



University
of Glasgow

THE AWARDS
2020 | UNIVERSITY
OF THE YEAR

Geopolitical Manoeuvring in Blockchain Standardization: A Comparative Analysis of the EU and U.S. Approaches

Ruochen Qi (Kris)

Dong-Hyu Kim

WORLD
CHANGING
GLASGOW



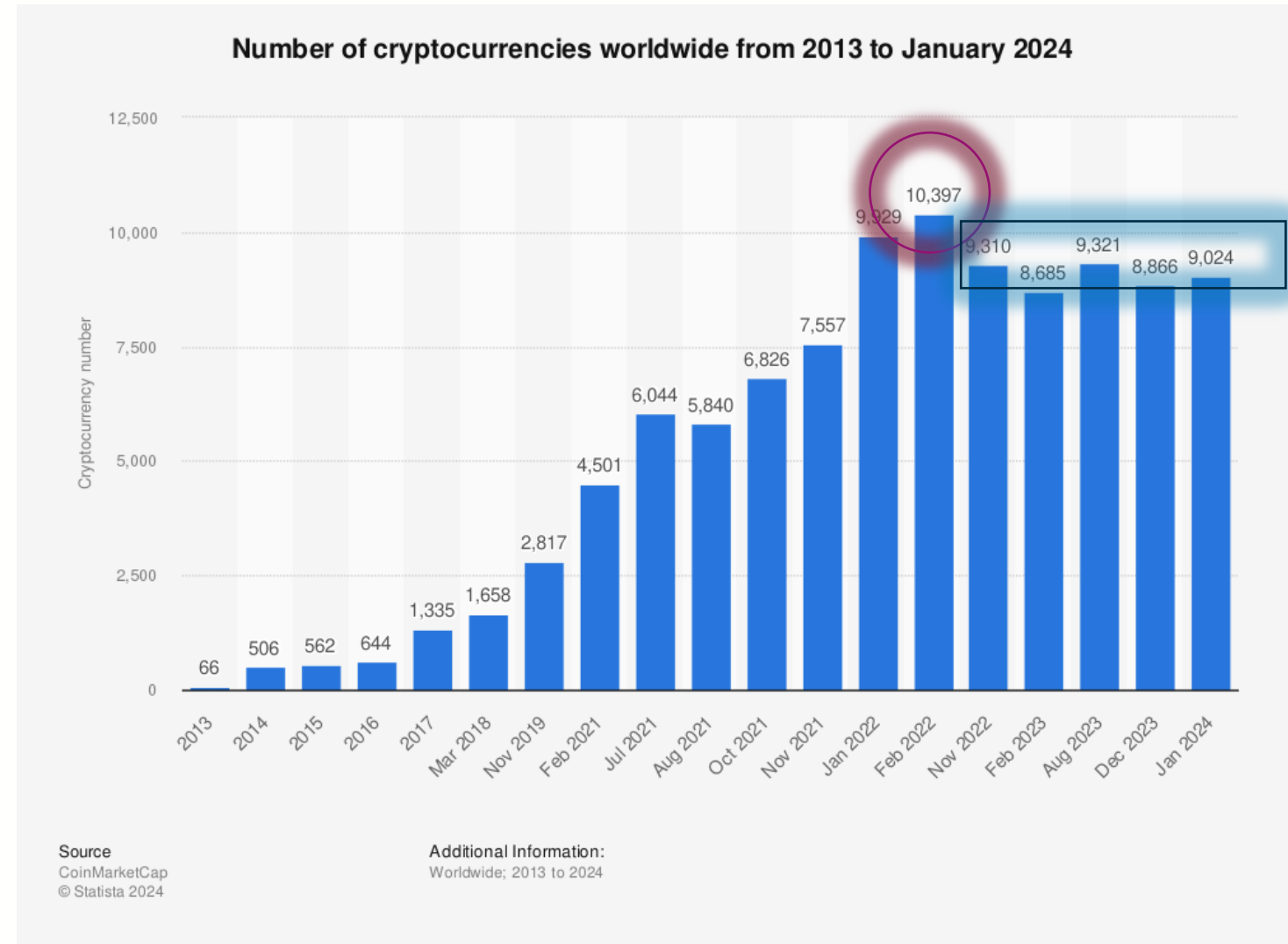
University
of Glasgow

Introduction

Introduction

Current crypto market trend

- The market now encompasses a total of **9024 distinct types of cryptos**, a considerable increase from the 66 cryptocurrencies recorded in 2013 (Stata, 2024).
- The first peak number of cryptocurrencies: 10397, but it dropped slightly because **FTX fell from grace** and sent shockwaves across the industry in **Nov 2022** (Butts and Qin, 2022).
- After COVID-19 and within the current economic recession, the number of cryptocurrencies has also **stayed stable situation** during the recent two years, maintaining around 9k.
- This is a signal to investors risk-averse that **stay conservative and try to find stability** in the crypto market (**Stablecoins**).

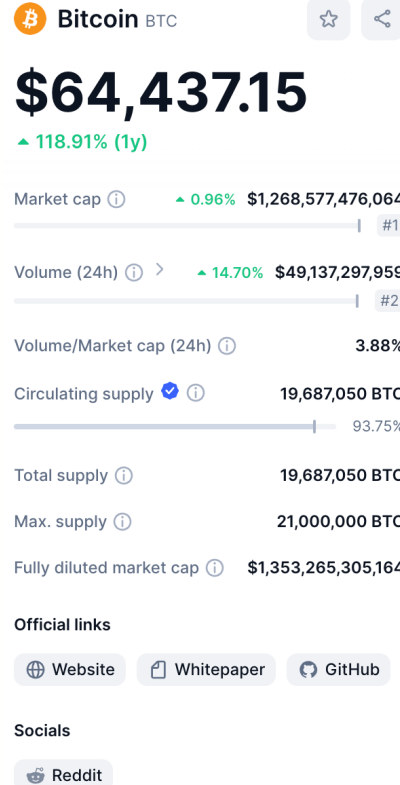




Introduction

Current crypto market trend

- There are total **on-chain trading volume of USD 117.08 billion** accounted within the preceding 24 hours (Coinmarketcap, 2024).
- Bitcoin price has climbed over 65k USD,
 - **Total market capitalization surpassed \$1.2 trillion**
 - **Daily trading volumes around \$50 billion**
 - **Bitcoin has the largest trading volume in the whole crypto market, at almost: 50%**
- The U.S. government has increased its bitcoin holdings since the last bearish market trend in 2021 (Dune, 2024).





Introduction

Research gap in blockchain standardization

Some research focus on blockchain standardization

- Although some articles have compared blockchain technology standardization (Li and Tang, 2022; Konig et al., 2020):
 - others have focused on organizational studies (Brunsson, Rasche, and Seidl, 2012);
 - cybersecurity (Radanliev, 2023);
 - benefits realization (Enwerem and Chkwudebe, 2021);
 - antitrust laws (Bjorn, 2014);
 - data protection laws (Li, 2020).

- **Research gap:**

There is still a dearth of studies focusing on the **blockchain standardization** based on *geopolitical development*.

Some studies focus on geopolitics

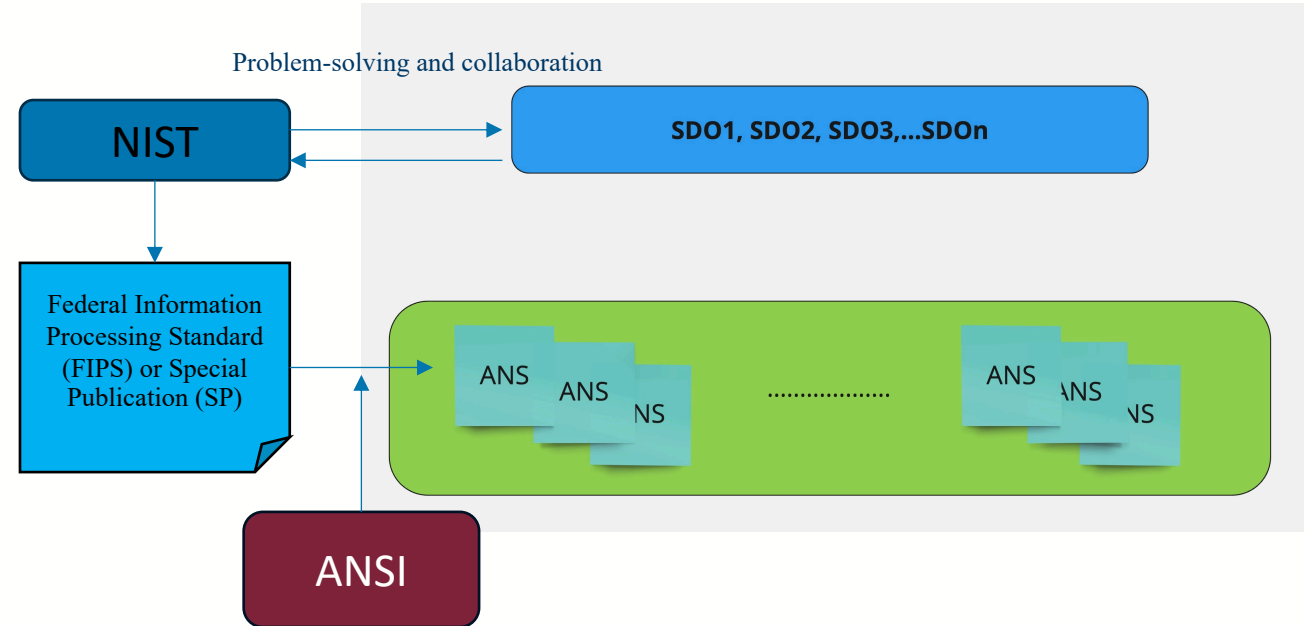
- Despite the contribution of standardization, the risk dimension has been brought to the fore by recent geopolitical developments (Joshi, 2019) in other high technologies, such as IoT (Ahn, 2020), open RAN (Kim, Eom, Lee, 2023), and discussion on technology sovereignty (Edler, et al., 2023).
- However, blockchain and distributed ledger technology are missed in these research and discussions.



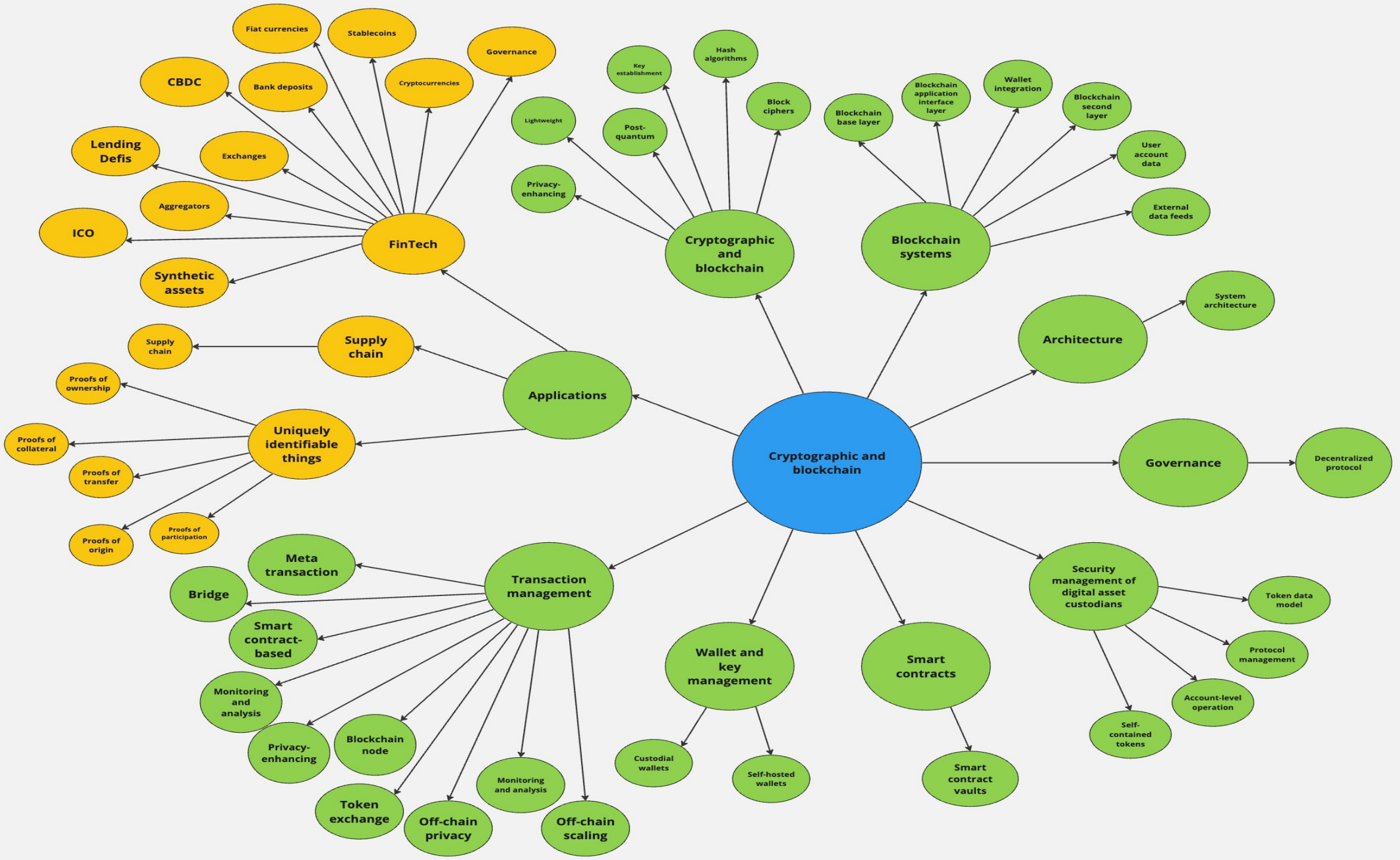
University
of Glasgow

Comparison of Blockchain Standardization Across U.S., EU, and ISO

- **American National Standards Institute (ANSI):**
 - *American National Standards Institute (ANSI)* is a private, non-profit organization that administers and coordinates the U.S. voluntary standards and conformity assessment system.
 - ANSI facilitates the development of *American National Standards (ANS)* by accrediting the procedures of *standards developing organizations (SDOs)* and approving their documents as *American National Standards (ANS)* (ANSI, 2024).
 - ANSI is the sole U.S. representative to the *International Organization for Standardization (ISO)*, and, through the *U.S. National Committee (USNC)*, to the *International Electrotechnical Commission (IEC)*.
 - ANSI promotes the use of U.S. standards internationally, advocates U.S. policy and technical positions in international and regional standards organizations, and encourages the adoption of international standards as national standards where they meet the needs of the user community.



- **NIST** internal report 7977 (NISTiR 7977) clarifies the principles, processes and procedures that drive **cryptographic standards** for blockchain technology.
- **NIST IR 8301 document** (Lesavre et al., 2021) indicated the **high-level technical overview and conceptual framework of token designs and management methods** based on the previous NIST IR 8202 documents (Yaga, et al., 2018).

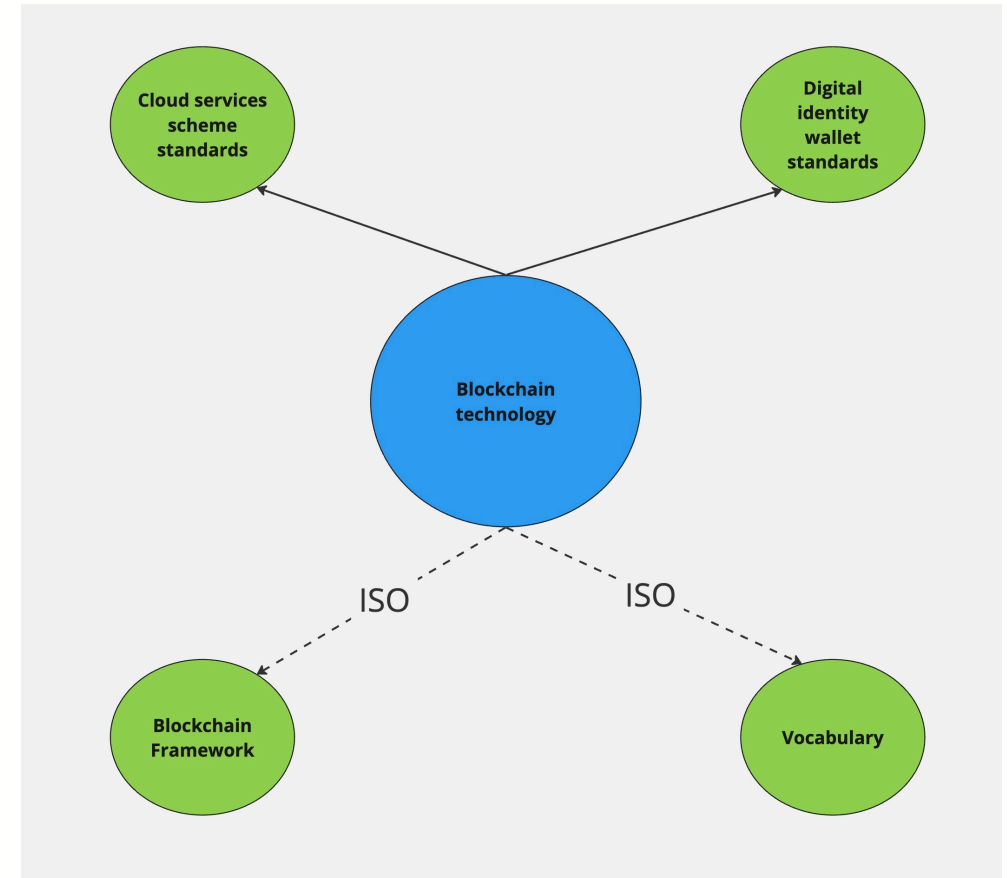




EU Standardization – CEN, ENISA

Technology & application Area

- The *European Committee for Standardization* (CEN) employs a pyramid-shaped hierarchical standardization process, leveraging the expertise of national standardization bodies across EU members (ENISA, 2023), such as:
 - The Agence nationale de la sécurité des systèmes information (ANSSI) in France
 - The Bundesamt für Sicherheit in der Informationstechnik (BSI) in Germany
- The *European Union Agency for Cybersecurity* (ENISA) has formulated two standards directly related to blockchain technology:
 - Digital identity wallet standards
 - Cloud services scheme standards
- **These standards refer to existing frameworks from ISO or maintain consistency with ISO standards.**





Non-government Standardization – ISO

Technology & application areas



- ISO comprises 11 published standards, 8 incomplete standards in development, and 6 standards pertaining to blockchain technology
- Covered application sectors:
 - Finance,
 - Food industry,
 - Traceability platforms,
 - Record systems,
 - E-commerce,
 - Non-Fungible Tokens (NFTs).
- Covered technology areas:
 - Vocabulary
 - Identifiers of subjects and objects for the design of blockchain systems
 - Overview of trust anchors for DLT-based identity management
 - Reference architecture
 - Guidelines for governance
 - Overview of existing DLT systems for identity management
 - Taxonomy and Ontology
 - Privacy and personally identifiable information protection considerations
 - Security management of digital asset custodians
 - Overview of and interactions between smart contracts in blockchain and distributed ledger technology systems.





University
of Glasgow

Stablecoins



Stablecoins

- Stablecoins exhibit a unique feature that serves as a bridge between **cryptocurrency** and **fiat currency**.
- **Primary feature and value of stablecoins:** The fundamental premise of cryptocurrency's value lies in its ability to be exchanged for fiat currency denominated in U.S. dollars.



Source: Top 5 Stablecoins – A Complete List; Stablecoins shown above are **DAI**, **USDC**, **Tether**, **BUSD**, **TureUSD**, respectively from left to right

- The United States prioritizes regulating stablecoins credit risk and standardizing innovative pegging techniques.
- The EU has established the crypto market regulatory agency MiCA to formulate new regulations and promote the creation of a Euro-backed stablecoins to counter the dominance of USD-pegged stablecoins.

Both major regions have made concerted efforts to regulate and advance the standardization of stablecoins (European parliament, 2022; SEC, 2020). Consequently, stablecoins, serving as the foundational and bridging element of trust, assume significant importance as essential instruments for enhancing the competitive strength of both regions.



Stablecoins Approach – U.S.: *Financial Market-Driven*

- **The U.S. has standardized stablecoins as a use case since the stablecoins framework was designed by Moin (2019) (Lesavre, Varin, Yaga, 2021).**
- **U.S. *Securities and Exchange Commission* (SEC) created the FinHub, a strategic hub for supporting financial technology innovation. In the section on blockchain and distributed ledger technology, regulatory and supervisory issues regarding stablecoins have been emphasized similarly to legal currency USD (SEC, 2020).**
- **SEC statements treat stablecoins as securities under the U.S. federal securities laws, citing anti-money laundering (AML), countering the financing of terrorism (CFT), and sanctions obligations requirements (SEC, 2020).**

The screenshot shows the SEC website header with the logo and search bar. The navigation menu includes ABOUT, DIVISIONS & OFFICES, ENFORCEMENT, REGULATION, EDUCATION, FILINGS, and NEWS. A sidebar on the left lists 'Securities Topics' such as Cybersecurity, Enforcement Task Force Focused on Climate and ESG Issues, Initial Coin Offerings (ICOs), Implementation of Dodd-Frank Act, Market Structure and Data Analysis, Ombuds, Regulation Best Interest, Saving and Investing for Military Personnel, Teacher Investment Outreach, and Whistleblower Awards. The main content area features the title 'Crypto Assets and Cyber Enforcement Actions' with a graphic of a globe and laptops. Below this is a section titled 'Crypto Assets' containing a table of enforcement actions.

| Action Name | Description | Date Filed |
|--|---|------------|
| SEC v. Sanchez, et al. | The Securities and Exchange Commission charged 17 individuals for their roles in a \$300 million Ponzi scheme that involved Houston, Texas-based CryptoFX LLC and targeted more than 40,000 predominantly Latino investors in the U.S. and two other countries. The complaint follows the SEC's successful emergency action in September 2022 that halted the CryptoFX scheme and charged its two main principals, Mauricio Chavez and Giorgio Benvenuto. | 3/14/2024 |
| In the Matter of ShapeShift AG | The Securities and Exchange Commission charged ShapeShift AG, a Swiss company that previously operated out of Colorado, with acting as an unregistered dealer in connection with its operation of an online crypto asset trading platform. To settle the SEC's charges, ShapeShift agreed to pay a \$275,000 penalty. | 3/5/2024 |
| In the Matter of TradeStation Crypto, Inc. | The Securities and Exchange Commission announced charges against TradeStation Crypto, Inc., based in Plantation, Florida, for failing to register the offer and sale | 2/7/2024 |

Stablecoins Approach – EU: *Geopolitical Perspective*

- The European Union is actively exploring strategies to either surpass or align with the standardization efforts of the United States in this domain.
 - In the European ICT rolling plan, one of the actions also pointed out: “*ESOs to develop the standards needed for the introduction of a programmable Euro (CBDC) and token economy (upcoming MiCA Regulation).*” (European Commission, 2024).
 - Radanliev (2023) mentioned: “*Regulations like MiCA might encourage big companies to get involved into crypto, The provisional MiCA bill has caused Circle (USDC) to create the Euro Coin (EUROC)*”
 - The Chief Strategy Officer of Circles Dante Disparte claimed that “*Circle aims to make Euro Coin a MiCA-conforming digital currency, for which our ongoing engagement with European stakeholders, regulators and policy makers, as well as our direct investments in Europe, are key bridges to the future.*” (Circles, 2022).
- Thus, the EU could leverage successful stablecoins development to establish standards and protect the stability of the EU cryptocurrency market within the region of the EU.

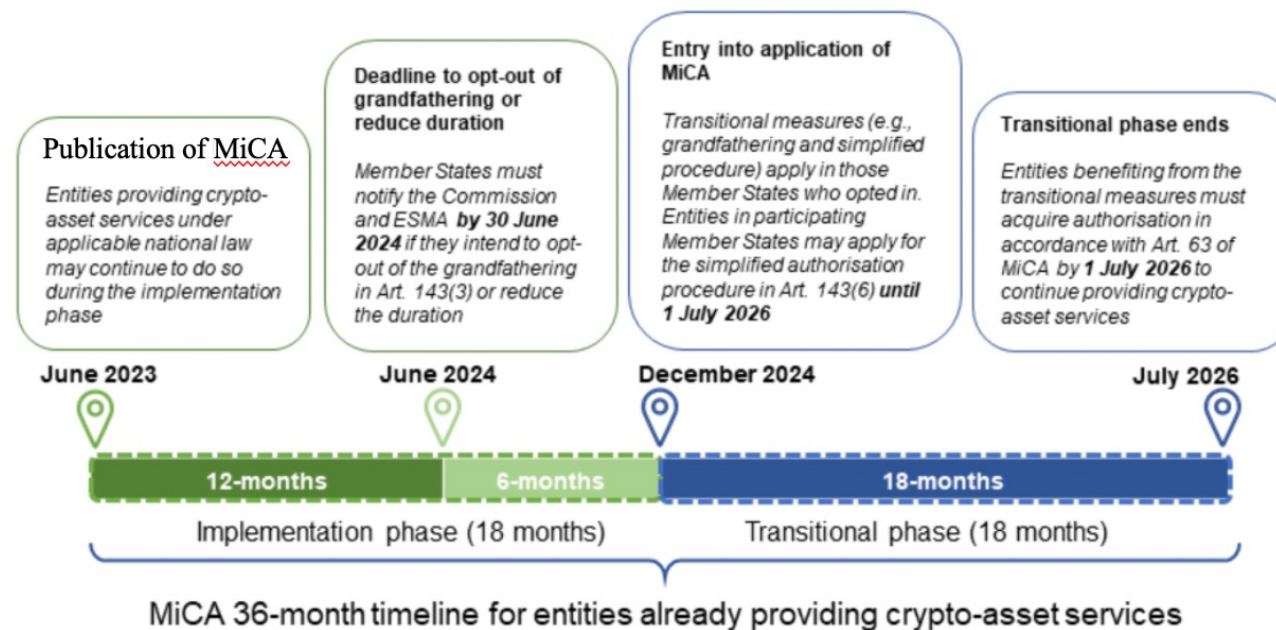


Source: Circle Internet Financial provided by **Bloomberg**



Source: USDC Coin | Image credit: Payments Cards & Mobile

- In June 2023, the *European Securities and Markets Authority* (ESMA) established the *Markets in Crypto-Assets Regulation* (MiCA) as a *new regulation* aimed at harmonizing the rules of the EU crypto-asset market (MiCA, 2023)
- MiCA focuses on regulating crypto-assets enabled by blockchain technology
 - Three types of crypto-assets
 - **Asset-referenced tokens** (including stablecoins backed by commodities, or one or several currencies)
 - **E-money tokens** (stablecoins backed by a single fiat currency)
 - **Other tokens, including utility tokens.**



- The Regulation on markets in crypto-assets (MiCA) requires ESMA to submit draft *regulatory technical standards* (RTS) and *implementing technical standards* (ITS) on a variety of topics within the three packages of consultation (Regulation(EU), 2023). On 12 July 2023, ESMA published a Consultation Paper to seek stakeholders' views on ESMA's proposals for 5 regulatory technical standards (RTSs) and 2 implementing technical standards (ITSs).



Art. 62 of MiCA: Information to be included in the application for authorisation as a crypto-asset service provider

- Article 62(2) of MiCA sets out the information that such an application must contain and which encompasses, inter alia, the following elements:
 - information about the *identity* of the applicant CASP
 - *a programme of operations*, setting out the types of crypto-asset services, including where and how those services are to be marketed;
 - a description of the applicant CASP's *governance arrangements and internal control mechanisms* (including procedures to comply with anti-money laundering and counter-terrorist financing obligations);
 - a description of the procedure for the *segregation of clients' crypto-assets and funds*;
 - a description of the *execution policy*;
 - a description of the *commercial policy*.



Different Regular Options of MiCA in the Past

- Option 1 – **bespoke legislative regime aimed at addressing the risks posed by ‘stablecoins’ and ‘global stablecoins’**
 - By following a strict risk-based approach and building on recommendations currently being developed by, for example, the FSB, this option would address vulnerabilities to financial stability posed by stablecoins, while allowing for the development of different types of ‘stablecoin’ business models.
- Option 2 – **regulating ‘stablecoins’ under the Electronic Money Directive**
 - This option would require ‘stablecoins’ issuers to comply with existing legislation that may not be fit for purpose. it might not mitigate adequately the most significant risks to consumer protection, for example, those raised by wallet providers.
- Option 3 – **measures aimed at limiting the use of ‘stablecoins’ within the EU’.**
 - This option would not be consistent with the objectives set at EU level to promote innovation in the financial sector.
 - This could leave some financial stability risks unaddressed, should EU consumers widely use ‘stablecoins’ issued in third countries.
- The Commission considered that **Option 1 was the preferred option for ‘stablecoins’ in combination with Option 2, to avoid regulatory arbitrage between ‘stablecoins’** that are indistinguishable from e-money and the treatment of e-money issued on a distributed ledger.

The importance of stablecoins for DeFi

- Despite stablecoins performing as the bridge between crypto-asset and fiat currency, providing a relatively safe “parking space” in crypto market (Adachi et al., 2021), stablecoins also have gained new uses, with the rise of decentralized finance (DeFi) applications. Such as, hedge the risk for unbacked crypto-assets, generate interest, and liquidly pool provision (Lyons and Viswanath-Natraj, 2020).
- **The largest existing stablecoin: Tether**
 - Based on the report from European central bank (2022), Tether dominates trading volumes within the crypto-asset ecosystem (Figure A), and stablecoins provide most of the liquidity for decentralized trading and lending (Born, et al., 2022).
 - Stablecoins provided around 45% of the liquidity in decentralized exchanges (DEXes) in May 2022 (Figure B)

Figure A: Trading volume of bitcoins and ether vs. other crypto-assets, official currencies, and stablecoins

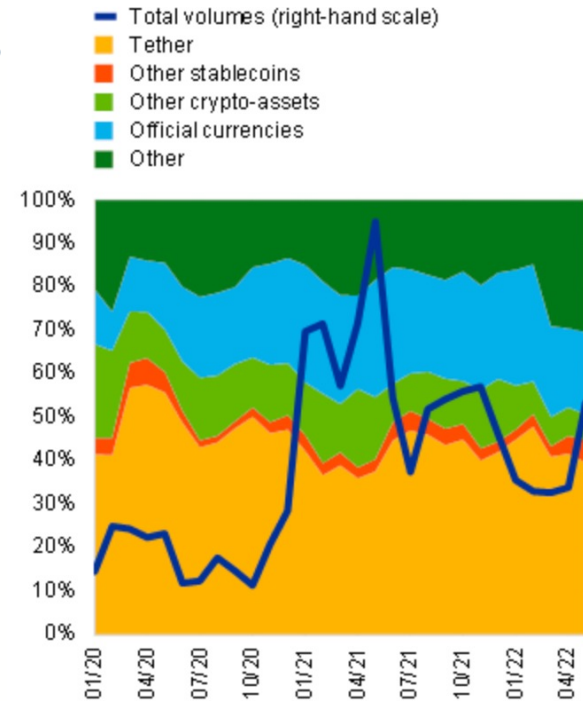
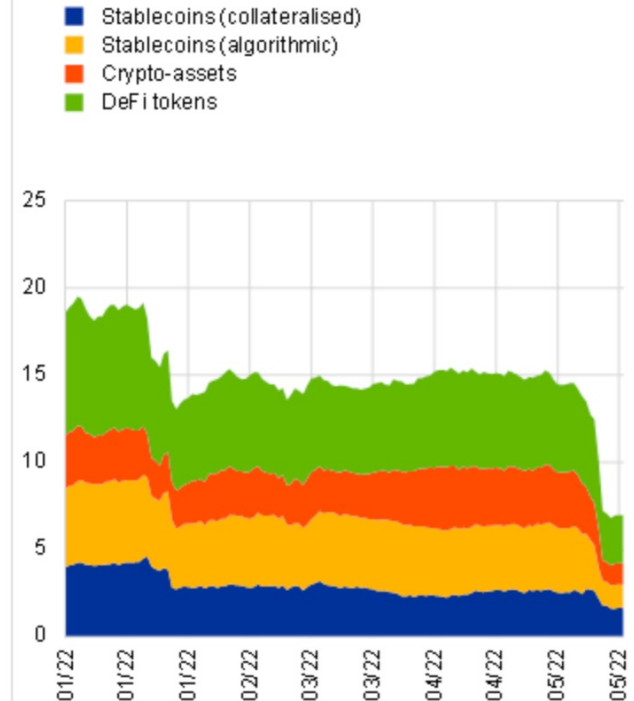


Figure B: Liquidity provision for DeFi trading by type of asset (liquid pairs data is from Curve, Uniswap, Sushiswap)



Source: European central bank, IntoTheBlock, CryptoCompare and ECB calculations

- Role of Euro-backed stablecoins in the EU DeFi business and financial ecosystems?



University
of Glasgow

Thank you!

