

DIGITAL ASSETS MAY SHIFT GLOBAL TRADE CURRENCY

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EXECUTIVE SUMMARY

The race to develop and adopt global stablecoins (GSC)/central bank digital currencies (CBDC) has the potential to put the stewardship of the global financial system up for grabs.

Greater than 80%¹ of global trade and 61% of the World Reserves² are denominated in US dollars (USD), while 2% of World Reserves are denominated in renminbi (RMB). China has made agreements with Australia, Japan, Thailand, Russia, and Vietnam to allow for direct currency trade, instead of converting to the US Dollar. China is perceived to be in the lead in piloting their CBDC. The ease of exchange that is facilitated by CBDC and GSC could influence the future form and currency of existing trade. The speed of adoption of digital money in all forms is accelerating at warp speed (see Figure 1 for an illustration of the actual and projected growth). Over the last two months, nations have woken up to the importance of this development and are accelerating the race to introduce CBDC and GSC through changes in regulatory acceptance of cryptocurrency, piloting of CBDC, and approving financial service organizations to operate in this space. This acceleration is taking place both in regulated and unregulated forums. A complete or significant switch to digital money that is unregulated could cause a seismic shift in the existing monetary framework. To that end, governments, central banks, regulators, and market participants need to be at the forefront of this cyber transformation being led by the introduction of GSC/CBDC.

DEFINITION

A stablecoin is defined by the Financial Stability Board (FSB) as a crypto-asset that aims to maintain a stable value relative to a specified asset, or pool or basket of assets. An example of a specified asset is most often the USD. A global stablecoin (GSC) is a stablecoin with a potential reach and adoption across multiple jurisdictions and also has the potential to achieve substantial volume. GSCs bring the reward of financial innovation of a digital store of value and the technological innovation of providing a means of payment using centralized or distributed ledger technology (DLT).ⁱ A subset of GSCs include CBDCs that are a fiat currency that is issued and controlled by a central bank.

The major differentiating criteria between GSC and other stablecoins is their limited systemic reach. Other stablecoins could be used within a specific country or company and would not need the same stabilization mechanisms that a GSC would need. In addition, other stablecoins would not pose the same threat of a disruption of market integrity through the payment system or other trading exchange. If other stablecoins were used in a wholesale capacity vs retail capacity, they would require a significantly lower consumer protection criterion.

GSCs are being propelled forward because:

- Developed and emerging markets are looking to adopt stablecoins to enable universal banking, increase efficiency through reducing frictionⁱⁱ,

ⁱ See Figure 2 for GSC Framework: Definition, Activities and Functions.

ⁱⁱ Direct wallet to wallet transfer is available without the requirement for a financial intermediary

facilitate decentralized finance (DeFi)ⁱⁱⁱ, suppress money laundering, and make the traditional financial system more resilient to breakdowns such as cyber attack events or natural disasters.

- There is increased participation in “techno-nationalism” to gain an early technological lead and attain dominance in emerging technologies.
- To increase financial inclusion to reach the 1.7 billion adults globally that remain outside of the financial system who have no access to a traditional bank, even though one billion of these adults have a mobile phone and nearly half a billion have internet access³. Increase in the use of mobile money to 50–65% penetration in emerging markets⁴.
- Increased cyber dependency⁵ and adoption, accelerated by the COVID-19 pandemic.

Examples of recent stablecoin adoption include:

- 80% of central bank respondents to the Bank for International Settlements survey in 2019 reported engagement in CBDC projects.^{6,iv}
- Widespread launch of People’s Bank of China (PBoC) central bank digital currency is expected in late 2020. The e-RMB (electronic renminbi) is currently the subject of a trial in more than four cities in China.
- The Bahamas Central Bank announced its digital currency, the Sand Dollar, is now available nationwide.⁷

iii DeFi facilitates cryptocurrency borrowing and lending platforms “yield farming”, and cryptocurrency exchanges (DEXes) that use smart contracts to enforce the trading rules, execute trades, and securely handle funds when necessary.

iv The Bank of Canada currently has no plans to launch a CBDC. However, the Bank will consider launching a CBDC if one or more alternative digital currencies—likely issued by private sector entities—were to become widely used as an alternative to the Canadian dollar as a method of payment, store of value and unit of account.

- Bank of England in talks with the Official Monetary and Financial Institutions Forum (OMFIF) with representatives from the central bank of Hungary and Switzerland, ING in Amsterdam, and Cypherium in New York to launch a joint GSC.
- The Office of the Comptroller of the Currency (OCC) clarified national banks’ and federal savings associations’ authority to provide cryptocurrency custody services for customers on July 22, 2020.
- The New York State Department of Financial Services (DFS), the BitLicense regulator, has published a greenlist comprising 10 cryptocurrencies for custody and eight cryptocurrencies for listing by New York banks.
- Stablecoins such as Tether, issued by Bitfinex, have already grown to an estimated USD \$12.8B. Tether is one of the GSCs of choice for moving an estimated USD \$50B out of China so far in 2020.⁸
- The decentralized finance (DeFi) market growth to over \$9B of Ether currently in use in a decentralized finance contract.⁹
- First special purpose depository institution bank approved by the Wyoming Banking Board for Kraken on Sept 16, 2020. As a state-chartered bank, Kraken now has a regulatory passport into other states without having to deal with a patchwork state-by-state compliance plan.
- Sept 24, 2020 the Digital Commodity Exchange Act of 2020 was introduced to create a single federal framework for cryptocurrency exchanges under the Commodity Futures Trading Commission (CFTC) oversight.
- The EU released a strategy for a Digital Single Market for financial services, which one of the focuses is “same risk, same rules, same regulation”.¹⁰

REGULATORY CONCERNS

Financial stability, market integrity, and consumer protection are part of the overarching principles of many regulators. One of the main mechanisms that addresses

the financial stability of a GSC is the backing of the stablecoin. The financial stability of the GSC backing ranges from the stability and backing assets which can range from:

- government- Peoples Bank of China (PBOC) or the US Federal Reserve (Fed);
- corporation or group of corporations (Libra);
- basket of assets (fiat, gold or fixed assets) that the GSC is based upon; to
- an algorithm that attempts to modify the volatility based upon monetary policy or another chosen framework to set the liquidity of the coins available in the market.

Market integrity is tied to the ability to protect users of the GSCs from wide volatility swings. In any proposed system is there a mechanism to halt trading if volatility exceeds a certain margin?

- yes, in a centralized system proposed by the China Central Bank Digital Currency or Libra, or
- no, for a decentralized stablecoin that is tied to volatile fiat currency or volatile basket of assets.

There are over 100 stablecoins either currently in circulation or under development. Table 1 compares the characteristics of two stablecoins under development that have the largest potential market share and the two stablecoins with the largest market share.

RISKS OF GSC/CBDCS

Financial stability, market integrity, and consumer protection are dependent upon amongst other things, domestic and cross-border regulatory power, international standards, supervisory tools, and availability of oversight resources. Both domestic and international regulation require a risk management framework to address issues such as reserve management, operational resiliency, cyber security, money laundering, recovery, and resolution. Consumer protection regulation is required to protect consumers rights to the underlying assets, access to

deposits of underlying assets (especially if in a foreign jurisdiction), and oversight of compliance for their safe keeping either domestically or in foreign jurisdictions.

Depending upon the way functions and activities^v of the GSCs are implemented there are potential risks to the overarching principles of stability, integrity, and consumer protection.

1. A central governance body could open the GSC to influence of authoritarian governments. Due to the technical architecture of some proposed CBDC all accounts can be frozen upon direction.
2. Risks to the control on issuance and redemption such as planned unlimited issuance and limited or costly redemption.
3. Transfer of coins between wallets—in order to truly meet the definition of a global system of transfer, a permissionless system must be available, or the efficiency and effectiveness of the Distributed Ledger Technology (DLT) could be lost. In a centralized or permissioned system, there must still be a third party that authorizes the transfer of coins between wallets, so that the frictionless transfer of coins that is available in a permissionless system is lost.
4. Consistent interaction with users requires rules for exchanging fiat currency with country central banks.
5. Loss of control of the coin issuance, redemption, or trading due to cyber attacks or interference.
6. If a GSC were to truly emerge that had the global reach and volume similar to a 10% volume of the trading of the US dollar, then there would be a potential risk to financial stability arising from GSC arrangement because until a greater than 10% threshold is attained, there is no material threat to the fiat dominance that is currently 40% transacted in USDs.

^v Functions and activities outlined by the FSB and highlighted in Figure 2 Functions include: Governance, Issuance, Redemption, Stabilization, Transfers, Interaction with Users, Storage of Private Key, Exchanging; Activities include: Banking, Payment, and Security/Investment.

7. Increased money laundering that may be facilitated through an unregulated GSC.^{vi}

POTENTIAL VULNERABILITIES

To address these risks, a complete regulatory framework and compliance system need to be in place and agreed upon globally before any stablecoins should be traded across borders. While this would be ideal, given that GSCs are already being trialed in several countries, and are being considered by over 80% of central banks, waiting for this ideal situation would be more detrimental than providing a transparent environment for testing out internationally approved stablecoins. If an approval environment is not provided, the ecosystem will develop non-regulatory approved stablecoins that will expand in scale and scope, until the influence of those non-regulatory approved stablecoins will dominate the market and it will be too late for regulators to influence transparency and legality of these coins. For example, China's stablecoin or Digital Currency/Electronic Payments (DCEP), as well as regional stablecoins that are part of Binance's Venus project are already in the adoption phase.

Not for the faint of heart

Sushiswap, a popular DeFi token lost 70% of its value on Sept 5, 2020 after increasing to 77% of Uniswaps trading volume. The fall is jointly attributed to Sushiswap's lead developer cashing out \$15 million of funds and an accusation that centralized exchanges deliberately crashed the price of the token due to a perceived threat to the centralized model of exchanges like Binance and Huobi.

Vulnerabilities arising from various stablecoin functions and activities occur when there is disagreement about implementation of regulations or the principles upon which those regulations are set. Such vulnerabilities include:

- Volatility of stablecoin reserve assets: this is due both to the value of the underlying asset, e.g.: USD which has fluctuated between 1 USD to €1.16 since the introduction of the Euro.
- Operational payment system interruptions: an example is the introduction of payroll using stablecoins, an operational interruption to payroll could have knock on effects within the economy.
- Fire sale of reserve assets: if there was a sudden run on the stablecoin, the value on the sale of the reserve assets would be depressed by having to sell at fire sale prices.
- Withdrawal of liquidity provision: Centralized permissioned stablecoins have the ability to limit withdrawal of balances, this occurred during the Sovereign Debt Crisis in Greece when there were limitations on liquidating bank accounts.
- Operational loss of Private Key access: Canada had its own example of this with the Quadriga scandal and loss of Private Key access.

GOVERNANCE RISK

Governance risk needs to be addressed in order, amongst other things, to deal with fraud or conflict of interest. If there is poison in the tree, then the fruit of the tree will also be poisonous. If the governing agency is in disagreement about the underlying fundamental principle, such as individual privacy of data, then there can be no agreement on the regulation of a GSC from a data privacy issue. Today, many nations have fundamental differences in their view of human rights and the right to privacy. There is a governance vulnerability for GSCs due to a lack of agreed upon standards. Governance regulations for like-minded countries need to be approved to help deal with these issues. A recommendation to move ahead with

^{vi} The volume of money laundered globally every year accounts for as much as 5% of global gross domestic product, or \$2 trillion, according to the United Nations Office on Drugs and Crime. (Qinqin & Denise Jia, 2020)

a governance structure that is agreed to by a small group of regulators, and then adding on members as the technology continues to be accepted may be the best way to deal with governance issues.^{11, 12}

This failure to reach agreement is one of the reasons for the support of a non-permissioned distributed ledger technology (DLT) for stablecoins because demand for the functionality of DLT that has a stable value to facilitate providing a return on cryptocurrency and introducing new product innovations such as derivative products. An example of this is the Uniswap exchange that allows for the minting of new stablecoin that can be traded in a non-permissioned way through smart contracts.

The ECB examined several scenarios in the Report on a Digital Euro ... that could “threaten European financial, economic and, ultimately, political sovereignty”.

The Financial Times

Other Risks include:

- Liquidity risk has and could disrupt the minting, issuing, and burning of GSC.
- Operational risk such as cyber attacks or fraud have and could disrupt the operating of the infrastructure, Validating Transactions, Storing Private Keys, and Exchanging GSCs.
- Fees for trading of GSCs or “gas” to make a transaction on the blockchain fluctuate widely when demand increases, making many trades unprofitable.
- Basel Committee on Banking Supervision (BCBS),
- Principles for Financial Market Infrastructures (PFMI) issued by the Committee on Payments and Market Infrastructures (CPMI) of the Bank of International Settlements and the International Organization of Securities Commissions (IOSCO), and
- Office of the Superintendent of Financial Institutions (OSFI).

Moreover, determining which regulations apply is difficult when there are contradictions in definition of a GSC as a FX, commodity, security, or digital asset. The recommended approach is to have a lead regulator.

REGULATORY FRAMEWORK

To address these vulnerabilities there needs to be one agreed upon lead regulatory body that would set the regulations for the GSC conglomerate to be joined by those organizations or countries that wish to issue regulated GSC. Currently the application of all of the following regulations that apply to GSC have the potential to be both less efficient and transparent and more confusing.

- Financial Stability Board (FSB),
- European Commission (EU),
- European Central Bank (ECB),
- Office of the Comptroller of the Currency (OCC),
- Financial Action Task Force (FATF),

Currently the tools to establish and regulate GSC are more advanced in the hands of the creators/issuers of GSC than the regulatory bodies. As with the second pillar of BSBC II, a supervisor should be involved with the development of the GSC so that best practices can be followed. Such approvals can also help to ensure there is not a delay at the end of the process due to not meeting regulatory approval.

WHERE FROM HERE?

In a perfect world, all regulatory bodies would be created equal. Unfortunately, this is not the case. From the standpoint of powers, tools, and resources to regulate, individual country regulators are not aligned from a resource or a philosophy viewpoint. This disconnection currently leads to regulatory arbitrage, and unless there is agreement on regulation of a new GSC, this will continue.

The FSB GSC Consultative Document Response recommended that “Authorities should apply regulatory requirements to GSC arrangements on a functional basis and proportionate to their risks.” This principles-based recommendation could be applied in countries where principles-based regulation currently exists. However, in countries where rules-based regulation is predominant (USA) there will need to be further granularity to what is meant by “apply regulatory requirements ... proportionate to their risk.”

Currently the regulatory framework outlined by the FSB and illustrated in Figure 2 addresses financial stability, market integrity, and consumer protection. However, that framework needs to be expanded to include addressing challenges or issues arising from monetary policy, monetary sovereignty, public vs private issue of digital currency, payment services, central bank digital currency (CBDC), and anti-money laundering/combating financing of terrorism (AML/CFT) concerns.

Time is of the essence because many countries are already issuing GSCs. The speed with which this is happening should not be underestimated, and without regulatory oversight of this market, one cannot be sure if all is as it appears to be. It is important to be a partner with those that want to be at the lead of GSCs so that the regulatory framework can develop alongside the technology.

The GSC framework in Figure 2 illustrates what should be included and what is not included at a high level. What should follow is a drilling down into the detail of each of the areas included in the framework, as well as identifying what is not covered in the framework. Several regulators have made recommendations addressing the same issues. These recommendations need to be consolidated into one place, starting with an agreed upon definition of a GSC.

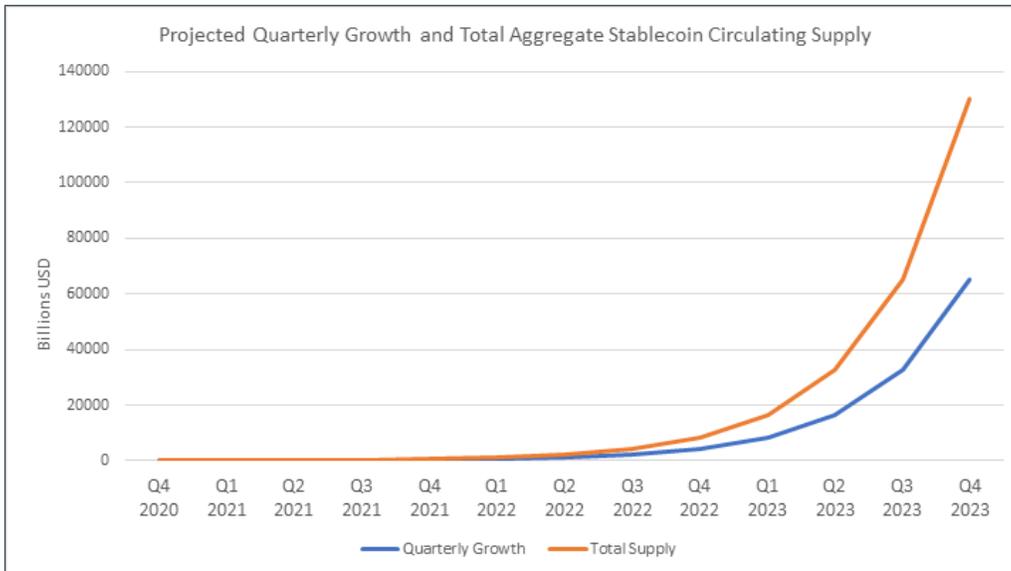
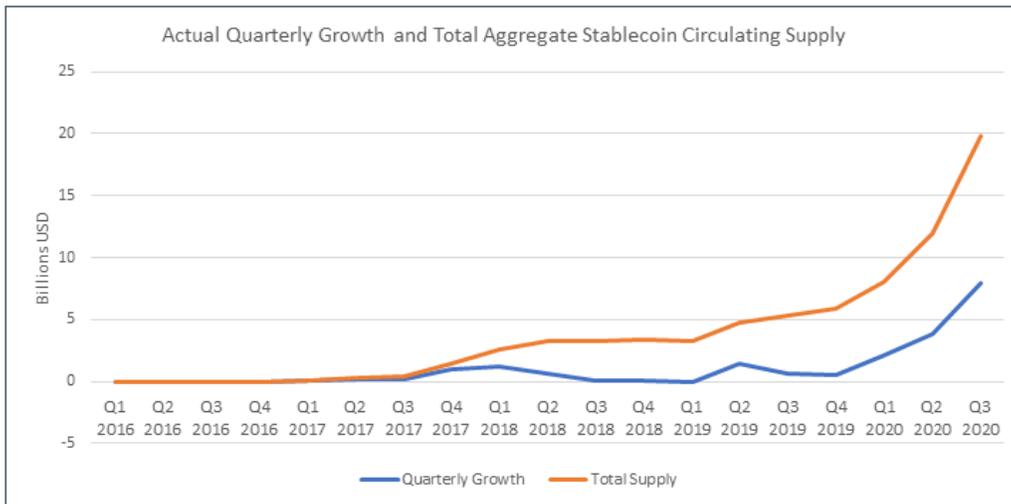
Regulators cannot delay. Adoption of GSCs is going to continue whether the regulators are participating to achieve the goals of financial stability, market integrity, and consumer protection or not. If we delay a workable framework, waiting for the perfect solution, the world will have marched on, and a solution will be thrust upon the market without regulatory input or protection.

Table 1: Comparison of Digital Assets: Central Bank Digital Currencies (CBDCs) and Stablecoins

Comparison Criteria	PBOC Central Bank Digital Currency	Libra ¹³ Stablecoin	Tether Stablecoin	USDC & USDC 2.0 Stablecoin
Governing Body	Peoples Republic of China	Libra Association members (Facebook’s Calibra, Shopify, Lyft, Spotify, Uber, Coinbase, Creative Destruction Lab, etc.)	iFinex Inc., which is headquartered in Hong Kong and registered in the British Virgin Islands. iFinex also owns Bitfinex.	Consortium, a collaboration between Coinbase and Circle Internet Financial (Circle)
Decentralization	Permissioned central private network	Permissioned central network, no longer planning to evolve into a permissionless network.	Permissionless, however is reliant upon iFinex through Bitfinex to stake a massive number of tokens.	Permissioned, centralization off-set by a network of multiple token-issuing members, thus providing multiple reserves and liquidity sources for network users rather than presenting a single collateralization gateway point of failure. This approach is distributed, though it does not purport to be- or aim to be- entirely decentralized.
Valuation based on	China closely manages the yuan’s exchange rate against the dollar, so a digital version of the nation’s currency – also known as the renminbi, or RMB – could trade similar to a dollar-linked stablecoin	Each single-currency stablecoin will be fully backed by a Reserve, which will consist of cash or cash equivalents and very short-term government securities denominated in that currency.	Cash and cash equivalents including loans and other cryptocurrency. Currently there is NY Attorney General’s investigation focusing on the potential loss or dissipation of over \$850 million in customer funds.	US Dollars held in custody account audited monthly by Grant Thornton LLP

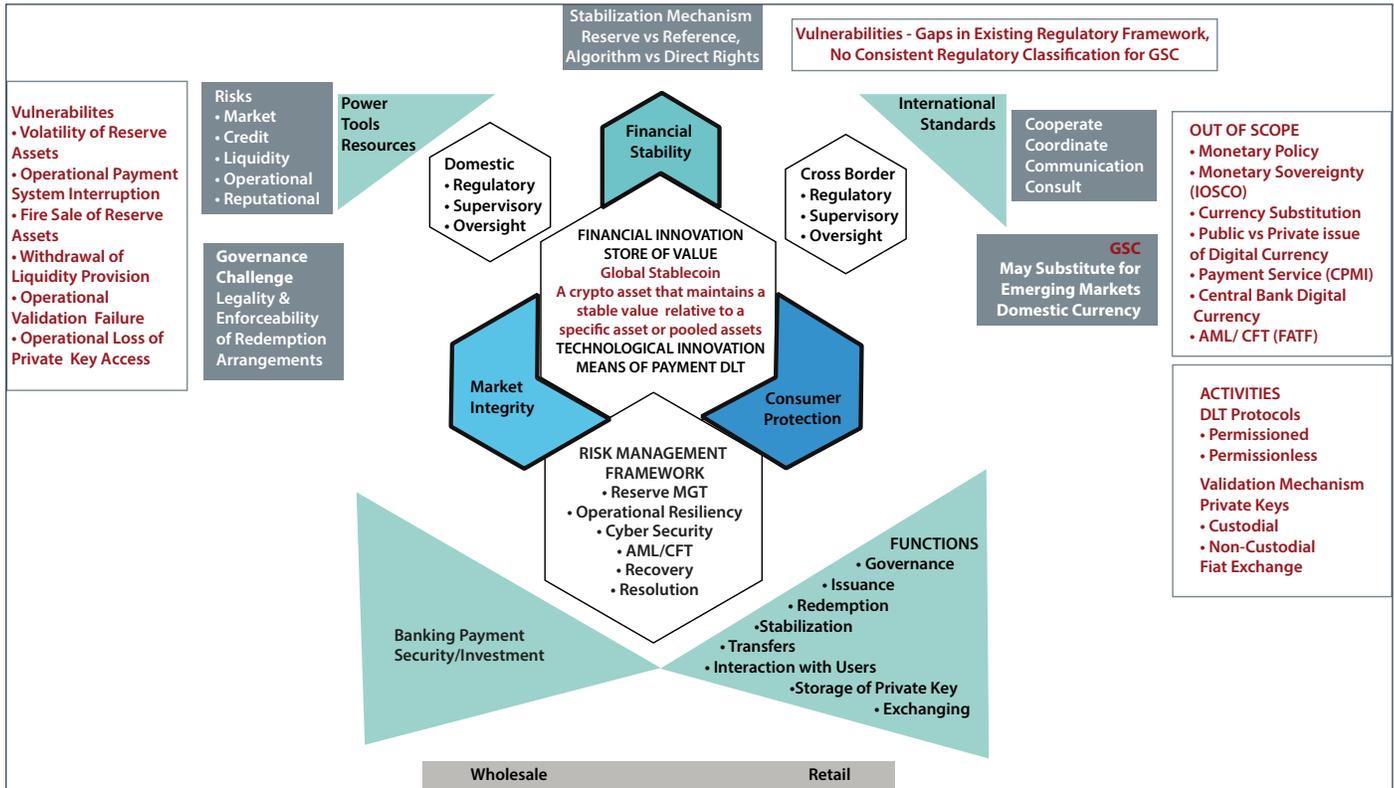
Comparison Criteria	PBOC Central Bank Digital Currency	Libra Stablecoin	Tether Stablecoin	USDC & USDC 2.0 Stablecoin
Valuation based on		Single-currency SCs in \approx USD, \approx EUR, \approx GBP, and \approx SGD) and a multi-currency Libra Coin (\approx LBR) ¹⁴ .	Bitfinex has issued its own statement denying the Attorney General’s claims and insisting that “we have been informed that these... amounts are not lost but have been, in fact, seized and safeguarded” by unnamed parties. ¹⁵	
Market Capitalization	1.1 billion RMB ¹⁶ (\$162 US) Pilot: Shenzhen, Suzhou, Chengdu and Xiong’an. Sept 10th announced expansion to Beijing and Hong Kong ¹⁷ 2018 digital payments in China \$18Trillion. ¹⁸	Estimate USD 250 B bases on 250 million people would become Libra users and each user would own one Libra coin worth USD 1,000.00.	USD 16.5B (Oct/2020) ¹⁹	USD 2.9B (Oct/2020) ²⁰
Market Transaction Volume		N/A	\$45.0B/24 hours ²¹	\$414.6M/24 hours ²²
Advantages	<ul style="list-style-type: none"> • Central bank backing • Large liquidity potential 	<ul style="list-style-type: none"> • Multi and single currency • Ease of use for current FB users 	<ul style="list-style-type: none"> • Permissionless trading • Large liquidity 	<ul style="list-style-type: none"> • Monthly audited backing • Gasless sends

Figure 1: Actual Quarterly Growth and Aggregate Stablecoins in Circulation^{vii}



vii Data Source Coin Metrics, CoinDesk Research

Figure 2: GSC Framework: Definition, Activities and Functions



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