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**Global drivers of cryptocurrency  
development: Economic, technological and  
regulatory perspectives across major  
economies**

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## 1. Abstract

The purpose of this research is to explore how regulatory divergence affects the governance of cryptocurrencies across the key regions: the United States, the European Union and Japan. By analysing the institutional frameworks, regulatory models and political priorities in these regions, this thesis aims to identify the factors affecting the regulatory treatment of cryptocurrencies and their integration within the global monetary system. The comparative analysis used in this research highlights the different paths taken by each region in response to the same technological advancements in the cryptocurrency sector.

The findings suggest that each of the three regions—U.S., EU, and Japan—adopt distinct regulatory approaches, shaped by their institutional structures and political goals. The U.S. has promoted fast market expansion with an inconsistent regulatory system. The EU has succeeded in creating a unified regulatory structure but comes at the cost of slower market development. Japan's regulatory model, focused on legal certainty and caution, has led to provide a stable market environment, though at the expense of a more dynamic market.

This thesis offers new insights into cryptocurrency governance, concluding that regulatory divergence across regions is influenced not only by technological factors. Political goals and institutional structures also play an important role in shaping regulatory responses. The findings highlight how factors such as market stability and investor protection shape the regulatory measures and market outcomes in different regions. The study concludes that cryptocurrency regulation must be seen as a complex combination of institutional design, regulatory philosophy, and political motivations.

### **Keywords**

Cryptocurrency regulation; Institutional design; Regulatory divergence; Political priorities; Financial markets.

## 2. Introduction

In just over a decade, the emergence of cryptocurrencies in the digital age have reshaped the traditional conceptions of money, introducing new forms of exchange, investment and value storage in the digital economy. Despite their growing popularity, cryptocurrencies have not been able to replace traditional money functions in its full capacity, particularly as a unit of account. What once started as a technological experiment, cryptocurrencies—mainly Bitcoin—has now become a central point of global discussions around finance, power, and regulation. Bitcoin, born out of the 2008 financial crisis, emerged as an intent to create a system in which money could exist outside the scope of control of central banks or state control. It introduced a peer-to-peer network that directly challenged the traditional role of states and financial institutions sovereignty in regulating monetary systems, causing debates about power, control and decentralization in financial monetary systems.

Now, as digital assets continue to expand beyond speculation instruments and their impact begins to intersect with areas such as monetary policy, financial regulation and broader state issues. This shift has led to generate debates about the role of decentralized finance (DeFi) which challenges traditional financial models that are state-controlled. As cryptocurrencies grow in importance, they begin to affect the dynamics of global power, financial authority and trust within today's interconnected global economy. The rise of cryptocurrencies poses a challenge to the concept of monetary sovereignty, forcing governments and central banks to reconsider the importance of their role in managing financial systems globally.

For clarity, this study defines cryptocurrencies as decentralized digital assets recorded on distributed ledgers and secured through consensus mechanisms such as proof-of-stake. Blockchain is the underlying technology that enables these systems. This study focuses on crypto development, referring to both to market expansion and formal integration of these assets into traditional financial markets and institutions. **Adoption** is defined here as the extent to which cryptocurrencies are integrated into financial systems, measured by indicators such as **market penetration** (e.g. user numbers, transaction volumes), **regulatory integration** (e.g. adoption of relevant laws like MiCA), and **institutional engagement** (e.g. financial institutions offering crypto services).

This analysis excludes **central bank digital currencies (CBDCs)** and **tokenized securities**, unless they directly intersect with private crypto markets. This study excludes CBDCs, as they represent state-issued and centrally governed instruments, which are affected by different regulatory and political dynamics. To make the analysis more manageable, I focus on

three regions with different political economic settings: the United States, with a market-driven decentralized model; the European Union, with a rule-based, supranational framework; and Japan, with a bank-centric system and early prudential formalization. These three cases reflect different market conditions, regulatory frameworks, and institutional structures thus allowing us to create a structured comparison. This study is subject to some limitations. It does not take into account emerging economies such as China and South Korea, where political regimes, regulatory objectives and data comparability differ substantially. This approach allows a sharper examination of how economic incentives, technological capabilities, and institutional structures influence the development of cryptocurrencies.

The rise of cryptocurrencies has sparked significant interest in their regulation and future development. However, the factors influencing their adoption and regulation across the different jurisdictions remain underexplored. Existing investigations on this area have been largely focused on isolated national case studies or in technological aspects of cryptocurrencies, but few studies have compared how diverse institutional structures, regulatory philosophies, and political objectives shape cryptocurrency governance. This gap in the study is crucial because understanding economic, technological and regulatory factors affecting cryptocurrency adoption is essential for policymakers, governments, financial regulators and businesses in the industry. This study aims to address this gap by realizing a comparative analysis of three distinct monetary systems to find how their regulatory frameworks influence market integration and the global development of cryptocurrencies.

Recent scholarship, such as Chey (2022), highlights that cryptocurrencies have increased its importance on becoming part of the international political economy (IPE). As digital assets expand its presence in the global market, it becomes clear that cryptocurrency development is not only a question of technological advancement but a shift in the global economic power dynamics. This study aims to contribute to that discussion by providing a comparative analysis of how different institutional frameworks, economic incentives and regulatory environments influence cryptocurrency adoption and integration in the United States, the European Union, and Japan. These three economies have been selected based on their different institutional structures, which offers the opportunity to make a comparison on how these differences affect crypto development.

The core of the problematic of this research is to determine why differences in regulatory approaches to cryptocurrency exist across jurisdictions and what implications do these variations have for the future of cryptocurrencies. More specifically, this thesis asks: How do institutional

frameworks, regulatory approaches, and political priorities influence the adoption and development of cryptocurrency markets in the United States, the European Union, and Japan? The adoption of cryptocurrencies is measured here by factors such as market penetration, regulatory integration and institutional involvement. The focus is on understanding the relationship between institutional structure, regulatory divergence, and market outcomes—which are all key factors to explain the varying levels of crypto adoption in these regions.

The novelty of this study lies in its comparative methodology and the explicit focus on governmental factors in shaping the integration of cryptocurrencies into national markets. By comparing the United States' market-driven approach, the European Union's rule-based model, and Japan's bank-centric framework, this study aims to find out the distinct drivers of cryptocurrency integration in their economies.

In addressing this research problem, the thesis will be focusing on key factors such as institutional trust, regulatory divergence and market incentives. Institutional trust being understood as the confidence that market players and investors place in the regulatory system that oversees the cryptocurrency market. As cryptocurrencies challenge traditional aspects of monetary sovereignty and state power over monetary systems, understanding these variables is essential for navigating on the evolving market of decentralized finance (DeFi). The study also highlights that while central banks digital currencies (CBDCs) are excluded from the scope, they still play a role in the broader conversation of cryptocurrency regulation.

### 3. Objectives

The following section will layout the goal outlines the general (main) objective, specific objectives and research hypotheses of this study. These elements are crucial for guiding the methodology, defining key concepts in the theoretical framework, and shaping the design and implementation of the practical analysis.

#### 3.1 General Objective

The main objective of this study is to analyse how economic, technological, and regulatory factors influence the development and adoption of cryptocurrencies in three distinct political economies: the United States, the European Union, and Japan. This study seeks to provide a comparative analysis of these regions to identify the key drivers that influence cryptocurrency integration in each region. In doing so this study seeks to contribute to the emerging International Political Economy (IPE) literature, which studies the interaction between state power and financial systems in the context of new financial technologies.

#### 3.2 Specific Objectives

**O1. Compare the regulatory frameworks** that govern cryptocurrencies in the United States, European Union, and Japan, with a focus on how these frameworks affect cryptocurrency adoption, regulatory divergence and market integration.

**O2. Examine the role of technological innovations** influencing cryptocurrency governance and regulatory structures across the United States, the European Union, and Japan. This includes understanding how technological advancements shape institutional actions to cryptocurrency regulation and market development.

**O3. Assess the economic incentives** (e.g. market demand, institutional investment, consumer adoption) in each region and evaluate how these factors influence cryptocurrency adoption and integration, with a focus on the institutional environment.

**O4. Identify the key institutional, technological and regulatory drivers** that explain the regional divergence in cryptocurrency regulation, with a specific focus on governmental trust market conditions, and governmental priorities.

## 4. Methodology

The following section outlines the research design, case selection logic, sources and the comparative analysis that was conducted.

### 4.1 Research design

This analysis adopts a comparative case study methodology to explore how economic, technological, and regulatory factors shape the development and integration of crypto across three distinct jurisdictions: the United States, the European Union, and Japan. These cases were explicitly selected because they represent different institutional structures and regulatory environment, offering the opportunity to study the relationship between institutional frameworks, regulatory philosophies, and crypto adoption. The focus of this study is to analyse how these factors differ and what effect does it have on market outcomes, even when facing similar technological advancements. The time frame for this research spans from 2014 to 2025. This period allows for a comprehensive examination of both regulatory advancements and market evolution. While recent world events (e.g. geopolitical tensions, wars, and economic crises) may have significant implications for cryptocurrency governance and therefore development, there is insufficient data at this point to fully include their impacts on financial markets.

### 4.2 Case selection logic

These three cases were selected to provide significant contrast on regulatory philosophies and economic settings, offering insights into how market-driven, rule-based, and bank dependent systems approach cryptocurrency governance:

- The **United States** has a decentralized system where cryptocurrency regulation is controlled by a range of federal and state authorities, resulting in a fragmented regulatory structure.
- The **European Union** employs a supranational regulatory framework, aiming to harmonize cryptocurrency regulation across its member states, with a focus on MiCA for standardization.
- **Japan** has taken a more formalized and prudent regulatory path, with early regulation, heavily influenced by its banking sector (e.g. Bank of Japan) and a centralized regulatory system.

This selection is critical in understanding how institutional systems influence cryptocurrency regulation and its adoption in the market. The regions offer different historical contexts that provide a comparative point of view through which regulatory divergence and market outcomes can be analysed.

### 4.3 Scope boundaries

To preserve analytical coherence throughout the whole analysis, central bank digital currencies (CBDCs) and tokenized securities are kept out of the scope. CBDCs' development is mainly driven by state control and centralized regulations, they operate within a completely different regulatory framework compared to cryptocurrencies. CBDCs are important in the broader picture of digital currency system, but not for this research. Additionally, emerging economies such as **China** and **South Korea** are excluded from the analysis due to the differences in political structures and regulatory philosophies, which would make the comparative analysis challenging.

### 4.4 Data sources

The evidence used in the study relies on four different types of sources:

- **Peer-reviewed academic articles**, which provide a theoretical basis for the study of cryptocurrency and its integration into traditional monetary systems.
- **Institutional reports** from international financial entities such as the IMF, World Bank, and European Central Bank, which offer reliable information regarding the global financial landscape and regulatory approaches adopted.
- **Government and regulatory document** from the US, EU, and Japan that detail national, statal, and regional regulatory approaches, including the MiCA in the EU and key US SEC rulings.
- **Industry reports**, such as those from Kaiko, these organisations are considered to be highly trusted on providing up-to-date cryptocurrency market trends, analytics, and indices.

### 4.5 Analytical strategy

Each region is examined through a common analytical framework covering economic, technological, and regulatory drivers of cryptocurrency adoption and integration. Findings are then compared and analysed to find any key patterns and differences. The economic factors include measures such as market demand, institutional investment, and consumer response. The technological drivers examine blockchain technology and other technological advancements influencing the crypto market. The regulatory drivers assess how each region's institutional framework and political priorities shape cryptocurrency governance. Findings are then compares across regions to identify patterns and/or differences in cryptocurrency regulation and adoption, with a focus on how do governmental structure affect markets results. This approach strengthens the comparative nature of the thesis and ensures that cross-case differences are interpretable.

#### 4.6 Limitations

This study is limited by the availability of data and regulatory documentation across the three different areas. Data availability differs between the US, EU, and Japan, which may affect the evidence to back the claims made on this analysis. Additionally, regulatory documents may not be comparable due to the differences in legal systems and political structures. To mitigate these issues, the analysis prioritises primary and institutional sources, ensuring consistency in the analytical approach across cases to ensure meaningful comparisons across regions.

## 5. Theoretical Framework

To understand the impact of cryptocurrencies, it is essential to first define the traditional functions of money. In this section we will be exploring the different functions of money, before digging into whether cryptocurrencies challenge or complement these traditional categories.

### 5.1 Money and its functions

Money has historically served three key functions: as a **medium of exchange**, a **store of value** and a **unit of account**. These functions are essential for global economic stability, providing a common standard measure for economic activity. Cryptocurrencies have raised questions whether they can fulfil the traditional functions in the digital age. Cryptocurrencies offer potential advantages like a decentralized system and digital transactions; these characteristics are the ones that raise uncertainty regarding their ability to meet these classical monetary functions

**Bitcoin**, has often been referred to as “digital gold”, can function as a potential store of value, due to its limited supply and its decentralized structure. As Dotan et al. (2020) suggest, Bitcoin is often compared to gold, which has also a fixed supply that offers protection against inflation. However, its price volatility significantly threatens its ability to act as a stable store of value and unit of account. For instance, Bitcoin’s price can fluctuate substantially, creating price swings in short periods, creating uncertainty on consumers that makes it impractical for daily transactions (Bakhtiar et al., 2023). Other cryptocurrencies like **Ethereum**, **Ripple** or **Litecoin** also contribute to this debate, Bitcoin is not the only cryptocurrency with these issues.



Figure 1: Bitcoin's 1-Year Price Performance and Volatility  
Source: Investing.com, 2024

As illustrated in Figure 1, Bitcoin's 1 year price performance highlights the volatility that impedes its ability to serve as a reliable store of value. This price fluctuation complicates its ability to act as a unit of account. This section evaluates whether digital assets, despite their technological advancements, can effectively fulfil the traditional monetary roles, given the challenges they face.

Bitcoin was originally created as a peer-to-peer digital cash system, but its unstable price volatility, high transaction fees, and slightly slow transaction speeds hinder its use as a medium of exchange in a financial market. While occasionally some retailers accept Bitcoin, its sudden price fluctuations make it difficult for consumers to assess the true costs of transactions, which is key characteristic of a unit of account. This has been highlighted by Bakhtiar et al. (2023), who debate the Bitcoin's volatility as one of the most significant factors that limits its ability to operate in everyday transactions. Furthermore, Bakhtiar et al. (2023) delve into how network effects and technical limitations such as transaction speed and scalability delay Bitcoin's ability to become a practical medium of exchange.

While Bitcoin still maintains dominant in the market, other cryptocurrencies such as **Ethereum** and **Ripple** have contributed to this debate by offering technological innovations that address some of Bitcoin's limitations. New features as the Ethereum's smart contracts, allow to automate agreements through blockchain without the intervention of intermediaries. Ripple's cross-border payment systems, enables 24/7 transfers bypassing banking systems. Tapscott & Tapscott (2017) point out that blockchain technology, such as those used by Ethereum, can reshape how financial contracts and smart contracts work, making them more practical in certain areas compared to Bitcoin. Despite these innovations, however, the continued volatility and regulatory uncertainty surrounding cryptocurrencies continue to limit their expansion and adoption as a stable form of money. This section evaluates whether digital assets, can effectively fulfil the classic monetary roles considering the challenges they face.

## 5.2 Crypto in International Political Economy

Cryptocurrencies have significantly gained presence in the field of International Political Economy (IPE) by offering a financial system that bypasses state control and challenged established monetary sovereignty. These digital assets defy the functioning of traditional financial systems and raise fundamental questions about financial power, sovereignty and trust. As cryptocurrencies operate through decentralized networks, they reduce the reliance of

centralized institutions such as central banks and governments to intervene. This system offers a new form of economic autonomy, and this shift in power dynamics forces policymakers and regulators to reconsider their strategies on integrating decentralized finance (DeFi) into national and global economies. From a political economy perspective, the rise of cryptocurrencies has a profound implication for the sovereign authority originally held by governmental institutions.

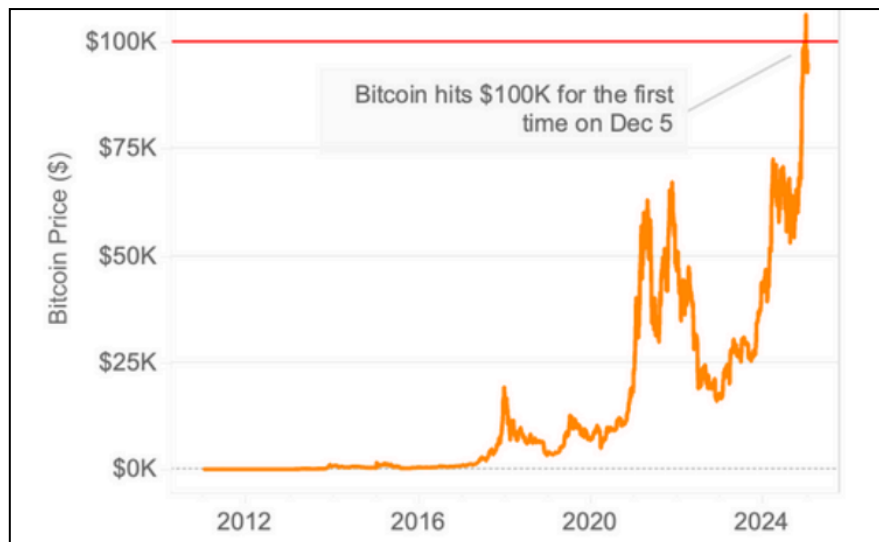


Figure 2: Bitcoin Price Surge After U.S. Elections and its ATH Hits \$100K  
Source: Kaiko. (2024). *Quarterly Market Report*

The rise of Bitcoin, for example, has significantly altered the landscape of global finance. As shown in Figure 2, Bitcoin's price surged to a new all-time high (ATH) due to the recent significant political and economic events, particularly the U.S. elections. Political events of this magnitude often impact investor's approach and strategic portfolio transactions. In this case, the U.S. elections raised institutional interest in digital assets, sparking a buying wave across major trading platforms such as Binance. As a result, Bitcoin reached its first all-time high since March in November and later surpassed the \$100,000 mark for the first time in December.

This development illustrates that cryptocurrency markets are increasingly shaped by macroeconomic, and political factors, rather than being entirely dependent by technological developments. The surge in Bitcoin's value suggests that institutional investors respond to political actions in the United States, reinforcing the idea that cryptocurrency development has a common thread with broader political economy conditions. This is a clear demonstration of how financial markets, including those where digital assets operate, are influenced by political decisions, often resulting in volatility and shifts in investor confidence.

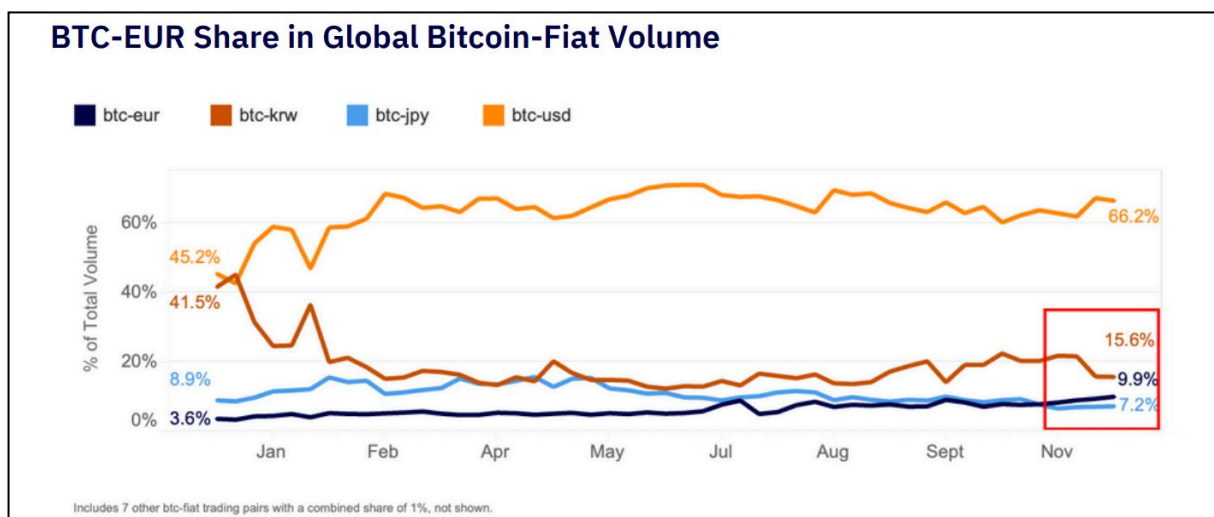


Figure 3: BTC-EUR Market Share Growth in Global Crypto Markets  
Source: Kaiko. (2024). *The State of the European Crypto Market*

As shown in Figure 3, the Euro has become increasingly important in global cryptocurrency markets. Euro-denominated trade volumes reached to a multi-year high in 2024, with the BTC-EUR market share rising from 3.6% to nearly a 10% of global Bitcoin-fiat trading volume. Earlier in 2023, BTC-EUR volumes remained below BTC-JPY trading activity, making the abrupt change particularly noteworthy. The upward trend in Euro-denominated trading activity is closely linked to regulatory developments in the European Union, notably the Markets in Crypto-Assets (MiCA) regulation. MiCA has provided a more flexible and clearer regulatory structure, which has increased investor confidence in European cryptocurrency markets, especially compared to the fragmented regulatory environment in the U.S.

From a political economy perspective, this shift points out how regulatory environments and governmental involvement can alter the distribution of cryptocurrency trading activity. The growing role of the European Union in crypto markets offers the idea that coordinated regulation across member states facilitates smoother market expansion and integration into the global trading system. Regulatory harmonization within the EU can reduce market fragmentation, offering a model for other regions that may be considering on introducing cryptocurrencies into their financial markets.

The decentralization of cryptocurrencies marks a significant structural shift in the balance of economic power, challenging traditional state control over financial activity (Campbell-Verduyn, 2018). Governments, which have historically used their power over national currencies and financial organizations to influence macroeconomic outcomes, now face a dilemma: cryptocurrencies bypass these state-imposed mechanisms, operating outside the scope of control

imposed by governments. This undermines central banks' authority, limiting their ability to influence monetary policy. From a political economy viewpoint, this dynamic shows how cryptocurrencies do not eliminate sovereignty but instead reshape it. Governments and policymakers are transitioning from a direct control over financial systems to a more supervisory role, where the dilemma lies in regulating decentralized finance (DeFi) without stifling its development.

This transformation process is not evenly developed globally. Different countries have its own regulatory strategies based on their respective economic priorities and political ideologies. In the European Union, a more comprehensive and coordinated regulatory approach is applied, MiCA's aim is to protect investors, ensure financial stability and reducing risks such as money laundering. In contrast, the United States has historically opted by a regulatory model dependent on many agencies, with bodies such as the SEC, CFTC, and others overseeing cryptocurrency governance. With more recent proposals like the GENIUS Act focusing on regulating payment stablecoins. This reflects a more fragmented approach, creating regulatory uncertainty between states. Japan, while being an early adopter of crypto regulation, has recently imposed a stricter model of supervision and high taxation, limiting market advancement. These different regulatory models, highlight how the future of crypto integration is not solely tech-dependent, but is also influenced by the regulatory philosophy that reflects the economic priorities and political concerns.

Figure 4 from the Kaiko report further illustrates the structure of Euro-denominated trading volume, examining the market share of various exchanges. Exchanges such as Kraken and Bitvavo are among the key players in the European market, particularly in Euro-denominated Bitcoin trading. During November, when weekly trading volumes reached a peaked at almost €12 billion, Bitvavo alone accounted for nearly half of the total trading volume.

The concentration of trading activity in a limited number of exchanges shows that the European cryptocurrency market is yet to be developed. While growth is evident, the market is still in its developing phase, with a significant portion of its activity concentrated on few exchanges. Platforms that successfully comply to the EU regulations are likely to attract a larger portion of market activity, which suggests that regulatory compliance can be a critical factor in determining which exchanges dominate the market.

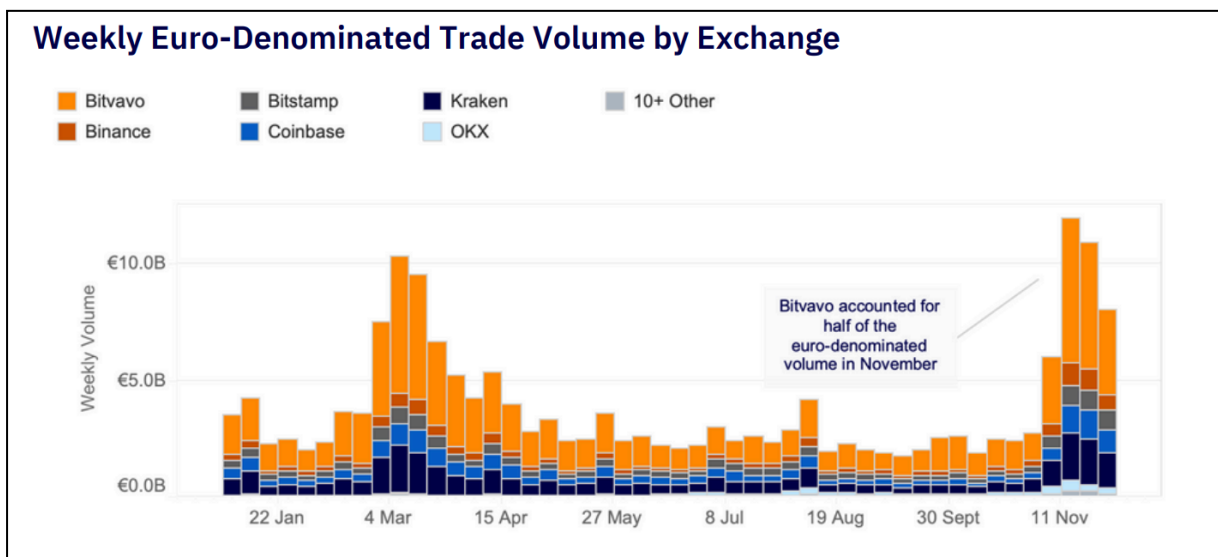


Figure 4: Exchanges Market Share by Euro-denominated trading volume  
Source: Kaiko. (2024). *The State of the European Crypto Market*

The concept of trust in financial systems has undergone a transition due to the rise of cryptocurrency activity. Conventional financial systems have always relied on central trust, where banks, financial institutions, and regulatory authorities act as trusted intermediaries. In contrast, cryptocurrencies operate through their decentralized model, using blockchain technology and consensus algorithms to establish trust without relying on government-controlled authorities. This system's trust is based on mathematical algorithms and distributed networks to validate transactions, rather than institutional actors, this shift increases transparency and resistance to possible manipulations. However, the concept of trust itself is not eliminated but reallocated; rather than relying on traditional institutions, trust now relies in the technological infrastructure that supports cryptocurrencies (Atzori, 2017). Analysing it from a political economy view, this change in trust reflects the developing relationship between technology and institutional power, pointing out how institutions must adapt to technological innovations to maintain credibility in financial systems.

Governments approach to cryptocurrencies differs significantly across regions, this reflects the different regulatory philosophies and economic priorities. The European Union has opted for a more comprehensive regulatory framework with the MiCA regulation (effective

December 2024), which seeks to protect investors, guarantee financial stability and prevent risks such as money laundering. This regulatory approach reflects EU's objective of harmonizing cryptocurrency regulation across member states to promote market integration. On the other hand, the United States initially opted with an agency-based approach with regulatory bodies like SEC and CFTC, but they have recently (July 2025) shifted towards a more structured approach, including proposals as the GENIUS act, which focuses on regulating payment stablecoins. Japan offers a more cautious approach: although they formally regulated crypto in an early stage, they now introduced stricter supervision and high taxation, which has slowed market development. These different regulatory approaches demonstrate that the future integration of cryptocurrency into global markets is not solely dependent on technological innovations, but also by national regulatory decisions made by governments, which reflect their distinct economic priorities and political interests.

### 5.3 Regulation and institutions

Differences in cryptocurrency regulation can only be understood when considering the institutional infrastructure of each jurisdiction (Zetsche et al., 2017). Regulatory changes are deeply based on how each nation organizes and regulates its financial system. The European Union, for example, is characterized by supranational governance that seeks to provide unified regulations across all its members, thereby avoiding fragmentation and promoting market integration. This institutional structure helps explain the adoption of measures like the Markets in Crypto-Assets (MiCA) Regulation, promoting a stabilized market and investor protection at the EU level. In contrast, the United States operates through a decentralized system divided among multiple authorities at both federal and state level. This layered structure contributes to regulatory fragmentation, where certain measures may overlap leading to an inconsistent system of crypto regulation. Japan's model, on the other hand, reflects a highly centralized financial supervision framework, controlled mainly by the Financial Services Agency (FSA) and the Bank of Japan (IMF,2024). This system results in clearer, though stricter, regulatory standards.

These differences in governmental structure suggest that regulatory divergence in cryptocurrency governance is more closely linked to the institutional design of each jurisdiction's financial system rather than the technological characteristics of crypto-assets themselves. This thesis argues that regulatory divergence in cryptocurrency governance is driven primarily by differences in institutional design, financial market structure, and political priorities across jurisdictions, rather than by technological factors of crypto-assets itself.

Beyond institutional frameworks, the organization of financial markets plays a decisive

role in deciding the appropriate regulatory strategy. The United States, with its strong capital-market philosophy and advanced technological environment, has historically supported financial innovation, including within the crypto sector (IMF, 2023). This is reflected in the permissive regulatory environment that has allowed the crypto market to develop but also led to concerns about investor protection and systemic risk. The European Union, while also supportive of innovation, faces the challenge of coordinating regulatory measures across multiple financial systems, and therefore placing greater importance to financial stability and coordinated supervision. Japan's model, in contrast, shaped by its bank-centred financial system (Bank of Japan) and by previous episodes of financial instability, has maintained a more cautious regulatory attitude toward emerging financial technologies, including cryptocurrencies. This conservative model reflects Japan's priorities of financial stability and investor protection, often resulting in stricter regulatory measures and tax treatment

In addition to institutional structure and economic factors, cryptocurrency regulation is heavily shaped by broader political issues, such as providing financial stability, maintaining monetary sovereignty, fostering innovation, and the need to protect investors. States must assess systemic risk, investor protection, and market competition when deciding on crypto regulation. The European Union's cryptocurrency regulation is closely linked to efforts of ensuring monetary stability and maintaining consistency across member states. In the United States, crypto policy is increasingly framed in terms of strengthening financial competitiveness, while still prioritizing growth. Japan's approach reflects a strong prioritization of financial stability, as it works gradually to integrate crypto-assets into their financial system and hopefully treat them similarly to stocks, through stricter supervisory and tax treatment. Ultimately, cryptocurrency regulation is not only a technical matter, but a political decision on how to manage risk, innovation and market development (BIS, 2021).

## 6. Comparative Analysis

This section applies the analytical framework previously mentioned in other sections to the three selected jurisdictions: The United States, the European Union, and Japan. Each case is examined through a common structure which evaluates how institutional frameworks, regulatory design, and market conditions influence crypto integration in different political economies. This allows to identify both common patterns and key differences across the three regions.

### 6.1 The United States

The United States presents a particularly relevant example for analysing cryptocurrency development due to its market-oriented financial system, which combines deep capital markets, a strong private financial sector, and a fragmented regulatory framework. Unlike other bank-centred systems, the U.S. economy is heavily market-based, which has created a favourable environment for the rapid expansion of venture capital and financial technology (fintech), including crypto-assets. At the same time, the complexity of this layered institutional structure means that innovation often develops faster than the development of a unified regulatory framework. This makes the United States an especially useful case in examining how institutional fragmentation can promote cryptocurrency development while simultaneously generating regulatory divergence across institutions (IMF, 2023).

The regulatory approach of the United States reflects the institutional fragmentation of its financial system (Zetsche et al., 2017). Rather than adopting a centralized model in which a single unified federal framework governs the sector, the U.S. divides oversight across multiple federal and state authorities to supervise different aspects of the crypto market. At the federal level, oversight has been split between the Securities and Exchange Commission (SEC) and the Commodity Futures Trading Commission (CFTC). The SEC has generally applied securities laws to many crypto-assets and has emphasized investor protection, whereas the CFTC has focused on treating digital assets such as Bitcoin as commodities and monitors derivatives linked to digital assets (CFTC, n.d.). Additionally, individual state authorities also play a role, introducing their own supervisory rules, adding an extra layer of compliance complexity to the U.S. crypto market.

This layered regulatory model has contributed to regulatory uncertainty and fragmentation, allowing markets to expand rapidly but often forcing firms to navigate overlapping mandates and a mixture of inconsistent compliance requirements (GAO, 2016; CRS, 2023). As illustrated in Figure 4, the U.S. financial regulatory structure is based on overlapping federal and state authorities, each with different roles, creating a complex structure in which

digital assets might have to comply with the regulation of different regulators depending on their characteristics and the activities they are involved. This fragmentation not only increases the compliance part but also hinders the development of a harmonized regulatory model, which would offer clearer guidelines for companies operating in the market.

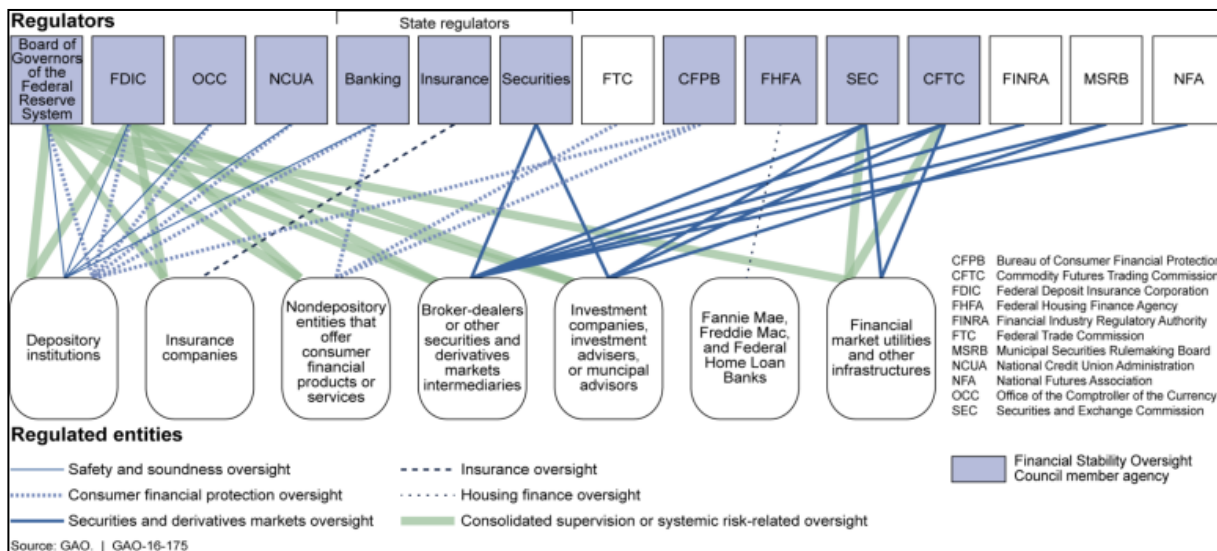


Figure 5: U.S. Financial Regulatory Structure  
 Source: Government Accountability Office (GAO), *Financial Regulation: Complex and Fragmented Structure Could Be Streamlined to Improve Effectiveness* (GAO-16-175, 2016), reproduced in Congressional Research Service, *Who Regulates Whom? An Overview of the U.S. Financial Regulatory Framework* (2023).

Figure 5 reinforces the idea that fragmentation in the United States is structural rather than casual. A single financial product may fall under the scope of several regulators depending on the type of institution involved, the activity itself, and most importantly whether oversight is enforced at a federal or state level. This complexity helps to justify why similar digital assets may be subject to different supervisory approaches, increasing compliance burdens.

Despite these challenges, the U.S. has also been one of the centres of cryptocurrency market development due to its highly developed capital markets and the emphasis they place on financial innovation. Its market-based financial structure has encouraged the expansion growth of venture capital, fintech firms, and digital asset exchanges, creating favourable conditions for the growth of digital assets as a segment of the financial market despite the existence of regulatory fragmentation (IMF, 2023). This development became more visible when the SEC approved the spot Bitcoin exchange-traded products (ETPs) in January 2024 (SEC, 2024), which strengthened the connection between digital assets and traditional financial markets. As a result, the U.S. case illustrates how strong financial infrastructure and investor participation can support rapid crypto development, despite when inconsistencies in the regulatory framework persist.

However, the same institutional framework that has enabled favourable market

conditions for cryptocurrency growth has also generated both significant legal and regulatory uncertainty. The complexity of the U.S. regulatory framework has created legal uncertainty regarding exchanges, issuers, and investors, forcing firms to operate in an environment in which various authorities apply different rules to similar activities. This increases higher possible compliance costs and complicates long-term planning for firms operating in the market. This duality of outcomes is therefore mixed: on the one hand, the United States presents one of the most favourable market conditions for crypto market expansion; on the other hand, it highlights the need for a single unified regulatory system. As a result, the American model has promoted innovation and market growth, while also reinforcing the need for a fully harmonized regulatory system (GAO, 2016; CRS, 2023).

From an analytical point of view, the U.S. case reinforces the argument that regulatory divergence in cryptocurrency governance is closely linked to institutional factors and market environment in which cryptocurrencies evolve. The U.S.'s market-based financial system has encouraged innovation, private investment, and the rapid market expansion of cryptocurrency markets. However, the overlap of supervisory rules across multiple authorities has introduced regulatory uncertainty. This case supports the broader argument of this thesis: differences in institutional configuration together with political and economic priorities, are key to explain why cryptocurrency development and regulation evolve at different paces across regions.

## 6.2 European Union

The European Union offers a distinct model for cryptocurrency development compared to the United States. It combines advanced financial markets with an institutional framework rooted in supranational coordination across its member states. The EU must coordinate regulatory actions across multiple member states, legal systems and supervisory institutions. This makes the European case especially relevant for analysing how cryptocurrency regulation can develop through harmonization rather than through purely national approaches. It also makes the EU a great example of how the institutional structure, and the objective of preserving financial stability influences both the pace and direction of crypto development (Council of the European Union, 2023).

The EU's regulatory framework is closely tied to its objective of creating a more consistent and integrated financial market across member states. Unlike the U.S., where fragmentation characterizes the regulatory structure, the EU has progressively moved towards a harmonized framework for cryptocurrency governance. The most notable example of this approach is the adoption of the Markets in Crypto-Assets (MiCA) regulation, which provides a

common regulatory structure for crypto-assets and service providers across the Union. This framework seeks to reduce differences between member states, MiCA's main objective is to clarify rules, strengthening investor protection, and provide financial stability across the EU. The European case therefore differs from the U.S. model, as cryptocurrency regulation is organized around coordination and consistency rather than fragmented institutional supervision (Council of the European Union, 2023; ESMA, 2025). As illustrated in Figure 6, the EU model of financial supervision is built on a multi-layered network that combines supranational harmonization with national authorities, helping explain why cryptocurrency governance in the Union is constructed around harmonization rather than national oversight.



Figure 6: European Union system of financial supervision

Source: Council of the European Union. (2019). *EU system of financial supervision*.

Figure 6 provides a complete picture of the institutional structure of the European Union's supervisory model. Rather than relying on a single centralized regulatory institution, the EU system is organized through European System of Financial Supervision (ESFS), which combines supranational supervisory authorities such as ESMA (European Securities Markets Authority), EBA (European Banking Authority) and EIOPA (European Insurance and Occupational Pensions Authority) with National Competent Authorities (NCAs) at the member-state level, while the European Systemic Risk Board (ESRB) provides the macro-financial oversight. This helps explain why cryptocurrency regulation in the European Union is organized around

harmonization, coordination across member states, and financial stability, rather than around purely national oversight.

Beyond its regulatory framework, the European Union has shown clear signs of market expansion in cryptocurrency activity. According to Kaiko reports, monthly euro-denominated trade volumes in 2024 remained above the previous year's average (approximately €12B) and increased substantially, reaching nearly €50 billion in November, more than twice the volume recorded in October. In parallel, the BTC-EUR share of global BTC-fiat trading volume rose from 3.6% to nearly 10%, overtaking BTC-JPY and becoming the third-largest BTC-fiat pair by volume worldwide. This growth in trading activity was also accompanied by an expansion in market infrastructure, as more than 331 new euro-denominated trading pairs were launched during the year. Taken together, these advancements suggests that the European Union has gained importance as a more structured and attractive market for crypto investors. Its harmonized regulatory framework may have contributed not only to greater legal clarity, but also to stronger investor confidence and boosting cross-border market integration.

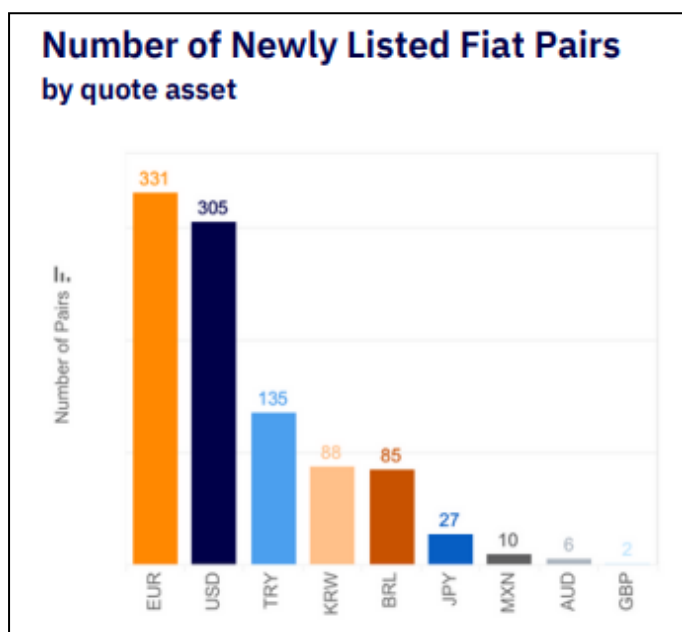


Figure 7: Number of Newly Listed Fiat Pairs by quote asset  
Source: Kaiko. (2024). *The State of the European Crypto Market*

Figure 7 reinforces the idea that the development of the European crypto market in 2024 was also reflected by the expansion in trading infrastructure. The launch of 331 new EUR-denominated fiat pairs, more than in USD and TRY markets, implies that the euro has become an increasingly relevant quote asset within the global crypto trading. In the context of the thesis, this supports the argument that regulatory harmonization in the EU may influence not only legal clarity, but also the pace at which a market infrastructure develops across regions. The EU's

model thus offers insight into how governmental structure, focused on harmonization, can drive both market growth and cross-border integration.

Despite the advantages of harmonization, the EU's approach is not free from limitations. Although a harmonized regulatory framework such as MiCA reduces fragmentation and facilitates market integration, the complexity of coordination across multiple member states and supervisory institutions can make regulatory process slower. Although this unified framework offers greater legal certainty, the practical application of common standards still depends on institutions operating at both European and national levels. This may generate uncertainty in implementation and supervision, potentially slowing EU's ability to respond rapidly to innovations in the crypto sector. As a result, the EU model offers greater consistency than the U.S. model, but it may also be slower in adapting quickly to new developments in the crypto market. As a result, the European case reflects a trade-off between legal clarity and the pace at which innovation is integrated into the market (ESMA, 2024).

From an analytical perspective, The European Union's approach shows how regulatory divergence in cryptocurrency development is closely tied to the institutional design that focuses on supranational coordination. By prioritizing standardization, legal certainty and financial stability, the EU offers a more structured approach of crypto market development than the United States. At the same time, this model shows that a more consistent structure may result in a slower pace of regulatory adaptation. In this sense, this supports the broader argument of this thesis: differences in institutional design and political priorities both influence the speed and path each country adopts regarding cryptocurrency development.

### 6.3 Japan

Japan presents a different case for cryptocurrency evolution, as its financial system is characterized by a stronger role for banks, a more centralized supervision approach and a more cautious attitude toward financial innovation. Unlike the highly market-based U.S. system, Japan's regulatory philosophy has placed greater emphasis on maintaining a prudent control and financial stability. Its financial system is organized around a smaller number of public institutions, which helps explain why crypto-assets have been introduced into a more controlled environment. This context is relevant to understand the Japanese crypto market, since the country was among the first major economies to regulate cryptocurrency activity formally. However, the regulatory framework adopted was primarily aimed at risk limitation rather than maximizing market expansion. As a result, Japan provides a useful case for examining how early regulatory integration can coexist with a relatively conservative market atmosphere (IMF, 2024).

Japan’s regulatory approach reflects its preference for early regulatory standardization and centralized financial supervision. Unlike many other countries that waited for the market to start developing before imposing any regulations, Japan was among the first countries to establish a legal framework for cryptocurrency activity, mainly through adjustments to the Payment Services Act. This introduced a registration system for crypto-asset exchange service providers under the supervision of the Financial Services Agency (FSA). Japan moved to regulate crypto-related activities at an early stage to reduce the potential risks associated with operational failures, consumer protection and market stability. In contrast to the European model of supranational harmonization, and the U.S. model’s fragmentation, Japan’s system relies more heavily on centralized oversight. Giving the Japanese approach greater legal certainty, but also a more cautious and risk-sensitive approach to market development.

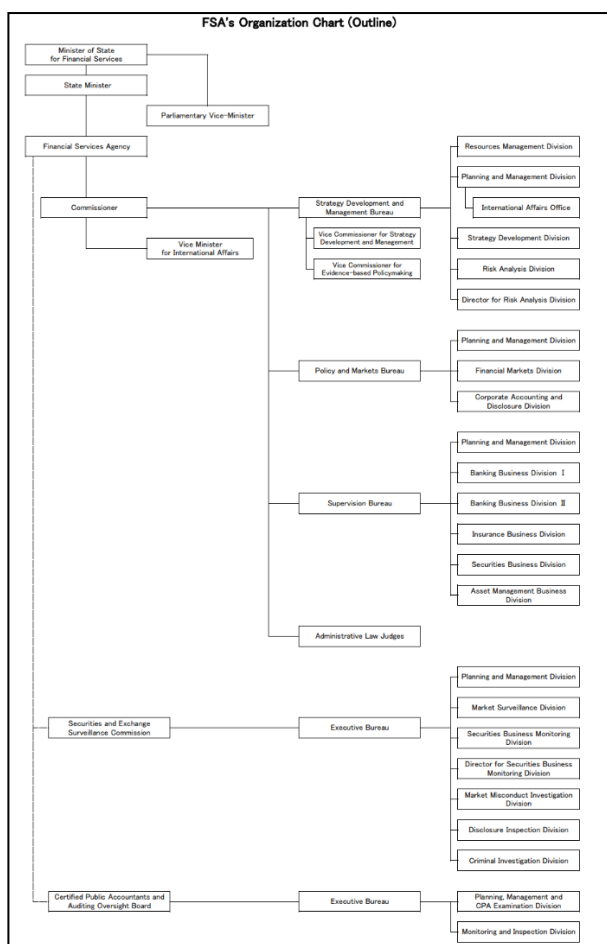


Figure 8: Financial Services Agency (FSA) organization chart (outline)  
 Source: Financial Services Agency of Japan, *FSA's Organization Chart (Outline)*.

As illustrated in Figure 8, Japan’s supervisory model is highly organized around a centralized institutional structure. The Financial Services Agency (FSA) sits at the core of financial supervision, supported by various divisions that monitor different aspects of financial markets. This structure provides a clearer guideline in cryptocurrency governance but shows a more risk-sensitive approach towards market growth. The clear institutional hierarchy depicted in the FSA’s organizational chart supports a more controlled regulatory structure compared to

fragmented models found in the U.S. and the harmonized but way less centralized European system (IMF, 2024).

The Japanese crypto market has developed within a more regulated, yet relatively low-risk environment. According to the Financial Services Agency, the number of accounts held at crypto-asset exchange service providers in Japan exceeds the 12 million, while the balance of user deposits surpasses 5 trillion yen. The agency also reports that around 7.3% of investors with investment experience now hold crypto-assets, showing that they have become a more significant category in the domestic investment market (FSA, 2025). However, the IMF highlights that fintech adoption in Japan remains relatively low in comparison to major international markets (IMF, 2024). Taken together, these indicators suggest that Japan has developed its crypto market under more regulated and secure conditions, its pace of development has been slower than in regions where market expansion has been more strongly promoted.

Despite the advantages, the Japanese approach is not free from limitations. The same early formal regulation and centralized supervisory structure that have improved legal clarity has also limited the growth and integration of crypto activities into the market. In its latest discussion paper, the FSA has recently noticed that excessive regulation could push users and service providers move out towards foreign markets, therefore diminishing Japan's international market attractiveness (FSA, 2025). At the same time, the high number of concerns related to fraudulent activities, the presence of unregistered providers, and market misconduct continues to justify the strong supervisory framework imposed by the FSA. This means Japan illustrates a framework that offers a high degree of control and oversight, but at the cost of a more restrictive approach towards growth and innovation.

From an analytical perspective, Japan demonstrates that cryptocurrency regulation can develop through early formalization, centralized supervision, and a strong focus on prudential control. Unlike the United States, where innovation has progressed alongside its fragmented supervisory structure, and unlike the European Union, where harmonization is the core regulatory objective, Japan has followed a more conservative path centred on legal certainty and risk containment. While this model provides stronger regulatory clarity, it also shows that stricter oversight does not necessarily lead to faster market expansion. In this sense, Japan reinforces the broader argument of the thesis: institutional design and political priorities influence not only cryptocurrency governance, but also how fast they develop across different markets.

#### 6.4 Cross-case comparison

To make the comparison more precise, Table 1 summarizes the main analytical indicators

used in this thesis. Rather than measuring market size alone, the selected indicators combine institutional structure, regulatory design, and market evidence to reflect the essence of this comparative study. This approach helps show that divergence across jurisdictions is not solely legal or technological dependent but is also structural. Each region’s financial structure and political philosophies shape the regulatory approach used in cryptocurrency markets and therefore influencing its development. The table therefore serves as a synthetic overview of the main patterns identifies in the United States, the European Union, and Japan.

<b>Jurisdiction</b>	<b>Institutional structure</b>	<b>Regulatory model</b>	<b>Illustrative evidence/KPI</b>	<b>Main trade-off</b>
<b>United States</b>	Market-based financial system; fragmented multi-agency and dual federal-state oversight.	Agency-based and overlapping oversight (SEC, CFTC, state authorities), no single unified model.	At least <b>40 states</b> introduced digital-asset legislation in 2025.	Strong innovation and market dynamism, but high legal uncertainty and fragmented supervision.
<b>European Union</b>	Supranational, multi-level supervisory structure combining EU and national authorities.	Harmonized framework under MiCA, aimed at reducing fragmentation and increasing legal consistency.	In 2024, BTC-EUR rose nearly <b>7%</b> of global BTC-fiat, monthly euro-denominated trading nearly reached <b>€50 million</b> ; more than <b>331</b> new EUR-denominated pairs were launched in the year.	Greater legal clarity and market integration, but slower adaptation due to coordination across member states.
<b>Japan</b>	More centralized, bank-centred, prudential	Early formal regulation under the Payment Services Act; registration and	More than <b>12 million</b> crypto exchange accounts, over <b>5 trillion</b> yen in user deposits, and a <b>7.3%</b> holding rate	Greater legal certainty and stronger control, but more restricted

	supervisory model.	oversight trough FSA	among investors with investment experience	market dynamism.
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Figure 9: Key Comparison of Cryptocurrency Governance Models Across Jurisdictions

Figure 9 summarizes the key indicators used in the comparison. The U.S., EU, and Japan present different institutional models and regulatory philosophies, which have resulted in varied market outcomes. The U.S. has fostered a more fragmented and fast-moving, but this comes along with regulatory uncertainty. The EU has prioritized harmonization, promoting market clarity, but at a slower pace. Japan, with its centralized oversight, has focused on market integrity and control, though it has developed more cautiously than the U.S. and the EU.

This section brings together the findings from the United States, the European Union, and Japan to identify the main factors influencing regulatory divergence in cryptocurrency governance across different institutional settings. Rather than analysing these cases individually, the comparison focuses on how differences in financial systems, regulatory design, and political priorities lead to different paths of cryptocurrency governance. The aim is not only to identify the variations in regulatory models, but also to describe how those differences affect the evolution of cryptocurrencies across regions, even when all three face the same underlying technological developments.

The first major source of divergence lies in the institutional organization of each jurisdiction's financial system. In the United States, the market-based financial model comes alongside with a dispersed supervisory structure. Where regulatory authority is divided across multiple federal and state agencies, contributing to both regulatory uncertainty and fast-moving crypto market. As shown in Table 1, the introduction of digital asset regulations across 40 states in 2025 illustrates the level of fragmentation of the U.S. regulatory system (NCSL,2025). In the European Union, financial oversight is organized through a supranational system that seeks coordination with both European supervisory authorities and national authorities, trying to preserve consistency in the market. Japan, by contrast, represents a third model, it relies on a more centralized and bank-centred model, where the Financial Services Agency (FSA) plays a leading role in market registration and regulation of cryptocurrency activity. This model is more conservative, with fewer public entities involved in financial oversight, offering a clearer regulatory structure, but leading to a slower market development.

These differences matter significantly. The institutional framework of each jurisdiction

sets a different starting point in the cryptocurrency governance, helping explain why similar technologies are regulated in such different ways. The U.S. model allows for rapid innovation to expand but suffers from a fragmented regulatory structure. The EU model fosters integration and legal clarity but at a slower pace due to harmonization across its member states. Japan's centralized model has a stronger markets control but results in a more cautious approach to market expansion.

The second major source of divergence lies in the regulatory strategies adopted by each jurisdiction to govern cryptocurrency activity. In the United States, regulation has developed through an agency-based model in which multiple authorities apply their supervisory measures over digital assets, creating an overlapping framework that generates uncertainty for investors and market participants. In the European Union, by contrast, regulation has been structured around the objective of harmonization, with MiCA seeking to reduce fragmentation and establish common set of market rules. As shown in Table 1, this harmonized framework has resulted in a significant increase in BTC-EUR trading volume, which rose from 3.6% to nearly 10% of global BTC-fiat in 2024, highlighting how a single unified framework can foster market integration.

Japan follows an alternative path. They are characterized by an early formal regulation through the Payment Services Act, which states that to be able to operate legally in the market crypto exchange providers must register with the FSA. This centralized system has led to provide investors with clearer rules and stronger legal environment, as shown by the fact that 12 million crypto exchange accounts and 5 trillion yen in deposits were recorded (FSA, 2025). However, Japan's approach has been more cautious, placing a greater emphasis on risk containment and financial stability rather than prioritizing rapid market development.

The comparison reveals how different regulatory philosophies not only create certain degrees of legal clarity but also influence the speed and direction of market growth. The U.S. promotes innovation but at the cost of regulatory uncertainty among its investors. The EU focuses on market integration and investor protection through harmonization, while Japan prioritizes regulatory clarity and prudence at a cost of a slower pace of growth.

A further explanation for regulatory divergence lies in the political priorities that guide each region's response to cryptocurrency activity. In the United States, the regulatory debate has been mainly influenced by concerns related to financial innovation, competitiveness, and the role of private sector actors in market development. In the European Union, by contrast,

cryptocurrency regulation has been more focused on objectives of preserving financial stability, investor protection, and consistency across member states. Japan, meanwhile, has placed a greater importance on prudential supervision, market integrity, and user protection, reflecting a more risk-averse approach towards financial innovation.

These political priorities have led to different approaches to cryptocurrency governance, which reflect not only institutional structures but also the political objectives that each state attaches to regulating new financial technologies. While some regions put the focus on fostering innovation and market dynamism, others prioritize ensuring financial stability, investor protection, or prudential oversight. These objectives influence the pace and direction of crypto markets development, demonstrating once again how different political regulatory goals shape the managing of cryptocurrency governance.

Overall, the comparative analysis of the three regions highlights that cryptocurrency governance evolves differently across jurisdictions, shaped by distinct institutional and political economy characteristics. While the United States, the European Union, and Japan all respond to the same technological advancements, their responses vary significantly due to differences in institutional designs, regulatory approaches, and political priorities. The U.S. model emphasizes innovation and market dynamism, the EU prioritizes harmonization across states and market integration, and Japan has adopted a more centralized and prudent path. In this sense, the comparison supports the broader argument of this thesis: the evolution of cryptocurrency markets depends less on the technological developments alone than on the institutional design, regulatory philosophy, and political objectives through which each jurisdiction responds to them.

## 7. Conclusions

This thesis was concluded to explore how regulatory divergence influences cryptocurrency governance across different jurisdictions, focusing on the United States, the European Union, and Japan. By analysing each region's institutional structure, regulatory approaches, and political priorities, the study provides a comparative analysis for understanding the varied paths through which cryptocurrencies have evolved and been regulated in these regions.

### Key findings:

1. Institutional influence on regulation:
  - The study found that institutional frameworks are a fundamental driver of regulatory divergence. The U.S. model, a market-based financial system controlled by a fragmented framework, encouraging rapid innovation but also resulted in regulatory ambiguity. The European Union has prioritized harmonization through a supranational regulatory model, leading to a clearer legal guideline for investors but moving at a slower pace in market adaptation. Meanwhile, Japan' centralized and protective approach has provided regulatory certainty but limited the pace of market growth.
2. Regulatory approaches and market outcomes:
  - The findings also highlighted how regulatory approaches have a direct impact on market outcomes. The U.S. model has fostered a dynamic crypto market, driven by rapid innovation and governmental participation, despite its fragmented system. The EU's coordinated network has contributed to legal clarity, as evidenced by the rise of BTC-EUR trading and the launch of numerous EUR-denominated fiat pairs. Japan's cautious model, ensuring market integrity and user protection, has proceeded at a slower rate of market advancement.
3. Political priorities and crypto governance:
  - Political objectives, such as financial innovation, financial stability and prudential oversight, have also played a key role in influencing the crypto regulatory system. The U.S. has its focus on innovation and market competitiveness as mentioned before, the EU seeks to ensure financial stability and protect users. Japan, on the other hand, has prioritized for a prudent and strict supervision and market integrity based on the risks

associated with financial innovation in the market.

#### Implications for future research and policy:

Given the rapid evolution of cryptocurrency markets, future research should continue to explore how regulatory divergence may affect global integration and market stability. Governments and policy makers in both emerging and established economies should take into consideration the institutional design and political objectives when designing regulations for digital assets.

The comparative analysis of the U.S., EU, and Japan offers important takeaways for other regions considering the regulation of cryptocurrencies. While some regions may focus on rapid market development, others may focus on risk management and legal clarity. Finding the right balance between these objectives will be crucial in the future development of cryptocurrency markets.

## 8. AI declaration

I, Santos Nacher Rodriguez, a student of E2-Bilingual at Universidad Pontificia Comillas, hereby declare that, in submitting my Bachelor's Thesis titled "Global drivers of cryptocurrency development: Economic, technological and regulatory perspectives across major economies", I have used the Generative Artificial Intelligence tool ChatGPT or other similar AI tools solely in the context of the activities described below:

1. **Brainstorming research ideas:** Used to brainstorm and outline possible research areas.
2. **References:** Used in conjunction with other tools, such as Science, to identify preliminary references which I later cross-checked and validated.
3. **Methodologist:** Used to discover methods applicable to specific research problems.
4. **Literary and language style editor:** Used to improve the linguistic and stylistic quality of the text.
5. **Synthesizer and disseminator of complex books:** Used to summarize and understand complex literature.
6. **Reviewer:** Used to receive suggestions on how to improve and refine the work at different levels of rigor.

I affirm that all the information and content presented in this work are the product of my own research and individual effort, except where otherwise indicated and with the proper credits given (I have included the appropriate references in the thesis and clarified where ChatGPT or other similar tools have been used). I am aware of the academic and ethical implications of submitting non-original work and accept the consequences of any violations of this declaration.

Date:26/03/2026

Signature:  \_\_\_\_\_

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