

STRIKING A BALANCE WITH STABLECOINS

How Europe should react and how digital euro could help

In this paper

Stablecoins are gaining more prominence in the United States and could play a large geopolitical role.

European policymakers should not overreact, but should stay alert and adjust legislation accordingly. The digital euro could offset use of stablecoins, but would need to have clear selling points. High holding limits would be key to a wide user adoption and achieving ECB's stated goals.

Aleksandar Simić, Dirk Bezemer, Mark Sanders, Brenda Kramer October 2025



Colofon

Utrecht, September 2025.

The Sustainable Finance Lab (SFL) is an academic think tank whose members are mostly professors from different universities in the Netherlands. The aim of the SFL is a stable and robust financial sector that contributes to an economy that serves humanity without depleting its environment. To this end the SFL develops ideas and provides a platform to discuss them, thus bridging science and practice.

This Working Paper has been drafted by Aleksandar Simić, Researcher at the Sustainable Finance Lab; Prof. Dr. Dirk Bezemer, University of Groningen; Prof. Dr. Mark Sanders, Maastricht University; Brenda Kramer, Director of the Sustainable Finance Lab.

This paper is based on the report that has been originally requested by the Economic and Monetary Affairs (ECON) Committee of the European Parliament. The <u>original paper</u> can be found on the website of the European Parliament.

The views expressed in this publication are those of the authors and do not necessarily reflect those of all members of the Sustainable Finance Lab

Working Paper

Sustainable Finance Lab publishes different types of publications. This is a Working Paper. In our working papers, SFL members, employees or associates work out ideas that have a more reflective and academic nature. These publications typically do not contain concrete (policy) proposals.

3

SUMMARY

The crypto-asset market has exploded in size since the inception of Bitcoin in 2008 and now has multi-trillion valuations. An increasing number of consumers globally use crypto to trade and speculate. Even some large financial institutions invest in crypto as a risk diversification strategy. Stablecoins were developed as an alternative to the price volatility of unbacked crypto assets. These tokens are designed to hold their value 1:1 with a fiat currency. At present, this is mostly the US dollar. Stablecoins are currently used as a bridge between the real economy and the crypto-markets.

The current US administration appears to be very favourable to the crypto industry. Several bills are currently in the process that regulates the industry, intending to spur innovation, protect consumers, and promote stablecoins as a means of payment. Some politicians explicitly call for US-based stablecoins as a tool to expand the US dollar's role as a global reserve currency.

The European Central Bank (ECB) has expressed concern around this development. The concern is focused on the dominance of dollar-backed stablecoins in Europe and their potential impact on monetary policy and monetary sovereignty. The ECB also offered this as another argument in issuing the digital euro.

In this paper, we investigate to what extent foreign stablecoins could impact the ECB's monetary policy conduct. We look at the traditional transmission channels and describe how a high stablecoin uptake could have an effect on them. We find that foreign stablecoins are unlikely to witness large adoption in the Euro area. By extension, we do not envision that monetary policy will be negatively impacted. Euro is a stable currency, with the broad support of the European public. European payment systems are advanced, inexpensive, and reliable. Europe has already developed MiCA regulation to limit large stablecoin issuance. While not perfect, MiCA makes a first step towards stringent

crypto-asset regulation. Stablecoins, like other crypto, are related to crime, political corruption, and instability in value. All of these are potential risks to their business model and make them prone to sudden loss of trust by consumers.

Digital euro, being issued by the ECB and denominated in euro, can be a credible alternative to stablecoins in the Euro area. The current proposal for the digital euro threatens to fall short of its potential. There are unresolved questions around privacy, competition with banks, and pricing for merchants and consumers. Crucially, the digital euro is currently foreseen to have rather low holding limits. This would severely reduce its usefulness and make it more difficult to compete with other private payment instruments. High holding limits might also have cobenefits for the stability of the banking sector.

Stablecoins as a technology are developing rapidly. The US public policy seems to support this growth. Presently, we conclude there is no significant impact of foreign stablecoins on monetary policy in Europe. However, constant monitoring of the developments of monetary and financial stability by EU policymakers is merited.

CONTENT

Su	mmary	3			
List of abbreviations					
1.	Introduction	7			
2.	What are crypto-assets?	9			
3.	Crypto-assets and other forms of money	13			
4.	Interaction between monetary policy and stablecoins	21			
5.	Stablecoin adoption in Europe	25			
6.	Conclusions and recommendations	32			
De	Deferences				

LIST OF ABBREVIATIONS

ART Asset-referenced Token

CBDC Central Bank Digital Currency

DFR Deposit Facility Rate

DLT Distributed Ledger Technology

ECB European Central Bank

EMT E-Money Token
EU European Union

EUR Euro

GENIUS Guiding and Establishing National Innovation for

US Stablecoins

MiCA Markets in Crypto Assets
MLF Marginal Lending Facility
MRO Main Refinancing Operations
OMO Open Market Operations

STABLE Stablecoin Transparency and Accountability for a Better

Ledger Economy

US United States
USD US dollar

I. INTRODUCTION

Crypto-assets are booming. The total market capitalisation is above EUR 3 trillion, with Bitcoin alone at EUR 2 trillion (CoinMarketCap, 2025c). Crypto now also has political support from the United States (US) administration and policymakers. Currently there at least two bills intended to regulate stablecoins in the US Senate, while administration officials are pushing dollar-based stablecoins as a means of supporting the role of US dollar globally (Matthews & Tran, 2025).

European Central Bank (ECB) officials have drawn attention to the possible impacts these stablecoins might have (Munster & Faggionato, 2025). US-based big tech companies with an already significant presence in payment systems could expand their market power by issuing their own stablecoins. This expansion could, according to the ECB, not just come at the expense of the use of cash and bank deposits as a means of payment in the Euro area, but also ultimately impact monetary policy and sovereignty in the Euro area. Partly as a result of this growing concern with US stablecoins, the ECB has once again underscored the need for the digital euro as a possible counterweight (Lane, 2025).

In this paper we investigate these concerns. We outline the main transmission channels of monetary policy and discuss how stablecoins could theoretically impact them. We ultimately find that the impact would be negligible, as there are severe barriers to their adoption. Euro as a currency enjoys a great support of the Euro area population, bringing into question the need for introducing another currency as a means of payment. Digital payments are already well developed in Europe, leaving little need for stablecoins. European regulation is also very stringent on stablecoin issuers and could limit any large token issuance. Moreover, we find that the instability of stablecoins and the relationship of its issuers with

At the same time, crypto technology and the regulatory space are moving fast, so attention to them is merited. Over time, stablecoins could get more support by the US Government and the Federal Reserve, giving them legitimacy and boosting their growth. They could also become more bank-like in nature and get more integrated with the traditional financial sector. This interconnectedness could be a source of contagion and lead to financial instability. As seen in previous financial crises, these could easily have effects on the European financial sector, too. Any response should involve both the regulators and the ECB as monetary policy makers and financial supervisors.

We proceed as follows: In Section 2 we outline the main features of various crypto assets. Section 3 compares them to cash and bank deposits, and the digital euro, in order to gauge their potential uptake. Section 4 charts monetary policy transmission channels and how crypto assets could impact them. Section 5 details barriers to adoption of crypto in Euro area. The last section concludes and offers recommendations for policymakers.

2. WHAT ARE CRYPTOASSETS?

Crypto-assets are digital representations of value and rights that may be stored and transferred electronically using distributed ledger technology (DLT) or blockchain. Bitcoin was the first crypto-asset, designed in 2008, with Ether being announced in 2014, and many others to follow. The present size of the crypto market cap is around USD 3.5 trillion (CoinGecko, 2025), compared to, for example, the S&P 500 which is presently above USD 45 trillion (YCharts, 2025).

Crypto-assets were originally designed as a way to transfer value between two users digitally, without having a need for a centralised point of trust to verify the transaction. According to Bitcoin's creator¹, these intermediaries were charging for services, such as fraud detection and transaction mediation, which could be done away with via a decentralised network where multiple parties verified each transaction (Nakamoto, 2008). In reality, the crypto markets have since proved to be impacted by fraudulent groups and individuals, whereas the transaction fees of unbacked crypto are still relatively large for smaller transactions (see discussion below).

The main innovation of the crypto-assets is the DLT or blockchain². As the name suggests, blockchain is by nature distributed, meaning a copy of it exists on multiple locations. This contrasts to databases that are typically centralised.³

¹ Satoshi Nakamoto is a pseudonym and which individual or group published the original Bitcoin whitepaper is yet to be discovered.

² Strictly speaking the two terms are not synonymous. Blockchain is more specific and is just one kind of DLT. However, for simplicity and the purposes of this paper we will use the terms interchangeably.

³ Backups of centralised databases exist for security purposes. However, they are not crucial for the working of the system, as is the case with DLT.

Blockchain works by allocating transactions between two users in chunks called blocks. The validity of transactions is verified through two systems: proof-of-work or proof-of-stake. Proof-of-work relies on so-called miners, users with expensive computer systems that use the computational power to solve complicated mathematical tasks that ensure the validity of the transaction. In the proof-of-stake system there are no miners, but validation is done by users who are trusted as they already own a large amount of the crypto-asset (i.e. have a higher stake, hence the name).

Another property of blockchain payments is pseudonymity rather than anonymity. In effect, each transaction between two accounts can be traced, but the identity of any account holder is unknown. Truly anonymous payments, like cash transfers, are in principle not traceable and the parties in the transaction are not required to create any accounts or wallets to enter a transaction.

Another difference between the crypto-assets and traditional payment systems is programmability. Some crypto-assets can, aside from payments, execute other pre-programmed instructions under certain given circumstances. For example, payment from one wallet to another would be executed only upon performance of service or arrival of goods. These bits of code are called smart contracts.

Retail crypto-asset trading is usually done through exchanges. Exchanges fulfil several uses in the crypto world which are typically separate in traditional finance, including purchasing crypto-assets with fiat money (euro, dollar), serving as custody for assets, trading, brokerage, and lending. However, the usual legal customer protection guardrails that exist in the traditional financial sector do not cover crypto exchanges, and this overlap of roles is sometimes abused by exchange owners. For instance, as transaction validators, exchanges could have inside information on upcoming transactions and abuse them in their role of market makers, manipulating the price and thus defrauding customers (a practice called 'frontrunning') (DNB, 2022).

What kinds of crypto-assets exist?

One way to categorise crypto-assets is between unbacked crypto-assets (like bitcoin and ethereum) and those that are backed by some kind of asset (like USDT or USDC) or algorithm (like Dai) — often called stablecoins. As the value of unbacked crypto-assets does not depend on the value of any other currency or commodity or mechanism, the market value of them is uncertain and tends to fluctuate considerably over time. This feature partly explains why they are currently more frequently used as a speculation product.

Conversely, the value of stablecoins is kept stable (hence the name) by being backed by either assets or automatic value stabilisation mechanisms. In the case of asset backing, stablecoin issuers hold liquid financial assets (like government bonds) or commodities (like gold), or other unbacked crypto-assets. USDT, for example, is fixed in value with the US dollar (i.e. 1 coin = 1 USD) and its issuer holds liquid dollar-assets to maintain the parity with the dollar. Alternatively, stablecoin issuers could rely on algorithms that trade crypto-assets and programmatically maintain the value of the coin (DNB, 2022).

However, several episodes witnessed loss of parity between stablecoins and the fiat currency. Tether, the issuer of USDT, has multiple times failed to show in an audit that all of its coins were backed by liquid dollar instruments, and the representative of the company later admitted only partial backing (Lopatto, 2021). Similarly, TerraUSD, an algorithmic stablecoin, was found to be associated with a crypto-Ponzi scheme in 2022, leading to the loss of trust, withdrawal of reserves among coin holders, and eventual collapse of the stablecoin (DNB, 2022).

Crypto promises fulfilled?

On the one hand, the crypto-market has achieved the original goals: digital, nearly anonymous peer-to-peer transactions without traditional intermediaries are proven to be possible at scale. However, this success has come with some downsides. Firstly, crypto-assets are not predominantly used as means of payment between everyday citizens. For instance, in Europe only 9% of consumers held crypto in 2024, and of those a mere 14% held it for payment purposes only. On the other hand, on average two thirds of Europeans who hold crypto stated they used it for investments (ECB, 2024a). Further, this attractive investment opportunity has incentivised a market for computing systems with extremely high energy demands for mining crypto-assets, using the amount of electricity equivalent to that of Poland in 2024 at 150-170TWh (Delahaye, 2024). The original vision of Bitcoin as a decentralised and disintermediated means of payment is replaced by a reality of crypto-assets often being used as investment and speculation vehicles (DNB, 2022).

In addition, crypto-assets are often associated with crime. One analysis puts the total volume of crypto used in criminal activities at USD 41 billion as a lower bound (Chainalysis, 2025). The acts in question include not just crypto-market related endeavours, like pyramid schemes and fraudulent investments, but also more traditional crime operations such as drug trade, money laundering, and child sexual abuse material (Europol, 2021). Crypto is also used for sanctions evasion, with an estimation that state-run North Korean hacking groups managed to steal around USD 1 billion in 2022 alone (Clark et al., 2022; Naumaan, 2023). The true extent of sanctions evasion by crypto-assets is likely to be much larger than this.

Bitcoin's original design was focused on enabling cheaper transactions than established institutions. Purely in terms of fees, and in the case of global cross-border remittances, this goal seems to have been effectively reached. In 2024 the average retail cross-border payments cost 6.62% in transfer fees and could take days to settle (World Bank, 2024). In contrast, crypto-asset fees⁴ in the previous months averaged between USD 1 and 2 for Bitcoin transactions⁵ (BitInfoCharts, 2025) and settled in seconds or minutes. However, this cost advantage of crypto might be of less relevance for Europe, where settlement is typically instantaneous, even for cross-border transfers (European Payments Council, 2025), and card fees for merchant transactions are very low, at 0.2% to 0.3% for Visa and Mastercard payments (Mastercard, 2015; Visa, 2025).

Moreover, transaction fees alone do not capture the full externalities of crypto use. For instance, one study found that a single Bitcoin transaction required 402kg of CO2 emissions, amounting to EUR 37 per transaction (Trespalacios & Dijk, 2021) – much larger than the market price of the transfer fee. The total environmental costs of Bitcoin mining were estimated at EUR 2.4 billion in 2020 (Trespalacios & Dijk, 2021). Currently these amounts are certain to be larger, as the energy required has doubled from 70TWh to at least 150TWh in 2024 (Delahaye, 2024). These findings bring into question the alleged benefits of stablecoins. The following section examines how they relate to other forms of money and what the likelihood of their broader adoption could be.

⁴ Crypto-asset transfer fees are flat, market-based and depend on congestion (i.e. demand) at the time of the desired transfer (DNB, 2022).

⁵ But have historically run into dozens or hundreds of USD per transaction (BitInfoCharts, 2025)

3. CRYPTO-ASSETS AND OTHER FORMS OF MONEY

In order to come to a proper assessment of the potential effects of crypto-currencies on the European monetary system, we need to establish the role they play compared to other forms of money. In this section we discuss five payment instruments: cash, bank deposits, central bank digital currencies (CBDCs), unbacked crypto assets and stablecoins. We outline some of the more relevant features of these instruments and estimate how well they (might) play the role of money in the economy. This clarifies the scope for adoption and possible impacts of crypto assets and CBDCs. Without going into deeper questions on the nature of money, we confine ourselves to discussing the three traditional roles any instrument has in order to perform the role of money well. These are: means of payment (being used in transactions for other goods and services); unit of account (are there goods and services invoiced in this instrument); and store of value (does the instrument hold value over time).

Established instruments: cash and bank deposits

The two most widely used instruments for everyday transactions are cash and bank deposits. Cash is a liability of the central bank and is thus a public form of money (see Table 1 below for full comparison). On the other hand, bank deposits are a liability of the commercial bank issuing it, so it is a private form of money. The value of the bank deposits is, however, backstopped by public institutions. Deposit guarantee systems insure deposits up to a pre-determined limit, reinforcing the trust in banks and preventing destabilising runs. Central banks can also act like lenders of last resort to prevent bank failure and stabilise the value of its liabilities. In some countries in Europe, tax payments are only possible using bank deposits, giving them further legitimacy by the state.

Both cash and bank deposits play the three traditional roles of money well. Being denominated in domestic currency they are a good unit of account. Since they have central bank support they are stable in value (typically in developed

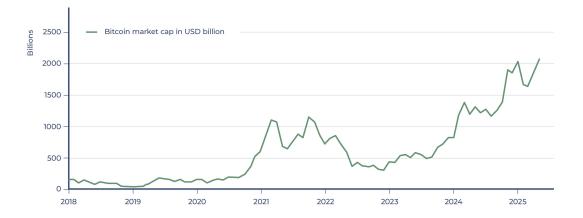
countries), thus a good store of value. They also have broad acceptance and are widely accepted means of payment.

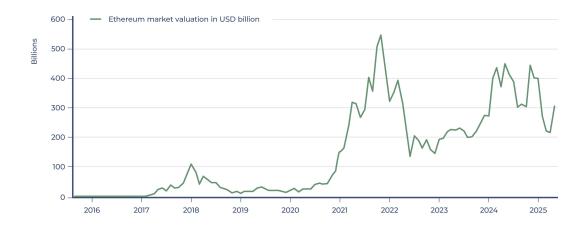
Aspiring instruments: unbacked crypto and stablecoins

When looking at the roles of money, crypto-assets are forms of digital and private means of payment and therefore fulfil the first role of money. Being mined on a DLT, unbacked crypto-assets are not a liability of any legal entity. In contrast, stablecoins have issuers, and the tokens they issue are backed by other assets. However, unlike bank deposits, they currently do not enjoy the level of government support in the form of the deposit guarantee system or lender of last resort by the central bank.

Unbacked crypto-assets are highly volatile in value (see Figure 1 below), leaving them a poor store of value. The transactions of unbacked crypto-assets can be slower and more expensive than cash and bank deposit payments in developed countries (for comparison see section 4.3). This makes them a relatively poor means of payment. Lastly, crypto-assets are not a unit of account. Few prices (in the legal economy, at least) are denominated in crypto-assets. Stablecoins are relatively stable in value and frequently used in crypto spaces as means of payment. However, these are mostly payments for buying and selling other crypto-assets. However, there is very little use of stablecoin in everyday transactions. In summary, crypto-assets do not fulfil all of the functions of money as well as bank deposits and cash do.

Figure 1. Market cap of Bitcoin and Ethereum





Source: CoinMarketCap (2025a, 2025b), authors' own elaboration.

Note: USD billion.

Proposed instruments: Central Bank Digital Currencies

Central Bank Digital Currencies (CBDCs) in theory have the potential of fulfilling all functions of money. However, CBDCs are still in the research phase for most major economies, including the Euro area (Atlantic Council, 2023). As such, design and implementation details are still not finalised. As the name suggests, CBDCs would be digital in nature and issued by the central bank. If CBDCs are issued and transferred on a blockchain the technological aspects will be similar to crypto (ECB, 2024b). However, it is not clear what benefits this setup would bring for retail transactions over the traditional, non-DLT based payments, which have broad adoption and high efficiency in Europe (ECB, 2024a).

For CBDCs to effectively fulfil all roles of money, design choices are important. Unlike bank deposits and stablecoins, CBDCs would be liabilities of the central bank and therefore default risk-free and public, making them a potential unit of account and reliable store of value. Since, for Europe, a CBDC would be linked to the euro, it would also function as a unit of account. To make CBDC a means of payment, acceptance and use by the broader public is critical and will depend on design choices made at the introduction. The next paragraph will give insight into the possibilities.

Digital euro

Digital euro is ECB's CBDC project, which is currently in development (ECB, 2023a). One of the main motivators for its introduction is the fact that digital payments using private forms of money are gaining dominance over cash payments (ECB, 2024a). In Europe, these payments are facilitated mostly by US-based Visa and Mastercard payment cards issued by European commercial banks. This presents a two-fold problem for the ECB: fewer Euro area citizens rely on cash as the only public form of money, and the reliance on Visa and Mastercard keeps increasing

(Cipollone, 2025). This reliance presents a geopolitical risk, as 13 countries in Europe fully depend on non-European card providers and there are only 9 national card schemes remaining in Europe (ECB, 2025d). Moreover, the ECB's concern is that a reduced use of cash would reduce trust in the financial system and bring into question the convertibility of bank deposits (Lane, 2025).

The developments around stablecoins have only increased these concerns as they are by nature private and most of them are expected to be foreign-denominated (Lane, 2025). The ECB allegedly requested revision in the MiCA regulation to further prevent their uptake in the Euro area (ECB, 2025a). Moreover, the ECB has put forward that the digital euro could help counter these trends. The digital euro would be a public, digital alternative to private and foreign payment instruments.

How the digital euro is envisioned to help

ECB officials put forward several reasons why the digital euro could be an attractive alternative to foreign stablecoins and private means of payment. Firstly, it could be designed to offer a base level of services on top of which various payment providers could build their value-added services. This is opposite of global stablecoins which are foreseen to be locked in within the proprietary platform of its issuer (Lane, 2025).

Secondly, the digital euro could be designed to be more protective of user privacy than current private payment solutions, such that only a minimum of user and payment information is available to the ECB and payment providers (Daman, 2024). The ECB also does not have a profit motive and would not sell this data on to the market (Daman, 2024). Big tech companies, who might become large issuers of global stable coins in the future, and commercial banks are infamous for their privacy violations and often use and sell their customer data for profit (Boissay et al., 2021).

Thirdly, the digital euro could be more accessible to the public than the private payment solutions. For instance, it would be cheaper for merchants, ensuring broader adoption. Moreover, through public institutions and facilitated access it would lower the threshold for use by marginalised groups (ECB, 2024b).

Ensuring the right design

At the same time, a broad adoption of the digital euro is not guaranteed. CBDC rollouts in other countries are a case in point. In case of Nigeria, the Bahamas and Jamaica, after more than a year, the total amount of CBDC compared to total currency in circulation was on average still below 1% (Noll, 2024) and in Nigeria only 0.5% of the population had a digital wallet (Aurazo et al., 2024; Ree, 2023).

While these are developing countries and their use-cases for introducing a CBDC

Since Europe has well developed digital payments systems, this is not a given. This means that any new competitor in the field has a high threshold for widespread user adoption. This is true of stablecoins, but also potentially the digital euro. There are several design choices the digital euro needs to satisfy in order to increase the likelihood of its adoption. First, the digital euro needs to be cheaper and more convenient than existing commercial bank apps, both for merchants and consumers (Bindseil et al., 2021). On the upside, the ECB intends to keep the fees for consumers and merchants minimal, offering a cost advantage to private payment instruments (ECB, 2023a). At the same time, the ECB envisions private banks and payment service providers administering the digital euro (ECB, 2024b). As consumers in the Euro area are familiar with their banking solutions, it is not a priori clear how the digital euro will be able to differentiate itself and offer more convenience in the wallet it is competing with.

The same is true of privacy. Polling research has found that European consumers highly value privacy in their payments (ECB, 2021). At the same time, the ECB stated that private payment providers sell their clients' data for profit (Daman, 2024). It is then an open question whether consumers would trust the privacy of the public digital euro administered through a private payment solution.

Crucially, in order to meaningfully compete with bank deposits and stablecoins, the digital euro should also be an adequate store of value. This would only be possible if it has high (or infinite) holding limits. This is in contrast to the current ECB plans where holding limits are still to be calibrated, but are expected to amount to EUR 3000-4000 per consumer (Panetta, 2022).

Such limitation might hamstring user adoption and ultimately reduce the chances of success of the digital euro (Chiu & Hofmann, 2022; Hofmann, 2023; Niepelt, 2023). It is unclear conceptually why a central bank would provide a physical currency that can be held in (in principle) unlimited amounts, whereas a digital version of it could not (Niepelt, 2023). Similarly, if the ECB is concerned about the loss of the monetary anchor due to the declining use of public money (cash) (ECB, 2023a; Lane, 2025), it would be expected that a more ambitious use of public digital money would be welcomed.

A similar parallel can be drawn with stablecoins. Simply put, stablecoin holdings do not have a cap. If the ECB's stated ambition is to design a CBDC to counter the use of stablecoins (Lane, 2025), it is difficult to see how a limited digital euro could be a more attractive alternative to stablecoins.

The stated reasoning for the low holding limits is reducing the financial stability risks. The concern is that an unlimited digital euro would exacerbate a financial crisis by facilitating fast deposit outflows to the ECB balance sheet (ECB, 2023a). Moreover, mass and long-term migration of bank deposits to digital euro holdings could, according to this reasoning, reduce cheap (deposit) funding from banks, forcing them to acquire alternative (and typically more expensive) funding, which could have consequences for both financial stability and monetary policy (ECB, 2023a) (see discussion in 4.2 below).

First, as recent episodes of financial instability in the US and Switzerland have shown, digital deposits can quickly be withdrawn and moved to another bank with or without CBDCs and stablecoins (Chiu & Hofmann, 2022; Grünewald, 2023). Second, it is not clear why a central bank would prefer that consumers run from deposits into private stablecoins instead of a public CBDC (Hofmann, 2023). Third, and counterintuitively, a run into an unlimited digital euro could give a central bank more information about liquidity needs of impacted banks, leading to a quicker reaction and shortening of the financial instability episode (Chiu & Hofmann, 2022; Hofmann, 2023). Lastly, the ECB can 'recycle' the newly acquired central bank reserves back into the banking system in the form of new lending to banks (Brunnermeier & Niepelt, 2019).

A more fundamental question is whether the banking system (in Europe) works well and whether the status quo should be maintained. Conceptually, it is not clear in the first place that liquid and short-term deposit financing is an appropriate funding source for the typically long-term assets banks often hold. Alternative setups are imaginable where different kinds of institutions could match maturities more appropriately (Niepelt, 2023).

A part of the reason for the maturity and liquidity mismatch is the bank regulatory framework. For instance, the post-2008 crisis regulatory wave in Europe has increased compliance costs for banks and limited incentives for riskier real economy lending (Chiu & Hofmann, 2022). A part of the regulatory framework that applies to banks specifically is the deposit guarantee system. These systems are designed to compensate bank customers up to a certain point (EUR 100,000 in the Euro area) and refund them in the case of bank bankruptcy. This safety disincentivises customers from moving their deposits to competing non-insured products (such as MMFs), tilting the market playing field in banks' favour.

To sum up, bank deposits and cash are established payment instruments and are very money-like. CBDCs are still not in existence in developed economies and their use as money will largely depend on design choices. If the holding caps are strictly enforced the store of value role could be limited compared with other money substitutes on the market. Means of exchange and unit of account roles also depend on whether the consumers and merchants widely adopt CBDCs an see the added value compared to other payment instruments on the market, as the case of Nigeria and Jamaica has shown.

Crypto-assets provide innovative, peer-to-peer payment options, but have not broken into the larger economy, so everyday goods and services cannot be purchased with them. Unbacked crypto assets are a poor store of wealth as their value fluctuates considerably. Stablecoins could be a better store of value, but their stability has not always been guaranteed (see discussion in Section 4) and typically are not remunerated, leaving them disadvantaged when compared to some other instruments, such as bank deposits or MMFs.

Table 1. Properties of different forms of money and crypto-assets.

	Cash	CBDCs	Bank deposits	Unbacked crypto	Stablecoins
Digital	No	Yes	Yes	Yes	Yes
Public	Yes	Yes	No	No	No
On a blockchain	No	Not expected in Euro area ⁶	No	Yes	Yes
Programmable	No	Possible, but digital euro not ⁷	Optionally	Yes	Yes
Use without intermediaries	Yes	Not in Euro area ⁸	No	Yes	Yes
Has large price volatility	No, stability guaranteed by the central bank	No, stability guaranteed by the central bank	No, parity with cash guaranteed by the central bank	Yes	Not typically
Means of payment role	Yes	If broadly adopted	Yes	Not in the wider economy	Not in the wider economy
Unit of account role	Yes, de- nominated in domestic currency	Yes, de- nominated in domestic currency	Yes, de- nominated in domestic currency	Not in the wider economy	Not in the wider economy
Store of value role	Yes	Not if holding limits are low	Yes	No	Yes
Performing money role	Well	Depending on the design	Well	Presently poorly	Presently poorly

Source: Banco de España (2022), authors' own elaboration.

⁶ See (ECB, 2024b), but wholesale (i.e. inter-institutional) settlements experiments have already begun (ECB, 2025b).

⁷ See (Panetta, 2023)

⁸ See (ECB, 2023)

4. INTERACTION BETWEEN MONETARY POLICY AND STABLECOINS

In this section we outline the goals, instruments, and transmission channels of monetary policy in Europe. We discuss mechanisms by which stablecoins could theoretically impact monetary policy in Europe.

The ways in which the monetary policy instruments of the ECB affect the real economy are called transmission channels. On the upstream of this transmission there is the ECB's adjustment of the short-term rate that determines the medium-and long-term rates through expectations. On the downstream is the cost and availability of liquidity for companies and households (Lane, 2022). For this paper we focus on the effect of stablecoins on the most relevant downstream channels.

Interest rate channels

Interest rate channels refer to the way in which short-term interest rates set by central banks have effects on consumer and company savings, wealth, and cash flow. For instance, higher interest rates make household savings more attractive, reducing consumption in the short term. They also reduce financial asset (stock and bond) prices, decreasing total wealth and reducing spending. Higher interest rates impact the cash flow of consumers and companies: on the one hand it increases interest payments, reducing the cash flow available for consumption; on the other hand, it increases interest revenues of the assets consumers and companies might hold (Lane, 2022).

Multiple studies have found that monetary policy shocks impact crypto-asset prices, although there are differences in terms of the sign and size of the effect, as well as the jurisdiction. For instance, Karau (2023) finds that after 2020 Federal Reserve's contractionary monetary policy (i.e. increase in interest rates) reduced the price of Bitcoin, but that in the pre-2020 period this contractionary stance had the effect of increasing its price. A study by Ma and collaborators contradicts the latter finding. They find that Fed's monetary tightening (i.e. increase in interest

rates) is associated with a decrease in the price of Bitcoin on a pre-2020 dataset (Ma et al., 2022). International Monetary Fund research finds that an increase in Fed interest rates decreases the market capitalisation of the crypto markets (Che et al., 2023). Another study finds that Fed monetary policy tightening decreases the market capitalisation of stablecoins specifically, as higher interest rate environment prompts investors to move from non-yielding stablecoins to traditional investment vehicles (Aldasoro et al., 2025).

In the Euro area, a decrease in interest rates is found to reduce Bitcoin prices (Pietrzak, 2023). A Bundesbank study found different results: a decrease in ECB interest rates leads to an increase in Bitcoin prices, although the effect found was quite small (Bundesbank, 2021). Monetary policy then does appear to have an impact on crypto-assets, but the effect sign is not conclusive and a matter of further empirical study.

Bank lending channels

Bank funding costs, i.e. the price at which banks refinance themselves, are key for monetary policy transmission. Banks typically get their funding either through deposit issuance (i.e. deposit funding), which is shorter term, cheaper, and more 'sticky' (slower to respond to monetary policy impulses); or through wholesale funding, which is usually longer term, more expensive, and quicker to respond to monetary policy. Increase in bank funding prices translates into the price of new lending or existing flexible-rate loans to the economy. Increase in interest rates also reduces the prices of assets that banks hold and accept as collateral, reducing the lending rate and overall consumption (Lane, 2022).

Literature indicates several ways that crypto-assets might impact the bank lending channel. For instance, large scale consumer preference for crypto-assets might lead to deposit flight from commercial banks. This would, the argument goes, force banks to shift from deposit funding to wholesale funding. This could make bank lending more expensive and volatile (Assenmacher, 2020; G7 Working Group on Stablecoins, 2019). At the same time, it could improve the policy transmission, as wholesale funding is more responsive to monetary policy impulses than cheaper but more 'sticky' deposits (Beltrametti & Pittaluga, 2023; G7 Working Group on Stablecoins, 2019). Lending channels could also be weakened if large amounts of bank holdings switch to crypto-assets and away from traditional assets that central banks can directly influence (Melachrinos & Pfister, 2021). In extremis stablecoin issuers could become bank-like in their activities, engaging in lending and thus creating new tokens that are not fully backed by assets (as is now the case), and weakening monetary policy transmission (G7 Working Group on Stablecoins, 2019).

There are reasons to doubt any of these impacts could take place in the Euro area. Firstly, allowing stablecoin issuers to engage in bank-like activities is a policy choice. Banks are faced with strenuous financial regulation and supervision, and are subject to bank charter laws. Presently, through MiCA regulation, stablecoin issuers would not be treated like banks and would be subject to strong criteria about which assets they would need to hold to back their coins (Regulation (EU) 2023/2869, 2023).

Secondly, as discussed previously, monetary policy does impact crypto-asset values, although the effect and the sign are not clear. Consequently, even if crypto-assets do become a larger share of bank holdings, monetary policy effect would not by default be weakened, as suggested by Melachrinos and Pfister (2021).

Most importantly, it is far from certain that (European) consumers would en masse convert their bank deposits to stablecoin holdings to such an extent that it might impact monetary policy (see discussion in 4.3 below). Nor is it certain that banks would passively accept competition from stablecoins. For instance, findings show that banks have previously increased deposit rates in response to increased competition from fintech companies (Hodula, 2023). This reaction could conceivably be replicated against stablecoin issuers.

Exchange rate channel

Finally, monetary policy changes impact currency exchange rates: an interest rate decrease by the ECB depreciates the value of the euro relative to other currencies (Lane, 2022). Assuming that, for example, dollar-denominated assets have not changed in yield, they automatically become more attractive than euro assets. This increased demand in dollars and reduced demand in euro leads to depreciation of the latter (Bundesbank, 2021). The depreciation of the currency also makes domestic goods cheaper, causing a rise in exports and, in turn, increased demand (Mishkin, 2019).

As crypto-assets are de facto akin to foreign currencies, the same mechanism should apply: reducing interest rates will depreciate the domestic currency vis-à-vis stablecoins (Bundesbank, 2021), leading to an increase in consumption in domestic currency, which leads to strengthening in this transmission channel.

This holds under the assumption that foreign currency plays the medium of exchange role, but not the unit of account role. If prices in an economy become (partly) denominated in a foreign currency, the central bank by definition loses its grip on price stability as prices are not denominated in the assets in which it can intervene (barring foreign reserves it might hold). This (partial) repricing of goods in foreign currency is called dollarization. Some authors fear (or at least discuss) that this scenario might be replicated with a successful uptake of foreign-denominated

stablecoins (see for example Beltrametti & Pittaluga, 2023; ECB, 2019; He, 2021; Melachrinos & Pfister, 2021; Pfister, 2017; Stevens, 2017)

While it is true that the largest stablecoins are dollar-denominated, it is not a foregone conclusion that these stablecoins would broadly be used in Europe. Moreover, MiCA regulation is especially designed to maintain financial stability and limit the influence of foreign currency-backed stablecoins (Regulation (EU) 2023/2869, 2023).

However, most importantly, dollarization is largely associated with developing countries where trust is lost in domestic currency (Pfister, 2017). It is hard to conceive that the Euro area, with a strong backing in laws, stable currency and well-functioning payment systems, would need to resort to dollarization. In a remote scenario in which such a thread were to arise, governments have mechanisms to defend their domestic currencies, such as not allowing tax payments in this currency, enforcing public procurement contracts only in domestic currency, etc. (Pfister, 2017; Stevens, 2017). We discuss more below.

STABLECOIN ADOPTION IN EUROPE

The above overview shows theoretically how foreign-denominated stablecoins could impact European monetary policy. As there is very little academic literature on these mechanisms, our analysis is based on theory rather than empirical evidence of the described channels. However, based on the theory available and empirical data with regards to the size and use of stablecoins in Europe, we find there are reasons to doubt this impact on European monetary policy might materialise. There are four important reasons why.

Institutional barriers

Euro is the official currency of the Euro area. It is a legal means of payment throughout the Euro area (ECB, 2023b). Euro banknotes are easily recognisable, widely in use, and are an explicitly symbol of European identity (ECB, 2025b). Retail prices in the Euro area are denominated in Euro, salaries are paid in this currency, and taxes are levied in it. Euro is also adopted by some non-EU countries due to the strength of the trade with EU and trust in the value of the currency (ECB, 2023b). The ECB maintains the monetary stability of Euro and through supervisory action maintains parity between the Euro in physical form and private bank deposits (Lane, 2025). Europe on the whole has well developed digital payments systems. Percentages of payments by cards, digital wallets and online payments are high and growing in many member states (ECB, 2024a). In the latest survey on the topic, 83% of the citizens of the Euro area have a positive view of the Euro, the highest score recorded yet (European Union, 2025). The familiarity and trust in a currency supported by the government give the currency considerable stickiness.

This government support has been a strong driving force for millennia. According to historical and anthropological records, states have had a decisive role in defining and circulating currencies within their territories (Goodhart, 1998). They had a crucial role in establishing the unit of account for everyday trade (Goodhart, 1998;

Graeber, 2014; Hudson, 2004). Other (private) currencies could still circulate, as long as the state had the last word in setting the terms of the trade (Graeber, 2014; Knapp, 1924).

This view helps us to understand the success of bank deposits. While a private instrument, bank deposits are usually denominated in a domestic currency, and the parity with the public currency is maintained through central bank policymaking. But the state-view of money could also explain why foreign-denominated stablecoins might not succeed in Europe: they are neither denominated in domestic currency, nor have an explicit backing and parity commitment by the central bank. The Fed has not committed to acting like the lender of last resort for stablecoin issuers, nor is there any kind of a deposit guarantee system for them. This lack of state support could reduce the trust among the users of the currency and hamper the adoption of foreign-based stablecoins.

Aside from setting the unit of account, the states have historically been the privileged issuers of currency and were uniquely entitled to income (seigniorage) from minting the currency tokens (Huber, 2017). The government has also had a unique prerogative to tax its population. For instance, during the US Civil War the Confederacy started issuing new currency to help pay off debt with seigniorage income, and used taxation to stimulate the circulation of that currency (Goodhart, 1998). This effect of introducing new currency and taxation was also demonstrated in various colonial endeavours (Goodhart, 1998; Graeber, 2014).

There are clearly exceptions, such as dollarized countries that adopt other sovereign currencies, or the unique example of El Salvador which designated Bitcoin as a legal tender for a period. But these examples almost exclusively apply to countries experiencing social unrest, low trust in government, and economic instability. Other historical examples further demonstrate that the collapse of the currency follows the collapse of the issuer (Goodhart, 1998).

Crucially, none of this is the case with the Euro area countries and institutions today. Strong governance, rule of law and trust in domestic currency characterise the present situation, and it is doubtful that the mere convenience of payment provided by foreign stablecoins could counter these overwhelming historical and political forces.

Regulatory barriers

The development of Libra (later renamed Diem), a global stablecoin envisioned by Facebook (since renamed Meta), in 2019 prompted the regulatory response within the EU. Hence the Markets in Crypto Assets (MiCA) Regulation was born (Regulation (EU) 2023/2869, 2023).

MiCA regulation focuses mostly on stablecoin issuance, and not the whole of the crypto market. Stablecoins are not defined by name instead they are broken down into two groups: Asset-Referenced Tokens (ART) and E-money Tokens (EMT). ART stabilise their value referring to another value, right, or one or more currencies. EMT maintain their value by referencing only one currency (Zetzsche & Sinnig, 2025). Both types of tokens need to have a prospectus ('white paper') containing the most important properties of the tokens, issued by a recognised EU legal entity, and be backed by assets segregated from the issuer's assets (Cantú et al., 2025). EMT regulation mandates that at least 30% of the assets backing EMT are in credit institutions (i.e. banks) and tokens be backed 1:1 with liquid reserves (Cantú et al., 2025; Zetzsche & Sinnig, 2025).

Interestingly, MiCA regulation also entails very strict requirements for larger and more successful ART and EMT. Both fall under special European Banking Authority supervision if they reach more than 10 million users, 2.5 million transactions and EUR 500 million in transaction value per day. More extremely, a cap is placed on an ART with 1 million transactions per day and EUR 200 million total transaction value in 1 currency area. These issuers will need to stop trading and issue a plan to reduce the trade volume (Zetzsche & Sinnig, 2025).

It is still unclear what net effect MiCA will have on stablecoin issuance and the use of foreign tokens in Europe as its rollout was quite recent. Tether, the issuer of the biggest stablecoin by volume, has already announced they would not try to register in Europe, partly due to the regulatory burden, but also because Europeans do not consist of a large part of the customer base (Peak, 2025). On the other hand, large European banks like ING are reportedly planning to join a consortium of banks and start issuing their own stablecoin (Allison, 2025).

If the ultimate goal of MiCA was to slow down large-scale, foreign stablecoin adoption, based on these initial results it appears the goal has been achieved for now. The question remains whether this regulation will promote issuance of domestic stablecoins (to the extent this is desirable in the first place) and if the capping presents an obstacle to potentially innovating effects of stablecoins in the payments space

Credibility of crypto

Stablecoins, like other crypto-assets, come with downsides of their own. These might present an additional threshold to adoption in the Euro area. Contrary to their name, stablecoins are not always stable in value. In fact, in several episodes they lost parity with the fiat currency. This means that less than USD 1 could be obtained for 1 stablecoin token. For instance, USDT lost the parity in 2018 and 2023 (Browne, 2018; Nicolle, 2023). The instability of USDT is related to controversy around Tether, the issuer of USDT, failing to show multiple times in an audit that all of its tokens were backed by liquid dollar instruments; as well as alleged fraud involving the Bitfinex trading platform (Browne, 2021; Lopatto, 2021). Similarly, TerraUSD, an algorithmic stablecoin was found to be associated with a crypto-Ponzi scheme in 2022, leading to loss of trust, withdrawal of reserves among coin holders, and eventual collapse of the stablecoin (DNB, 2022).

The relationship between crypto and crime is broader. One analysis puts the total volume of crypto used in criminal activities at USD 41 billion as a lower bound (Chainalysis, 2025). The acts in question include not just crypto-market investments, like pyramid schemes and fraud, but also more traditional crime operations such as drug trade, money laundering, and child sexual abuse material (Europol, 2021). Crypto is also used for sanctions evasion, with an estimation that state-run North Korean hacking groups managed to steal around USD 1 billion in 2022 alone (Clark et al., 2022; Naumaan, 2023). The true extent of sanctions evasion by crypto-assets is likely to be much larger than this.

Concerns also exist that the US regulation of stablecoins is too lax and might lead to corruption. US president Donald Trump has reportedly already benefitted from his own crypto company World Liberty Financial to the tune of USD 1 billion (Alexander, 2025). The GENIUS act, according to its detractors, does not offer enough guardrails against US politicians benefitting personally from such stablecoin issuance (McNair, 2025). This political involvement could be a political liability, and suddenly shift trust in the token holders and cause them to lose value.

Bitcoin's original design was enabling cheaper transactions than established institutions (Nakamoto, 2008). In terms of cross-border fees that might be the case, traditional fees amount to on average 6.62% globally and could take days to settle (World Bank, 2024); whereas crypto-asset fees have since June 2024 averaged between⁹ only USD 1 and 2 for Bitcoin transactions (BitInfoCharts, 2025) and settle in seconds or minutes.

⁹ The reason for the variation in fees and long settlement times is that crypto transactions depend on various factors, such as congesetion of the blockchain, the number of available miners, etc.

However, this cost advantage of crypto might be of less relevance for Europe, where settlement is typically instantaneous, even for cross-border transfers (European Payments Council, 2025), and card fees for merchant transactions are very low, at 0.2% to 0.3% for Visa and Mastercard payments (Mastercard, 2015; Visa, 2025).

However, transaction fees do not capture the full price of crypto use. For instance, one study found that a single Bitcoin transaction required 402kg of CO2 emissions, amounting to EUR 37 per transaction (Trespalacios & Dijk, 2021) – much larger than the market price of the transfer fee. The total environmental costs of Bitcoin mining were estimated at EUR 2.4 billion in 2020 (Trespalacios & Dijk, 2021). These amounts are certain to be larger currently, as the energy required has doubled from 70TWh to at least 150TWh in 2024 (Delahaye, 2024). These findings bring into question the alleged price benefits of crypto-assets. End users might not find these externalities a relevant factor in their choice of payments. However, governments, especially those with strong climate and nature protection commitments, would be advised to take these considerations into account when regulating and legitimating the crypto sector.

Presently, crypto-assets are not predominantly used as means of payment. For instance, in Europe only 9% of consumers held crypto in 2024, and of those only 14% held them only for payment purposes. On the other hand, on average two thirds of Europeans who hold crypto stated they used them for investments (ECB, 2024a). The original vision of Bitcoin as a decentralised and disintermediated means of payment is replaced by a reality of crypto-assets often being used as investment and speculation vehicles (DNB, 2022). Broader adoption of crypto-assets for speculation might have financial stability effects, especially if more large financial institutions start investing in crypto. However, for now the baseline retail stablecoin use as a means of payment is very low, especially outside the crypto-markets. It is not clear what their trajectory for growth will be.

What to monitor and how to react

The above analysis considered the status quo of stablecoin development and concludes that, at the current pace, there is little reason to worry that they could seriously impede Euro area monetary sovereignty and monetary policy. This does not mean European policymakers should be complacent, but should carefully monitor developments in this space.

Stablecoins could also gain more government support, especially in the US. The GENIUS Act is quickly progressing through the US Senate. The supporters of the bill promise more innovation and customer choice in the stablecoin space (McNair, 2025). Stablecoins could provide such innovation that they gain broad adoption with consumers and merchants. They might prove to be cheaper to transfer,

leading merchants to provide discounts on stablecoin payments compared to the more traditional means of payment. Large supermarket chains, tech, and media providers could use their size to quickly scale up this demand. Stablecoin issuers might also engage in (unregulated) credit provision, catering to customers underserved by traditional lenders. All of these trends could suddenly materialise in a moment of crisis and lack of trust in the financial sector.

European regulators should follow this trend carefully. Updates to MiCA Regulation could be warranted, especially in a quickly innovating environment. At the same time, regulation should not be so strict as to stifle genuine innovation. Bank business models should not necessarily be protected at all costs, especially if that would hamper customer benefits. Moreover, the digital euro could prove to be cheaper for merchants than private payment solutions, making them a viable alternative to stablecoins. An appropriate set of design choices could guarantee this.

Financial stability

Financial stability considerations are beyond the scope of this paper. However, as evidenced in the 2008 financial crisis, banking crises starting in the US can spread to Europe. European legislators should, thus, keep an eye on crypto policy developments in the US that could threaten bank stability on their own continent.

There are several ways crypto-assets could start or exacerbate a financial crisis. First, the sudden drop in value of crypto on a financial company's balance sheet could cause losses for the company, or in the worst case, insolvency. This is not a remote possibility. In 2023 Signature Bank and Silvergate Bank, both with large crypto exposures, had to be wound down after a plunge in crypto valuation (Joebges et al., 2025).

On the one hand, the risk of this in Europe happening is currently not high, as investments of the financial sector in crypto amount to only €3.4 billion in Q4 2024 (ECB, 2025a). On the other hand, the trend is quickly growing, with crypto investments amounting to more than a 250% increase compared to the same period in 2022 (ECB, 2025a). Moreover, share of investments in a sector might not be a good indicator of the likelihood of the financial crisis caused by the products in that sector. For instance, sub-prime mortgages amounted to only \$1.2 trillion in 2008, while being the prime cause of the financial crisis (Cunliffe, 2021).

Second, crypto assets could be used to facilitate bank runs (Joebges et al., 2025). As evidenced in the bank instability episode of 2023, large amounts of bank deposits can leave a bank balance sheet in a very short window. For example, Signature Bank lost 20% of its deposits in one day, while Silicon Valley Bank lost 25% (Rose, 2023). If trust in the crypto sector is larger than the traditional financial sector,

Lastly, financial regulation could make crypto similar to banking. For instance, deposit guarantee schemes could be extended from bank deposit insurance to cover bank stablecoin accounts. This could stimulate consumer confidence and holding deposits denominated in stablecoins. Moreover, stablecoin issuers could be given a bank license and allowed to lend out crypto, mimicking bank deposit creation. This could have consequences for central banks and other financial supervisors. For instance, the lender of last resort function could be made more difficult, as central banks operations are conducted in the domestic currency, and not the foreign currency, which crypto assets are *de facto* (Melachrinos & Pfister, 2021; Stevens, 2017).

The above list of considerations of crypto assets on financial stability is not complete. Moreover, some of these concerns are more remote than others. Their realism depends, among other factors, on politics and crypto legislation both in the US and Europe. In any event, central banks and other financial supervisors in Europe ought to remain vigilant to the changes in this sector and have in mind the consequences of some of these less likely scenarios too.

6. CONCLUSIONS AND RECOMMENDATIONS

The current US administration is developing regulation to promote the market for stablecoins. According to one interpretation, stablecoins could then be used as tools of statecraft and strengthen the global reserve currency role of the US dollar. The ECB officials have shared concerns that foreign stablecoins could have a negative effect on monetary sovereignty and monetary policy.

This study looks at the monetary policy transmission channels in Europe and investigates what the theoretical impacts of stablecoins could be. Our analysis finds that at this point in time, significant impact is unlikely.

We find that there are significant institutional and regulatory barriers to wider adoption of foreign stablecoins in the Euro area. Euro as a currency enjoys remarkable trust across the Euro area. Europe also has well developed, stable, and fast digital payment systems. These factors bring into question the motivation of Europeans to switch to a new means of payment.

MiCA regulation entails stringent criteria for stablecoin issuance in Europe, as well as rigorous provisions for disciplining issuers with large amounts of tokens in circulation. This has already discouraged large foreign issuers from registering in Europe.

Stablecoins are often used in various kinds of crime, including fraud, extortion, sanctions evasion and corruption. Their issuers have been involved in criminal activities, often leading to a loss in the value of the token. These links with crime and news of instability could lead to a loss of trust in stablecoins, causing broader financial instability.

Digital euro is ECB's flagship CBDC project, with one of the goals of offering a credible alternative to stablecoins. Issued by the central bank and euro-denominated, it might prove to be familiar to consumers and enjoy wide adoption. Crucially, this depends on key design choices.

As it now stands, the digital euro might prove to be underwhelming to European consumers. Privacy, price, and added value compared to other private payment solutions might put them off of the digital euro.

Crucially, the holding limits need to be increased considerably for the digital euro to be a viable payment alternative to cash, bank deposits, and stablecoins.

Supervisors, regulators and monetary policy makers should carefully monitor the developments in the crypto space and the US policy related to stablecoins. Given little regulatory pressure, stablecoins might in time become more like banks, potentially leading to financial instability that could impact European banking sector. The US government and the Fed might give stablecoins a bigger role, making it a staple of banking and monetary policy. These could have impact on ECB's financial and monetary policy making.

34

REFERENCES

Aldasoro, I., Cornelli, G., Ferrari Minesso, M., Gambacorta, L., & Habib, M. M. (2025). Stablecoins, money market funds and monetary policy. Economics Letters, 247, 112203. https://doi.org/10.1016/j.econlet.2025.112203

Alexander, D. (2025, June 5). Here's How Trump Made An Estimated \$1 Billion On Crypto. Forbes. https://www.forbes.com/sites/danalexander/2025/06/05/this-is-how-much-trump-has-made-from-crypto-so-far/

Allison, I. (2025, April 22). Dutch Bank ING Said to Be Working on a New Stablecoin With Other TradFi and Crypto Firms. CoinDesk. https://www.coindesk.com/business/2025/04/22/dutch-bank-ing-said-to-be-working-on-a-new-stablecoin-with-other-tradfi-and-crypto-firms

Assenmacher, K. (2020). Monetary policy implications of digital currencies [SUERF Policy Note]. SUERF. https://www.suerf.org/wp-content/uploads/2023/12/f_ec9b954aefd15bc4fffe92f5683d1dd2_13537_suerf.pdf

Atlantic Council. (2023). Central Bank Digital Currecy Tracker [Dataset]. https://www.atlanticcouncil.org/cbdctracker/

Aurazo, J., Banka, H., Frost, J., Kosse, A., & Piveteau, T. (2024). Central bank digital currencies and fast payment systems: Rivals or partners? BIS. https://www.bis.org/publ/bppdf/bispap151.pdf

Banco de España. (2022). Crypto-assets. In Financial Stability Report. https://www.bde.es/f/webbde/Secciones/Publicaciones/InformesBoletinesRevistas/InformesEstabilidadFinancera/22/FSR_Spring2022.pdf

Beltrametti, L., & Pittaluga, G. B. (2023). Monetary policy implications of stablecoins and CBDCs. ECONOMIA INTERNAZIONALE, 76(3), 453–478. https://www.iei1946.it/article/pdf/download/841/monetary-policy-implications-of-stablecoins-and-cbdcs

Bindseil, U., Panetta, F., & Terol, I. (2021). Central Bank Digital Currency: Functional Scope, Pricing and Controls. SSRN Electronic Journal. https://doi.org/10.2139/ssrn.3975939

BitInfoCharts. (2025, May 27). Bitcoin Avg. Transaction Fee Chart. BitInfoCharts. https://bitinfocharts.com/comparison/bitcoin-transactionfees.html

Boissay, F., Ehlers, T., Gambacorta, L., & Shin, H. S. (2021). Big Techs in Finance: On the New Nexus Between Data Privacy and Competition. In R. Rau, R. Wardrop, & L. Zingales (Eds.), The Palgrave Handbook of Technological Finance (pp. 855–875). Springer International Publishing. https://doi.org/10.1007/978-3-030-65117-6_31

Browne, R. (2018, October 15). Major cryptocurrencies jump as the controversial dollar-pegged token tether falls. CNBC. https://www.cnbc.com/2018/10/15/bitcoin-other-cryptocurrencies-jump-as-dollar-pegged-tether-falls.html

Browne, R. (2021, February 23). Cryptocurrency firms Tether and Bitfinex agree to pay \$18.5 million fine to end New York probe. CNBC. https://www.cnbc.com/2021/02/23/tether-bitfinex-reach-settlement-with-new-york-attorney-general.html

Brunnermeier, M. K., & Niepelt, D. (2019). On the equivalence of private and public money. Journal of Monetary Economics, 106, 27–41. https://doi.org/10.1016/j.jmoneco.2019.07.004

Bundesbank. (2021). The impact of the Eurosystem's monetary policy on Bitcoin and other crypto tokens [Monthly Report]. Deutsche Bundesbank. https://www.bundesbank.de/resource/blob/877282/6bd23da5a9b8ab8f472938b016 628d39/mL/2021-09-geldpolitik-krypto-token-data.pdf

Cantú, C., Frost, J., & Noone, T. M. (2025). Some Perspectives on the Regulation of Stablecoins. Law and Contemporary Problems, 87(2), 129–156. https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5161&context=lcp

Chainalysis. (2025, January 15). 2025 Crypto Crime Trends from Chainalysis. Chainalysis. https://www.chainalysis.com/blog/2025-crypto-crime-report-introduction/

https://www.reuters.com/technology/how-would-us-bitcoin-strategic-reserve-work-2025-01-24/

Che, N., Copestake, A., Furceri, D., & Terracciano, T. (2023). The Crypto Cycle and US Monetary Policy [IMF Working Paper]. International Monetary Fund. https://www.imf.org/-/media/Files/Publications/WP/2023/English/wpiea2023163-print-pdf.ashx

Chiu, I. H.-Y., & Hofmann, C. (2022). Unlimited Central Bank Digital Currency: The Case for a Public Good in the Euro-area and Its Regulatory (and Deregulatory) Implications for Modern Finance. North Carolina Journal Of International Law, 48(1), 1–77. https://scholarship.law.unc.edu/cgi/viewcontent.cgi?article=2136&context=ncili

Cipollone, P. (2025, February 28). The role of the digital euro in digital payments and finance. Crypto Asset Lab Conference.

https://www.ecb.europa.eu/press/inter/date/2025/html/ecb.in250228~7c25c90e4d.e

Clark, R., Kreps, S., & Rao, A. (2022, March 7). Shifting crypto landscape threatens crime investigations and sanctions. Brookings.

https://www.brookings.edu/articles/shifting-crypto-landscape-threatens-crime-investigations-and-sanctions/

CoinMarketCap. (2025a, May 26). Bitcoin price today, BTC to USD live price, marketcap and chart. CoinMarketCap.

https://coinmarketcap.com/currencies/bitcoin/

CoinMarketCap. (2025b, May 26). Ethereum price today, ETH to USD live price, marketcap and chart. CoinMarketCap.

https://coinmarketcap.com/currencies/ethereum/

CoinMarketCap. (2025c, June 16). Cryptocurrency Prices, Charts And Market Capitalizations. CoinMarketCap. https://coinmarketcap.com/

Daman, M. G. A. (2024, June 13). Making the digital euro truly private. https://www.ecb.europa.eu/press/blog/date/2024/html/ecb.blog240613~47c255bdd 4.en.html

Delahaye, J.-P. (2024, October 30). Bitcoin: Electricity consumption comparable to that of Poland. Polytechnique Insights. https://www.polytechnique-insights.com/en/columns/energy/bitcoin-electricity-consumption-comparable-to-that-of-poland/

Derby, M. S., & Saphir, A. (2024, December 19). Powell says Fed cannot hold bitcoin, not seeking to change that. Reuters. https://www.reuters.com/technology/fed-cant-hold-bitcoin-not-seeking-change-that-powell-says-2024-12-18/

DNB. (2022). Crypto-assets: Evolution and policy response. https://www.dnb.nl/media/ieliqxqc/dnb-occasional-study-crypto-s-engels.pdf

ECB. (2019). Crypto-assets: Implications for financial stability, monetary policy, and payments and market infrastructures. Publications Office. https://data.europa.eu/doi/10.2866/162

ECB. (2021). Eurosystem report on the public consultation on a digital euro. https://www.ecb.europa.eu/pub/pdf/other/Eurosystem_report_on_the_public_cons_ultation_on_a_digital_euro~539fa8cd8d.en.pdf

ECB. (2023a). A stocktake on the digital euro—Summary report on the investigation phase and outlook on the next phase. European Central Bank. https://www.ecb.europa.eu/euro/digital_euro/investigation/profuse/shared/files/dedocs/ecb.dedocs231018.en.pdf

ECB. (2023b, December 5). Our money. European Central Bank. https://www.ecb.europa.eu/euro/intro/html/index.en.html

ECB. (2024a). Study on the payment attitudes of consumers in the euro area (SPACE) – 2024.

https://www.ecb.europa.eu/stats/ecb_surveys/space/shared/pdf/ecb.space2024~19d 46f0f17.en.pdf

ECB. (2024b, December 2). FAQs on a digital euro.

https://www.ecb.europa.eu/euro/digital_euro/faqs/html/ecb.faq_digital_euro.en.html

ECB. (2025a). Non-paper on EU and third country stablecoin multi-issuance (No. WK 4742/2025 COR 1). Council of the European Union. https://data.consilium.europa.eu/doc/document/WK-4742-2025-COR-1/en/pdf

ECB. (2025b, January 31). ECB selects motifs for future euro banknotes. https://www.ecb.europa.eu/press/pr/date/2025/html/ecb.pr250131~611055a567.en.html

ECB. (2025c, February 20). Eurosystem expands initiative to settle DLT-based transactions in central bank money.

https://www.ecb.europa.eu/press/pr/date/2025/html/ecb.pr250220_1~ce3286f97b.en.html

ECB. (2025d, February 28). Most EU countries rely on international card schemes for card payments, ECB report shows.

https://www.ecb.europa.eu/press/pr/date/2025/html/ecb.pr250228_1~7f0697af45.en. html

ESMA. (2023). Markets in Crypto-Assets Regulation (MiCA).

https://www.esma.europa.eu/esmas-activities/digital-finance-and-innovation/markets-crypto-assets-regulation-mica

European Payments Council. (2025). EPC scheme to make real-time payments in SEPA. https://www.europeanpaymentscouncil.eu/what-we-do/sepa-instant-credit-transfer

European Union. (2025). Standard Eurobarometer 103 (No. 103). European Union. https://europa.eu/eurobarometer/survevs/detail/3372

Europol. (2021). Cryptocurrencies—Tracing the evolution of criminal finances. https://www.europol.europa.eu/cms/sites/default/files/documents/Europol%20Spotlight%20-%20Cryptocurrencies%20-

%20Tracing%20the%20evolution%20of%20criminal%20finances.pdf

G7 Working Group on Stablecoins. (2019). Investigating the impact of global stablecoins. G7/IMF/BIS. https://www.tresor.economie.gouv.fr/Articles/5f8c26f2-a2cd-4685-ba82-fa9e4d4e5d67/files/d10fb97f-a9a6-472b-842a-8b279e8863c4

Goodhart, C. A. E. (1998). The two concepts of money: Implications for the analysis of optimal currency areas. European Journal of Political Economy, 14(3), 407–432. https://doi.org/10.1016/S0176-2680(98)00015-9

Graeber, D. (2014). Debt: The First 5,000 Years, Updated and Expanded (2nd ed). Melville House.

Grünewald, S. (2023). A legal framework for the digital euro. European Parliament. https://www.europarl.europa.eu/RegData/etudes/IDAN/2023/741518/IPOL_IDA(2023">https://www.europarl.europa.eu/RegData/etudes/IDAN/2023/741518/IPOL_IDA(2023") 741518_EN.pdf

He, D. (2021). Monetary Effects of Global Stablecoins. Cato Journal, 41(2), 353–365. https://www.cato.org/sites/cato.org/files/2021-05/cj-v4ln2-13.pdf

Hodula, M. (2023). Interest rates as a finance battleground? The rise of Fintech and big tech credit providers and bank interest margin. Finance Research Letters, 53, 103685. https://doi.org/10.1016/j.frl.2023.103685

Hofmann, C. (2023). The case for unlimited holdings of digital euros. European Parliament.

https://www.europarl.europa.eu/RegData/etudes/IDAN/2023/741511/IPOL_IDA(2023) 741511_EN.pdf

Huber, J. (2017). Sovereign Money: Beyond Reserve Banking. Springer International Publishing. https://doi.org/10.1007/978-3-319-42174-2

Hudson, M. (2004). The Archaeology of Money: Debt versus Barter Theories of Money's Origins. In Credit and State Theories of Money. Edward Elgar Publishing Limited.

Hunnicutt, T. (2025, March 3). Trump names cryptocurrencies in strategic reserve, sending prices up. Reuters. https://www.reuters.com/world/us/trump-says-cryptocurrency-strategic-reserve-includes-xrp-sol-ada-2025-03-02/

Karau, S. (2023). Monetary policy and Bitcoin. Journal of International Money and Finance, 137, 102880. https://doi.org/10.1016/j.jimonfin.2023.102880

Knapp, G. F. (1924). The State Theory of Money (H. M. Lucas & J. Bonar, Trans.). Macmillan and Co.

https://upload.wikimedia.org/wikipedia/commons/b/bb/Georg_Freidrich_Knapp_-__The_State_Theory_of_Money_%281924_translation%29.pdf

Koonprasert, T. T., Kanada, S., Tsuda, N., & Reshidi, E. (2024). Central Bank Digital Currency Adoption: Inclusive Strategies for Intermediaries and Users (Fintech Notes No. NOTE/2024/005). https://www.imf.org/-/media/Files/Publications/FTN063/2024/English/FTNEA2024005.ashx

Lagarde, C. (2025, May 26). Earning influence: Lessons from the history of international currencies [Speech]. Europe's role in a fragmented world, Jacques Delors Centre at Hertie School in Berlin.

 $\underline{https://www.ecb.europa.eu//press/key/date/2025/html/ecb.sp250526 \sim d8d4541ce5.e} \\ \underline{n.html}$

Lane, P. R. (2022, October 11). The transmission of monetary policy [Speech]. "EU and US Perspectives: New Directions for Economic Policy." https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp221011~5062b44330.en. httml

Lopatto, E. (2021, August 16). The Tether controversy, explained. The Verge. https://www.theverge.com/22620464/tether-backing-cryptocurrency-stablecoin

Ma, C., Tian, Y., Hsiao, S., & Deng, L. (2022). Monetary policy shocks and Bitcoin prices. Research in International Business and Finance, 62, 101711. https://doi.org/10.1016/j.ribaf.2022.101711

Mastercard. (2015, December). Intra-EEA - Intercountry Interchange Fees.

https://www.mastercard.co.uk/content/dam/public/mastercardcom/eu/gb/Other/Website_Intra_EEA_Fallback_Interchange_Fees_220121.pdf

Matthews, B. C., & Tran, H. (2025, February 12). Central bank digital currencies versus stablecoins: Divergent EU and US perspectives. Atlantic Council. https://www.atlanticcouncil.org/blogs/econographics/central-bank-digital-currencies-versus-stablecoins-divergent-eu-and-us-perspectives/

McNair, K. (2025, June 13). The Senate just advanced a bill to regulate stablecoins—What the GENIUS Act could mean for crypto and other investors. CNBC. https://www.cnbc.com/2025/06/13/what-the-genius-act-could-mean-for-crypto-and-other-investors.html

Melachrinos, A., & Pfister, C. (2021). Stablecoins: A Brave New World? Stanford Journal of Blockchain Law & Policy. https://stanford-jblp.pubpub.org/pub/stablecoins-brave-new-world/release/l

Mishkin, F. S. (2019). The economics of money, banking and financial markets (Twelfth edition, global edition). Pearson.

Munster, B., & Faggionato, G. (2025, April 22). Commission livid as ECB warns of crypto apocalypse under Trump. POLITICO.

https://www.politico.eu/article/european-commission-livid-ecb-warn-crypto-apocalypse-donald-trump/

Nakamoto, S. (2008). Bitcoin: A Peer-to-Peer Electronic Cash System. https://bitcoin.org/bitcoin.pdf

Naumaan, S. (2023, January 12). North Korea's Cryptocurrency Craze and its Impact on U.S. Policy | Council on Foreign Relations.

https://www.cfr.org/blog/north-koreas-cryptocurrency-craze-and-its-impact-us-policy

Nicolle, E. (2023, June 15). Tether Deviates From Dollar Peg as Market Mismatches. Bloomberg.Com. https://www.bloomberg.com/news/articles/2023-06-15/tether-deviates-from-dollar-peg-as-market-mismatches

Niepelt, D. (2023). Digital Euro: An assessment of the first two progress reports. European Parliament.

https://www.europarl.europa.eu/RegData/etudes/IDAN/2023/741510/IPOL_IDA(2023)741510_EN.pdf

Noll, F. (2024). Observations from the Retail CBDCs of the Caribbean. Federal Reserve Bank of Kansas City. https://www.kansascityfed.org/research/payments-system-research-briefings/observations-from-the-retail-cbdcs-of-the-caribbean/

Panetta, F. (2022, June 15). The digital euro and the evolution of the financial system [Speech]. Committee on Economic and Monetary Affairs of the European Parliament.

https://www.ecb.europa.eu/press/key/date/2022/html/ecb.sp220615~0b859eb8bc.en.html

Panetta, F. (2023, January 23). The digital euro: Our money wherever, whenever we need it. Committee on Economic and Monetary Affairs of the European Parliament.

https://www.ecb.europa.eu/press/key/date/2023/html/ecb.sp230123~2f827led76.en. html

Peak, B. (2025, May 23). Why Tether refuses to comply with MiCA — A Deep Dive. Cointelegraph. https://cointelegraph.com/explained/why-tether-refuses-to-comply-with-mica

Pfister, C. (2017). Monetary Policy and Digital Currencies: Much Ado About Nothing? [Working paper]. Banque de France. https://publications.banque-france.fr/sites/default/files/medias/documents/dt-642.pdf

Pietrzak, M. (2023). What can monetary policy tell us about Bitcoin? Annals of Finance, 19(4), 545–559. https://doi.org/10.1007/s10436-023-00432-3

Ree, J. (2023). Nigeria's eNaira, One Year After (No. WP/23/104). https://www.imf.org/en/Publications/WP/Issues/2023/05/16/Nigerias-eNaira-One-Year-After-533487

Regulation (EU) 2023/2869. (2023). REGULATION (EU) 2023/2869 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 13 December 2023. Official Journal of the European Union. https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex%3A32023R2869

Reuters. (2025, January 30). ECB's Lagarde slaps down Czech proposal for bitcoin reserves. Reuters. https://www.reuters.com/markets/europe/ecbs-lagarde-slaps-down-czech-proposal-bitcoin-reserves-2025-01-30/

Stevens, A. (2017). Digital currencies: Threats and opportunities for monetary policy. NBB.

https://www.nbb.be/doc/ts/publications/economicreview/2017/ecorevi2017_h5.pdf

Trespalacios, J. P., & Dijk, J. (2021). The carbon footprint of bitcoin. De Nederlandsche Bank. https://www.dnb.nl/media/lftd2xjl/the-carbon-footprint-of-bitcoin.pdf

van 't Klooster, J. (2023). Monetary sovereignty: The euro and strategic internationalization. In Treading softly: How central banks are addressing current global challenges. ECB. https://www.ecb.europa.eu/pub/pdf/other/ecb-legal-conference-2023-proceedings.en.pdf

Visa. (2025, April). Intra Europe EEA | Multi-lateral Interchange Fees. https://www.visa.co.uk/content/dam/VCOM/regional/ve/unitedkingdom/PDF/fees-and-interchange/april-25/intra-eea-apr25.pdf

World Bank. (2024). Remittance Prices Worldwide Quarterly. World Bank. https://remittanceprices.worldbank.org/sites/default/files/rpw_main_report_and_annex_q324.pdf

Zetzsche, D., & Sinnig, J. (2025). The EU Approach to Digital Currencies. Law and Contemporary Problems, 87(2), 157–183. https://scholarship.law.duke.edu/cgi/viewcontent.cgi?article=5162

