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Stablecoin: Research on the Value, Regulatory Challenges, and Countermeasures

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Abstract. The rapid emergence of Stable Coins has completely altered the global landscape of digital finance. The benefits of blockchain technology, along with the typical advantages of a fiat currency, in the form of a stable coin, have had a surreal effect on the world of finance. The paper investigates the evolution, comparative merits and systemic risks of Stable Coins compared to Bitcoin, also uses them for advantages in decentralized finance, liquidity and international transactions. The results clearly show that the Stable Coins have become essential infrastructures of finance because of their low volatility, transaction efficiency but also their sensitivity to such issues as regulation and transparency of reserves. The study of the literature of the BIS, IMF and ECB gives evidence of the fact that stable coins will co-exist with the Central Bank Digital Currencies (CBDC), rather than that they will replace them. The proposed method gives evidence of how a system of collaborative regulation and transparency of reserves can be achieved to facilitate innovations but also protect global economic stability.

Keywords: Stable Coins, Central Bank Digital Currencies, regulation

1. Introduction

In the past ten years, the global economy spent a transformation by digital assets. To this end, stablecoins have certainly come to prominence.Net worth of the currencies, called stable coins, they are coins which aims to hold a value based upon an asset, such as a truck, or commodity or basket of other value. It is these points that enable the stablecoins to be differentiated from twins, unstable, majorly volatile coins such as bitcoins and eithereums, and have the efficiencies of blockchain operating in former fashions of fiscal critical mass systems. Since they have received purported attention by many politicians and architects. The stablecoins thus have been thought of as a means of bridge, at a limit of the decentralized Fiorotene scheme and traditional financial and payment techniques. Stablecoins became a very significant increase in position. The more organizations that are chief forming the coins such as tether, united states dollar, circle- which show average daily volume translate hundred billion range that still comment of that position in the currency markets. Application shots of stablecoins are more than limited in use to the trading of the coins, but are now on the rise, including more inclusively of other themes of decentralized financial service and technology (de fi). Stablecoins can create the coin because of their nature yield and low transaction cost of the coins. This is being recognized and used in the cross border stores and the making of

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inflation for the coin store in many countries to the nature of the coins for the time being the powerful medium of trading. These events show that not only technology, but a financial instrument that has no meaning, a constant changing ideal state whilst able to have and do the large impact in others, being finance stability, but also being the administration and regulation of global currency.

The developments of stablecoins have, however, also created controversies. Claims are made that stablecoins are beneficial for finance and that they lower transaction costs, are easily used in countries where there is a lack of safety in currency transactions and they give a sure method of payment digitally. These arguments however are contested to the extent that it would appear that the development of stablecoins could subject both consumers and the market to the risks which are being incurred because there is no plain answer, in either legal or regulatory terms, what the position of stablecoins is. A recent vote in preliminaries by the US Senate in favour of the GENIUS bill would appear to indicate a recognition by Government and a recognition of the necessity of there being a legal regulation of the stablecoins. There would, however, appear to be various national regulatory models, which would, for instance including MiCA in the EU, and an absolute ban in China. From these various matters research questions have arisen. Can stablecoins in the future be regarded as being viable for the financial market, or is the development of CBDCs to undermine their future and existence. Granting that compared to Bitcoins which are already existing they have already their advantages, are stablecoins going to add to this, and have they any if possible regulatory or legal problems, which can be susceptible by the numerous acceptances and contact that stablecoins will have with the global financial system. Finally, how they are likely to effect the future of Monetary Policy in relation to financial stability, and how they are going to effects both which is the future. This article, in considering criticism and comparison will try to consider these problems. The matter of research can be divided as follows. First, the economic benefit and problems of stablecoins, their consequences on the market, further the problems of regulation of the different stablecoins, and again problems whether a common one can arise internationally as to regulation being formed. In dwelling on questions in these areas it is hoped that this would contribute to a policy design area to the eventual regulation of stablecoins, and further the eventual discussion, as to a common framework.

2. The economics and functionality of stablecoins

2.1. The economics of stablecoins

The economic advancement by technical innovation of the first generation of cryptocurrency industry came in 2009 by the advent of Bitcoin, yet the continuing, marked volatility of the price of this currency presents a serious difficulty for its acceptance and use as a medium of exchange or unit of account. The BIS (Bank of International Settlements) observe the emergence of stablecoins, as necessitated by the problem of acceptance, as a result of the stable position of valuation in regard to the fixation of prices of the value to fiat currency or to products based upon various hard assets, thus designing out as far as possible the attributes of volatility to their values [1]. This built in design quality facilitates the possible operation of this class of asset, ie, stablecoin, by the interactions with the monetary systems existing for the purpose of daily transactional needs and value exchange, as opposed to Bitcoin. These stablecoins besides solving the question of value volatility of products, appear also to have the hidden asset of speed in operational efficiency in the transaction settling process which the payments and receipts etc., are referred to in conference to that of Bitcoin. The transactions and verification confirmations in respect to Bitcoin, take a good deal more than 10 minutes often, owing to the mining, but the main stream of stablecoins are able to settle in 30

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minutes or seconds their operation transactional value requirement. Hence it does appear as though it is the class of stablecoin which are stable to their values, which are able also to provide the efficiency desired for transactional purposes, and therefore it seems logically that it should be applicable to possible users merchant customers, also valuable in e-commerce and personal payments and international for valuable minimal transactions. It is interesting to note that the stablecoins and products resulting therefrom, are therefore not merely hedging products in the crypto currency implementation but should be looked upon as building blocks towards real payments occurring. In addition and the whole de-fi emerging product development characteristics show as result if anything, that it is in fact the stablecoin which are cement like, as that which holds all this in the eco-system deep. The manner and method of all the patterns of research de-fi being done by the BIS, said that stablecoins were any rate looked upon as being "the infra-structure of digital finance system", by reason of far stretonage present in their use in the eco-system of the world of de-fi[1]. There are in fact three main constructions of the whole class of stablecoin in respect to the lending platforms being as liquidity pools and derivatives, etc.

2.2. The functionality of stablecoins

2.2.1. Collateral function in leading protocols

Stablecoins (e.g. DAI, where some assets are collateralized to issue the stablecoin) are important in context of providing stability in transaction and lending situations made, for example, in lending protocols (e.g. MakerDAO.)

2.2.2. Liquidity provision and market depth

Provisioning liquidity: Stablecoin pairs (e.g. USDC/USDT) on decentralized exchanges (DEXs), such as Uniswap and Curve, add depth to a market and price anchors/exposure.

2.2.3. Value preservation in volatile markets

Some investors will often move to stablecoins in periods of volatility to preserve value holdings. This role speak to SAs potential as a risk off asset in the crypto ecosystem.

In a few of the functions, stablecoins not only can promote developing DeFi, but also can be one of the major key valuable stores in the wider digital economy. Contrasting to Bitcoin which called “digital gold”, stablecoins would fit more instruments of traditional finance. Although its market value is lower than that of Bitcoin, BIS research suggested that stablecoins have increased dominance in trading activity and payments. The overall market value of stablecoins exceeded USD150 B in 2025 suggesting a great size of the crypto-market overall, what matter most is that stablecoins have surpassed the daily trading volume of bitcoins. The increased amounts of cross-border flows of stablecoins suggested that stablecoins are being used in projects outside the digital currency market and have also expanded into international finance and the monetary system [2]. This innovation has an impact on the global financial system and may have positive effects on aspects such as global financial stability.

2.3. Comparative analysis: stablecoins vs. bitcoin

In summary, stablecoins have less volatility, faster settlement, all of which make them superior to Bitcoin. In the decentralized finance sector, they perform better, offering cost and speed advantages

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in cross-border payments, thereby providing new ways for international capital flows. Research from the BIS compellingly shows that stablecoins have transitioned from peripheral instruments to foundational pillars of global finance. The growth of the market position of stablecoins not only reflects their functional advantages but also demonstrates their potential in the international monetary system.

3. Regulatory issues and systemic risks

3.1. Fragmentation and regulatory arbitrage

One of the major risks, as noted by Arner et al., is the absence of a consistent global framework that protects issuers and users from good practice and often inconsistent rules [3]. The first and foremost uncertainty is whether a stablecoin will clearly be classified as a security, commodity, payment instrument or e-money. Each of these questions comes with significant implications relevant to interpretive reserve requirements, consumer protection obligations and anti-money laundering (AML) requirements.

Further, regulatory fragmentation has created a potential for regulatory arbitrage which means that issuers elect to operate in jurisdictions that are less rigorous in their requirements; this can reduce (or eliminate) systemic protection. If a provider of a global stablecoin is operating in a number of jurisdictions that don't have a supervisory framework, we could be exposing ourselves significantly to risks associated with financial stability, reserve transparency and oversight. Arner et al. argue that in the absence of a significant supervisory framework, global stablecoins may expose the global financial system to greater risk rather than less [3].

3.2. Transparency and reserve quality

A second important regulatory consideration relates to the nature and transparency of the reserve assets. The stability of a stablecoin in times of stress, is directly correlated to the liquidity, transparency and quality of the collateral backing the stablecoin [4]. If the collateral is illiquid, has low credit quality, and/or is not possible to obtain, the threat of loss of confidence and subsequent rapid redemptions, is considerably enhanced. Stablecoins that are not fully collateralized, or are supported by opaque backing assets, are especially worrisome. In stress events, this type of deficiency can lead to the "de-pegging" of the stablecoin, at which point, the stablecoin ceases to trade at its reference value. De Blasis demonstrates empirically that asset quality matters in both the stability of the stablecoin during times of stress, and whether the stablecoin contributes to systemic risk through contagion [4]. This underscores the importance of independent audits, real-time disclosures of reserves and clear redemption facilities to preserve the market confidence essential to participants.

3.3. Lessons from the terra-luna collapse

The collapse of TerraUSD (UST) in May 2022 serves as a clear case of the potential dangers of digitally stablecoins purely backed by algorithms. Unlike other stablecoins with asset-backed holdings, UST aimed to sustain its peg to the US dollar purely via an algorithmic mechanism via its twin token, LUNA. Briola et al. reviewed this failure and concluded that the UST design was inherently weak based on its arbitrage incentives and yield from the Anchor protocol, in relation to changes in market sentiment [5]. Once market confidence waned, subsequent increases in redemptions formed downward momentum where LUNA price collapsed, and simultaneously

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removed the element of USTs design that helped sustain their peg. This trend obliterated tens of billions of dollars of market cap and demonstrated that algorithmically designed digital entities relying on collateralization and without credible backstop, can collapse in a matter of days. The Terra-Luna crisis has exposed some systemic flaws within the entire cryptocurrency ecosystem, even at the market level.

These flaws simultaneously indicate that although stablecoins have obvious advantages, they still carry significant risks. Without reasonable regulation as noted by Arner et al., global digital financial systems riding without regulatory infrastructure into economic/financial contact raise money sovereignty issues, capital flight risks and exposures to 'digital bank' runs. Likewise, De Blasis exemplifies how systemic risks can amplify market dislocation and the sustainability of collateral management. The Terra-Luna crisis is a real case of where design flaws perpetuate systemic failures.

For policymakers, they need to ensure that the policies can effectively regulate the market in a reasonable manner. Without these measures, the purported stability of the stablecoins could very likely lead to greater risks, not only affecting the cryptocurrency market but also having adverse effects on the entire financial system. The International Monetary Fund emphasizes that without sufficient monitoring, a large amount of the circulation of stable coins will undermine capital controls and will render the transmission of monetary policy throughout the developing countries more difficult [6].

4. Global regulatory policies and the future with CBDCs

Looking ahead, the future role of stablecoins may be closely linked to their relationship with CBDCs. The ECB has warned that their unregulated, widespread adoption could lead to fragmentation of monetary systems [7]. Clouse points to a potential for stablecoins to shape how CBDCs transmit monetary policy if they are unchecked by regulation [8]. Yet, Oxford Research Entry points out that there may be a co-existence of both; as CBDCs may act as risk-free digital money and stablecoins as complementing or adding value in DeFi and private sector spaces [9]. The Financial Stability Board (FSB) stresses also the necessity for cross-border co-ordination and a uniform regulatory framework throughout the jurisdiction for the avoidance of regulatory arbitrage and the retention of the financial stability of the system [10]. Ultimately the extent to which private innovation and public authority co-operate will determine the future of digital finance over the next decade.

From a policy perspective, three recommendations emerge: regulators should set appropriate and consistent regulatory structures that clarify legal classifications of stablecoins and their asset reserve transparency; there should be international coordination; through institutions such as the IMF, BIS and FSB, to prevent fragmentation and regulatory arbitrage of stablecoins; CBDC designs must consider the likely role of stablecoins, remaining open at a minimum to sharing systems that co-exist, rather than duplicate supply to their detriment. Importantly, the recommendations to follow, are not designed to impede innovation; rather, they consider how the benefits that stablecoins offer can materialize safely without harming individuals and the financial system at large.

5. Conclusion

In just a few years, stablecoins have developed from a relatively unknown financial innovation to being one of the essential building blocks of the new financing system. The essential characteristics of these currencies, which operate on a pegged basis to fiat currencies or other investment classes, create the financial stability, efficiency and inter-operability which is otherwise notably lacking in

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the existing crypto-currencies such as Bitcoin. That this is so is reflected in their constantly increasing areas of application in the decentralized financial services or Decentralized Finance field, along with, inter alia, cross-border payment systems and markets for on-tap liquidity, which means that they are now not merely vehicles for speculative trading but essential areas to improve innovation in financial services and productivity. The adverse consequences of their rapid development mean, however, that they are creating new systemic and regulatory problems. The lack of satisfactory standardised accepted practice in the international field, the opaque structures of the reserves behind the coins and the clear problems with the collapse of the Terra-luna operation underline how much there is a need for a greater degree of transparency, regulation and co-ordination between the various jurisdictions. Unless there are set in train vigorous new systems of control which will meet these issues, it is likely that the Stablecoin operations will become systems of systemic instability instead of stabilizing coin products. The perceptions of the implications of stablecoins and those of Central Banks Digital Currencies (CBDC's) for the digital monetary development of the next decade will, going forward, depend also on important factors. The successful co-operative relationship between the public authorities and private innovation sectors will be a vital factor in ensuring the success of stablecoins in aiding the existence of with sovereign.

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