when cryptocurrencies fluctuate sharply. For investors, stablecoins are more cost-effective, procedures are simpler, and there are many exchanges supported, which is very convenient. There is no need to involve banks or other intermediaries.

2.Limitation of Stablecoin

a. Structure and safety issues

The possibility of inflation in the commodity mortgage model is much lower than that of stablecoin backed by fiat currencies. Because mining gold or silver is much more difficult than “electronic money printing,” and the amount of supply is limited by the amount of commodity reserves. However, because the prices of commodities such as

gold and real estate are also affected by political and economic factors, there is a problem of price instability. In theory, an unstable underlying asset is difficult to serve as a value stability anchor. This means that commodity-collateralized stablecoins may eventually become speculative tokens for assets such as gold, making it difficult to realize the original intention of stablecoins.

The advantage of the fiat-collateralized stablecoin is that it is simple and easy to implement, which is conducive to the stability of the price of cryptocurrency. However, because legal currency is not an asset on the blockchain, the storage and supervision of mortgage assets need to introduce a third-party institution to ensure transparency, but the trust need to be built on the basis of centralized institutions, and will increase additional auditing, supervision and other costs, which does not conform to the concept of blockchain decentralization. For example, although USDT solves the problem of floating risk well, it has problems such as centralized control. USDT's issuance, acceptance, and regulatory operations are completely in the hands of the company. In addition to the undisclosed audit and opaque bank fund custody accounts, it has been questioned for regulatory violations, and there are problems with over-issuance of tokens and misappropriation of customer funds (ConsenSys 2019).

The crypto-collateralized stablecoin ensures transparency. The digital asset itself runs on the public blockchain, and users can see the changes in the value of mortgage assets at any time, avoiding centralized credit problems. However, the potential problems of this type of stable currency are changes in the value of mortgage assets and reliance on supplementary tools. One is that when the mortgage asset itself is a cryptocurrency such as Bitcoin, it is still highly unstable. Although it is possible to absorb price fluctuations

through over-collateralization, there is always a chance of a black swan event, and once it occurs, it will have a major impact on the potential value of the stablecoin. Second, the technical implementation of this model is also more complex and diverse than the fiat-collateralized stablecoin. Due to the code loopholes in the smart contract, it will bring greater exposure risks. The complexity of this type of problem may prevent its promotion and use, because ordinary users have difficulty understanding how the price is truly guaranteed.

Although the non-collateralized (algorithmic) stablecoin represented by Basis is based on the original purpose of Bitcoin and creates a stable coin without any financial asset collateral, this model completely depends on the trust in the algorithm. If there is a sudden confidence shake, the demand for this kind of algorithmic stablecoin will suddenly drop. Because there is no actual asset mortgage or financial institution credit guarantee, it is easy to cause a run to zero, triggering systemic risks. Moreover, the algorithmic stablecoin is completely separated from the central bank-led legal currency system, and it is difficult to obtain the approval of the regulatory authorities, and may encounter the risk of regulatory rejection (Nader et al. 2018).

b. Regulatory issues

On the one hand, the underlying technology of the stablecoin blockchain has not been tested on a large scale, and it is difficult to determine how robust it is; on the other hand, the existing regulatory laws and regulations in various countries are still largely blank. Not only is there a lack of strict and systematic legal definition of related concepts, but also it is difficult to be directly compatible and match in terms of regulatory principles and regulatory structures. Especially under the conditions of accelerated

advancement of cryptocurrency and rapid changes in the regulatory environment, how can government regulatory agencies correctly balance the prudent supervision and protection of innovation while improving the scientific, pertinent and flexible regulatory methods is undoubtedly a challenging task.

Although the anonymity of cryptocurrency is conducive to protecting personal privacy, it also brings challenges to anti-money laundering and combating terrorist financing (AML/CTF) . Due to the inability of outsiders to identify user identity information during the entire transaction process of cryptocurrency, and the drive of competition to the bottom of supervision, it is difficult for regulators and central banks to know the extent to which they are used for illegal transactions such as money laundering or tax evasion. Departments can trace through blockchain records, but this will increase the difficulty of supervision, delay regulatory response and increase supervision costs (McCormack 2019).

Stablecoins are borderless and can be used globally. Therefore, international regulatory coordination is very important. However, due to the significant differences in the level of economic development and financial system maturity of various countries, the regulatory stance and specific regulatory policy considerations are often inconsistent. This also brings problems about the establishment of a global sound and efficient governance framework for stablecoins and the coordination and unification of national supervision.

Chapter 6

Development prospects of Stablecoins through Libra

The introduction of Libra can be traced back to June 2019. Libra originally represented a synthetic currency, a combination of several legal currencies, including the US dollar, the euro, the Japanese yen, the British pound, and the Singapore dollar. According to Libra's definition of itself, this currency should be a stable currency that transcends the sovereignty of countries (Facebook 2020). In April 2020, the second edition of Libra's white paper was released, which made major adjustments to previous policies. In addition to retaining the original international currency portfolio, a series of single currency stablecoins were added. In order to comply with national currency management standards, Libra has improved the payment system to support international anti-money laundering and anti-terrorism requirements. Although it has been improved, its basic goals have not changed. The blockchain is still at the core of the payment system. This is mainly designed for the convenience of cross-border payments and for customer inquiries and traceability (Facebook 2020).

The key to this change is to take a step back from the super-sovereign currency setting. The improved Libra version covers the old version of Libra, but the importance of the old version of Libra has declined. It no longer serves as the main function and is only a supplement to a single stable currency. The Libra Alliance plans to promote the newly launched single stablecoin for use by local residents and commercial organizations. At the same time, it is necessary to further strengthen cooperation with central banks around the world to issue more types of single currency stable coin. The asset support behind this stable currency will be very sufficient. Its basic composition is cash and its equivalent, as well as short-term national debt. More than 80% of the reserve assets used to support the value of the currency are government

bonds with a remaining maturity of less than three months. The remaining nearly 20% of reserve assets are cash and its equivalents (Facebook 2020).

The market value of reserve assets is equal to or higher than the price of a single stable coin, which can effectively prevent possible malicious runs and stabilize the payment system. Reserve assets are also subject to public supervision. Reserve assets are under the custody of online banks and cannot be misappropriated or pledged. Although the quality of reserve assets is high, there is still a risk of loss. For example, in the case of large economic fluctuations, bonds may depreciate severely, which will affect the value of stablecoins. In order to avoid this situation, Libra has set up a capital buffer mechanism to absorb the losses caused by price fluctuations. Libra adopts the strategy of extending the time to redeem, and also charges fees for transactions that require immediate redemption.

The reserve asset is a stable coin with a single currency. Because it is tied to the legal currency in a one-to-one ratio, as long as the legal currency develops into a digital currency, it can be integrated with Libra logically. Therefore, Libra is exempt from the burden of managing reserve assets, and reducing the custody risk.

Combined stablecoins include a variety of single stablecoins, and various single stablecoins are combined according to smart contracts. The Libra Alliance is currently under the supervision of the financial market supervisory authority located in Switzerland, as well as the supervision and management of the central banks of various countries and related international organizations.

One of Libra's vision is to develop into a digital currency that can be settled across borders, which will affect the currency sovereignty of countries. According to the research report of the Group of Seven (G7, including Canada, France, Germany, Italy, Japan, the United

Kingdom and the United States), if the combined stable coin is circulated on a large scale and applied to a country's commercial system, it may affect the country's monetary policy to a large extent and interfere with the country's monetary sovereignty. For this statement, Libra believes that the problem is not big. For countries that already have a single stable currency, these two types of digital currencies can be used together and are subject to the country's foreign exchange control. For those countries that do not have a single stable currency, there are indeed concerns about the substitution of fiat currencies. The Libra Alliance's response strategy is to cooperate with the country's central bank to launch the country's single stable currency, thereby eliminating doubts about monetary sovereignty (Lopp 2019).

Libra changed its original intention to reduce the design proportion of the super-sovereign part of the digital currency. The main reason was that governments were worried about the infringement of monetary sovereignty and the impact of monetary policy.

There are more important reasons-- super-sovereign currencies make supervision more difficult.

In principle, stable coin and legal currency can be freely exchanged. Stablecoins must be audited regularly to ensure that under the supervision of the public, the reserves of legal tender are higher than the issuance of digital currencies.

If the reserve assets of stablecoins are entirely legal tender, things may be better controlled. In practice, part of the reserve assets exists in the form of securities. Although these securities are low-risk securities such as short-term government bonds, the price of securities will always fluctuate. In addition, the market liquidity of securities is much lower than that of cash, and any delay in securities trading may lead to loss of value. Therefore, it can be said that there is a contradiction between the value reserve assets of stablecoins including securities and the original intention of the primary design and definition. The emergence of stable coin is mainly to

avoid the price fluctuation of general digital currency relative to legal currency. How to solve this contradiction will reflect the core value of stable currency which is different from general digital currency.

In fact, Libra's super-sovereignty design has been under great compliance pressure from the very beginning, because while satisfying the currency supervision of various countries, it must also accept the supervision of relevant institutions for cross-border capital flows. Moreover, in order to use Libra, it is necessary to establish a commercial system that is willing to use stablecoins, and at the same time have to wait for the majority of the public to gradually become familiar with this set of transactions. It is quite difficult to achieve, especially in the short term.

Therefore, the launch of Libra's single stablecoin makes an improvement on that. The difficulty of single stable currency supervision based on international currencies such as the US dollar, British pound, and Japanese yen is greatly reduced, and a reasonable supervision mechanism should be established soon. For national governments that use a single stable coin, the use scenario of stable coin will be fixed in the field of payment, will not over-issue new currencies, will not harm monetary sovereignty, and the risk will be within a controllable range. The most important thing is that stablecoins are based on the blockchain and can be queried and traced at any time, which is more conducive to the expansion of the international use of legal currencies (Lopp 2019).

Chapter 7

Existing problem of Stable coin

The use of a single stable currency will significantly strengthen the status of the US dollar, further crowding out the legal currencies of economically disadvantaged countries, and intensifying the dollarization trend of these countries. Stablecoins are only a form. The real participation in the financial game is behind each sovereign country and its controlled currencies. Therefore, no matter how it is designed, stablecoins cannot bypass this basic fact (China Finance 2019).

If users want to own the synthetic stable coin Libra, it can be achieved through smart contracts. Users first need to purchase a variety of single stablecoins with legal currency, and then input these digital currencies into the smart contract proportionally. The smart contract will automatically generate a certain number of synthetic stablecoins, and vice versa.

These operations are all performed on the blockchain, and users can query at any time.

From the above analysis, it can be concluded that the stability of stablecoins depends on the properties of anchored reserve assets. Traditional reserve assets are securities and legal currencies, because the total amount of these two assets is huge and liquidity is guaranteed. But in recent years, global digital assets have also developed a lot, although the volatility is huge. From a long-term perspective, with the development of blockchain technology, more and more real assets such as real estate and precious metals will be transformed into assets on the chain, and the volume of digital assets will rise on a large scale, so as to prepare for the conversion of digital assets into reserve assets (China Finance 2019).

As far as the current situation is concerned, any digital asset as a reserve asset has problems and must rely on frequent trading operations to maintain price stability. It is only effective when the time span is short and there are fewer stablecoins put into the market. However, as the scale of stablecoins increases, the possibility of market manipulation becomes smaller, and the stability of reserve asset prices may be destroyed.

Chapter 8

Development Trend of Stablecoin

As a product of the combination of cryptocurrency and fiat money, stable coin represents the development trend of digital currency. Because stablecoins can not only smooth the price fluctuations of digital assets and make them transition to stable assets, but also play a greater role in increasing the connection between traditional financial markets and new digital financial instruments (Partz 2019). In particular, the announcement of the Libra project has enabled stablecoins to enter the global public and policy horizons, which is conducive to enhancing the knowledge and understanding of stablecoins from all walks of life. At the same time, under the promotion of asset digitization, the confirmation, registration and trading of digital assets also require stablecoins to undertake the functions of valuation, trading and storage of assets on the chain. These factors are conducive to the further development of stablecoins.

The legal digital currency issued by the central bank, which is the digital form of the fiat money, has the most stable value and the most reliable security, but so far it has rarely been issued. Except for the legal digital currency of the central bank, the current stable coin has not solved some key problems of the digital currency. One is effective supervision, including how to supervise a series of illegal criminal activities, such as illegal operation of the exchange, get away with the stolen money, money laundering risk and so on. The second is the risk of technical weakness, such as hacker attacks to steal digital currency assets, customer information disclosure, and transaction failure. Third, the key financial infrastructure is highly centralized. If a kind of stable coin is finally accepted by the market, most financial transactions will be completely dependent on the operation system of the stable coin, resulting in a high concentration of key financial infrastructure. Once the risk occurs, it is easy to cause social

chaos (Mita et al. 2019). Fourth, the stability of the operating system is poor. At present, digital currencies are highly dependent on computers, mobile phones and other intelligent application devices. In the face of force majeure, the system is extremely fragile, resulting in social instability

In April 2018, Sweden is expected to become the first cashless society in the world. Its central bank said in a report that a completely cashless society is vulnerable to hackers, wars and natural disasters. The Swedish central bank also called on the legislature to pass laws requiring banks to provide basic account services, including cash services, because not everyone has bank accounts, bank cards, smartphones and other electronic devices. They cannot force the public to use these tools (China Finance 2019).

China is accelerating the research of digital currency in order to use new technology to digitize paper currency and make the transaction more transparent and efficient. According to Yao Qian, who chairs the digital currency Research Center at the people's Bank of China, since China proposed the legal digital currency plan in 2014, the original plan has undergone two rounds of review and revision, and further research work is in progress. China will first introduce digital currency in some money markets, and then gradually and cautiously promote it, but she did not disclose the specific timing. Compared with traditional paper money, digital money uses sophisticated cryptographic techniques, which reduces costs, improves transaction efficiency and boosts transparency. At present, the most popular digital currency is bitcoin, which does not rely on a bank or government and allows users to spend money anonymously. The stablecoin that will be issued in China will not be like bitcoin, China's digital currency will be a legal currency supported by the government and issued by the central bank, which will be used as an alternative to paper money (China Finance 2018).

In the era of the digital economy, the transaction and circulation of digital assets have an objective demand for stablecoin. It can be predicted that with the development of digital economy, types of digital assets will continue to increase, the scale will continue to grow, and the personal property right attribute of digital assets will be strengthened, so the transaction and circulation demand of digital assets will constantly appear. When a large number of digital assets are registered and traded based on the blockchain, it is inevitable that the stable currency based on the blockchain should undertake the functions of value scale, circulation means and storage means.

China is one of the countries to carry out research on legal digital currency, and has made fruitful achievements in blockchain and legal digital currency research. Although China has done a lot of research on the technology, scale and specific ecology of issuing legal digital currency, it is very cautious in the development and promotion of legal digital currency due to the complexity of Chinese social and economic structure.

The rapid development of the digital economy and the absence of legal digital currency will produce conflicts to some extent, and give birth to various kinds of unofficial stable currencies. In the absence of supervision, the phenomenon of excessive issuance and misappropriation of reserves is inevitable, which is likely to cause a new round of chaos in the field of digital currency, and relevant regulatory departments need to pay close attention to it. In addition, after the launch of regulated US dollar stable coins such as GUSD and Pax, there might be more regulated US dollar stable currencies and regulated stable coins secured by other fiat money. Although the impact of regulated stable currency is not clear, it is likely to have a negative impact on China's foreign exchange management, and it will also erode the pricing right of RMB in China's digital economy, especially in the field of digital asset trading. Therefore, it is

necessary for the relevant regulatory authorities to strengthen the follow-up research on the development trend and impact of various regulated stable currencies and take effective measures in a timely manner (China Finance 2019).

Chapter 9

Conclusion

There are many kinds of stablecoins that have been issued and will be issued on the market. Under careful study and research, I find that they all have obvious flaws. Since stablecoins are maintained by smart contracts, this leads to a question, how can the off-chain price be written on the chain without distortion, and only in this way can the smart contract adjustment trigger the correct mechanism to automatically adjust the money supply. In addition, the real-time quotations of different exchanges will be different, and how to summarize and take measures is also a problem. Based on various aspects of information, it can be concluded that digital currencies with legal and official backing are the most suitable stable coin for China.

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HONORS & AWARDS

- Dean's List (all semesters)
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- EPIC Academic Achievement Gold Star Award (03/2019)
- The Honor Program Recognized--First Year Student (08/2017- 05/2018)
- The Honor Program Recognized--Second Year Student (08/2018- 05/2019)
- Audience Appreciation Award in Honors and Teaching International Program--1st Place (04/2017 & 12/2018)
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WORK EXPERIENCE

Citibank (Shanghai West Nanjing Road Branch)- Shanghai, China *06/2019 - 08/2019*
Intern - Citigold Client Relationship Manager Assistant

- Responded to customer inquiries, providing information on bank accounts, policies, products, and services
- Interviewed prospective clients over the phone to learn about their financial needs and to introduce our new financial products (including mutual fund, stocks, and bonds)
- Gathered quantitative and qualitative data for the purpose of financial products market for Citigold clients
- Partners with all aspects of the bank to gain financial knowledge including commercial banking, lending and complex investment solutions

Agricultural Bank of China - Yinchuan, China *07/2018 - 08/2018*
Intern - Assistant Lobby Manager

- Maintained the lobby instruction in the proper order, and greeted and welcomed daily clients and ensured exceptional levels of customer service were met and maintained
- Introduced bank's new promotions and financial products to prospective customers, resulted in increased awareness.
- Managed check cashing savings deposits and withdrawals and a variety of other customer transactions as required.
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Academic Learning Assistant for course *Econ 302: Intermediate Microeconomics* at PSU for two semesters
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Joined social practice program at Community Service Department in Library of Ningxia, had a rudimentary grasp of Chinese Library Classification
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