EU perspective on private and central bank digital currencies

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Abstract

‘European Union perspective on private and central bank digital currencies’ has become a trending topic in the last years especially due to disruptive technological shift towards digital payments and away from traditional banking services as we know it. During the rapid growth of several cryptocurrencies globally and locally different campaigns arose to support the ever-growing initiatives related to the implementation of a single centralized digital currency on a European level which would potentially serve all member states equally.

The main focus of this trend is increased engagement in not only public digital currencies but also privatized cryptocurrencies which had had a massive meaning in the lives of many people not only as tradable securities with massive volatility but also by representing this lucrative concept of extracting the middle man and embracing the decentralization idea behind the technology. European Union executives continue to explore ways to start developing and later on implementing the digital currency which would vastly improve the EU’s stand in the global scheme of financial systems and further support any future problems that could arise with the decreasing usage of fiat money. The pathway to a single digital currency in Europe tends to be complex with many adjustments along the way but with continuous assistance between member states and sufficient resources provided it could happen very soon and change our lives dramatically.

In the paper, we will elaborate on two main aspects of the digital currencies which are private and public, their usage, advantages as well as disadvantages, and many other exciting aspects about the rapidly emerging world of digital currencies not only in the European space but also globally.

Keywords:digital currency, cryptocurrency, influences and consequences, European Union, exchanges, blockchain, ECB, CBDC, Euro coin, volatility, improvements

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Introduction

Throughout history, money innovations have more than once challenged and altered the structure of the financial system. There were several debates on whether innovations pose risk or rewards, as well as the role of central banks in the whole scheme of fiat money confidence amongst people. Many central banks quarantined physical bills along the way, and the ECB was one of the first to condemn banknotes for their inefficiency and obsolete technology, even before the COVID-19 pandemic unfolded. This is a global phenomenon that is now being observed as countries try to deliver stimulus funds to their population. Several legal systems, ranging from mailed paper cheques to manually handing out banknotes, are improperly designed to quickly move money into the hands of those who need it, and productivity losses are common along the way.

It is clear that some central bankers regard banknotes as an "outdated technology" and want to reap some of the benefits of digitization, such as relative security and consistency. The need for an immediate fiscal and monetary response to the COVID-19 pandemic has become ever more pressing. These are likely to be the key arguments by those trying to advocate central bank digital currencies in the United States and Europe, and they would more likely impose a greater degree of regulation on central banks. Paper banknotes are a good example. Their ultimate usability improved trade, which was difficult at first due to the defaults that happened after the huge issuing of banknotes in the 17th century. Several concerns were raised about their effect on peace and, finally, the sovereign's legitimacy. Nonetheless, new banknotes gradually increased the advantages of central banking for the rest of the population. Additionally, this raised awareness that trust in money is dependent on the stability of bank deposits, leading central banks to accept the role of lender of last resort.There are growing fears in today’s society about digitalization and its effects on society as a whole. Digital payment if not properly controlled and governed could create instability and furthermore pose a threat to the monetary sovereignty of the European Union. That’s why the ECB is actively looking for solutions in the digital payments area by considering to issue digital euro – Euro coin, alongside already existing banknotes which would still represent a claim on the central bank instead of the one of a private party. To do that the European Central Bank with its power over the money supply of the member states should have an in-depth understanding of several implications such as social and financial and therefore foresee possible scenarios of issuing a digital currency. The formation and later implementation of such currency should not jeopardize the stability of the financial system and the basic needs of Europeans.

In our seminar paper, we are going to analyze the above-described ideas and try to provide facts, solutions and recommendations for a brighter, preferably better future for all the member states in the European Union.

1. PRIVATE ASPECT

1.1 Cryptocurrency and Blockchain

A cryptocurrency is a digital or virtual currency that is cryptographically secure, making counterfeiting or double-spending nearly impossible. Many cryptocurrencies are decentralized networks focused on blockchain technology, which is a distributed ledger implemented by a computer network. Cryptocurrencies are characterized by the fact that they are not typically distributed by any central authority, leaving them theoretically resistant to government interference or exploitation. The majority of interest in these unregulated currencies is speculative, with speculators often driving prices skyward.

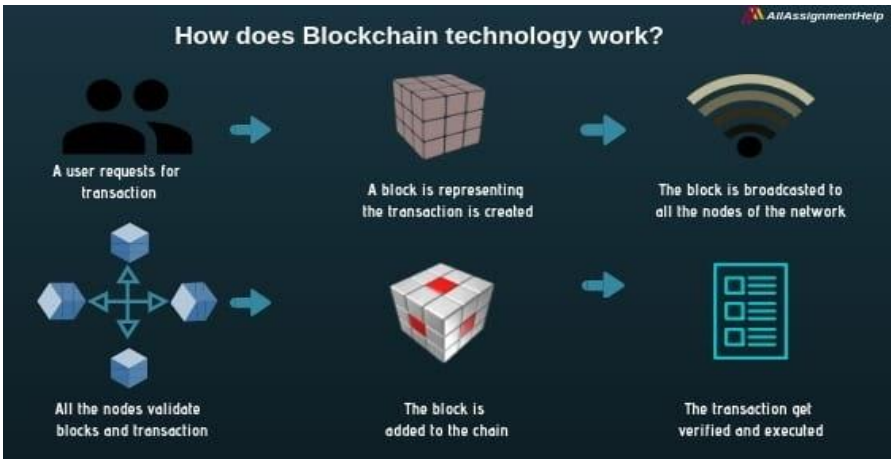

Figure 1: How does Blockchain technology work?
(Source: Allassignmenthelp)

1.2 Advantages

1.2.1Transactions

Cryptocurrencies carry the promise of making it possible to move money between two parties without the need for a trustworthy third party such as a bank or credit card provider. Instead, these transactions are protected by the use of public and private keys, as well as various reward schemes such as “Proof of Work” or “Proof of Stake”. In the current cryptocurrency scheme, a user's "wallet," or account address, has a public key, while the private key is only available to the owner and is used to sign transactions. Customers can avoid the high wire transfer fees charged by banks and financial institutions by conducting fund transfers with lower payment costs. One of the benefits of cryptocurrency transactions is that they are one-to-one, taking place on a peer-to-peer networking structure that makes “cutting out the middleman” a common practice. This results in greater transparency when creating audit trails, less uncertainty about who should pay what to whom, and greater accountability because all parties involved in a transaction are aware of the transaction's status.

1.2.2 Asset Transfers

On one level, cryptocurrency blockchain is similar to a "big property rights database," which can be used to execute and enforce two-party contracts on commodities such as vehicles, real estate, or any other physical commodity. The blockchain cryptocurrency ecosystem could also be used to allow specialized modes of transfer.Cryptocurrency contracts, for example, may be structured to include third-party approvals, make reference to external facts, or be completed at a future date or period. Furthermore, since each individual representing the cryptocurrency holder has sole control over their own account, the time and cost associated with asset transfers are reduced.

1.2.3 More Confidential Transactions

Any time an individual makes a transaction in a cash/credit system, the entire transaction history can become a reference record for the bank or credit agency involved. At the most basic level, this could include checking account balances to ensure that adequate funds are available. A more detailed review of one's financial background may be required for more complicated or business-critical transactions. Another significant benefit of cryptocurrencies is that each transaction is a one-of-a-kind trade between two parties, the terms of which can be negotiated and decided upon in each case. Furthermore, information is exchanged on a “push” basis, which allows only the sum to be transmitted and nothing else. This safeguards the integrity of financial history and shields interested parties from the danger of account or identity fraud, which is more prevalent in the conventional system, where details can be revealed at any point in the transaction chain.

1.2.4 Easier International Trade

Despite the fact that they are essentially unrecognized as legal tender on a national level at the moment, cryptocurrencies are not subject to the exchange rates, interest rates, transaction fees, or other levies levied by a particular government. Furthermore, using the peer-to-peer system of blockchain technology, cross-border transfers and transactions can be carried out without the need for currency exchange or similar factors.

1.2.5 Strong Security

The strong encryption techniques used in the distributed ledger (blockchain) and cryptocurrency transaction processes protect against fraud and account tampering while also ensuring customer privacy. If a cryptocurrency transfer has been approved, it cannot be reversed, unlike credit card companies' "charge-back" transactions. This is a safeguard against fraud that necessitates a formal arrangement between a buyer and seller about refunds in the case of a mistake or a return policy.

1.3 Disadvantages

1.3.1Price volatility and lack of inherent value

Price instability, which is linked to a lack of intrinsic value, is a major issue, and one of the details that many alluded to when characterizing the cryptocurrency environment as a bubble. It's a valid issue, but it's one that can be addressed by explicitly tying cryptocurrency value to tangible and intangible assets (as we have seen some new players do with diamonds or energy derivatives). Increased adoption should boost consumer trust and reduce uncertainty. The number of locations where cryptocurrencies can be exchanged for actual goods or services remains extremely restricted. For similar reasons, the volatility inherent in cryptocurrencies renders them a bad store of value, as the value of crypto fluctuates wildly even on an intraday basis when transformed back into an individual's base currency. To demonstrate this in percentages, consider the annualized volatility of the monthly percent change in the price of bitcoin in US dollars, which is approximately 90% for the last five years. The timing of a bitcoin or other cryptocurrency investment would have a direct impact on the returns obtained.

1.3.2 Cybersecurity issues

Cryptocurrencies, like digital technology, would be vulnerable to cybersecurity breaches and could fall into the hands of hackers. We've already seen signs of this, with several ICOs breached and costing investors hundreds of millions of dollars last summer alone (one of these attacks alone resulted in a $473 million loss). Mitigating this would necessitate ongoing security infrastructure maintenance, but we can already see several players grappling with it directly and employing improved cybersecurity initiatives that go beyond those used in traditional banking industries.

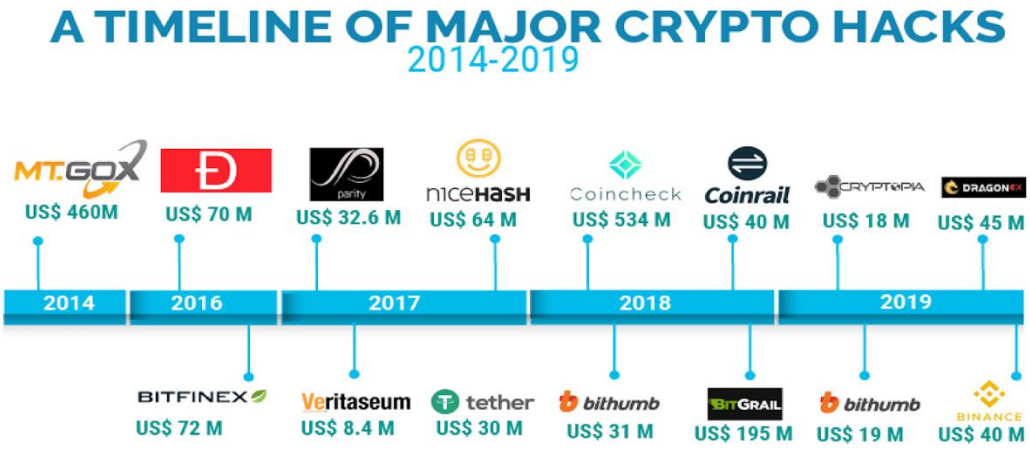

Figure 2: A timeline of major crypto hacks
(Source: Fintechnews)

1.3.3 Scalability

Although it is true that the number of bitcoins issued will ultimately be capped at 21 million, and many other cryptocurrencies have restricted supply built into their protocols, there is currently nothing stopping an increasing number of new cryptocurrencies from being released. As a result, the availability of cryptocurrency is potentially infinite. One of the most serious questions about cryptocurrencies is the scaling issues that they present. While the number of digital coins and acceptance is growing exponentially, it is still dwarfed by the number of transactions processed per day by payment giant VISA. Furthermore, transaction speed is a vital metric that cryptocurrencies cannot compete with on a level playing field with players like VISA and Mastercard until the infrastructure delivering these technologies is massively scaled. Such an evolution is complicated and difficult to carry out in a smooth manner. However, some have already proposed several solutions, including lightning networks, sharing, and staking as options to overcome the scalability issue.

1.3.4 Poor store of value and limited acceptance

Although bitcoin and other cryptocurrencies are now accepted on a growing number of payment sites, the number of locations where cryptocurrencies can be exchanged for actual products or services remains quite restricted. For similar reasons, the volatility inherent in cryptocurrencies renders them a bad store of value, as the value of crypto fluctuates wildly even on an intraday basis when transformed back into an individual's base currency.

1.3.5 Unregulated and unbacked

Cryptocurrencies are a private-sector invention with no government oversight or enforcement. These transfers are mostly semi-anonymous and as such more than ideal for a variety of criminal activities such as money laundering and tax evasion. This means that criminals will easily manipulate cryptocurrencies to defraud unsuspecting investors. According to a 2019 academic survey, 25% of bitcoin users are involved in illegal activity, and 46% of bitcoin transactions are associated with illegal activity. Since cryptographic examination of the Bitcoin blockchain has assisted police in arresting and prosecuting suspects, Bitcoin is a relatively weak option for performing illicit business electronically. However, more privacy-oriented coins exist, such as Dash, Monero, and ZCash, which are much more difficult to trace.

1.4 Cryptocurrency regulations in the EU

Regulations can differ depending on the member state and compliance with the European Banking Authority, European Commission, European Central Bank, European Insurance & Pensions Authority, and European Supervisory Authority for Securities.Cryptocurrencies are generally considered legal in the European Union, although cryptocurrency trading regulations vary by member state. Cryptocurrency taxation varies as well, but manymember-states levy capital gains tax on cryptocurrency-derived income at rates ranging from 0% to 50%. The European Union's Court of Justice ruled in 2015 that transfers of conventional currency for crypto or virtual currency (and vice versa) constitute supply of services but should be exempt from VAT.

In January 2020, the EU’s Fifth Anti-Money Laundering Directive - 5AMLD came into effect. 5AMLD brings cryptocurrency -fiat currency exchanges under the scope of EU anti-money laundering legislation, requiring exchanges to perform ‘Know- your- customer’ and ‘customer-due-diligence’ on customers and to fulfil standard reporting requirements. In December 2020, 6AMLD came into effect: the directive made cryptocurrency compliance more stringent by adding cybercrime to the list of money laundering predicate offences.

1.5 Cryptocurrency Exchange Regulations

Cryptocurrencies and crypto assets are listed as qualified financial instruments (QFIs) in the EU. Banks, credit institutions, and investment companies are not prohibited by EU law from owning, gaining exposure to, or providing services in crypto assets or cryptocurrencies. Exchanges dealing in QFis are regulated at the regional level, and companies may simply use their current QFi licenses to offer cryptocurrency-related products and services. Firms must, however, comply with a wide variety of EU legislation and regulations, including obligations for reimbursement, margin, deposit, and sanctions.

Exchanges must be registered with their respective regulators in some EU member states, such as Germany's Financial Supervisory Authority (BaFin), France's Autorité des Marchés Financiers (AMF), or Italy's Ministry of Finance. These regulators' authorizations and licenses can then be exchanged, allowing them to work under a single regime across the entire block. Following the footsteps of 5AMLD, 6AMLD has consequences for cryptocurrency exchanges. The guideline makes legal persons as well as individuals liable for money laundering offenses, which means that going forward, the leadership employees of crypto asset, currency, wallet, and exchange firms must exercise even greater supervision of their internal AML controls.

1.6 Future Cryptocurrency Regulations

The EU is actively exploring further cryptocurrency regulations. An EU draft document expressed concerns about the risks associated with private digital currencies and confirmed that the European Central Bank is therefore considering the possibility of issuing its own digital currency. In January 2020, the European Commission announced a public consultation initiative, seeking guidance on where and how crypto assets fit into the EU's existing regulatory framework. The Commission followed up in September 2020 with a new proposal known as the Markets in Crypto-Assets Regulation (MiCA). The proposal sets out draft regulatory measures for cryptocurrencies including the introduction of a new licensing system for crypto-asset issuers, industry conduct rules, and new consumer protections.

1.7 Trading

The act of speculating on cryptocurrency price fluctuations through a CFD trading account, or buying and selling the underlying coins through an exchange, is known as cryptocurrency trading. Cryptocurrencies can be purchased and sold on exchanges, and they can be deposited in 'wallets.' Cryptocurrency markets are decentralized, which means they are not issued or supported by a centralized body such as a nation's government. Instead, they run across a network of computers.Unlike standard currencies, cryptocurrencies exist only as a decentralized digital archive of ownership stored on a blockchain. When consumer needs to transfer cryptocurrency units to another user, they send them to the user's digital wallet. The transaction is not deemed final until it has been validated and applied to the blockchain in a method known as mining. This is also how new cryptocurrency tokens are typically produced.

1.7.1Buying and selling cryptocurrencies via an exchange

When buying cryptocurrencies from an exchange, one is purchasing the coins themselves. An exchange account needs to be opened and the entire value of the asset deposited to open a spot, and then the cryptocurrency token kept in one's own wallet before you're ready to sell. Exchanges have their own steep learning curve and it's quite complex for a beginner to get to know the technology and learn how to make use of the results. Many exchanges still have deposit caps, and accounts can be costly to manage.

1.7.2 CFD trading in cryptocurrencies

CFD trading is a type of derivative that allows a person to bet on cryptocurrency price fluctuations without owning the underlying coins. You can go long ('buy') if you believe the value of a cryptocurrency will increase, or short ('sell') if you believe it will decline.
Both are leveraged goods, which means that only a small amount – known as margin – is required to achieve maximum exposure to the underlying demand. Since your benefit or loss is always measured based on the total size of your position, interest will magnify all gains and losses.

1.8Exchanges

1.8.1Centralized Exchange

The first and most popular form of exchange is the centralized exchange. These exchanges are private companies that have websites for trading cryptocurrency. Many of these markets have active trading, high volumes, and liquidity. However, centralized exchanges are contrary to the Bitcoin theory. They run on their own private servers, which provides a source of the attack. If the company's servers are breached, the whole system can be temporarily shut down. Worse, personal data about its users may be exposed.
The larger, more common centralized exchanges provide by far the easiest on-ramp for new users, and they also provide some sort of protection if their systems fail. While this is right, when you buy cryptocurrency on these exchanges, it is deposited in their custodial wallets rather than in your own wallet that you own the keys to. The insurance issued is only valid if the exchange is at fault. If your device and Coinbase account, for example, are hacked, your funds will be lost, and you will most likely be unable to claim insurance. This is why it is important to remove any significant amounts and store them safely.

1.8.2 Decentralized Exchange

Decentralized exchanges work similarly to Bitcoin. There is no central point of control in a decentralized exchange. Consider it a server, except that each computer inside it is distributed around the globe, and each computer that makes up one part of that server is operated by a person. If one of these computers fails, it has little impact on the network as a whole since there are many other computers that will keep the network going. This is not the same as one company controlling a server in a single region. Attacking something that is dispersed and decentralized in this way is even more complicated, making such attacks unrealistic and likely to fail.

Because of this decentralization, these types of exchanges are not subject to the rules of any regulatory agency, since the system is not operated by a single individual or organization. Individuals who participate come and go, so a government or regulatory agency cannot possibly target a single individual or community. This ensures that those trading on the platform are not required to reveal their identity and are free to use the platform in whatever way they see fit, legal or illegal.

1.9 Volume

Volume is extremely important in cryptocurrency trading, and the total amounts traded are completely out of reach in the last year. On Binance exchange the regular daily volume of currencies traded is $37 billion. Here are the world's five largest exchanges by volume on 24.04.2021:

#	Name	Exchange Score	Volume(24h)	Avg. Liquidity	Weekly Visits	# Markets	# Coins	Fiat Supported	Volume Graph (7d)
1	Binance	9.8	$37,906,864,577 ▲ 38.49%	562	34,690,815	1205	358	AED, ARS, AUD and +43 more	
2	Huobi Global	9.2	$10,913,413,274 ▲ 30.92%	602	1,883,132	960	324	ALL, AUD, BRL and +47 more	
3	Coinbase Pro	8.6	$3,835,781,164 ▲ 70.99%	477	5,263,535	185	58	USD, EUR, GBP	
4	Kraken	8.4	$2,120,761,631 ▲ 60.49%	491	5,372,402	284	62	USD, EUR, GBP and +4 more	
5	KuCoin	8.2	$1,751,220,697 ▲ 45.68%	433	1,268,622	701	307	TOKEN	

Figure 3: Daily volume of currencies traded on Binance
(Source: Binance)

Consider Coinbase, a business that recently went public through a direct listing and hit a whopping $100 billion valuation on its first trading day, changing the entire game of cryptocurrency as perceived by the public eye. Throughout the current crypto bull run, not only individual but also institutional investors added significantly to the volume figures. Crypto trading volume on Coinbase reached new highs in Q4 2020, reaching $89 billion, with institutions accounting for $57 billion. Although recent institutional volume is more than five times that of Q1'2018, retail trading volume remains below that of Q1'2018, despite bitcoin reaching new all-time highs. It all started with Michael Saylor's company MicroStrategy purchasing $250 million in bitcoin in August of 2020, before raising a total of $2.2 billion in the cryptocurrency. Following these aggressive bitcoin transactions, Jack Dorsey's Square and Elon Musk's Tesla invested $220 million and $1.5 billion, respectively, with Tesla also announcing plans to accept bitcoin payments in the future. In addition to these businesses betting on bitcoin, banks have ignited their interest in cryptocurrencies. The Bank of New York Mellon established a digital assets unit earlier this month to assist customers in managing their cryptocurrencies, and Goldman Sachs recently announced the return of its cryptocurrency trading desk.

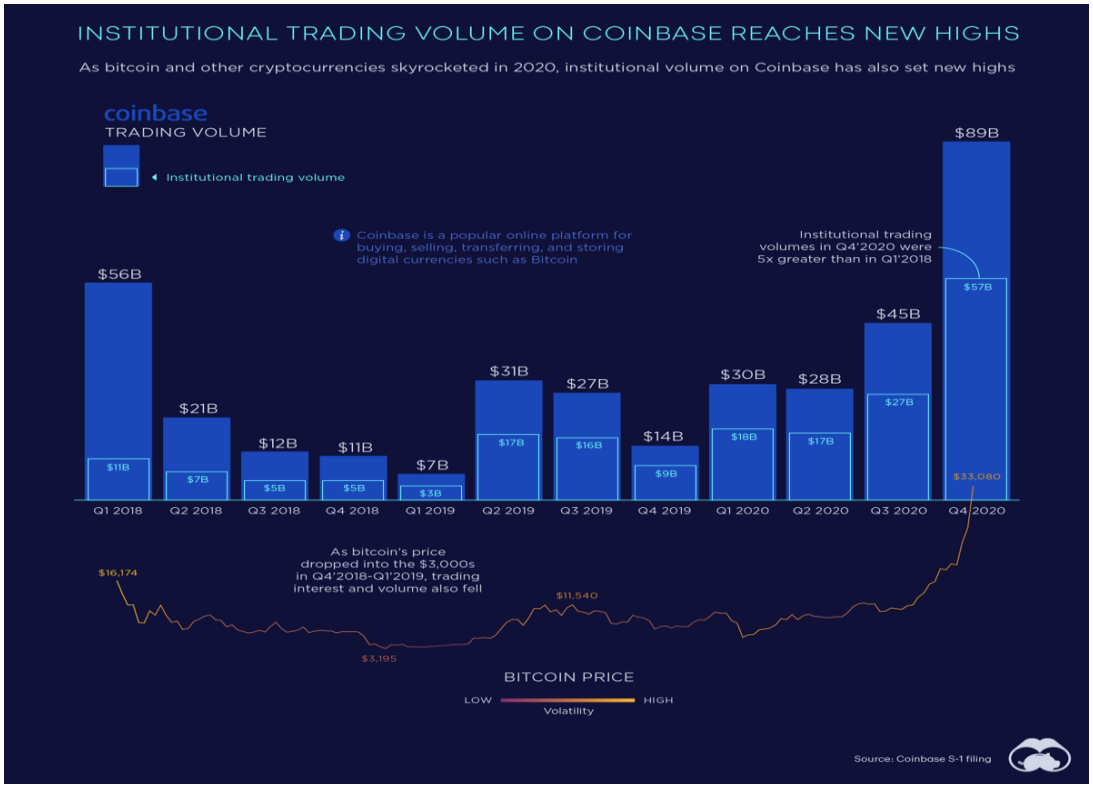

Figure 4: Institutional trading volume on Coinbase reaches new highs
(Source: Visual Capitalist)

1.10The main differences between Digital and Cryptocurrency

In contrast to these two cryptocurrencies, which also use DLT (distributed ledger technology), officially backed digital currencies will be released centrally and backed by their respective central banks. “One distinction between a digital euro and a Bitcoin is the manner in which they are issued. While the operations of the euro are centralized, with only the ECB authorized to issue it, the operations of Bitcoin are completely different referring to user-generated cryptocurrency mining. It is a distributed mechanism that is fundamentally different from the issuance of currency by a central bank in that states can issue it without limit, while the monetary mass of Bitcoin, for example, is predefined and would not exceed 21,000,000.

However, with cryptocurrencies something else occurs. To begin with, since they are created by the users themselves, only after the creation of the blocks and their verification do new coins enter circulation. From there, its value is set by the market. “From an economic point of view, the native cryptocurrencies of decentralized and non-permissive networks, such as Bitcoin or Ethereum, are not anchored to the value of a legal tender, but rather are subject to the price set by supply and demand. Furthermore, it must be borne in mind that they are not backed by a legal entity that responds in the event of technical problems.

Another of the main differences is that a digital currency backed by a central bank would have low volatility, compared to that exhibited by cryptocurrencies today. This is due to the fact that while central banks ensure financial stability through monetary policies, in relation to the value of other currencies, Bitcoin is a volatile currency because it acts in an immature market, not backed and full of expectations. Although the economist points out that this may change the more the use of cryptocurrencies becomes popular.

Figure 5: Digital Currency vs. Cryptocurrency
(Source: Sourceessay)

2. PUBLIC ASPECT

2.1 Paper money limitations and an introduction of the Digital currency

Digitalization has permeated every aspect of our lives and altered the way we pay. According to numerous studies, almost half of customers choose to pay online, and this has risen even further since the pandemic. The European Central Bank (ECB) has revealed plans to create an electronic version of Europe's most widely used currency. The ECB maintains technical neutrality when implementing rapid changes in payment behavior.

2.2 The future

The digital euro would still be a Euro: it would function similarly to banknotes but in digital form. It would be an electronic form of money distributed by the Eurosystem (the ECB and national central banks) that would be available to all people and businesses. The newly released currency would not be a replacement for cash, but rather a supplement to it. The Eurosystem will continue to ensure that everyone in the eurozone has access to the Euro currency.

It would provide an individual with more options on how to pay, make it easier to do so, and assist in dealing with circumstances in which people no longer choose cash. It would also assist in avoiding reliance on digital means of payment issued and regulated from outside the eurozone, which could jeopardize financial stability.
Such a design will stand in contrast to cryptocurrencies such as Bitcoin, whose value has skyrocketed and resulted in some users becoming victims of cyber theft. It will also vary from stable coins, which tend to avoid price volatility but are backed by a basket of traditional currencies. In principle, a digital euro could simplify the transaction at a lower cost.

The ECB may maintain its own ledger, automatically monitoring who owns each digital cent. Alternatively, it might establish rules for other ledger-keepers in a decentralized framework, maybe similar to Bitcoin's distributed ledger, which records each transaction utilizing blockchain technology. Digital euros have the potential to secure people's data by generating digital certificates that are only available to authorities. Preventing criminals from transferring illicit money. This may imply restricting large digital currency transactions and monitoring spending trends that seem suspicious. Last but not least, the digital Euro will help Europe's ongoing innovation push.

2.3 Why now?

Central banks can implement their own digital currency for two reasons:

First, the overall usage of electronic payments is on the rise especially in the last year due to concerns that physical cash may help spread the COVID-19 virus.
Second, the software industry is creating its own currency. As a result, or more so defensive move from an optimization standpoint.

2.4 Why would a digital euro not be a crypto asset?

Cryptoassets are inherently different from central bank money such as their values are unpredictable due to the lack of a fixed valuation and the lack of a credible entity backing them. People using a digital Euro would have the same degree of trust as they would with cash since they are both backed by a central bank, which crypto-assets such as stable coins cannot provide. A digital Euro will be a digital symbol of Europe's development and integration. Since the adoption of the euro, the ECB has been in charge of maintaining citizens' confidence in our currency. A digital Euro, like cash, will be available to all and provide a wider range of payment options.
ECB continues to mull over plans to introduce a digital Euro, which it hopes could mitigate some of the risks posed by private firms establishing their own digital currencies. It also issued a warning about Big Tech firms' recent participation in cryptocurrency campaigns and warned that such moves could jeopardize privacy, increase competition risks, and even "endanger monetary sovereignty."

Big Tech firms are seeking to sidestep traditional distribution networks including payment systems through their control of social media and contribute to a rapid take-up of stable coins, which could create systemic risks.

2.5 Currency stabilization process

As the first move toward stabilization, tough regulations for cryptocurrencies, such as stable coins, that protect consumers while preserving state sovereignty in monetary policy, would be needed.
Stable coins, a form of cryptocurrency backed by conventional assets, have been a hot topic since the rise of cryptocurrencies and the introduction of Facebook, Inc.'s Libra coin last year. According to Reuters, some central banks and regulators are concerned that Libra will damage monetary policy, make money laundering schemes simpler, and take away privacy. As a result, they threatened to halt the project, and it has been put on hold. The Bitcoin hype has recently become one of the most common trends in the financial markets. The value of the cryptocurrency has risen to the point that firms such as Tesla already accept Bitcoin as payment, and several other businesses, such as PayPal, are also discussing the possibility of their customers being able to pay with Bitcoin in the foreseeable future.
According to the ECB, referring to Bitcoin as a currency is incorrect because it lacks the fundamental properties of a currency. It is a risky asset with no distinguishable underlying value that is prone to significant price swings. The Euro is backed by the ECB and is a widely accepted form of payment. It is also legal tender. There is hardly anyone that does not recognize the Euro as a currency. The ECB's main concern is that confidence in cryptocurrencies could quickly evaporate, causing disruption in the financial market while representing a very fragile system.

2.6 Stable coin

Stablecoin is a cryptocurrency that offers and provides market stability while maintaining a low level of volatility. Fiat or cryptocurrency must provide a means of monetary exchange and ensure that its value remains constant over time. Failure to guarantee constant value would prevent its adoption due to concerns about purchasing power. The USD, GBP, and Euro are currencies that provide stability and ensure consistent buying power. This function of fiat currency and price commodity provided by gold is why the secure coin is pegged to it. The primary aim of a stable coin is to mimic the value of fiat currencies so that it can be used as a medium of exchange while maintaining price stability. The price stability of the stable coin is achieved by algorithmic and aping trading of its assets. Payments in the EU have fundamentally changed, and the central bank must play an important role in this transition. European payments must be a dynamic and creative market capable of meeting demand while maintaining European sovereignty. According to Executive board member Fabio Panneta, the digital Euro will be a digital sign of change and integration in Europe.
The advantages that cryptocurrencies provide to their users have made them extremely popular in society. They became important in business and international trade due to their low transaction

costs, anonymity, transferability in cross-border international markets, and absence of central banks. However, the problem of high volatility in their prices prevents widespread adoption.
Users are hesitant to trade in digital assets because of the uncertainty, which can trigger massive price swings in a matter of minutes. Even the most popular coins, such as Bitcoin and Ethereum, cannot provide stability, with price fluctuations of up to 20% being frequent.
A proposed solution to cryptocurrency volatility is the development of a stable value coin (also known as a "stable coin"). Stable coins allow an issuer to distribute a cryptographic token to users in exchange for a particular fiat currency at a 1:1 exchange rate. By reacting to the needs of cross-border payments and focusing on a considerably cheaper and quicker method of money transfer, global stable coins have the potential to make a huge difference and progress in payments. Indeed, the Financial Stability Board has suggested a roadmap to improve cross-border payments that acknowledges the importance of sound global secure coin arrangements.
The stable coin promises to convert into fiat currencies, reducing the chance of monetary system volatility. Deposit insurance, laws, and supervisions all have a secure guarantee of one-to-one convertibility. Customers' protection is ensured by the fact that they must be kept in custody by third parties.These protections cannot extend to stable coins, making them susceptible to runs. If the issuer does not guarantee a fixed value, the price of the stable coin may fluctuate with the value of the reserve assets, and a run will occur whenever users – who bear all risks – anticipate a decrease in the redemption price of the stable coin. However, if issuers do guarantee a fixed value of the stable coin and are perceived as being incapable of sustaining losses, a run can occur. Large investments in safe assets by stable coin issuers can have monetary policy implications. By influencing the availability of safe assets, these issuers can influence the level and volatility of real interest rates, potentially having unfavorable monetary policy implications for financial markets. The operation of the market can also be impacted. Furthermore, since stable coins are used as a store of value, a significant change in bank deposits to stable coins may have an effect on bank operations and monetary policy transmission.

2.7 Types of stable coins

2.7.1 Fiat-Backed

Fiat-backed stable coins are tokens that are linked to a specific fiat currency and its value. They are still set at a 1:1 ratio to the pegged currency. While most fiat-backed stable coins use fiat currency reserves as collateral, some fiat-backed stable coins might choose to use other commodities such as gold, silver, or oil.

2.7.2 Crypto-Backed

Crypto-backed stable coins are similar to fiat-backed stable coins, but they are backed by other cryptocurrencies instead of fiat. They are required when a consumer sends and locks his or her cryptocurrency into a link. The secure coin is then issued by a contact. When the holder of this

form of stable coin wants to get their collateral back, they simply pay the stablecoins back into the same contract, along with any accumulated interest.

2.7.3 Algorithmic

To ensure price stability, algorithmic stable coins depend on mathematical models and algorithms. It serves as the country's central bank, responsible for printing money and keeping the value of the money printing constant by the use of a predefined mathematical process. They are generated by increasing and decreasing the supply of tokens.

2.8 Market Overview - History of stable coin

According to Block data analysis, more than 200 projects related to stable coins were launched between 2014 and 2019. Tether was the first project to be released. Tether is a stable coin linked to the US currency, with a 1:1 token value in relation to the dollar.
The demand for tokens has been steadily growing, leading to financial decentralization by making significant progress in the supply of stable coins such as DAI and USDC, two of the most exchanged and commonly used stable coins in the market. March 12th, 2020, was crucial for the overall stable coins and cryptocurrency securities that were affected by the dropping prices triggered by the COVID-19 crisis's instability. The pandemic slowed the growth of stable coins more than anticipated at first. USDC, HUSD, and BUSD are the most common examples of increasing stablecoins.

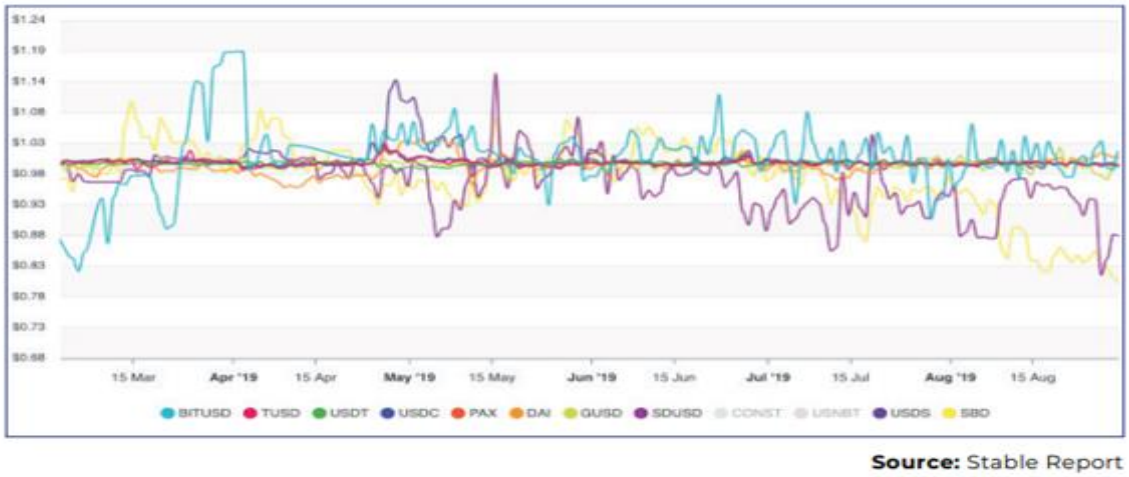

Figure 6: Stable coins and transactions
(Source: Stable Report)

The transaction volume in stable coins is 5-10 times that of Bitcoin and Ethereum. Compared to other cryptocurrencies, it was revealed that the stable coin is more transferable, more stable, quicker, and safer. In contrast to conventional money transfers, stable coin promotes the use of

cross-border payments and transfers by providing transaction functionalities without the use of an intermediary or middleman. A lot more than fiat currencies, stable coins are used as a counter currency on trading pairs in crypto asset trading.

2.9 EU and Stablecoin - the legal issue

The European Commission has proposed regulating crypto-asset markets, with the key purpose of providing legal security in the EU and establishing unified rules placed on cryptocurrencies. The plan had seven major components. The first requirement from the regulatory body is a provision of the whitepaper from their country's authorities. The whitepaper addresses capital and governance criteria, rules on conflicts of interest, rules on the stabilization processand the pool of assets backing the asset-referenced tokens, as well as requirements for issuers seeking permission to set up trading platforms for crypto-assets.Holders of stable coins will be approved by an e-money institution and will be issued on the issuer's argument, allowing them to be exchanged at any time by showing proof of keeping e-tokens. The provisions of authorization and operating conditions governing the trading platform will include services related to custody of crypto-assets, exchange of crypto to fiat currency or other crypto-assets, execution of orders, placement of crypto-assets, reception, and transmission of orders, regulating the issue of offering cryptocurrencies on the EU market and doing so while minimizing its value of volatility and reducing money laundering at the minimum level.With a massive expansion of cryptocurrencies and the level of adoption in the marketplace, it cannot stay unregulated because of alternatives in payments that it provides.

2. 10 The Monetary system with CBDC

The introduction of central bank digital currency (CBDC) – Euro coin as one of the payment methods could provide new stability for the Central Bank in the EU financial market. It will bring along creativity, change in payments, and new ways of doing business both internally and internationally. The most frequently asked question today is about commercial banks and how they will look in the future, as well as how all of this digital currency trend will affect them in the long run. Commercial banks would not be able to use CBDC because the central bank guarantees market volatility by exchanging CBDC for actual fiat currencies that the central bank distributes to commercial banks, as well as CBDC liquidity with the perception of transferring CBDC into the real economy.

CBDC's impact on the monetary system is constrained by its ability to respond to demand. The transmission of the monetary system has therefore been jeopardized. CBDC may, in principle, impact interest-bearing monetary transmission, allowing for more negative rates. Of course, in reality, CBDC will be accompanied by cash, which will halt cash holders and cause cash flow to flow through Commercial Banks.

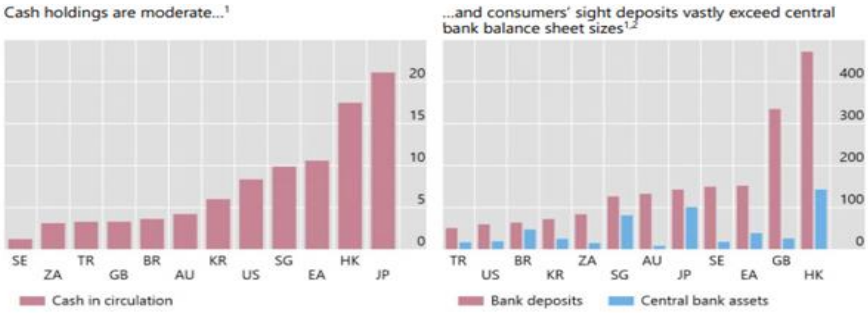

Figure 7: Impact of CBDC on cash flow

The graph shows that the presence of CBDC will not halt or impact cash flow, and the level of cash holders in bank deposits will decrease in the future. The following frequently asked question focuses primarily on CBDC's foreign trade prospects and currency competition. The incorporation of CBDC into the financial system and its consequences are critical because they facilitate the user's transfer and exchange. The presence of currency reserves such as the US dollar can make CBDC more appealing to users. The dollar is a perfect reserve currency because it is stable, with low inflation, a large number of safe reserves, and a healthy US economy in the global market. The legal framework of the United States allows CBDC holders to invest freely without fear of restrictions.

Multi-CBDC arrangements could address frictions in today's correspondent banking system, such as differing contact requirements and a lack of consistency around exchange rates or fees.

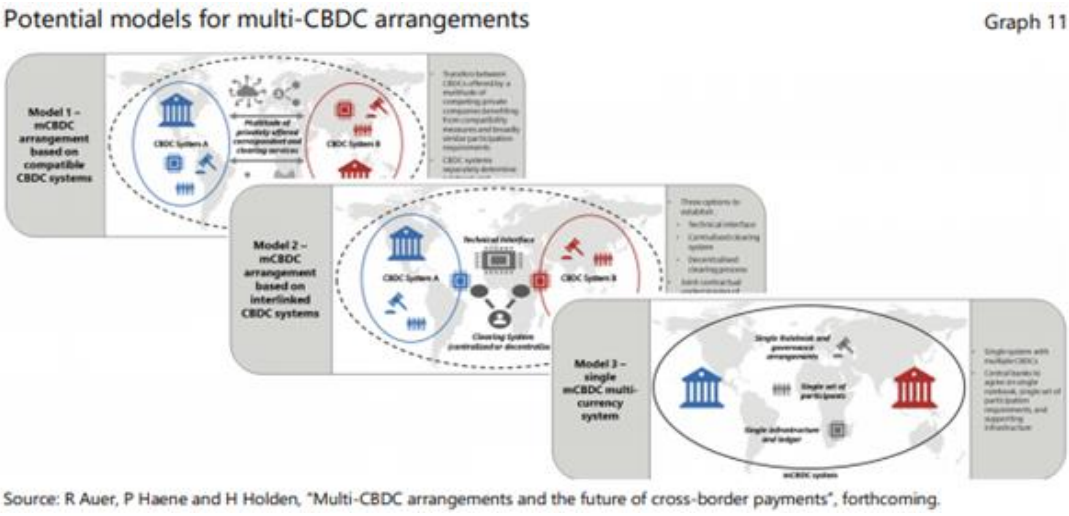

Figure 8: Potential models for multi - CBDC arrangements
(Source: R Auer, P Haene and H Holden, “Multi-CBDC arrangements)

Conclusion

The seminar paper's premise was to briefly enter the field of digital currencies and discuss them from the private and public perspectives, thus reflecting the objective side of this new technology while also objectively analyzing the idea of non-physical currencies, which would have a significant effect on Europeans in the near future.

Private cryptocurrencies are here to stay, with large exchanges leading the way in the coming years. Cryptocurrencies and digital currencies will likely share the financial room not just in the EU, but also internationally since there are no boundaries online. One of the most difficult issues that regulators will face is how to balance the public and private agendas within the currency space, and the rules of regulation that will be implemented will have to be carefully structured on multiple levels of not only unified EU legislation but also discussed with representatives from member states.

The Central Bank should be the primary controlling and regulating body in the digital cryptocurrency market. CBDC – Euro coin can therefore serve as the primary source of stability, backed by central bank guarantees. With the outbreak of the COVID-19 pandemic, there is even more pressure on all sides to introduce changes in the EU's financial markets, posing many technical, legal, and economic challenges. Euro coin - must be created, implemented, and distributed equally to people of all member countries as an alternative to cash payment methods, representing a different type of payment - a more versatile and secure payment system. As part of the electronic payment scheme, the CBDC will be an alternative payment mechanism alongside private alternative cryptocurrencies. The central bank's key function should be to protect users and ensure the safety of exchanging and transferring digital currencies, and they should develop a framework in which all new issues of cryptocurrencies in the market are standardized and controlled under the same set of rules.

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