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Can Euro-based stablecoins challenge the hegemony of the USD dollar?

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RESUMEN

Abstracto

Las stablecoins siguen siendo un aspecto importante del mercado de las criptomonedas, y esta tesis se enfoca en la situación de las stablecoins basadas en el euro y su capacidad para desafiar a las stablecoins basadas en el USD. Al analizar el tema, se define cómo han evolucionado los tipos de stablecoins a lo largo del tiempo, mientras las stablecoins basadas en el USD siguen siendo dominantes, e investiga si las stablecoins basadas en el euro pueden proporcionar un entorno capaz de atraer a europeos y empresas por igual. La gestión de estas stablecoins varía y está marcada por cuestiones como la confianza, la fluidez y los desafíos que surgen de otros marcos legales.

Introducción

Una stablecoin es un tipo de criptomoneda que busca mantener un precio de mercado estable mediante su relación con activos de reserva como moneda fiduciaria, metales preciosos u otras criptomonedas. Se clasifican en tres tipos principales: stablecoins colateralizadas en cadena, stablecoins colateralizadas fuera de cadena y stablecoins algorítmicas. Actualmente, se estima que más del 90% de las stablecoins están emitidas con base en el USD debido a su estabilidad y aceptación. No obstante, un número considerable de personas utiliza el euro como su medio de pago y moneda de transacción; sin embargo, estas permanecen en segundo plano cuando se trata de stablecoins. Evaluar los tokens basados en euros como un tipo de stablecoin puede ayudar a encontrar alternativas al dominio actual del USD.

La revisión de literatura del proyecto destaca otros trabajos que capturan los efectos potenciales de una stablecoin en la banca, la estabilidad financiera y los sistemas de pago. Algunos ejemplos incluyen a Baughman et al. (2022), que se centraron en las stablecoins como infraestructura de las finanzas descentralizadas, el Banco Central Europeo que analizó las posibilidades de la influencia de una stablecoin en la estabilidad de precios y la Reserva Federal que tocó las áreas de crecimiento de las stablecoins y la amenaza que representan para el sector bancario tradicional. La estructura del proyecto comienza con los antecedentes históricos de las stablecoins y su capitalización de mercado actual, luego procede a analizar la estabilidad y el tráfico de negociación de las stablecoins vinculadas al euro, así como su propósito en la industria de servicios financieros, e incluye finalmente un análisis de caso sobre la stablecoin basada en el euro de Circle.

Mercado de stablecoins

Las stablecoins son útiles para negociar criptomonedas arriesgadas, cubrirse con el objetivo de mitigar riesgos, minimizar costos de transacción, utilizar en pagos, y en el "staking" y "lending" de criptomonedas. La mayoría de las stablecoins están vinculadas al USD debido a su estabilidad y alta liquidez. Los activos centralizados en el mercado poseen una alta capitalización de mercado y volumen diario de negociación, por lo tanto, son preferidos por muchos usuarios y empresas. Sin embargo, las stablecoins basadas en el euro solo capturan una pequeña cuota de mercado y tienen problemas para alcanzar los mismos niveles de confianza y liquidez que las stablecoins basadas en el USD. Están gobernadas por leyes regulatorias y aceptación en el mercado. Otros tipos de stablecoins respaldadas por diferentes activos tienen cuotas de mercado significativamente menores y pueden ser más estables o menos aceptadas.

La (ir)relevancia de las stablecoins basadas en el Euro

Las stablecoins vinculadas al euro muestran diferentes niveles de volatilidad en comparación con las stablecoins vinculadas al USD. Otro factor clave que debe gestionarse eficazmente es la estabilidad de precios, ya que ayudará a ganar la confianza de los usuarios y, por lo tanto, la adopción de esta tecnología. La capitalización de mercado y el volumen de transacciones de las stablecoins basadas en el euro en comparación con las basadas en el USD también revelan la dominancia y utilización del mercado. Analizar la correlación entre Bitcoin y las stablecoins basadas en euros proporciona información sobre su estabilidad y su atractivo para los usuarios. Una correlación positiva moderada indica que las stablecoins basadas en euros pueden ser una opción de stablecoin mientras que también tienen la flexibilidad de ser influenciadas por los precios del mercado de Bitcoin.

Campos donde las stablecoins basadas en el Euro podrían desempeñar un papel

Las stablecoins basadas en euros podrían ser útiles en muchos sectores, que van desde las transacciones transfronterizas dentro de la zona euro, los pagos digitales dentro de los mercados europeos y también como parte de la integración con los sistemas financieros europeos y estructuras legales.

Emergencia de nuevos jugadores: Circle y su stablecoin basada en el Euro

La stablecoin de Circle basada en euros demuestra cómo los nuevos participantes buscan aprovechar la estabilidad del euro. Para lograr el éxito de tales iniciativas, la confianza, la liquidez adecuada y el entorno regulatorio serán factores críticos de éxito.

Conclusión

Las stablecoins basadas en el euro tienen el potencial de desafiar a las stablecoins basadas en el USD proporcionando una alternativa estable dentro de Europa. Su éxito dependerá de si se consigue construir confianza, asegurar liquidez y navegar eficazmente por los paisajes regulatorios. Esto podría reducir la dependencia del USD y diversificar el mercado de stablecoins, especialmente dentro del ecosistema financiero europeo.

Referencias

La tesis incluye fuentes de artículos académicos, instituciones financieras y análisis de mercado, proporcionando una comprensión integral de la dinámica del mercado de stablecoins y su potencial para desafiar el dominio de las stablecoins basadas en USD.

SUMMARY

Abstract

Stablecoins remain an important aspect of the crypto market, focusing this thesis on the situation with Euro-based stablecoins and their ability to challenge USD-based stablecoins. Analyzing the topic, it defines how the type of stablecoins has changed over time as USD-based stablecoins remain dominant and investigates if Euro-based stablecoins can provide an environment able to entice Europeans and businesses alike. The management of these stablecoins varies, and it is majored by issues such as trust, fluidity and the challenges that stem from other legal frameworks.

Introduction

Stablecoin is another category of cryptocurrencies which aims at maintaining a stable market price through its relation with reserve assets like fiat currency, precious metals, or other cryptocurrencies. They are classified into three main types: on-chain collateralized stablecoins, off-chain collateralized stablecoins and algorithmic stablecoins. At the moment, it has been estimated that over 90% of stable coins are issued based on the US dollar because of its stability and acceptance. Nevertheless, a considerable number of people use Euro as their mode of payment and transacting currency; they still remain in the background when dealing with stablecoins. Assessing Euro based tokens as a type of stablecoins can help in finding alternatives to the current USD dominance.

This project's literature review highlights other papers that capture the potential effects of a stablecoin on banking and financial stability as well as payment systems. Some examples include Baughman et al. (2022) who focused on stablecoins as the infrastructure of decentralized finance, the European Central Bank that analyzed the possibilities of a stablecoin's influence on price stability and the Federal reserve that touched on the areas of stablecoin's growth and the threat it poses to the traditional banking sector. The layout of the project is to start with the historical background of stablecoins and their current market capitalization. Then it proceeds to analyze the stability and trading traffic of Euro pegged stablecoins, as well as their purpose in the financial services industry, and finally, includes a case analysis on Circle's Euro stablecoin.

Stablecoin market

Stablecoins are useful for trading risky cryptocurrencies, hedging with an aim of mitigating risks, minimizing transaction costs, use in payments, and in staking and lending of cryptocurrencies. Most stablecoins are USD pegged stablecoins owing to their stability and high liquidity. Centralized players in the market possess high market capitalization and daily trading volume, therefore, they are preferred by many users and companies. However, Euro based stablecoins only capture a very small market share and have issues to garner the same levels of trust and liquidity as the USD based stable coins. They are governed by regulatory laws and acceptance in the market. Other types of stablecoins backed by different assets have significantly less market shares and can be more stable or less accepted.

The (ir)relevance of Euro-based stablecoins

Stablecoins pegged to Euro show different level of volatility compared to stablecoins pegged to USD. Another key factor that needs to be managed effectively is the price stability as that will help in winning the trust of the users and thus the adoption of the technology. The market capitalization and transaction volume of Euro-based stablecoins to USD-based stablecoins also reveal the dominance and utilization of the market. Analyzing the correlation between Bitcoin and Euro-based stablecoins gives the information on its stability, and its attractiveness to users. A moderate positive correlation indicates that Euro based stablecoins can be a stablecoin option while at the same also having the flexibility of being influenced by the market prices of Bitcoin.

In which fields could Euro-based stablecoins play a role

Euro based stablecoins could be useful in many sectors, ranging from cross-border foreign transactions within the Euro zone, digital payments within the European markets and also as part of integration with European financial systems and legal structures.

Emergence of new players: Circle and its Euro-based stablecoin

Circle's stablecoin based on Euro demonstrates how new entrants seek to take advantage of Euro's stability. To achieve the success of such endeavors, trust, adequate liquidity and the regulatory environment will be crucial success factors.

Conclusion

Euro-based stablecoins have the potential to challenge USD-based stablecoins by providing a stable alternative within Europe. Their success will depend on building trust, ensuring liquidity, and effectively navigating regulatory landscapes. This could reduce dependency on the US dollar and diversify the stablecoin market, especially within the European financial ecosystem.

References

The thesis includes sources from academic papers, financial institutions, and market analyses, providing a comprehensive understanding of stablecoins' market dynamics and their potential to challenge the dominance of USD-based stablecoins.

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ABSTRACT

This project aims to analyze the potential growth that the Euro could experience within the stablecoin market, challenging the total dominance of the US dollar. To achieve this, we will examine the evolution of stablecoins over the last decade and currently, comparing all types of stablecoins that hold significant relevance in the market. At each stage, I will present the potential dangers and drawbacks that could be triggered by the fight against the US dollar hegemony.

Euro-based stablecoins could have the potential to challenge USD-based stablecoins by providing a stable alternative for European users and businesses. Despite their potential, euro-based stablecoins face challenges such as regulatory compliance and competition from established euro-pegged stablecoins. Success will depend on building trust, ensuring liquidity, and navigating complex regulations

1. INTRODUCTION

i. What are stablecoins

A stablecoin is a type of cryptocurrency that is designed to have a stable value, typically pegged to a reserve asset or a basket of assets such as fiat currencies (like the US dollar or the Euro), commodities (like gold), or other cryptocurrencies. Users can buy, sell and trade them just like any other crypto coin (DeMatteo, 2023). There are three different types of stablecoins, each with its own way of fixing the value of the tokens to a stable figure:

- Off chain collateralized stablecoins

  These stablecoins have a reserve of a fiat currency such as the U.S. dollar, assuring the stablecoin's value. Other forms of collateral can include precious metals like gold or silver as well as commodities like crude oil, but most fiat-collateralized stablecoins have reserves of U.S. dollars.

  Such reserves are maintained by independent custodians and are regularly audited. Tether (USDT) and TrueUSD (TUSD) are popular stablecoins backed by U.S. dollar reserves and denominated at parity to the dollar. As of late July 2023, Tether (USDT) held the position of the third-largest cryptocurrency by market capitalization, trailing only Bitcoin and Ethereum. Its market capitalization exceeded $83 billion (Hayes, 2024).

- On chain collateralized stablecoins

  They are backed by other cryptocurrencies. Since the reserve cryptocurrency may also be susceptible to high volatility, such stablecoins are typically overcollateralized, meaning that the value of the cryptocurrency held in reserves exceeds the value of the stablecoins issued.

  For instance, a cryptocurrency worth $2 million might be held as reserve to issue $1 million in a crypto backed stablecoin, providing insurance against a 50% decline in the price of the reserve cryptocurrency. MakerDAO's Dai (DAI) stablecoin, for example, is pegged to the U.S. dollar but backed by Ethereum (ETH) and other cryptocurrencies valued at 150% of the circulating supply of DAI stablecoins.

- Algorithmic stablecoins

  Algorithmic stablecoins may or may not maintain reserve assets. Their primary differentiator lies in the strategy of stabilizing the stablecoin's value by managing its supply through an algorithm, essentially a computer program running a predefined formula.

  In some aspects, this is not vastly different from central banks, which also stabilize the value of the currency they issue without necessarily relying on reserve assets. However, the key distinction is that a central bank like the U.S. Federal Reserve establishes monetary policy publicly, based on well-understood parameters, and its role as the issuer of legal tender enhances the credibility of that policy.

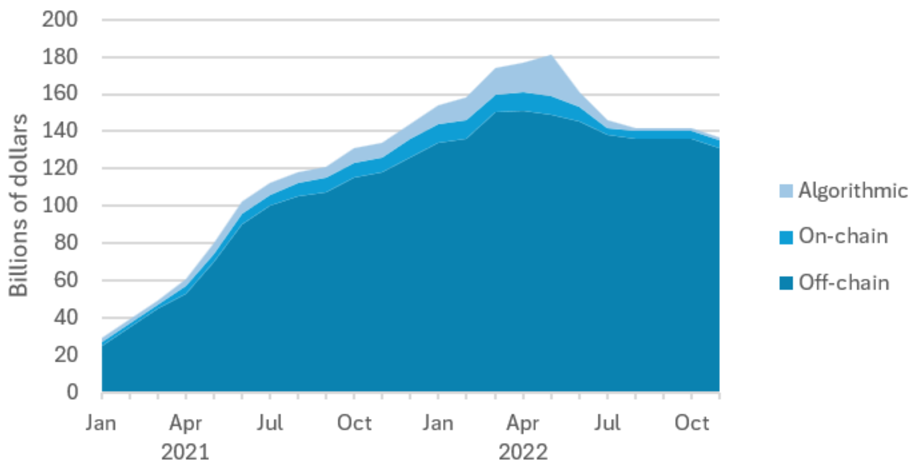
  In times of crisis, algorithmic stablecoin issuers cannot rely on such advantages. For instance, on May 11, 2022, the price of the TerraUSD (UST) algorithmic stablecoin plummeted by over 60%, breaking its peg to the U.S. dollar, as the price of the related Luna token used for pegging Terra dropped by more than 80% overnight (Hayes, 2024).

Stablecoins where created a few years after the launch of Bitcoin. They were created when the crypto industry was in its infant days, and the liquidity of digital assets was pretty low. Low liquidity was provoking high volatility and there was the need of a crypto asset that remain stable in value against the pegged external asset class.

Since then, they have evolved significantly to the technology we have today. Some of the most outstanding aspects of the technology are the diverse mechanisms mentioned in the introduction about how stablecoins back up their value, the increase in the transparency and regulation to give these assets more trust and confidence and also the capacity of decentralization.

The graph below shows the evolution of the stablecoins market capitalization in 2021-2022. There is a clear dominance of the Off-chain collateralized stablecoins due to their perceived stability and reliability (European Central Bank, 2019). In December 2021, there is a clear decline in the capitalization of algorithmic stablecoins due to the Terra-Luna disaster, which at that time was the leading stablecoin of its group. This not only represented a significant loss in the capitalization of algorithmic stablecoins but also a loss of user confidence in all stablecoins (Mitsu et al, 2021).

Figure 1: Stablecoins by capitalization



Source: Baughman, G. et al. (2022).

ii. Motivation

During the last years, over 90% of stablecoins are pegged to the US dollar as their collateral asset with very few spaces for other assets to be used to back up stablecoins. Other types of assets tried to challenge this monopoly such as TerraUSD, who became very popular in 2021 due to its innovative system. However, it eventually collapsed meaning the failure of the battle against the US dollar and the loss of trust in algorithmic stablecoins. Euro-based stablecoins have a very little space in this market, which does not represent at all the proportion of fiat Euro in circulation compared to the US dollar (Genç, 2023).

Furthermore, they have a wider acceptability, liquidity and permanence than other stablecoins which make them essential. Since these coins are backed by the US dollar, traders who buy them can feel confident that their value will be preserved over time unlike other cryptocurrencies such as Bitcoin or Ethereum. Besides being most widely accepted in the world's leading reserve currency, another reason is that they are distributed extensively for global trading platforms and exchanges and trusted. Also helping in integrating into conventional financial structures are USD-backed stablecoins which allow users to move funds between digital assets and fiat currencies more conveniently. As cornerstones of the cryptocurrency ecosystem because of their adaptability and dependability, dollars supported stablecoins serve as important tools for investors, traders or even businesses (Liao and Caramichael 2022).

It is rather challenging to definitively ascertain the precise total of US dollars and euros in circulation. However, estimates suggest that there are approximately 2 trillion US dollars in circulation and over 1 trillion euros (Statista Research Department, 2022). The ratio of the total amount of euros to dollars in circulation is approximately 1:2, so why would the percentage of each currency be different in terms of backing stablecoins?

iii. Literature review

The issuance of stablecoins may have relevant implications to the banking system, financial stability, payments, and others. This has spurred researchers to develop theoretical and empirical models aimed at comprehending their potential impacts. Therefore, this investigation contributes to several literatures spanning the fields of economics of stablecoins, banking, financial stability, and payments. In particular, this work is closely related to the recent literature that tries to understand the broader aspects of stablecoins. Baughman et al. (2022) explores stablecoins at length as they form the backbone of decentralized finance (DeFi) system which makes them both payment instruments and stores of value. The document explains the different stabilization mechanisms used by stablecoins. These mechanisms are also clarified in "Stablecoins: Overview, uses and categories", by CFI team. The paper examines what are known as stablecoins defined as cryptocurrencies designed to keep their price steady through tying their value to external references such as fiat money or commodities (Loo, 2022). Stability, therefore, is crucial in this fast-changing environment in order to provide security for investors who seek safety in these unstable markets. "The expanding functions and uses of stablecoins", by the European Central Bank, surveys the rapid growth of stablecoins in the cryptocurrency asset class, accentuating their part in price stability and connecting fiat currencies with crypto assets. Stablecoins are a nascent financial risk despite representing only a small fraction of the entire cryptocurrency market, which is why it is important to develop regulations that will mitigate these risks and prevent systemic threats to financial stability. To conclude this line, paper "Stablecoins: Growth potential and impact on banking", by the Federal Reserve, apart from giving a detailed definition of stablecoins and its types, discusses the current and potential use cases of stablecoins, focusing in their role in cryptocurrency trading and financial systems.

Secondly, I also contribute to the literature analyzing the runs on stablecoin markets. The biggest run of all times is described in "Runs on stablecoins", by Anadu, K. et al. The article explores the problem of stable coins whose recent instability is evidenced by the run on Terra in May, 2022. The description of them as "stable" suggests that their price does not vary, but this can be refuted by drastic drop in sales and market cap during this month. The article emphasizes on stablecoins driven by algorithms. It further compares stablecoins with money market funds (MMFs) and investigates how a Terra run ended up affecting other stablecoin categories hence pushing investors to prefer US-based ones that carry less risk. The run on Terra which resulted in its failure leading to a massive decrease in its circulation and market capitalization. This had an impact on the whole sector of stable coins whereby others also experienced reduced amounts as they opted for safer options especially regulated U.S.-based ones composed of securities. Stable coin runs are related to previous money-market fund runs; thus demonstrating the link between traditional finance markets plus digital asset eco-systems. In this line, paper "Runs and Flights to Safety: Are Stablecoins the New Money Market Funds?", also by the Federal Reserve Bank of New York, discusses how stablecoins and money market funds both seek to provide investors with safe, money-like assets but are vulnerable to runs in times of stress. In this paper, similarities and differences between the two are investigated, comparing investor behavior during the stablecoin runs of 2022 and 2023 to investor behavior during the money market fund runs of 2008 and 2020. It also documents that, similarly to money market fund investors, stablecoin investors engage in flight to safety, with net flows from riskier to safer stablecoins during run periods.

Thirdly, this manuscript also relates to the literature that focuses on exploring the relevance of euro-based stablecoins. Paper "The international role of the euro", by Minesso, M. & Habib, M., explores the significant growth of the stablecoin market in the recent years emphasizing the low dominance of the euro-based stablecoins, constituting only 0,2% of the total market capitalization. The evolving role and potential of euro-based stablecoins in Europe's digitalization is discussed in "The future of machine money", by Digital Euro Association. The article explores the unique opportunities of stablecoins un machine-to-machine (M2M) payments and Internet of Things (IoT) applications, where their programmability and stability could completely change transactions.

iv. Structure of the project

Before delving into the potential adaptation of the euro as a stablecoin, I will first analyze the evolution and capitalization of the major stablecoins in Section 2.

Following this preliminary analysis, in Section 3, we will delve deeper into Euro stablecoins, examining both their volatility and their intra-day transaction volumes. Additionally, I will explore whether there could be any correlation between Euro stablecoins and other types of assets or indices (such as Bitcoin, the S&P500, or the STOXX Europe 600).

Next, in Section 4, I will discuss the potential roles that Euro stablecoins could occupy within the financial system and, in particular, I will briefly analyze the case of the Circle stablecoin in Section 5.

Finally, in Section 6, I will present the conclusions drawn from the various analyses conducted to assess the possibility of Euro stablecoins having a significant presence in this market or if the US dollar will maintain dominance for much longer.

2. STABLECOIN MARKET

i. Use of stablecoins

Stablecoins serve various functions within the crypto-asset ecosystem. They are designed to provide stability in value compared to other cryptocurrencies, making them useful for different purposes. Some common uses of stablecoins include:

- Price stability: Stablecoins allow users to trade volatile cryptocurrencies like Bitcoin and other real-world assets with a more stable currency that works as a bridge.

- Hedging against volatility: As a way of hedging against market volatility in the crypto space, many users prefer to keep their funds in stablecoins so that during turbulent and ultra volatile times they can still have their money invested.

- Reducing transaction fees: Traders use these coins so as to avoid extra charges while converting any other digital asset into cash or vice versa since most exchanges do not charge additional fees or they do it at a very low cost for conversion between such coins. This could help save on transaction costs for individuals.

- Facilitating payments: Being less prone to price swings which are typically associated with mainstream cryptos, this makes them ideal for transacting business in terms of purchase power and being used as means of payment (Mitsu et al, 2021).

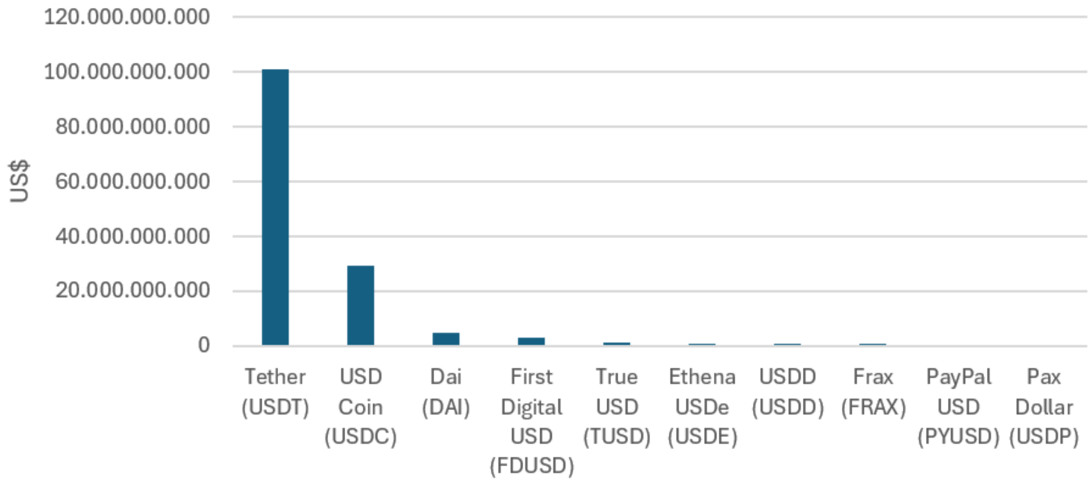
- Crypto staking: Some users engage in staking using stablecoins as an avenue for earning passive income. It involves locking up stablecoins to support the operations of a blockchain network, receiving rewards in the form of cryptocurrencies.

- Crypto lending: For the user, it operates similarly to staking. In this scenario, stablecoins are lent to other users for their use, receiving rewards in the form of cryptocurrencies. The operation is quite similar to the method used by commercial banks to lend money to their clients (DeMatteo, 2023).

ii. USD-based stablecoins

Among all the stablecoins, those pegged to the US dollar dominate the market scenery. These USD-based stablecoins, characterized by their stability and liquidity, are the preferred choice for users. Below is a graph of the highest capitalized stablecoins based on the dollar, along with the average daily trading volume.

Figure 2: USD stablecoins by capitalization

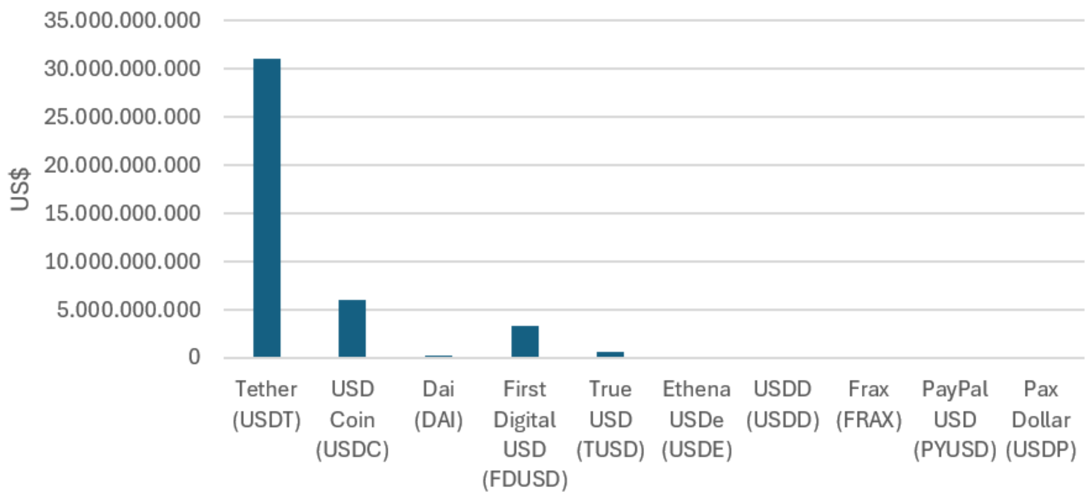


Source: CoinGecko

As observed, USDT accounts for 70% of the total capitalization of USD-based stablecoins, and between USDT and USDC, they represent 90%. This reflects the clear dominance of two stablecoins in the entire market, with the others representing a small portion of the capitalization. Only the top five stablecoins surpass one billion dollars in market capitalization, underscoring the dominance of the major ones.

In addition to market capitalization, it is important to analyze the volume of these stablecoins as it provides a much more comprehensive picture of the health and vitality of this market. The daily volume of a stablecoin refers to the total amount of transactions conducted with that stablecoin over a 24-hour period (Carreras, 2024). The following graph shows the average daily volume over the last year (from April 1, 2023 to April 1, 2024, except for PYUSD, USDE and FDUSD which entered the market after that date).

Figure 3: Average volume per day of USD stablecoins

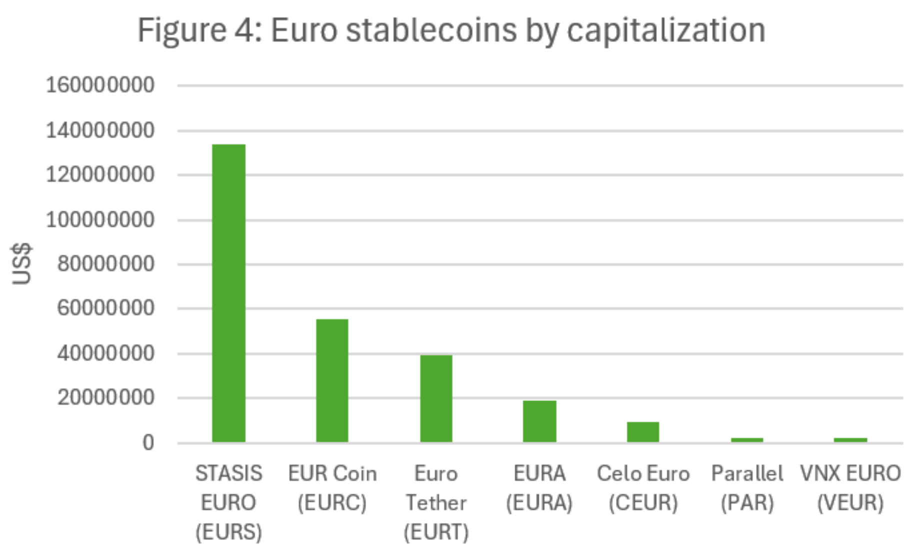


Source: CoinGecko

Comparing the market capitalization with the daily volume of stablecoins, a certain correlation between the two graphs is observed, indicating that the higher the market capitalization, the greater the daily transaction volume conducted in that currency. It is worth noting the divergence between this correlation in FUSD, as this stablecoin was launched on July 26, 2023, so to reach the market capitalization that places it in the fourth position, it has had a higher volume in the last year.

iii. Euro-based stablecoins

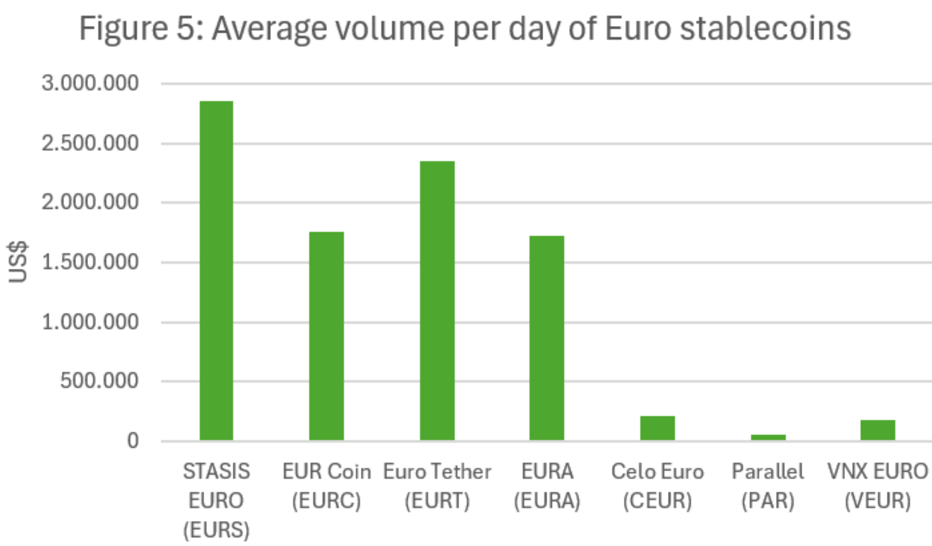
Euro-based stablecoins constitute the second largest market segment, yet their value remains relatively restricted. Their market share is notably diminutive, hovering around 0.2% of the total stablecoin market (Minesso and Habib, 2022). Furthermore, the arena for euro-denominated stablecoins is predominantly controlled by the three most prominent coins (Stasis Euro, Euro Coin and Euro Tether). In the following graph, the capitalization of the top euro-based stablecoins is displayed.



Source: CoinGecko

In the case of euro-based coins, a more evenly distributed capitalization is observed, with EURS being the dominant one with 50% of the total capitalization. The figures for euro-based coins are much lower than those of the dollar. The capitalization of Euro Tether is $40 million, while that of USD Tether is $31 billion (almost 800 times larger), which is clear evidence of the difference in market presence between the Euro and the dollar in the same stablecoin.

The average daily volume in Euro stablecoins over the last year (from April 1, 2023 to April 1, 2024) is shown below:

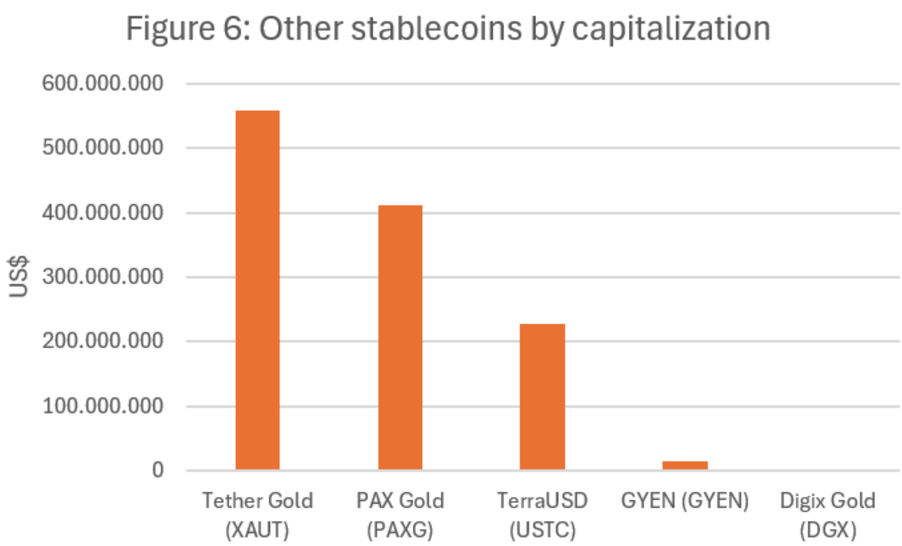


Source: CoinGecko

In this case, the majority of the volume is distributed almost evenly among the top four stablecoins, showing a certain divergence with respect to their market capitalization. This indicates that users are indifferent when it comes to conducting transactions through the euro coins, with none dominating over the others as seen in the USD coins.

iv. Other stablecoins

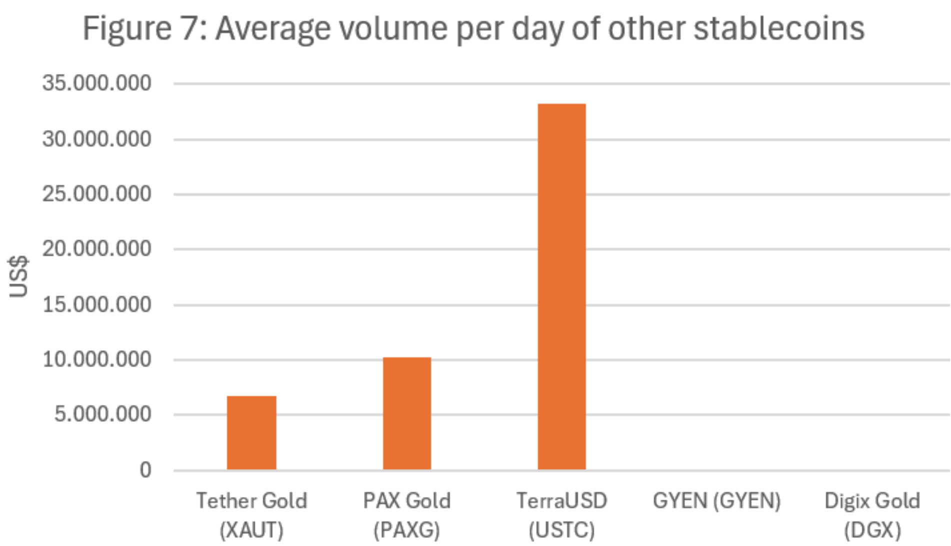
There are other assets to which stablecoins can be pegged, such as gold or other currencies. Gold-backed stablecoins typically have their price tied to either the price of a gram of gold or the price of an ounce of gold (Jalan, 2021). Those backed by currencies maintain their price with that of the currency. The following graph shows the stablecoins with the highest capitalization in this category:



Source: CoinGecko

XAUT, PAXG, and DGX are pegged to gold. The first two account for almost all of the capitalization of gold-based coins, with DGX's capitalization being negligible compared to them (only $1.2 million). USTC (TerraUSD) detached its value from the US dollar since its major crash in May 2022, dropping to $0.025 (Hayes, 2024). Nonetheless, it maintains a relatively high capitalization, ranking as the 11th largest stablecoin by market capitalization. GYEN corresponds to the stablecoin pegged to the Japanese yen with the highest capitalization, although it does not represent a significantly large presence in the market. The British pound is one of the most traded currencies in the forex market, but it has very few stablecoins pegged to it and with very low capitalization.

The average daily volume in these five stablecoins over the last year (from April 2, 2023 to April 1, 2024) is shown in the following graph:



Source: CoinGecko

As observed, the daily trading volume of USTC is more than 3 times higher than that of the next highest volume. Some experts suggest that since USTC lost parity with the US dollar, it should no longer be considered a stablecoin as it is unlikely to regain it (BitDegree). The two gold-based coins have a significantly similar average daily volume, with PAXG's being almost double that of XAUT. The other two do not reach $100.000, making them insignificant compared to the former ones.

3. THE (IR)RELEVANCE OF EURO-BASED STABLECOINS

i. Prices and volatility

As mentioned in section 2, the market for euro-based stablecoins represents only 0.2% of the total stablecoin market capitalization. In this part, an analysis will be conducted on prices (on April 2nd, 2024) and daily volatility in the last year (from April 2nd, 2023) of the euro stablecoins with the highest capitalization. It must be taken into account that the prices of stablecoins are in US dollars, so their price depends on the value of the EUR/USD pair at that time. Volatility is expressed as a percentage relative to its value in euros.

The stablecoins with the highest capitalization are:

- STASIS EURO (EURS). It is one of the most famous euro-based stablecoins, was launched by Stasis platform in 2018. It is anchored to the value of the euro at a ratio of 1:1 and it has all its euros fully secured with real-world cash deposits held in banks. EURS is listed on many exchanges and is among the most liquid and used single currency euro-pegged coins.

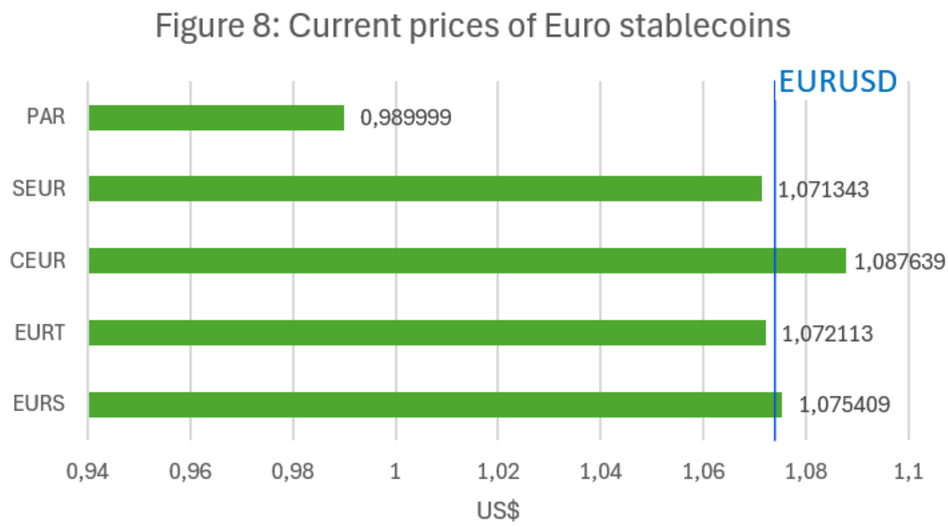
- Euro Tether (EURT). This stablecoin is the USD-pegged coin that represents tether's euro version. Underlying Tether's reserves support this cryptocurrency, which also maintains a peg to the Dollar. European liquidity can be found in crypto traders and investors who use EURT for stability reasons.

- Celo Euro (CEUR). CEUR is a stablecoin created on Celo blockchain that mirrors the price of the European currency. This crypto asset places itself as a stable fiat-denominated coin within Celo ecosystem and dApps.

- Synthetixs Euro (SEUR). Among the various synthetic currencies issued on Synthetix DeFi market, SEUR stands out because it tracks value of Euro through over collateralization with other digital assets ensuring there are enough Euros within defi space.

- Parallel (PAR). Parallel is a euro-pegged stablecoin built on the Ethereum blockchain. It aims to provide a stable euro-denominated asset for use in decentralized applications and DeFi protocols, offering users exposure to the euro within the crypto space (Minesso & Habib, 2022).

Below are the prices of the stablecoins and the EUR/USD price line at the same moment when the prices were taken (on April 3, 2024):



Source: Binance

EURS, EURT, CEUR, SEUR maintain a relationship with the US dollar quite similar to that of the Euro, with EURS being the closest to the exact price. However, Parallel is far from replicating the behavior of the Euro, which could signify a loss of confidence from its investors and lead to the total loss of its parity with the Euro.

Now, I will calculate and analyze the volatility of five euro-based stablecoins mentioned before (EURS, EURT, CEUR, SEUR, and PAR). Volatility is a key metric for understanding the stability of these assets, and it can significantly impact their usability for transactions and as a store of value.

For our analysis, I will compute (using CoinGecko) the daily price data over one year for each stablecoin. The following steps outline the process for calculating volatility:

1. Collect daily prices: obtain daily closing prices for each stablecoin.
2. Calculate daily returns using the following formula:

$$R_t = \frac{P_t}{P_{t-1}} - 1$$

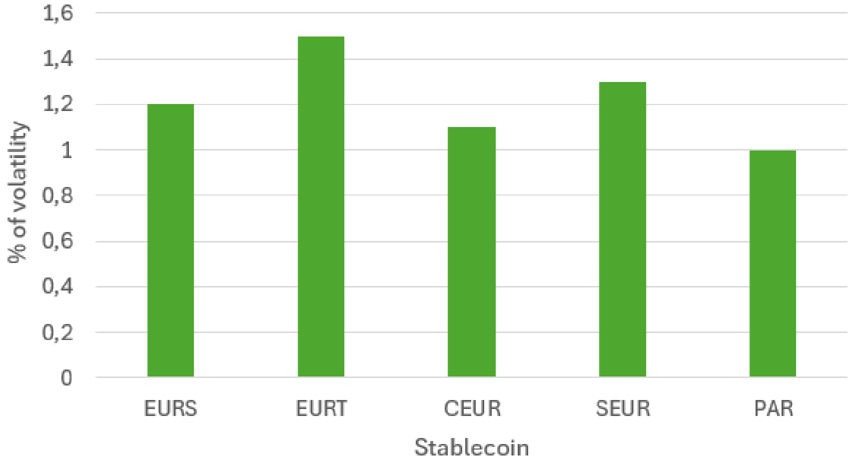
   where R_t is the daily return, P_t is the closing price on a day t and P_{t-1} is the closing price on the previous day.
3. Compute volatility: Calculate the annualized volatility using the standard deviation of the daily returns:

$$\sigma = \sqrt{365}\; x\; std(R_t)$$

   where std(R_t) is the standard deviation of the daily returns.

Below is shown the summary graph of the volatilities:

Figure 9: Annualized Volatility



Source: CoinGecko

From these results, it is evident that PAR exhibits the lowest annualized volatility at 1.0%, indicating it is the most stable among the analyzed stablecoins. In contrast, EURT has the highest annualized volatility at 1.5%, suggesting it is the least stable of the group. The volatility differences among these stablecoins are relatively small, all being under 2%. This reflects a general stability across euro-based stablecoins, making them suitable for transactions and as stores of value. CEUR and EURS follow closely with volatilities of 1.1% and 1.2%, respectively, indicating high stability and reliability. Investors and users seeking the least volatile asset might prefer PAR or CEUR due to their lower volatility. The slight variations in volatility might influence the choice of stablecoin depending on the specific use case, such as day-to-day transactions, savings, or international transfers. Overall, the analysis shows that euro-based stablecoins provide a stable option for users looking to avoid the high volatility associated with other cryptocurrencies, thus enhancing their potential for wider adoption in financial transactions and digital economies.

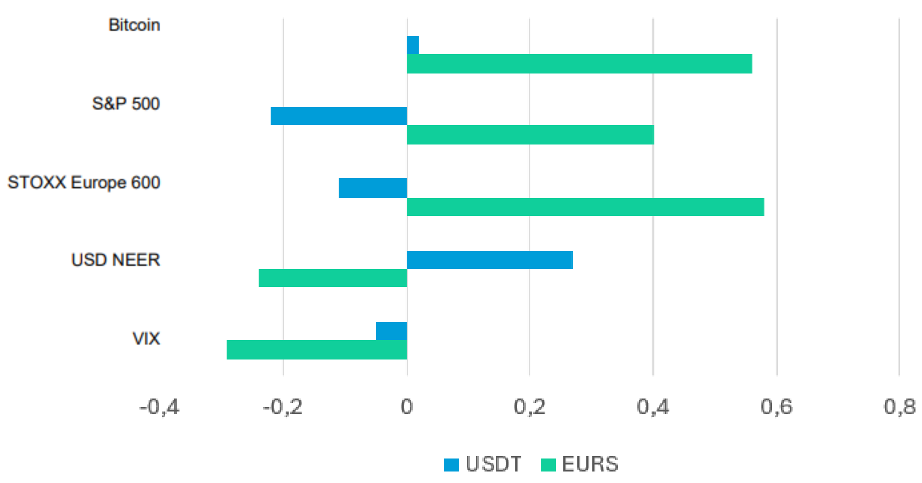
ii. Ratios comparison

The significance of the data collected in part i. might appear incomplete if analyzed in isolation. To conduct a more comprehensive analysis of the preceding data, we will compare the correlation between the USD-based and Euro-based stablecoins with the highest capitalization (USDT and EURS) and the world's most relevant assets and indices (Bitcoin, S&P 500, STOXX Europe 600, USD NEER, and VIX).

Each of these entities represents a sector of high importance in the market: Bitcoin is the cryptocurrency with the highest market capitalization of all and typically acts as a barometer for the entire crypto ecosystem. Bitcoin's health sets the trend for other alt-coins (alternative coins, referred to every crypto coin different from bitcoin), and during crises, it tends to experience less severe downturns than alt-coins. The S&P 500 and the STOXX Euro 600 are the most significant indices in the United States and Europe, respectively. Their value is determined by the market capitalization of the top companies in each territory, which makes them the best indicators of market health. The USD NEER (Nominal Effective Exchange Rate) is an economic indicator which measures the US dollar's value against multiple foreign currencies, thereby evaluating its relative strength in global markets. The VIX (Volatility Index) reflects market volatility expectations in the near future, based on the price of S&P 500 options. Investors use the VIX to assess market risk, with high levels indicating increased volatility and potential uncertainty, while low levels suggest a period of reduced volatility and greater stability (MoonPay, 2024).

The following graph shows the correlation coefficient of the mentioned assets and indices with the two strongest Euro and USD based stablecoins:

Figure 10: Correlation of USDT and EURS with the main assets and indices



Source: Minesso, M. & Habib, M. (2022).

For Bitcoin, USDT shows a small positive correlation, suggesting that movements in Bitcoin prices have little to no impact on USDT. In contrast, EURS exhibits a much higher positive correlation with Bitcoin, indicating that EURS tends to move more in line with Bitcoin prices, albeit still weakly.

Regarding the S&P 500, USDT displays a moderate negative correlation, implying that as the S&P 500 rises, USDT tends to decline and vice versa. On the other hand, EURS shows a stronger positive correlation with the S&P 500, suggesting that EURS tends to move in the same direction as the S&P 500.

When looking at the STOXX Europe 600, USDT has a small negative correlation, indicating a slight tendency to move the other way around to the European stock index. EURS, however, demonstrates a stronger positive correlation with the STOXX Europe 600 compared to USDT, reflecting EURS's alignment with European market trends.

For the USD NEER, USDT exhibits a moderate positive correlation, indicating that USDT's value increases as the US dollar strengthens against other currencies. EURS shows a negtive correlation with USD NEER.

Regarding the VIX (Volatility Index), USDT shows a moderate negative correlation, indicating that as market volatility increases, USDT tends to rise, highlighting its use as a safe-haven asset during uncertain times. However, EURS displays a negative correlation with the VIX, suggesting that the value of EURS falls as the volatility increases.

In summary, USDT generally shows negative or weak correlations with stock indices (S&P 500, STOXX Europe 600) and a moderate positive correlation with the USD NEER, indicating it behaves more like a safe-haven asset. It has a small or zero negative correlation with the VIX and Bitcoin, reinforcing its stability during high volatility. Conversely, EURS exhibits stronger positive correlations with the S&P 500, the STOXX Europe 600 and Bitcoin, suggesting it is more influenced by stock market movements and Bitcoin. It also shows a negative correlation with USD NEER and the VIX, which suggests that in times of high volatility shows much less stability than USDT. These results suggest that EURS may be more integrated with the performance of stock markets, particularly in Europe, whereas USDT serves as a more stable asset during market volatility, maintaining stronger ties to the strength of the US dollar.

iii. Bitcoin and Euro-based stablecoins

The correlation between Bitcoin (BTC) and euro-based stablecoins offers valuable insights into how fluctuations in BTC prices might impact the stability and behavior of these stablecoins.

Based on the data shown in Figure 9, the correlation between BTC and EURS (a prominent euro-based stablecoin) is moderately positive, with a coefficient of approximately 0.55. This suggests a more substantial relationship between the price movements of BTC and EURS, indicating that changes in BTC prices do have a noticeable impact on EURS.

The moderate correlation of 0.55 suggests that euro-based stablecoins like EURS are moderately influenced by the price movements of Bitcoin. This means that significant price changes in BTC are likely to be reflected in the value of EURS to some extent. Consequently, euro-based stablecoins may experience increased volatility during times of significant BTC price fluctuations. While they remain relatively stable compared to many other cryptocurrencies, they are not entirely insulated from the market dynamics affecting Bitcoin (Hansen, 2023).

Given the moderate positive correlation, it becomes essential for users and businesses that rely on euro-based stablecoins to consider the potential risks associated with BTC volatility. Implementing hedging strategies and other risk management practices may be necessary to mitigate the impact of Bitcoin's price swings on euro-pegged digital assets. However, this moderate correlation also indicates potential opportunities within decentralized finance (DeFi). Traders and investors can exploit the relationship between BTC and EURS to develop trading strategies that leverage the predictable patterns of correlation for arbitrage or hedging purposes (Maurizio and Tercero-Lucas, 2023).

In conclusion, BTC price changes moderately affect euro-based stablecoins like EURS, with a correlation coefficient of 0.55. This relationship means that while euro-based stablecoins derive their primary stability from their euro peg, they are still influenced by Bitcoin's market dynamics. Users and businesses utilizing euro-based stablecoins should be aware of this relationship and consider appropriate strategies to manage potential volatility.

4. IN WHICH FIELDS COULD EURO-BASE STABLECOINS PLAY A ROLE

It is significant that euro-based stablecoins, which only account for 0.2% of the entire stablecoin market capitalization, have potential in many areas (Hayes, 2024). Developing digital economy can benefit from stability, efficiency and inclusiveness that come with these stablecoins particularly in matters concerning European financial landscape. There are many areas where Euro based stablecoins could be important.

1.Cross-Border Transactions

Euro based stablecoins can transform cross-border transactions and remittances by providing faster, cheaper and more transparent alternatives to conventional banking systems. Nowadays, international money transfers usually have high fees charged on senders, slow processing speed together with lack of transparency. By leveraging blockchain technology, euro-based stable coins can enable instantaneous transactions at minimal costs making them an appealing choice for individuals and firms engaged in cross-border trade within Europe and beyond (Adams, 2023).

2. Decentralized Finance (DeFi)

The DeFi market is mainly USD denominated, however integrating euro based stablecoins can enrich this still emerging market. Currently, the main user base of DeFi platforms is the United States, but European users will prefer contracts in euros rather than U.S. dollars, so they will gladly switch to DeFi platforms that use euro-denominated assets. This can result in the growing usage of DeFi apps, ranging from lending and borrowing to yield farming, in Europe. That is, stablecoins running on euro would ultimately assist in risk distribution, and also lessen reliance on the US dollar within the DeFi ecosystem (Orbitos, 2023).

3. E-Commerce and Online Payments

Euro-based stable coins will improve the outcomes of e-commerce and online payments. The latter are created to become more stable compared to the volatile cryptocurrencies while at the same time offering convenient means to pay and minimize the cost of the transactions as well as their duration. This will be beneficial to both the merchants where they can enjoy relatively lower fees, and faster settlement as well as consumers where they can enjoy a perfect shopping journey. Besides, euro-based stablecoins' incorporation into numerous payment processing platforms and systems can bolster confidence in the space among European users.

4. Corporate Treasury Management

Euro-based stablecoins can be quite useful to corporations in their treasury management processes. Thus, by possessing the digital euros they are able to avoid any costs affiliated with translating one currency to another and have better control over their cash flow. Euro-based stablecoins can also be used for internal transfers of company's assets and cross-border payments thus helping to improve the efficiency of financial operations and the management of funds. Also, the ability of tracing the financial transactions on block chains make them more secure from cases of fraud and compliance.

5. Applications in Government and Public Sector

The euro-based stablecoins can be considered by the governments as well as other PSEs with reference to their potential usage in various fields, including the payments of social benefits, the collection of taxes, and the public procurement. Stablecoins contribute to making processes more transparent, saving time of officials, and reducing the number of employed resources. In addition, euro-based stablecoins can be easily connected with CBDC initiatives as an additional instrument of monetary policy and financial stability.

6. Supply Chain Finance

The usage of euro-based stablecoins can also create value in supply chain finance substantially. Since stablecoins facilitate most payments and transactions using digital platforms, they enable removal of several layers of hitches within the supply chain, provide clear visibility of procedures, and boost the speed of payments. Suppliers can accelerate the payments to be received, and thus, by doing so, accrue cash faster and avoid expensive methods of financing. Also, in supply chain activities, smart contracts assist in eradicating complexities, differences, and consequently minimize the chances of errors.

7. Financial Inclusion

Euro-based stables are of great importance to introduce the idea of financial inclusion for the people and small merchants that cannot use slot car banking services. As a result of linking their value to the euro, euro-based stablecoins can help the people maintain and invest their funds or perform payments within the digital economy without using central financial institutions. This can prove to be very advantageous in areas where there is little accessibility to physical branches on a community or country or for the portions of the population that are underserved by conventional banks.

8. Investment and Wealth Management

Wealth management firms and investment platforms can easily integrate euro based stable coins in its product portfolios which would offer clients a stable and transparent asset type. Stablecoins also may become an intermediary between the traditional and digitalconomy, thus, they can help investors to avoid risks connected with fluctuations in the foreign exchange market and, at the same time, to diversify their portfolios. Moreover, euro based stablecoins can promote the practice of creating tokens of assets, which increase users' access to investment instruments.

9. Gaming and Virtual Economies

The gaming industry and virtual economies will also reap from euro based stablecoins. Game developers can have better and stable in-game economies because of the stable digital currency.by integrating. It also noted that using stablecoins would minimize the volatility of the digital currency cause by other digital currencies. This can add value to the games and, therefore, increase consumers' interest in the virtual products.

10. Organized Philanthropic Giving and Humanitarian Assistance

Non-profit organizations such as charities can also benefit from euro based stablecoins in carrying out the donation and aids without so much convolution. Given this, through the use of stable coins, such organizations can be in a position to transfer funds directly, that is, without many intermediaries and faster to the targeted beneficiaries. This can improve the level of trust and ensure accountability whereby many individuals will be motivated to give their support and donations towards cases of humanitarianism (Membrane Finance, 2024).

Thus, despite the fact that euro-based stablecoins currently make up a very insignificant portion of stablecoins, their usability and significances are multifaceted. Thus, euro-based stablecoins can assume the historical function of transforming cross-border payments, DeFi, e-commerce, corporate treasury, governments, supply chain finance, financial inclusion, investment, gaming, and charity. Consequently, euro-based stablecoins will likely emerge as a fundamental element of the financial industry in the process of the digital economy's further development introducing progressive businesses' advancements across various industries.

5. THE EMERGENCE OF NEW PLAYERS IN THE GAME: CIRCLE AND ITS EURO-BASED STABLECOIN

In sections 2 and 3, the current market position of the Euro-based stablecoins with the highest market capitalization was analyzed. Among them is EURC, one of the Euro stablecoins with most significant weight in the market, which will be further discussed as an observation of how they can make their way into the stablecoin market dominated by those based on the US dollar.

In June 2022, Global financial technology firm Circle launched a euro-based stablecoin called Euro Coin (EURC). The stablecoin is fully regulated and is backed by reserve funds held in custody by regulated financial firms in the US like Silvergate Bank. EURC is pegged at 1:1 with the euro and follows the full-reserve model such that it has an equal amount of euro-denominated reserves as its circulating supply (James and Thomas, 2023).

This model means that all EURC tokens are backed by fiat currency for which they were issued. According to the company's announcement, EURC was designed to offer a safer alternative to algorithmic stablecoins who experienced runs on the past. This token was initially launched on Ethereum Network as an ERC-20 token, enabling it to be used for payments, trade and decentralized finance activities such as lending and borrowing (Minesso and Habib, 2022).

Within days after Tether had suffered huge losses during mid-May 2022, investors sought for safer options within this space. It opens up possibilities for multi-currency digital banking systems and instant forex where trading volumes can exceed $6.6 trillion per day globally across traditional markets.

Therefore, when Circle introduced the new centralised stablecoin, called EURC, the market of stablecoins expanded. As a result, to achieve the goal of becoming the safest exchange platform, EURC has a solid legal framework and a clear transparency of the reserve model as plans for users and investors. Therefore, it can be concluded that the introduction of EURC has the opportunity to expand the stablecoins market offers which are currently largely represented by tokens tied to the US dollar, such as USDT and USDC.

From the Circle's perspective, it looks well-planted for EURC through the success of the USD Coin that it has introduced earlier. EURC's targeting of the major exchanges, wallets, and DeFi projects guarantees that users will have access to it and be able to use it easily from day one. This broad is a critical factor in ensuring that the adoption and liquidity of the CfD contracts are achieved in the market.

Euro Coin has many applications apart from the use of conducting transactions. In the application of decentralized finance (DeFi) EURC can be used for lending, borrowing, and trading within a platform, this will be appealing to the European users who are use to using EUR as their currency of preference. Such can bring a larger number of users to DeFi platforms, thus increasing availability and decreasing the demand for stablecoins tied to the US dollar.

For the corporate entities which are involved in active trade with other countries within the members of the Eurozone, EURC can be beneficial in eliminating the exchange risks as well as the costs and time incurred in making payments through the banking systems. Such efficiency may prove useful for the e-commerce sites or international organizations having businesses in different European countries. Additionally, it will be put forward that the openness and the unalterability of the blockchain transactions will be useful in improving the financial reporting and compliance (Ajiboye, 2023).

The more so, EURC's success will rely upon several factors such as the change of regulations, market reception, and competition to other euro-pegged stablecoins. The increasing pressure from the authorities in different countries will also be another strength of Circle – compliance. Nonetheless, as the European regulatory environment is quite intricate, it will still be necessary to actively communicate with the officials and adjust to a changing set of rules.

Another challenge lies in achieving and maintaining liquidity. While Circle's established network provides a head start, the competition is fierce, with existing euro-based stablecoins like STASIS EURO (EURS) and Euro Tether (EURT) already having a foothold in the market. Building trust and demonstrating the stability of EURC through transparent audits and reporting will be essential to gain and retain user confidence (Krisztian, 2023).

To conclude, the emergence of Circle's Euro Coin (EURC) signifies a promising development in the stablecoin market. By offering a regulated, transparent, and euro-backed stablecoin, Circle addresses key concerns of stability and trust, paving the way for broader adoption. As the digital economy continues to grow, EURC has the potential to play a vital role in various applications, from DeFi and cross-border payments to corporate treasury management and beyond. The journey ahead will involve overcoming regulatory and competitive challenges, but the foundational strengths of Circle's approach position EURC as a formidable player in the evolving landscape of digital currencies.

6. CONCLUSION

In conclusion, the evolving landscape of stablecoins, particularly euro-based stablecoins, presents significant opportunities across various sectors of the digital economy. As highlighted throughout this analysis, euro-based stablecoins such as EURS and the recently introduced EURC offer stability, efficiency, and inclusiveness in financial transactions, investments, and digital asset management.

Euro-based stablecoins are poised to transform cross-border transactions by providing faster, cheaper, and more transparent alternatives to traditional banking systems. They enhance the effectiveness of decentralized finance (DeFi) platforms by catering to European users who prefer transactions in euros, thus expanding the usability and adoption of DeFi applications in Europe.

Moreover, these stablecoins can revolutionize e-commerce and online payments by offering stable and convenient payment solutions, reducing costs, and ensuring faster settlement times. For corporate treasury management, euro-based stablecoins streamline cross-border payments, mitigate currency exchange risks, and enhance financial operational efficiency.

In government and public sectors, euro-based stablecoins can facilitate transparent and efficient processes, such as social benefit payments, tax collections, and public procurement, thereby improving governance and reducing administrative burdens.

Furthermore, their application in supply chain finance enhances transaction speed and transparency, benefiting suppliers and reducing financing costs. Euro-based stablecoins also play a crucial role in promoting financial inclusion, providing underserved populations with access to digital financial services and enabling participation in the digital economy.

In investment and wealth management, these stablecoins offer stable and transparent assets, mitigating risks associated with foreign exchange fluctuations and diversifying investment portfolios. Additionally, they contribute to the stability of virtual economies and gaming industries by providing a reliable digital currency for in-game transactions.

Lastly, in humanitarian and philanthropic efforts, euro-based stablecoins facilitate seamless and direct donations, ensuring transparency and accountability in aid distribution.

Overall, while euro-based stablecoins currently represent a small fraction of the stablecoin market, their potential impact across diverse sectors underscores their role in the future of digital finance. As regulatory frameworks evolve and market dynamics continue to shift, euro-based stablecoins are poised to emerge as fundamental instruments in driving financial innovation and efficiency in the digital economy.

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