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Revealing Stablecoin Successes: Lessons from a Case Study on USDT

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ABSTRACT

Stablecoins, a type of cryptocurrency tethered to real-world currencies, have garnered attention in the cryptocurrency sphere. Despite being designed for price stability, as seen in the 2022 UST case, this is not always guaranteed. To prevent such incidents, understanding the vital factors behind stablecoin's success is crucial. This article examines the case of USDT, a prominent stablecoin. Preliminary findings indicate several internal factors (Early-mover advantages, Price maintenance reserve, Recognition-seeking, Resilience gained through challenges and Choice of multiple blockchains) and external factors (Emergence of the cryptocurrency ecosystem, Regulatory constraints) that drive the success of stablecoin.

Keywords: Cryptocurrency, Stablecoin, USDT, Tether

INTRODUCTION

Cryptocurrencies have gained popularity due to their advantages of cheaper, faster, and geographically independent transactions. Bitcoin alone had around 106 million owners and thousands of daily transactions in 2023 (Buybitcoinworldwide.com 2023). However, the volatile nature of cryptocurrencies hinders their mainstream adoption. To address this, some firms have introduced stablecoins, cryptocurrencies with value pegged to non-volatile assets like the US Dollar. Stablecoins have been integrated into various cryptocurrency services, such as exchanges and wallets (e.g., Bitcoin and Coinbase). Some researchers suggested stablecoins a safe haven for cryptocurrency investors. When the price of Bitcoin declines, the trading volume of Tether (a type of stablecoin) tends to increase, indicating that investors view it as a secure investment choice (Wei, 2018).

In contrast to the volatility seen in many cryptocurrencies, stablecoins are purposely designed to uphold a consistent value, but such stability is not always guaranteed. In May 2022, TerraUSD (UST), a stablecoin, experienced a dramatic crash in May 2022 with value dropped nearly to zero. Prior to its collapse, UST held the impressive rank of eighth place in the cryptocurrency market, with a market capitalization nearing 40 billion USD. Being categorized as an algorithmic stablecoin, UST diverged from other well-known stablecoins like USDC and USDT, as its value is entirely reliant on the utilization of their algorithm instead of real-world assets (Kereakes et al., 2019). Its unprecedented decoupling triggered a collapse in the blockchain ecosystem, resulting in billions of dollars in losses for investors. Despite investors' potential anticipation of cryptocurrency volatility, the crash of a stablecoin can still be a jarring surprise. Therefore, this underscores the importance of delving into successful instances of stablecoin issuance. Otherwise, similar failures are likely to be repeated, with more cryptocurrency owners suffering from large financial losses.

This paper documents an ongoing case study on USDT, a highly successful stablecoin whose value is pegged to that of US dollars. Currently, it possesses the highest level of market cap and volume among all stablecoins in the market. We hope that through an in-depth study on USDT, we may be more informed about factors that contribute to the successful issuance of stablecoin and thus arrive at both theoretical and practical implications. Accordingly, our research question is, "How do we develop successful stablecoin?"

LITERATURE REVIEW ON CRYPTOCURRENCY AND STABLECOIN

Cryptocurrencies are digital or virtual currencies that use encryption technology to ensure security (Li and Whinston, 2020). The high volatility of Bitcoin and other cryptocurrencies significantly hinders their practicality as a medium of exchange despite their ability to facilitate fast and unchangeable transactions (Dyrberg, 2016). As a solution, some crypto-businesses have introduced stablecoins, which are pegged to other fiat currencies or financial instruments. Common examples of stablecoins include Tether (USDT), USD Coin (USDC), True USD (TUSD), and Binance USD (BUSD), all pegged to the US Dollar (Wei, 2018; Thanh et al., 2022). Table 1 illustrates arguments related to stablecoins.

The advantages of stablecoins include price stability, reduced financial and investment risks, and the ability to quickly convert to/from more volatile cryptocurrencies. Some scholars suggest that stablecoins have the potential to replace fiat currencies and call for regulatory measures that consider these impacts and potentials. However, there have also been cases of value crashes or de-peg, such as TerraUSD (Nurbaev et al, 2023). On the other hand, there are successful cases such as USDT, currently the largest stablecoin by market capitalization. While stablecoins have been subject to initial research from various perspectives.

There is currently limited research on the issuance of stablecoins. Exploring this direction in research could help bridge the gaps in academic understanding or market investments regarding the issuance of stablecoins.

Table 1: Descriptions of stablecoin

Reference	Argument
Morgan J (2023)	Extreme value fluctuations of unstable cryptocurrencies prevent them from being used as reliable stores of value or mediums of exchange. This requires stable value over time for effective use as 'money'.
Mita et al (2019)	Stablecoins can be categorized into four types based on their backing (fiat, commodity, crypto, and non-collateralized). Among these, non-collateralized stablecoins show strong potential for adoption in Decentralized Payment Systems.
Sidorenko (2019)	Within the realm of cryptocurrency, a growing portion of funds is shifting towards stablecoins and other low-volatility options. This shift has the potential to mitigate the risks associated with frequent asset turnover for cryptocurrency investors.
Wei (2018)	When the price of Bitcoin falls, the trade volume of USDT arises. This indicates that stablecoins are being perceived as a safe haven for some cryptocurrency investors.
Moin et al (2020)	The functions of value storage, the standard of measurement, transaction medium, and value steadiness are essential for all currencies. Recognizing the price instability of many cryptocurrencies, certain crypto-businesses have introduced stablecoins, which stablecoins maintain a consistent value tied to a stable asset, addressing the volatility concern.
Ante et al (2021)	Stablecoins offer a valuable research subject due to their resemblance to conventional fiat currencies. They might even have the potential to supplant fiat currencies on cryptocurrency exchanges.
Lipton et al (2020)	Stablecoins can serve as a trading tool for swift conversion between volatile cryptocurrencies and more stable currency alternatives. This provides users with U.S. Dollar-like trading and settlement capabilities, bypassing the need for traditional fund transfer methods.
Hsu et al (2022)	For newcomers to the world of cryptocurrencies, adopting stablecoins may pose a higher initial hurdle, as it requires time to grasp their nature and utility. Cryptocurrency businesses and exchanges need to effectively convey stablecoin knowledge to enhance newcomers' understanding and willingness to use them.

LITERATURE REVIEW ON CRYPTOCURRENCY AND STABLECOIN

FinTech refers to disruptive technologies in the financial sector, encompassing various innovative financial products and services like cryptocurrencies, mobile payments, P2P lending, and crowdfunding (Shim and Shin, 2016). The number of FinTech startups is rising, with increased investments and continuous development of new FinTech solutions (Lee & Teo, 2015). Integrating different technologies is essential for the seamless development of FinTech products, creating a delightful customer experience and driving their adoption (Buckley and Webster, 2016).

FinTech products and services may be classified into multiple types, depending on the typology established by different researchers. Some researchers have investigated deeper into different specific types of FinTech. For example, concerning cryptocurrency services, researchers have argued the importance of developing a wide range of service options to cater to the diverse needs of users (Au et al., 2022), while successful cryptocurrency exchange services can categorize their product and service options based on capital flows, such as deposits, wealth growth, and withdrawals. In P2P lending contexts, investors are more likely to borrow through P2P lending platforms if they prefer substantial, short-term, high-interest loans. Conversely, borrowers' adoption of P2P lending platforms is facilitated by reduced interest rates, improved quality, and speed (Milne and Parboteeah, 2016; Au et al. 2020). To develop a successful Neobank, factors like innovation, diversity, and sensitivity to compliance issues must be considered in product and service selection (Nurbaev et al., 2022).

But across different types of FinTech, the development of products emphasizes diversity and the establishment of an ecosystem to meet the comprehensive needs of users, often driven by firms' innovation. Product development should also consider building critical mass through mechanisms such as customer lock-in and standardization. Trust, social influence, security, speed, privacy, and users' perceived capabilities are significant drivers for FinTech product adoptions, as highlighted in previous FinTech and IS literature. While financial benefits play a crucial role in FinTech adoption, they are less discussed in non-FinTech IS adoption literature.

RESEARCH METHOD

We employed a case study approach along with the methodology of netnography for our research. The case study method is an empirical research technique used to comprehend the relationships between events, both preceding and subsequent, and the subject of the case (Merriam, 1988). Furthermore, the phenomenon of cryptocurrencies is multidimensional, encompassing both

external and technical aspects, making the adoption of an objective research approach overly complex (Gable, 1994). Thus, the case study method has emerged as an appropriate approach to investigate such phenomena (Klein & Myers, 1999).

Netnography is a form of research that involves documenting cultures and communities that emerge from internet-based communications. It aids in uncovering deeper insights from experiences that were less addressed in earlier research (Kozinets, 2010; Langer & Beckman, 2005). These characteristics are relevant to the cryptocurrency phenomenon as its activities are predominantly conducted online. We selected USDT as our research subject due to its success reflected in its user base and the broad range of financial products and services developed based on USDT. We intend to collect data from various sources, such as the official website of USDT, news articles and cryptocurrency exchanges.

Data analysis is performed concurrently with data collection to take full advantage of the flexibility case research methods afford (Eisenhardt, 1989). A set of aggregate theoretical dimensions and second-order themes (Gioia et al., 2013) were first derived from the existing FinTech literature as the theoretical lens to guide our data collection. The data collected was then coded using a mix of open, axial, and selective coding (Strauss & Corbin, 1998). More specifically, open coding was used to identify new and validate existing theoretical dimensions (e.g., stablecoin and FinTech successes), while axial coding was used to identify new and validate existing, second-order themes that fall under those dimensions (e.g., characteristics of stablecoins). Selective coding was then used to distil our case evidence into a number of first-order categories, which were then assigned to the appropriate dimensions and themes (Pan & Tan, 2011). Visual mapping and narrative strategies were also used to help us make sense of the voluminous amount of data collected (Langley, 1999; Klein & Myers, 1999). The former involved documenting, for example, the key milestones and stages of USDT development. Visual maps shown during the data analysis were gradually converted and merged into our model shown in the preliminary findings. The latter, on the other hand, entailed creating a textual summary of the key events, activities, and decisions that led to different development outcomes. Iterations between data, analysis, and theory development will continue until theoretical saturation is reached (Eisenhardt, 1989). The study is currently ongoing, and the iterative process between data collection, analysis, and theory development will continue until the state of theoretical saturation is reached (Eisenhardt, 1989).

PRELIMINARY FINDINGS



Figure 1: Theoretical model illustrating internal and external factors related to stablecoin success

Our preliminary findings suggested that there are baskets of factors (internal and external) that influence the issuance and success of stablecoins. (See Figure 1).

Emergence of Cryptocurrency Ecosystem

2017 was a pivotal turning point for the cryptocurrency ecosystem, with cryptocurrencies' price and overall market valuation speculating. The substantial price increases of Bitcoin and other cryptocurrencies garnered widespread attention and interest from both the market and users. Numerous companies and individuals entered this emerging field with the hope of seizing opportunities and profits. This rapid growth trend led to a swift and profound transformation of the cryptocurrency ecosystem. Furthermore, this environment gave rise to a multitude of innovative cryptocurrency projects, leading to the emergence of various new virtual currencies.

Amidst this backdrop, several USD-denominated virtual currencies gradually gained prominence in cryptocurrency trading. This included USDT (or known as Tether initially). In addition to the value peg to the US Dollar, USDT also possesses various advantages of stablecoins, such as price stability and the ability to convert into more volatile cryptocurrencies quickly. Furthermore, due to Tether's integration with many blockchains, it offers enhanced transaction liquidity (further detailed below). Consequently, Tether gained wider popularity and recognition, which is also essential for other Fintech business successes (Buckley and Webster, 2016).

Regulatory Constraints

In recent years, the regulation of cryptocurrencies has become a concern in various countries. Attitudes of governments varies across different countries, from complete restrictions (e.g. China) to open-and-embrace (e.g. El Salvador). In most other countries, cryptocurrency-related activities are not illegal, but cryptocurrencies are not recognized as value-carrying artefacts.

For instance, Hong Kong is one of the places with no ban on cryptocurrencies, and is where the issuer of Tether located. While the issuer is still required to comply with some regulations in money laundering and other aspects, they can still freely develop their business. Issuers' geographical locations are especially important for issuing stablecoins, given the local regulations are more sensitive to any businesses related to financed transactions. Upon being treated as illegal, the entire business will not work. Conversely, there are some grey areas for Tether to work and thus grow in Hong Kong.

Early-Mover Advantages

Among the top ten stablecoins ranked by CoinMarketCap in terms of market cap and trading volume, USDT is the only token that existed prior to 2018. Due to its early issuance and active involvement, users have become accustomed to using USDT leading to a critical mass of users. In turn, many developers and merchants adopted USDT for payment purposes.

For crypto-exchanges, on the other hand, it will be required for them to list USDT as one of the exchange options. For smaller crypto-exchanges, when they have limited capabilities to list all cryptocurrencies, they can only list more popular one (i.e., USDT). This create a positive reinforcement loop for the popularity of USDT. As a result, USDT has successfully claimed the dominant position in the stablecoin market by leveraging its early-mover advantage.

Price Maintenance Reserve

When a cryptocurrency is widely disseminated and adopted, its value changes can impact a huge amount of people. For stablecoin, their value is expected to peg to certain real-world assets. Many users adopt cryptocurrency as a safe haven of cryptocurrency investment (Wei, 2018). Any value changes may harm inventors' confidence significantly. To offer confidence to investors and to stabilize the price, reserve backup for price maintenance is required. These reserves typically comprise assets with low volatility and high liquidity, such as cash and other short-term deposits, ensuring the value stability and redeemability of stablecoin.

More specifically, the value of USDT is backed by reserves largely US dollars, ensuring that each issued USDT is pegged to an equivalent amount of US dollars. The reserves are not solely comprised of physical US dollar cash, but also US Treasury bonds. It also involved a shift from connected papers (which Tether initially held but was doubted for reserve purposes) to treasury bonds.

Moreover, Tether regularly publishes financial reports related to its reserves to demonstrate financial transparency and accountability. These proactive measures have contributed to mitigating scepticism and criticism surrounding Tether. In the introduction and development of stablecoins, ensuring the rationality and stability of reserves is of paramount importance to ensure their long-term sustainability and utility.

Recognition-Seeking

Without external adoption, a stablecoin may remain confined within the cryptocurrency sphere. To address such limitations and promote the wider adoption, it is crucial for a stablecoin to gain acceptance by businesses outside the cryptocurrency world, so that the usability of the stablecoin may be enhanced. For USDT, given its large user base, some firms have started accepting USDT for payment purposes. Examples include travel website Travala.com, Pornhub and TIME magazine, both accepting USDT for payment through intermediaries such as nowpayments.io.

Tether has even engaged in collaborations with governments. In 2022, Tether partnered with the city of Lugano in Switzerland to organize the "Plan B" initiative, aimed at promoting the adoption of Bitcoin and stablecoins throughout the city for paying parking fees and taxes. The initiative's goal is to enable over 2,500 businesses to accept three cryptocurrencies, including Bitcoin and USDT, by the end of 2023.

Resilience Gained Through Challenges

Despite ranked as a top stablecoin, USDT has experienced instances of decoupling, indicating a deviation from its initial 1:1 peg with the US dollar. In 2018, it once demonstrated deviations of approximately 3% in response to some incidents in the cryptocurrency world. However, the price of USDT could revert to its original peg shortly. This created a form of resilience for investors. As a result, USDT was trusted by investors even when there were further shocks in the cryptocurrency world.

For example, in response to the closure of FTX, the second-largest cryptocurrency exchange, in late 2022, USDT temporarily decoupled from its peg but quickly reverted to its original ratio. This was unlike some other less-adopted stablecoins, with value de-peg lasting longer. Tether also face market panic along with massive capital withdrawal requests. However, Tether was able to manage these requests and turned market panic into opportunities by demonstrating Tether' capacity, enhancing investor trust in Tether.

Choice of Multiple Blockchains

Instead of establishing its own blockchain, Tether adopted those of other existing and popular cryptocurrencies such as Ethereum, Tron, EOS and Solana. Since Tether launched its native token on Ethereum and Tron, Tether's market value and transaction volume have increased significantly(Coinmarketcap.com). This may be due to faster transaction speed, compatibility with most user wallets/exchanges, and reduced transaction fees, all enabled by the technical strengths of the chosen blockchain. Last but

not least, when USDT is available on different chains, one can switch to another chain for trading USDT (possibly via crypto-exchanges) to accelerate the transactions. In turn, the trading volume of USDT can be fostered.

DISCUSSION AND CONCLUSION

This paper presented an ongoing case of USDT which investigated the critical success factors of stablecoins. Our current preliminary work has identified several critical success factors. We have primarily divided these factors into two categories: external factors and internal factors. The external factors included the emergence of the cryptocurrency ecosystem and regulatory constraints, while the internal factors included (1) Early-mover advantages, (2) Price maintenance reserve, (3) Recognition-seeking, (4) resilience gained through challenges, and (5) Choice of multiple blockchain. For stablecoin issuers, whether already launched or not, these factors can guide their cryptocurrency initiatives. Furthermore, these arguments may also apply for other cryptocurrencies, if they would like to bootstrap and maintain some forms of price stabilities.

In the future, we will continue to collect data and analyze it to further expand and validate our findings. We will further develop our theoretical model by gathering and integrating additional data, followed by conducting in-depth analysis and comparing with existing literature. This will provide a more comprehensive understanding of the success and implications of stablecoins, not only to address the research questions at hand but also to serve as a starting point for further research on other stablecoins

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