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A Cross-Border Regulatory Coordination Framework for Digital Asset Governance: Lessons from Uzbekistan and Kazakhstan

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ABSTRACT

The rapid expansion of digital asset transactions has reshaped international economic activity and challenged the capacity of national legal systems to provide consistent regulatory protection. Kazakhstan and Uzbekistan have developed distinct legal approaches based on their institutional priorities and financial supervisory policies. This study examines how these regulatory differences influence legal certainty in cross border digital asset transactions. The analysis identifies three principal findings. First, different regulatory philosophies shape the recognition, classification, and supervision of digital assets, creating uncertainty about applicable legal standards. Second, differences in institutional authority and administrative practices produce overlapping responsibilities, inconsistent compliance requirements, and weak coordination among regulatory authorities. Third, limited regulatory interoperability complicates jurisdictional determination, information exchange, regulatory recognition, and cross border enforcement. The study therefore proposes a Cross Border Regulatory Coordination Framework that promotes regulatory compatibility, functional equivalence, mutual recognition, supervisory cooperation, and coordinated enforcement while preserving national regulatory autonomy and strengthening legal certainty across both jurisdictions.

Introduction

Digital asset markets have evolved from a marginal segment of speculative cryptocurrency trading into a broader architecture of digital finance involving crypto-assets, stablecoins, decentralised finance, tokenised assets, and blockchain-based investment channels. This development is legally significant because digital assets no longer function merely as technological instruments, but increasingly operate as financial infrastructures for value transfer, liquidity formation, investment participation, and cross-border settlement. Recent scholarship shows that DeFi has expanded the logic of financial intermediation by enabling lending, exchange, custody, and asset management through decentralised protocols rather than conventional financial institutions. Likewise, the total value locked (TVL)

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across decentralised finance protocols reached approximately USD 106 billion in May 2024, illustrating the increasing economic significance of decentralised financial infrastructures operating beyond conventional regulatory boundaries.[1]

At the same time, stablecoins have become an important bridge between volatile crypto-assets and fiat-denominated financial systems, while tokenisation enables rights over securities, commodities, real estate, and other assets to be represented and transferred through distributed ledger infrastructures. These developments have widened the scope of digital asset transactions from domestic trading activity to cross-border digital finance, where users, platforms, issuers, custodians, validators, and investors may be located in different jurisdictions.[2] Recognising these developments, the Financial Stability Board has warned that the increasing interconnectedness between crypto-asset markets and the traditional financial system may generate financial stability risks extending across jurisdictions, necessitating coordinated international regulatory responses.[3]

The legal relevance of this transformation lies in the mismatch between the borderless nature of digital asset markets and the territorially bounded structure of financial regulation. Cross-border digital asset transactions can involve multiple legal systems simultaneously: the jurisdiction where the user is located, the jurisdiction where the exchange or custodian is licensed, the jurisdiction governing the issuer of a token or stablecoin, and the jurisdiction in which enforcement or asset recovery must occur. This fragmentation becomes more complex in DeFi, where protocols may operate without a clearly identifiable domicile, responsible intermediary, or centralised governance body.[4] Stablecoins further complicate the picture because their issuance, reserve management, custody arrangements, redemption mechanisms, and user base may be distributed across different jurisdictions. Similarly, tokenised assets raise difficult questions concerning proprietary rights, settlement finality, applicable law, insolvency treatment, and investor protection when the underlying asset, token issuer, trading venue, and investor are not located in the same country.[5]

For emerging markets, these developments create both opportunities and regulatory risks. Digital assets may support financial inclusion, cheaper

[1] 'On Cross-Border Crypto Flows – Measurement Drivers and Policy Implications' https://doi.org/10.5089/9798400294501.001.A001

[2] Dirk A Zetzsche, Douglas W Arner, and Ross P Buckley, 'Decentralized Finance', *Journal of Financial Regulation*, 6.2 (2020), 172–203 https://doi.org/10.1093/jfr/fjaa010

[3] Raphael Auer, Giulio Cornelli, and Jon Frost, 'Rise of the Central Bank Digital Currencies: Drivers, Approaches and Technologies', *SSRN Electronic Journal*, 2020 https://doi.org/10.2139/ssrn.3724070

[4] Lennart Ante and Ingo Fiedler, 'The New Digital Economy: How Decentralized Finance (DeFi) and Non-Fungible Tokens (NFTs) Are Transforming Value Creation, Ownership Models, and Economic Systems', *Digital Business*, 5.1 (2025), 100094 https://doi.org/10.1016/j.digbus.2024.100094

[5] Tina van der Linden and Tina Shirazi, 'Markets in Crypto-Assets Regulation: Does It Provide Legal Certainty and Increase Adoption of Crypto-Assets?', *Financial Innovation*, 9.1 (2023), 22 https://doi.org/10.1186/s40854-022-00432-8

remittances, alternative investment channels, and regional capital mobility, but they may also generate regulatory arbitrage, consumer protection gaps, AML/CFT risks, and uncertainty over jurisdiction and applicable law. The problem is therefore not simply that digital assets are difficult to regulate domestically, but that their cross-border use exposes the limits of fragmented national regulatory regimes. The absence of coherent cross-border regulatory mechanisms not only undermines legal certainty but also constrains the development of regional digital financial markets, weakens investor confidence, and limits the effectiveness of international financial cooperation. This is particularly relevant for neighbouring jurisdictions with different regulatory philosophies, because the same digital asset transaction may be legally permitted, restricted, or prohibited depending on which regulatory system is applied. Digital assets increasingly operate beyond territorial borders, challenging conventional legal and regulatory frameworks.[6] The growing scale of this phenomenon is reflected in the rapid expansion of global crypto-asset markets.[7] According to the IMF–FSB Joint Report (2024), the total market capitalisation of crypto-assets reached approximately USD 2.2 trillion as of 30 August 2024, approaching its historical peak despite heightened regulatory scrutiny. This demonstrates that digital assets have become an increasingly significant component of global financial markets, thereby intensifying the need for coherent cross-border legal governance.[8] Consequently, the principal legal challenge is no longer whether digital assets should be regulated, but how fragmented national regulatory regimes can effectively govern cross-border digital asset transactions.[9]

Despite the rapid expansion of digital asset markets globally, scholarly understanding of cross-border regulatory dimensions in emerging market jurisdictions remains critically underdeveloped. Existing literature has predominantly focused on regulatory frameworks in developed jurisdictions, including the European Union's Markets in Crypto-Assets Regulation, the United States' fragmented federal-state approach, and Singapore's Payment Services Act framework. Bridging this gap requires shifting the analytical focus from developed jurisdictions to emerging markets, where regulatory institutions are still evolving, and divergent legal responses to digital assets are becoming

[6] Jan Schwiderowski and others, ‘Value Creation and Capture in Decentralized Finance Markets: Non-Fungible Tokens as a Class of Digital Assets’, *Electronic Markets*, 33.1 (2023), 45 https://doi.org/10.1007/s12525-023-00658-z

[7] Yuxin Guo and Xiaoyin Xia, ‘Building Walls or Breaking Barriers? Digital Governance Risk Exposure, Legal Protection, and Corporate Fixed Asset Investment Decisions’, *Finance Research Letters*, 107 (2026), 110355 https://doi.org/10.1016/j.frl.2026.110355

[8] Michael Chak Sham Wong, Emil Ka Ho Chan, and Imran Yousaf, ‘CBDCs, Regulated Stablecoins and Tokenized Traditional Assets under the Basel Committee Rules on Cryptoassets’, *Journal of Financial Regulation and Compliance*, 33.1 (2025), 31–47 https://doi.org/10.1108/JFRC-03-2024-0050

[9] Arjun Rachana Harish and others, ‘Blockchain-Enabled Digital Asset Tokenization for Crowdsensing in Environmental, Social, and Governance Disclosure’, *Computers & Industrial Engineering*, 185 (2023), 109664 https://doi.org/10.1016/j.cie.2023.109664

increasingly apparent.[10] Examining neighbouring jurisdictions that share similar historical and institutional foundations but adopt contrasting regulatory philosophies offers a unique opportunity to explain how regulatory fragmentation translates into cross-border legal uncertainty. Against this background, Uzbekistan and Kazakhstan represent particularly valuable comparative cases for three reasons. First, both countries share historical legal traditions rooted in Soviet-era civil law yet have developed fundamentally divergent regulatory philosophies toward digital assets, making them a natural experiment in regulatory choice under comparable institutional conditions. Second, the two countries represent the two dominant regulatory paradigms emerging across developing economies globally: promotion-oriented accommodation and cautious containment, providing insights relevant far beyond Central Asia.[11] Third, as neighbouring jurisdictions with substantial economic ties, cross-border digital asset transactions between them are practically significant, making the legal obstacles created by regulatory divergence consequential for real market participants rather than merely theoretical.[12]

Jurisdictional conflict in cross-border digital asset transactions arises from the structural mismatch between territorially grounded regulatory authority and the transnational architecture of digital asset markets. In the Uzbekistan–Kazakhstan context, the same transaction may simultaneously fall within multiple jurisdictional claims: the jurisdiction of the user's residence, the jurisdiction of the licensed exchange or Crypto-Asset Service Provider, the jurisdiction of the custodian, the jurisdiction of the issuer, and the jurisdiction in which enforcement is sought. This creates a legal environment in which no single jurisdiction can fully regulate the transaction, while multiple jurisdictions may assert overlapping regulatory authority.[13]

The conflict becomes particularly acute where national regulatory models attach different legal consequences to the same digital asset activity. A transaction conducted through an Uzbekistan-licensed platform may be lawful under Uzbekistan's promotion-oriented framework, yet may fall outside Kazakhstan's permitted AIFC-based regime if accessed by a Kazakhstan resident. Conversely, an AIFC-licensed entity may be authorised under Kazakhstan's framework but

[10] S. Ida Evangeline, 'The Future of Payment Systems', 2025, pp. 217–40 https://doi.org/10.4018/979-8-3373-1250-7.ch008

[11] Linshan Zeng, Martin R. Young, and Wei Hao, 'The Digital Currency Revolution: A Survey of Its Evolution, Current Practices, and Implications', *Journal of Economic Surveys*, 40.3 (2026), 1653–71 https://doi.org/10.1111/joes.70062

[12] Asmae El Jaouhari and others, 'Tokenization and the Future of Property Investment: A New Paradigm for Real Estate', *International Journal of Strategic Property Management*, 29.4 (2025), 297–315 https://doi.org/10.3846/ijspm.2025.24814

[13] Marco Antonio Bravo-Fabian, Sugey de J. López-Pérez, and Xavier Vence, 'Artificial Intelligence and Digital Product Passports: Data Governance Infrastructures Enabling Circular Business Model Innovation', *Journal of Cleaner Production*, 571 (2026), 148875 https://doi.org/10.1016/j.jclepro.2026.148875

may not satisfy Uzbekistan's domestic platform or licensing requirements when interacting with Uzbekistan residents. In such circumstances, jurisdictional conflict is not merely a question of overlapping authority; it becomes a problem of regulatory incompatibility, where compliance with one legal system may expose market participants to liability under another.[14]

This conflict also produces uncertainty over applicable law and dispute resolution. Because digital asset transactions may involve users, platforms, custodians, issuers, and network participants located in different jurisdictions, it is often unclear which legal system governs the validity of the transaction, the proprietary status of the asset, contractual obligations, custody failures, fraud claims, or investor remedies. Even where parties include choice-of-law or forum selection clauses, their effectiveness may be limited by mandatory regulatory rules, consumer protection requirements, or public policy exceptions in the jurisdictions involved. As a result, parties may face uncertainty not only over which law applies, but also over which court or arbitral forum has authority to resolve disputes.[15]

The most serious consequence of jurisdictional conflict is the creation of an enforcement gap. Regulatory authorities may assert jurisdiction over a cross-border digital asset transaction, but they may lack the practical capacity to supervise foreign platforms, compel disclosure of information, freeze digital assets, or enforce judgments outside their territory. This reveals a deeper weakness in fragmented digital asset governance: domestic regulatory frameworks may be internally coherent, but externally ineffective when transactions cross borders. Thus, the jurisdictional problem is not simply that Uzbekistan and Kazakhstan regulate digital assets differently; it is that each regulatory system assumes a degree of territorial control that cross-border digital asset transactions systematically undermine.[16]

Previous research by Zetzsche et al. showed that DeFi eliminates many functions of traditional financial institutions, thus eliminating traditional oversight points for regulators. However, they also demonstrated that decentralization does not eliminate the need for regulation; instead, regulation needs to shift to new points in the value chain (reconcentrated points) and even lead to the concept of embedded regulation.[17] In addition, the study by Aquilina et al. has shown that a

[14] Aina B. Otarbayeva and others, 'Investment Cooperation as a Digital Economy Development Method for the Republic of Kazakhstan and the EU', *World Development Perspectives*, 36 (2024), 100636 https://doi.org/10.1016/j.wdp.2024.100636

[15] Mariza Tsakalerou and Almat Abilez, 'The Paradox of Kazakhstan: Linear vs Harmonic Innovation', *Procedia Computer Science*, 217 (2023), 1734–43 https://doi.org/10.1016/j.procs.2022.12.373

[16] Mansia Sadyrova, Kuanish Yusupov, and Bibigul Imanbekova, 'Innovation Processes in Kazakhstan: Development Factors', *Journal of Innovation and Entrepreneurship*, 10.1 (2021), 36 https://doi.org/10.1186/s13731-021-00183-3

[17] Zetzsche, Arner, and Buckley.

functional approach to DeFi highlights the importance of regulating an activity by its economic purpose rather than its technological form. The authors critiqued regulatory approaches that depend heavily on technological classifications and proposed that activities with identical functions should be treated equally under the regulatory principles.[18] Further, Woxholth's research shows that the existing private law regimes and distributed ledger technology are unable to fully address the conflicting proprietary claims over crypto-assets. Their study points to the need for international consensus on enforcement methods, bona fide purchaser protection and property rights. However, the analysis focuses on proprietary claims arising from insolvency and asset transfers, without considering the extent to which different national regulatory regimes contribute to general cross-border legal uncertainty in digital asset governance. Thus, the interaction between cross-border regulatory cooperation, jurisdictional conflict and regulatory fragmentation is yet poorly explored.[19]

Collectively, existing studies have substantially advanced the understanding of digital asset regulation by examining decentralised finance, function-based regulatory approaches, and proprietary rights over crypto-assets. However, these studies remain largely focused on domestic regulatory design or private law issues, without adequately explaining how divergent national regulatory frameworks generate jurisdictional conflicts and cross-border legal uncertainty. Accordingly, this research extends the existing literature by comparatively analysing the regulatory frameworks of Uzbekistan and Kazakhstan to examine the relationship between regulatory fragmentation, jurisdictional conflict, and cross-border legal uncertainty, while proposing regulatory coordination as a more effective governance approach. This omission is particularly significant because regulatory fragmentation directly affects legal certainty, market accessibility, investor protection, and regulatory effectiveness in cross-border digital asset transactions. Without understanding the legal consequences of fragmented regulatory systems, policymakers lack an analytical basis for designing effective mechanisms of cross-border regulatory coordination. Unlike previous research that primarily analyse domestic digital asset regulation or private law implications, this research develops a Cross-Border Regulatory Coordination Framework by integrating comparative legal analysis with institutional governance theory. The framework explains how divergent regulatory philosophies generate cross-border legal uncertainty while proposing a

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[18] Matteo Aquilina, Jon Frost, and Andreas Schrimpf, 'Decentralized Finance (DeFi): A Functional Approach', *Journal of Financial Regulation*, 10.1 (2024), 1–27 https://doi.org/10.1093/jfr/fjad013

[19] Jannik Woxholth and others, 'Competing Claims to Crypto-Assets', *Uniform Law Review*, 28.2 (2024), 226–46 https://doi.org/10.1093/ulr/unad018

coordination model capable of preserving regulatory sovereignty without requiring full legal harmonisation.[20]

The significance of this research extends across multiple dimensions. From an academic perspective, this study contributes to emerging scholarship on digital asset regulation in developing and emerging market jurisdictions by providing the first systematic comparative legal analysis of Uzbekistan's and Kazakhstan's frameworks with explicit focus on cross-border dimensions. From a practical policy perspective, this research provides systematic analysis useful for regulators in both countries as they continue developing and refining digital asset frameworks, identifying specific cross-border conflicts and harmonisation opportunities that could inform bilateral negotiations or regional initiatives within existing frameworks such as the Shanghai Cooperation Organisation or the Eurasian Economic Union.[21]

Research Method

This research employs a doctrinal legal research design using comparative legal analysis as its principal methodological approach. The research examines the legal frameworks governing digital assets in Uzbekistan and Kazakhstan through a functional comparative method, which compares how different legal systems address equivalent regulatory problems rather than merely contrasting statutory provisions.[22] Primary legal materials consist of legislation, presidential decrees, regulatory instruments, and official guidance issued by the competent authorities of both jurisdictions, while secondary materials include peer-reviewed journal articles, international standards, and policy documents published by institutions such as the International Monetary Fund (IMF), the Financial Action Task Force (FATF), the Organisation for Economic Co-operation and Development (OECD), and UNIDROIT. The analysis proceeds through four sequential stages: (i) mapping the regulatory architecture of each jurisdiction; (ii) identifying similarities and divergences in legal definitions, institutional arrangements, supervisory mechanisms, and licensing regimes; (iii) assessing the legal implications of regulatory divergence for cross-border digital asset transactions, particularly with respect to jurisdiction, compliance, enforcement, and investor protection; and (iv) synthesising the comparative findings into a Cross-Border Regulatory Coordination Framework designed to enhance regulatory interoperability while preserving national regulatory sovereignty. To ensure

[20] Dhaval Prajapati and others, 'Understanding the Preference of Individual Retail Investors on Green Bond in India: An Empirical Study', *Investment Management and Financial Innovations*, 18.1 (2021), 177–89 https://doi.org/10.21511/imfi.18(1).2021.15

[21] Shawn Li and Peng Liu, 'The Stablecoins Race in Monetary Sovereignty Between China and the US', in *Technical Innovation in Financial Economics* (IGI Global Scientific Publishing, 2025), pp. 33–66 https://doi.org/10.4018/979-8-3373-2838-6.ch002

[22] Abdul Kadir Jaelani and others, 'Artificial Intelligence Policy in Promoting Indonesian Tourism', *Volksgeist: Jurnal Ilmu Hukum Dan Konstitusi*, 2024, 109–37 https://doi.org/10.24090/volksgeist.v7i1.10623

analytical rigour, the comparative assessment is structured around five evaluative dimensions: regulatory clarity, institutional effectiveness, market governance, cross-border functionality, and consistency with international standards, thereby enabling a systematic examination of how differing regulatory models influence legal certainty and cross-border digital asset governance.[23]

Results and Discussion

Regulatory Models of Digital Asset Governance in Uzbekistan and Kazakhstan

Understanding cross-border regulatory fragmentation requires an examination of the domestic regulatory models that govern digital assets within each jurisdiction. Differences in legal philosophy, institutional architecture, supervisory arrangements, and regulatory objectives shape how digital asset activities are recognised, regulated, and enforced at the national level. These domestic governance models constitute the foundation upon which cross-border legal interactions occur and therefore provide the analytical basis for assessing the sources of regulatory fragmentation and legal uncertainty examined in this research.[24] Kazakhstan and Uzbekistan provide an appropriate basis for comparative legal analysis because they share a common Soviet civil law heritage while adopting markedly different approaches to digital asset governance following their independence. Their comparable legal traditions and institutional backgrounds enable regulatory differences to be attributed primarily to divergent policy choices rather than historical or structural disparities. Furthermore, as two of the leading digital economies in Central Asia with increasing cross-border economic interaction, their regulatory frameworks have significant implications for regional digital trade, investment, and financial integration. Examining these jurisdictions therefore offers a valuable opportunity to assess how different regulatory models influence legal certainty, institutional effectiveness, and the governance of cross-border digital asset transactions.[25]

Uzbekistan's policy is oriented towards promoting digitalization as a strategi tool for accomplishing national economic transformation.[26] This orientation is reflected in the implementation of the Digital Uzbekistan 2030 Strategy, which determines digitalization as a priority of national development through the development of digital infrastructure, improvement of e-government services, strengthening the potential of information technologies, widespread use of

[23] Reza Octavia Kusumaningtyas and James Kalimanzila, 'The Impact of Tax Incentive on Increase Foreign Direct Investment', *Journal of Sustainable Development and Regulatory Issues (JSDERI)*, 1.2 (2023), 51–63 https://doi.org/10.53955/jsderi.v1i2.7

[24] AB. Saparbekova, EK & Smanova, 'Central Asian Legal System and Civil Society: Implications of Governance, Social Transformation, and Reform, Bulletin Of L.N', *Gumilyov Eurasian National University Law Series*, 150.1 (2025) https://doi.org/https://doi.org/10.32523/2616-6844-2025-150-1-27-36

[25] OECD Publishing, *Improving the Legal Environment for Business and Investment in Central Asia.*, 2021 https://doi.org/https://doi.org/10.1787/d3d8daca-en

[26] Central Bank of the Republic of Uzbekistan, *National Strategy for the Development of Financial Technologies 2026–2030.*, 2026.

blockchain technology, and scripts in various sectors of the economy. This effort aims to provide financial stability by developing a digital ecosystem that is inclusive and accessible and to introduce innovative technology.[27] The National Agency for Project-Project Development (NAPP) also represents the Uzbekistan government and is responsible for providing script services, regulating operational procedures, and creating a legal structure for enterprises involved in digital project management. NAPP was formed as a regulator of the digital sector by Presidential Decree No. UP-6207 in 2022[28] and was reaffirmed by Presidential Resolution No. PP-3832 of the Republic of Uzbekistan "The Tentative Guidelines for the Development of the Digital Economy and the Printing Sector".[29] In addition, NAPP acts as an observer to assist in the development of the digital regulatory framework through the formulation of policies, acquisition of information, and monitoring of actions relating to the digital sector in Uzbekistan. The problem questions the traditional model of governance in one institution, where the activities of policy-making, regulation, and supervision are concentrated in one body. This will aid regulatory coordination, promote the uniformity of policy implementation, and facilitate the integration of the digital ecosystem.[30] This model gives a clearer legal basis for the development of digital innovation and tokenisation, allowing for the development of regulatory frameworks and, subsequently, the growth of the digital stock market in Uzbekistan.[31]

Further, in the sphere of consumer protection and prevention of financial crime, Uzbekistan applies the Anti-Money Laundering and Counter-Terrorism Financing (AML/CFT) principle, following the advice of the Financial Action Task Force (FATF).[32] Uzbekistan also recognizes Digital Financial Assets (DFA) as a type of property having economic worth that can be used as a means of trade, transaction, or contractual connection. This claim challenges the idea that digital assets are not just tools of technology but also physical objects of legal rights capable of creating legal duties and liabilities in the context of data interchange.[33] This regulation is

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[27] Temurbek Pulatov, 'Digital Financial Assets as an Object of Civil Rights', *IRSHAD: Uzbek Journal of Law and Digital Policy*, 2.6 (2024), 71–72 https://doi.org/. https://doi.org/10.59022/ujldp.245

[28] Republic of Uzbekistan, *Presidential Decree No. UP-6207 of April, 2021: On Measures for the Further Development of the Capital Market* (Uzbekistan, 2021).

[29] Republic of Uzbekistan, *Presidential Resolution No. PP-3832 of July 3,2018: On Measures to Develop the Digital Economy and the Sphere of Crypto-Assets Turnover in the Republic of Uzbekistan* (Uzbekistan, 2018).

[30] Tolkin Kholbazarov, *Cryptocurrency Regulation in the Republic of Uzbekistan: Legal Status of Service Providers and the Question of Cross-Border Acquisitions by Crypto-Magazines*, 2023 https://doi.org/https://ssrn.com/abstract=6776059

[31] M. Yokubjonov, 'Asset Tokenization and Its Legal Types: International Experience and the Analysis of Uzbekistan's Legislation.', *The American Journal of Political Science Law and Criminology*, 2026 https://doi.org/10.37547/tajpslc/Volume08Issue06-09

[32] Pulatov.

[33] Ruziev Rustam, 'Property Rights in Uzbekistan: A Comprehensive Analysis of the Legal Framework and Its Implications for the Digital Age', *IRSHAD: Uzbek Journal of Law and Digital Policy*, 1.2 (2023), 4–6 https://doi.org/https://doi.org/10.59022/ujldp.78

aimed at not only regulating the activities of business entities, but also ensuring legal certainty as to the legal status of digital assets and the protection of the rights and obligations of the parties to any digital transactions in the context of the principle that the recognition of digital assets as objects of civil rights is a prerequisite for legal certainty and legal protection in civil relations in the administration of digital assets in Uzbekistan.[34] Thus, the effectiveness of the legislative process in Uzbekistan is determined by the quality of the law and the ability of the legislature to include all regulatory procedures in the legislative structure, which responds to the challenges of technological development.[35]

Then, Kazakhstan adopted a multi-tiered digital governance approach that combines governance mechanisms with inter-governmental coordination and risk-based governance. Kazakhstan has adhered to the Anti-Money Laundering and Counter-Terrorism Financing (AML/CFT) concept in accordance with the Financial Action Task Force (FATF) recommendations to maintain the integrity of the financial system. Providers of digital assets services will be the subject to Customer Due Diligence (CDD), Enhanced Due Diligence (EDD), transaction monitoring and transaction reporting by the Astana Financial Services Authority (AFSA) at the Astana International Financial Centre (AIFC). Simultaneously, the remittance policy of Kazakhstan is based on the protection of the assets of the client, the necessity of the risk management, the creation of operational and financial security, and the restriction of trading solely for the assets approved by the AFSA for trading on the stock exchange. This system proved effective through the application of prudential principles, conduct regulation, a broad regulatory framework, and coordination of AFSA, the National Bank of Kazakhstan (NBK), and other stakeholders to ensure market integrity, increase investor confidence, and safeguard the stability of the financial system in Kazakhstan.[36]

The differences of digital asset regulation between Kazakhstan and Uzbekistan can be analysed not only on the basis of substantive legal norms regulating digital assets, but also on the basis of differences in governance architecture (*architecture of governance*) regulating the decision making process, regulatory implementation and enforcement mechanisms. The effectiveness of regulation in the digital age depends not only on the presence of the legal system, but also on the ability of the community to formulate the law, coordinate the responsibilities of the regulator and adapt policies to the development of technology and the dynamics of the

[34] Khakimov Abdurakhmon Mukhammad-Ali A. Abdukokhor, & Jelek, 'An Institutional Governance Framework for Crypto-Asset Regulation: Addressing Legal Uncertainty in Digital Financial System', *International Journal of Tropics*, 2.5 (2026), 388–95 https://doi.org/https://doi.org/10.5281/zenodo.20456070
[35] S. P. Moroz, 'Digital Assets as an Object of Civil Rights.', *Bulletin of the Karaganda University 'Law Series'*, 29.1 (2024), 94–105 https://doi.org/https://doi.org/10.31489/2024L1/94-105
[36] International Monetary Fund and Monetary and Capital Markets Departement, 'Republic of Kazakhstan: Financial Sectol Assessment Program-Technical Note On Astana International Financial Center and The Kazakhstan Financial System', *IMF ELibrary*, 2024 (2024), 38 https://doi.org/https://doi.org/10.5089/9798400291197.002

market.[37] Kazakhstan has developed a multi-agency government model, similar to Uzbekistan's single-party government approach.[38] The main indication of regulatory efficacy is the capacity of the institution to integrate legislative norms, governance processes, technology infrastructure and market actors into a single regulatory system.[39]

The efficient regulation should be able to provide legal certainty to increase the trust of business owners and promote the widespread adoption of digital assets. To achieve this, the regulation should integrate the functions of decision-making, enforcement, protection, and security for business owners into a coordinated regulatory system.[40] Moreover, the development of blockchain and decentralised finance technologies has also provided a flexible governance model that can both preserve the integrity of the market and the stability of the financial system, but also foster technological innovation sustainably.[41] Therefore, the comparative analysis of Uzbekistan and Kazakhstan in this study is focused not only on identifying differences in legal norms, but also on assessing how differences in institutional architecture affect the efficiency of regulatory implementation, supervisory capacity and the ability of each country to develop a secure, adaptive, and sustainable digital asset ecosystem.

Table 1
Comparative analysis of regulatory approaches to digital assets in global jurisdiction

Criteria	Kazakhstan	Centrl Asia Uzbekistan, Kyrgyzstan)	Poland	USA	China	Singapore	South Korea	EU
Legal Status	AIFC : a digital asset as an object of law, The Law on Digital Assets 2021	Uzbekistan: licensed activities Kyrgystan: unregulated asset	A financial instrument under the law on trade. Regulation through MiCA	SEC: security Commodity Exchange : Commodity	Prohibition of eryptocurrencies CBDC: e-CNY	PSA 2019; the regulated paymen token	Virtual Asset Business Act	MiCA: unified regulation
Instituti	The AIFC	Uzbekistan:	FSA is	SEC,	PBoC	MAS is a	FSC,	ESMA,

[37] T. Van der Linden, T., & Shirazi, 'Markets in Crypto-Assets Regulation: Does It Provide Legal Certainty and Increase Adoption of Crypto-Assets?', *Financial Innovation*, 9.1 (2023) https://doi.org/https://doi.org/10.1186/s40854-022-00432-8

[38] I. H.-Y Chiu, 'An Institutional Account of Responsiveness in Financial Regulation: Examining the Fallacy and Limits of "Same Activity, Same Risks, Same Rules" as the Answer to Financial Innovation and Regulatory Arbitrage.', *Computer Law & Security Review*, 51 (2023) https://doi.org/https://doi.org/10.1016/j.clsr.2023.105868

[39] M. Cappai, 'The Role of Private and Public Regulation in the Case Study of Crypto-Assets: The Italian Move towards Participatory Regulation', *Computer Law & Security Review*, 49 (2023) https://doi.org/https://doi.org/10.1016/j.clsr.2023.105831

[40] L. Zetzsche, D. A., Annunziata, F., Arner, D. W., & Lin, 'The Markets in Crypto-Assets Regulation (MiCA) and the EU Digital Finance Strategy.', *Capital Markets Law Journal*, 17.2 (2024) https://doi.org/https://doi.org/10.1093/cmlj/kmad026

[41] F. Schär, 'Decentralized Finance: On Blockchain- and Smart Contract-Based Financial Markets', *Federal Reserve Bank of St. Louis Review*, 103.2 (2021), 386–411 https://doi.org/https://doi.org/10.26512/lstr.v18i2.58975

onal Structure	is main regulator, The National Bank is the CBDC Ministry of Digital Development	Central banks. Kyrgystan :Special commissions	the main regulatory, Ministry of Finance - taxes	CFTC, FinCEN		single regulator	crypto exchanges	national regulatory
Adjustment Features	Mining : special mode, Crypto exchanges.sandbox of AIFC	Uzbekistan: Pilot projects Kyrgystan: Regional cooperation	Integration with MiCA, An innovative sandbox	Federal/state level BitLicence (NY)	Centralized CNDC, Blockchain services	DPT licensing. Innovation hub	Banking partnership, VASP licences	Uniform standars, Passport system
Tax Regime	Mining : 1-10% Trade : corporate tax	Uzbekistan: Preferential regimes in free Kyrgystan: economic zones	Standard EU rates, VAT on services	Capital gains tax	Not available for crypto	GST on services	20% for profit	A harmonised approach

Sources : processed by the author

The results of this table reveal that both nations have established digital regulatory frameworks, although the sophistication and policy focus differ from one another as demonstrated in the comparative analysis of Uzbekistan and Kazakhstan presented in Table 1. The legalization of digital asset activity on the basis of the press mechanism is the main tool for the development of the market in Uzbekistan. Kazakhstan also has a more complete regulatory framework, adopting legislation that outlines the legal status, organizational structure, enforcement mechanisms, and penalties to promote the development of the digital economy. This difference implies that Kazakhstan concentrates on the growth of the digital asset ecosystem as a whole, whereas Uzbekistan is more concerned with regulating and supervising digital asset operations.[42]

The comparative research shows that the fundamental difference between Uzbekistan and Kazakhstan is not in the substantive regulation of digital resources but in their institutional models of governance and regulatory philosophy. Uzbekistan focuses on legal recognition and policy coherence through a centralized regulatory framework. Kazakhstan has a multi-agency governance model emphasizing prudential oversight, institutional coordination, and market integrity. These findings demonstrate that the success of digital asset governance cannot be measured solely by the breadth of legislative provisions but by the degree to which legal norms, institutional arrangements, supervisory mechanisms

[42] S Zhaksylykbayeva, A., & Suleimenova, 'Navigating the Legal Landscape: A Comparative Analysis of Digital Asset Regulation Across Global Jurisdictions', *Law, State and Telecomunications Review*, 18.2 (2025) https://doi.org/https://doi.org/10.26512/lstr.v18i2.58975

and technological governance work together as a comprehensive regulatory system. The comparative evidence given in this study thus suggests that variations in governance architecture are the main source of variance in regulatory efficacy and legal clarity. More crucially, these institutional divergences are not only about local governance, but are rapidly becoming salient in cross-border digital asset transactions. The various regulatory regimes might lead to varying compliance duties, jurisdictional overlap, and legal confusion in these transactions. This problem is the basis of the following discussion of regulatory fragmentation in cross-border digital asset governance.

Regulatory Fragmentation as a Source of Cross-Border Legal Uncertainty

Fragmentation of regulation is the phenomenon whereby countries create different legal frameworks, regulatory standards and enforcement procedures in connection to the same legal objects, leading to norm conflict in corporate transactions.[43] This disparity may lead to a digital action or asset being legally acknowledged in one jurisdiction but challenged or even classed in another area. As a result, there is little clarity about the existing law, the applicable viewpoints and the required enforcement mechanisms.[44] As the issue gets more complex in the digital era, the transnational nature of blockchain technology adds to this intricacy. This makes it possible to implement transactions in different nations at the same time without territorial limits, although the legal structure is based on national legislatio.[45]These disparities in regulatory architecture also have the potential to increase the costs of compliance, limit regulatory interoperability, and lower the legal culpability of business owners and investors engaging in cross-border transactions. This situation is represented in the digital laws of Kazakhstan and Uzbekistan, which have different regulatory and organisational systems, while they are located in the same regional economic space. This is because the efficiency of the digital asset management system depends not only on the quality of national rules but also on the level of regulatory coherence, the coordination of stakeholders, and the interoperability between the two countries.[46]

Regulatory fragmentations not only create disparities in substantive law between jurisdictions, but also spark discussions on jurisprudence that is relevant to the regulation, supervision and enforcement of digital asset transactions. This creates cross-border legal confusion when the business owner, digital service

[43] Teresa Rodriguez De Las Heras Ballell, 'The Emergence of Principles and Best Practices in Digital Assets: Ownership and Law Enforcement', *European Risk Regulation Journal*, 2024, 1–12 https://doi.org/10.1017/err.2024.55

[44] A. Bhandari, M., Sharma, R., & Kumar, 'Beyond the Blockchain Hype: Addressing Legal and Regulatory Challenges', *SN Social Sciences*, 4.10 (2024) https://doi.org/https://doi.org/10.1007/s43545-024-01044-y

[45] M. Amaral, 'Blockchain and Smart Contracts: Regulatory Challenges and Regulatory Approaches. In Case Studies on the Regulatory Challenges Raised by Innovation and the Regulatory Responses.', *OECD Publishing.*, 2021 https://doi.org/https://doi.org/10.1787/8fa190b5-en

[46] M Kiskis, 'Private Law Framework for Blockchain.', *Frontiers in Blockchain*, 7 (2024) https://doi.org/https://doi.org/10.3389/fbloc.2024.1205461

provider or investor cannot identify the country of jurisdiction, the national legislation that applies and the legal process to be followed in case of a disagreement. The range of restrictions imposed by each country is growing, and so is the risk of financial loss, legal conflicts, reputational damage and litigation for multinational businesses.[47] For example, companies that operate abroad must comply with a variety of legal principles such as the rule of law, the necessity of transparency, the standard of conduct and consumer protection to enhance compliance costs and improve the efficiency of digital foreign exchange transactions.[48]

The fragmented regulation also impacts the effectiveness of international law enforcement because of differences in legal systems, standards of proof, data protection mechanisms, and procedures for information exchange between authorities, which make the process of investigation, collection of electronic evidence, and law enforcement cooperation slower and less effective in dealing with disputes or violations of digital assets across jurisdictions. As a result, a number of studies have argued for the harmonisation of legal principles, the creation of regulatory coordination and the improvement of the interoperability of the community as necessary for preventing regulatory fragmentation, improving legal certainty and developing an effective digital legal framework.[49] The results of the comparative research in this context show that the differences between Kazakhstan and Uzbekistan are not confined to the content of the regulation, but also to the design of the legislative framework, as well as the legal philosophy underpinning the implementation of the regulation.[50] Therefore, the non-compliance with the law in digital asset transactions is not only due to the disparities in legal norms but also the differences in organisational structure, implementation methods, and regulatory coordination among nations.[51]

In addition to the establishment of separate legal frameworks, the regulatory reforms in Kazakhstan and Uzbekistan have also had legal implications for digital asset transactions. The transfer of digital assets or the transfer of digital assets between individuals can impact the definition of law, the conduct of politics and the application of legislation that vary in each jurisdiction. So, we are able to start talking about the law in force, the positive judgements of regulators and the competency of the digital asset management forum to handle the asset selection

[47] M. Lehmann, 'Who Owns Bitcoin? Private Law Facing the Blockchain', *Minnesota Journal of Law, Science & Technology*, 21.1 (2020), 93–140 https://doi.org/https://doi.org/10.24926/15529541.3823

[48] B. S. Kumar, F., & Mehta, *Impact of Trade Facilitation Indicators on Trade Flows in Transport Corridors of CAREC Region and Policy Implications (ADBI Working Paper No. 1435)*, 2024 https://doi.org/https://doi.org/10.56506/THJR6573

[49] Zetzsche, D. A., Annunziata, F., Arner, D. W., & Lin.

[50] Zhaksylykbayeva, A., & Suleimenova.

[51] Assel Bulatkaziyevna Zhanabilova, 'Legal Regulatory Of The Turnover Of Digital Assets In The Republic Of Kazakhstan And the Possibility Of Their Inheritance', *ZQAI*, 3 (2024), 125–32 https://doi.org/https://doi.org/10.52026/2788-5291_2024_78_3_124

process.[52] This scenario is further difficult by the global features of blockchain technology such as the opportunity for digital assets, service providers, investors and data infrastructure to be involved in different transactions. The regulation and administrative load of the border region has long been identified as a factor that inhibits the effectiveness of regional economic integration and raises the cost of business transactions in the economic relationship between Kazakhstan and Uzbekistan.

Further, regulation fragmentation leads to inconsistency, since the provision of digital services has to adhere to different legal norms in different jurisdictions. Besides the prerequisites of the company's mission, vision and values, the business owner has to follow the procedures of Know your customer (KYC), Customer Due Diligence (CDD) and risk assessment in line with the national standard. The AIFC AML/CFT Rules 2025, for example, which were adopted by the Astana Financial Services Authority (AFSA) in Kazakhstan, are based on a risk-based approach which requires enhanced customer due diligence and monitoring of digital asset transactions in line with the Financial Action Task Force (FATF) standards. Likewise, transactions with Uzbekistan should be carried out in accordance with the national policy, which is formed within the context of the digital regulatory framework of the country. The above-mentioned standard deviation increases the cost of production, increases the cost of cross-border transactions, and decreases the efficiency of transactions in digital assets due to the lack of interoperability in regulation and the mutual recognition mechanism between Kazakhstan and Uzbekistan. [53]

In addition to the establishment of separate legal regimes, the regulatory reforms in Kazakhstan and Uzbekistan have also resulted in legal ramifications for digital asset transactions. The transfer or exchange of digital assets between individuals may affect the definition of law, press freedom and the implementation of legislation that vary from one jurisdiction to another. This has triggered discussions on the existing law, the regulator's perspectives and the independent arbitration forum that can conduct arbitration cases. This intricacy is growing because of global features of blockchain technology. Therefore, in a single transaction, digital assets, service providers, investors and data infrastructure may reside in multiple jurisdictions. It has long been known that the legal and administrative structure of the country reduces the effectiveness of regional economic operations and raises the cost of commercial transactions in the economic interaction between Kazakhstan and Uzbekistan.[54]

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[52] M. Lehmann, 'Digital Assets in the Conflict of Laws: A Comparative Search for the "Ideal Rule"', *Singapore Journal of Legal Studies*, 2024, 197–222 https://doi.org/https://doi.org/10.2139/ssrn.4862792

[53] Astana Financial Service Authory, *Practical Guidance to AIFC Anti-Money Laundering and Counter-Terrorist Financing Framework (Version 2)* (Astana, Kazakhstan, 2025).

[54] B. S. Jiménez-Gómez, 'DLT and Law: A Necessary Relation for Legal Certainty', *Cuadernos de Derecho Transnacional*, 2024 https://doi.org/10.20318/cdt.2024.8956

Fragmentation of regulation also results in inconsistency, as digital services have to adhere to different legal norms depending on where they operate. In addition to the publication, distribution and distribution channels regulations, business owners should also follow the Know Your Customer (KYC), Customer Due Diligence (CDD) and risk assessment procedures in accordance with the current national standard.[55] The Astana Financial Services Authority (AFSA) of Kazakhstan has put in place the risk-based AIFC AML/CFT Rules 2025. This demands the application of increased consumer due diligence, monitoring of digital asset transactions and compliance with Financial Action Task Force (FATF) standards. Uzbekistan's transactions should also be consistent with the national legislative framework that encourages the growth of digital assets. The standard deviation mentioned above leads to increased production costs, increased costs for cross-border transactions and decreased efficiency of digital asset transactions due to the lack of interoperability in regulation and the mechanism of mutual recognition between Kazakhstan and Uzbekistan. [56]

Fragmentation of regulation is then a breach of investor protection. The legal status of electronic assets, enforcement of property rights, contractual security and verification process during transactions between Kazakhstan and Uzbekistan are the concerns of investors. Legal clarity, regulatory predictability and the efficiency of competition enforcement are the basic requirements of a successful international investment in the Asia-Pacific area.[57] The widening legislative gap between Kazakhstan and Uzbekistan is raising the legal risks, regulatory hurdles and confusion for investors and company owners when performing digital asset transactions. This is because each jurisdiction has its own legal regime, regulatory regime and regulatory norms.[58] In addition, the level of investor protection in the trading of digital assets is not only a function of the quality of domestic regulation, but also the level of predictability, consistency and coherence of international agreements that can ensure the execution of contracts, compliance with the law and the efficiency of financial asset trading. The regulatory coordination between Kazakhstan and Uzbekistan is a crucial step to ensure investor confidence, prevent legal violations and prevent the emergence of a digital banking system which is both efficient and sustainable, in line with the OECD's discussion on the importance of legal compliance.[59]

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[55] et al. Adrian, T., Chaudhary, C., Mancini-Griffoli, T., Narain, A., *Elements of Effective Policies for Crypto Assets.*, 2023 https://doi.org/https://doi.org/10.5089/9798400234392.007

[56] T. Casalini, F., López González, J., & Nemoto, *Mapping Commonalities in Regulatory Approaches to Cross-Border Data Transfers (OECD Trade Policy Papers No. 248)*, 2021 https://doi.org/https://doi.org/10.1787/ca9f974e-en

[57] M Cavaller Vergés, 'Toward a Legal Framework for Digital Assets: UNIDROIT Principles on Digital Assets and Private Law.', *Cuadernos de Derecho Transnacional*, 16.1 (2024) https://doi.org/https://doi.org/10.20318/cdt.2024.8416

[58] Jiménez-Gómez.

[59] Organisation for Economic Co-operation and Development, *Improving the Legal Environment for Business and Investment in Central Asia*, 2025 https://doi.org/https://doi.org/10.1787/d3d8daca-en

Regulatory fragmentation then undermines investor protection. Investors are worried about the legal status of electronic assets, the enforcement of the rights of ownership, contractual security and the verification process in the case of transactions between Kazakhstan and Uzbekistan. Legal stability, regulatory certainty and the effectiveness of competition enforcement are the basic requirements for successful international investment in the Asia-Pacific area.[60] The growing legislative heterogeneity between Kazakhstan and Uzbekistan is raising the legal risks, regulatory constraints and ambiguity for investors and company owners in the course of digital asset transactions. This is a result of the legal structure, regulatory systems and regulatory standards being specific to each jurisdiction.[61] In addition, the level of investor protection in the trading of digital assets is not only determined by the quality of domestic regulation, but also by the level of predictability, consistency and coherence of international agreements which can ensure the execution of contracts, compliance with the law and the efficiency of financial asset trading. In line with the OECD recommendations on the significance of legal compliance, the regulatory convergence between Kazakhstan and Uzbekistan is important for attracting investor confidence, avoiding legal violations, and developing an efficient and sustainable digital banking system.[62]

For companies operating cross-border this raises an immediate compliance problem as Kazakhstan and Uzbekistan have different regulations. The effects include among others the necessity to comply with different regulatory standards in each of the countries, increased operating expenses, longer compliance periods and uncertainty when entering the market of a nearby country. A survey of 108 businesses in Kazakhstan and Uzbekistan revealed that the most significant barriers to performing cross-border economic activities are disconnected markets, bureaucratic costs, inconsistent laws, and lack of knowledge of destination country regulations. Hence, regulatory fragmentation not only results in differences in legal norms but also increases the cost of compliance that enterprises need to incur before entering foreign markets. For companies involved in digital assets or in the digital space, the compliance challenges are becoming more complex, as companies need to comply not only with trade requirements, but also with laws related to data residency, cross-border data transfer, personal data protection, and reporting obligations to regulators in each country. Kazakhstan and Uzbekistan have both been tightening their data sovereignty regulations, but via different legal mechanisms. Companies active in both nations need adjust their digital infrastructure, data storage and information governance to comply with the

[60] E. Mik, 'Smart Contracts: Terminology, Technical Limitations and Real Legal Impact', *Law, Innovation and Technology*, 12.2 (2020), 269–300 https://doi.org/https://doi.org/10.1080/17579961.2020.1815406
[61] J. Arner, D. W., Auer, R., & Frost, *Stablecoins: Risks, Potential and Regulation*, BIS Working Papers No. 905, 2020 https://doi.org/10.2139
[62] Zetzsche, D. A., Annunziata, F., Arner, D. W., & Lin.

national regulations of each country.[63] Such differences increase the cost of investing in technology, the need for compliance audits and the risk of administrative penalties if they fail to meet their obligations in one of the jurisdictions.

This research shows that digital asset enterprises are subject to compliance obligations that beyond the usual cross-border trade restrictions. This implies that regulatory fragmentation imposes cumulative compliance burdens for companies, who must concurrently adhere to differing laws on data governance, digital infrastructure, reporting duties and regulatory oversight across several jurisdictions. Contrary to the previous studies identifying compliance costs mainly with trade barriers and commercial regulations,[64] these findings indicate that digital asset businesses experience additional compliance risks because of the difference in digital governance frameworks between Kazakhstan and Uzbekistan. These results show that legislative fragmentation leads to immediate legal uncertainty and also has major economic effects for cross-border digital asset transactions. In our comparison, the legal divergence between Kazakhstan and Uzbekistan results in higher compliance costs, delays in market entry, increased investment risks, and lower regulatory predictability for digital asset service providers.[65] This study further confirms the OECD's (2023) view that discrepancies between nominal legal protection and practical regulatory implementation remain a factor undermining corporate trust and cross-border investment in the region.

The cases of Kazakhstan and Uzbekistan show that the fragmentation of regulation is driven by differences in regulatory philosophy, institutional capability and the independent development of legal reform paths rather than discrepancies in the legal standards between countries. Our study reveals that the variation identified between the two jurisdictions is a reflection of systemic differences in regulatory philosophy rather than individual legislative anomalies.[66] This result contributes to the literature on cross-border digital governance by showing how institutional capability and regulatory ideology jointly affect the effectiveness of digital asset regulation. These discrepancies have led to an incompatible legal system in emerging economies, producing cross-border legal ambiguity, especially where investments, digital transactions, and economic activity transcend jurisdiction.[67] Evidence from Central Asia shows that regulatory

[63] Greenleaf,G., 'Data Privacy Laws in Central Asia: Between Ex-SSR and "Belt & Road"', *International Data Privacy Law*, 15.1 (2025), 67–90 https://doi.org/https://doi.org/10.1093/idpl/ipaf001

[64] Roman Vakulchuk and Farrukh Irnazarov, *Analysis of Informal Obstacles to Cross-Border Economic Activity in Kazakhstan and Uzbekistan*, 2014.

[65] Luke Lee, *Examining The Legal Status of Digital Assets as Property: A Comparative Analysis of Jurisdictional Approaches*, 2024 https://doi.org/https://doi.org/10.48550/arXiv.2406.15391

[66] World Bank., *World Development Report 2022: Finance for an Equitable Recovery.* (Washington, DC, 2022) https://doi.org/https://doi.org/10.1596/978-1-4648-1730-4

[67] A. M.-A. Iminokhunov, A. A., & Khakimov, 'An Institutional Governance Framework for Crypto-Asset Regulation: Addressing Legal Uncertainty in Digital Financial Systems', *Innovation Science and Technology*, 2.5 (2026) https://doi.org/https://doi.org/10.5281/zenodo.20456070

misalignment weakens the effectiveness of institutional coordination, norm harmonization, and legal certainty for cross-border commercial operators. The first pattern illustrates how diverse paths of regulatory modernization and legal reform result in uneven legal standards and so hinder cross-border harmonisation.[68] Kazakhstan has a highly codified and digitalised legal system, but most Central Asian states (including Uzbekistan in some parts) are still undergoing lengthy reform processes that result in unequal regulatory modernisation. These differences in technology standards, implementation approaches, and enforcement mechanisms are more likely to lead to different interpretations of cross-border operations.[69] The second pattern shows how the differences in institutional architecture hinder the coordination of authority, resulting in cross-border collaboration that is often declaratory and lacks operational techniques. Research on Central Asia indicates that the absence of coordinated monitoring systems, variations in institutional capacity, and the lack of uniform implementation standards among the countries in the region continue to hinder the effectiveness of regional cooperation.[70] The OECD also points out that differences in institutional capacity directly impact the level of legal certainty across borders, as the quality of the legal environment in Central Asia is largely determined by the capacity of national institutions to apply rules consistently.

The third pattern shows how the lack of a supranational body able to harmonise national legal systems leads to the growth of regulatory fragmentation. The idea of fragmentation and coherence is that the international legal system evolves through several regimes established sectorally by each state according to its own aspirations for growth. Hence, all countries have their own regulatory standards, oversight methods and compliance models. This leads to fragmented legal systems and possibly legal ambiguity in cross-border corporate transactions.[71] This phenomenon is manifested in the formation of different types of government in Kazakhstan and Uzbekistan, while both countries belong to the same economic region. The fourth pattern shows that regulatory fragmentation not only results in differences in legal norms, but also has practical consequences for commercial actors. A study by the Asian Development Bank indicates that

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[68] C.-F. Liu, H.-W., & Lin, 'Constitutional Traditions as Boundaries in Standardising Administrative Rulemaking through Trade Agreements.', *International & Comparative Law Quarterly*, 71.4 (2022), 889–913 https://doi.org/https://doi.org/10.1017/S002058932200029X

[69] R. Verbovaya, O., Ashyraliyeva, B., Kaliyeva, G., Salimbayeva, Z., & Sagalbayeva, 'Reforming National Law in the Context of Digital Transformation: Key Challenges and Prospects for Development.', *Law, State and Telecommunications Review*, 16.1 (2024), 278–302 https://doi.org/https://doi.org/10.26512/lstr.v16i1.48168

[70] Park,J. W. B., 'Competitive Institutionalized Cooperation in Central Asia and Externally Guided Regionalism', *Central Asian Survey*, 45.2 (2026), 145–66 https://doi.org/https://doi.org/10.1080/02634937.2024.2441803

[71] Cortier Thomas., Delimatsis, Panagiotis., Gehne, Katja., & Payosova, Tetyana, 'Fragmentation and Coherence in International Trade Regulation: Analysis and Conceptual Foundations', in *The Prospect of International Trade Regulation: From Fragmentation to Coherence*, ed. by Panagiotis Cottier, Thomas., & Delimatsis (Cambridge: Cambridge University Press, 2011), pp. 1–66 https://doi.org/10.1017/CBO9780511792496.002

companies engaged in cross-border trade between Kazakhstan and Uzbekistan encounter a number of problems including higher transaction costs, uncertainty of administrative and customs procedures, difficulties in acquiring regulatory information and the increased compliance burden due to different rule implementation in the two countries. These challenges point to the negative impact of regulatory fragmentation on trade efficiency, investment climate and predictability of cross-border corporate activity.[72] Collectively, the four patterns suggest that regulatory fragmentation should be conceptualized as a multidimensional governance problem, rather than as a mere legislative inconsistency. Our study shows that legal certainty in cross-border digital asset transactions is not simply a matter of harmonising substantive legal standards, but also requires institutional coordination, regulatory interoperability and coherent administrative implementation across jurisdictions. The results show that divergence in regulatory philosophy and institutional capacity jointly determine the effectiveness of cross-border digital asset governance between Kazakhstan and Uzbekistan.

In conceptual terms these four patterns are causally linked to one another. Different regulatory philosophies have paved the way for different paths of legal reform, which in turn led to non-uniform institutional architectures and implementation standards.[73] Institutional disharmony has then led to regulatory fragmentation . Finally, regulatory fragmentation has brought about cross-border legal uncertainty that increases legal risks for businesses, decreases trade efficiency and increases compliance costs.[74] The importance of the regulatory harmonization, the increased inter-authority coordination and the improved regulatory coherence are therefore important pre-conditions for better governance of digital assets and cross-border trade. Uzbekistan-Kazakhstan's experience shows that legal uncertainty on the border is a structural outcome of a divergence of regulatory philosophy and institutional capacity. This analysis contributes to the literature on cross-border digital asset governance by showing that regulatory fragmentation is the key mechanism relating variations in regulatory philosophy and institutional capability to cross-border legal uncertainty. While previous research has often focused on the national regulatory regimes or the legal recognition of digital assets at the level of individual jurisdictions, our comparative analysis demonstrates that the legal uncertainty is related to the interaction between different legal systems, institutional arrangements and implementation of regulation across jurisdictions. The findings give a larger analytical framework for understanding digital asset governance by merging

[72] F Vakulchuk, R., & Irnazarov, *Analysis of Informal Obstacles to Cross-Border Economic Activity in Kazakhstan and Uzbekistan (Regional Economic Integration Working Paper No. 130)*, 2014 https://doi.org/https://hdl.handle.net/11540/1291

[73] Liu, H.-W., & Lin.

[74] M. Lehmann, 'Legal Fragmentation, Extraterritoriality and Uncertainty in Global Financial Regulation', *Oxford Journal of Legal Studies*, 37.2 (2017), 406–34 https://doi.org/https://doi.org/10.1093/ojls/gqw023

comparative legal analysis with institutional governance perspectives, and provide a platform for future regulatory harmonisation initiatives in cross-border digital asset markets.

From Regulatory Fragmentation to Cross-Border Regulatory Coordination

The comparative results discussed in the preceding sections show that fundamental disparities in regulatory philosophy, institutional architecture, and national policy goals are the main causes of cross-border legal uncertainty rather than just variations in legal regulations. As a result, complete legal harmonization would not be politically or institutionally feasible. Effective cross-border governance should concentrate on regulatory coordination methods that can maintain regulatory sovereignty while guaranteeing interoperability, legal certainty, and supervisory collaboration rather than mandating identical legal rules.[75] The fast growth of cross-border digital asset markets has intensified the need for greater international regulatory harmonization. But the assumption that legal harmonization is the best way forward requires a fundamental re-examination. Unlike conventional financial markets, digital asset ecosystems, as they traverse borders, are characterized by varied legal traditions, regulatory philosophies, institutional capacity, and economic priorities. Regulatory variety should therefore not be seen as a transient anomaly to be remedied, but as an inherent feature of international digital financial regulation. Therefore, attempts to develop harmonized regulatory standards across jurisdictions may not reflect the underlying differences in domestic legal systems and national policy objectives, especially in emerging market economies where the regulation of online assets is closely related to broader approaches to financial innovation, promotion of investment, monetary stability and technological development.[76]

Empirical developments further show the practical difficulties of full legislative harmonization. The IMF–FSB G20 Crypto-Asset Policy Implementation Roadmap (2024) estimates that as of August 2024, the global crypto-asset markets had a market capitalization of USD 2.2 trillion. Regulatory responses, however, in terms of licensing requirements, legal classification, prudential supervision, taxes, and consumer protection remain highly heterogeneous among jurisdictions. Countries increasingly employ regulatory tactics that are compatible with their domestic institutional arrangements and economic aims, rather than converging onto a single global model of regulation. These trends indicate that regulatory

[75] Erkan Ustaoglu, 'Connectedness between Communication Digital Assets and Communication Stock Markets: Implications for Portfolio Design and Hedging Performance', *International Review of Economics & Finance*, 107 (2026), 105029 https://doi.org/10.1016/j.iref.2026.105029

[76] Emmanuel Joel Aikins Abakah and others, 'Blockchain Market and Eco-Friendly Financial Assets: Dynamic Price Correlation, Connectedness and Spillovers with Portfolio Implications', *International Review of Economics & Finance*, 87 (2023), 218–43 https://doi.org/10.1016/j.iref.2023.04.028

fragmentation is not a temporary occurrence but a permanent feature of global digital asset governance.[77]

Therefore, the principal problem from the viewpoint of international law is not the removal of regulatory diversity, but the management of its legal consequences. Regulatory fragmentation is a concern only insofar as varied domestic frameworks lead to incompatible legal requirements, jurisdictional conflicts, and impediments to cross-border transactions in electronic assets. The aim of international governance should therefore be to abandon the search for total legal harmonization and to move towards the creation of regulatory coordination mechanisms which can maintain national regulatory independence and at the same time provide legal certainty, supervisory cooperation and interoperability between jurisdictions. In emerging markets, regulatory diversity is expected to persist because of varied economic conditions, institutional capacities, and sovereign policy choices. Therefore, it provides a more realistic basis for regulating electronic assets. Legal rules cannot simply be transplanted across jurisdictions because legal effectiveness depends on institutional, political, and socio-economic contexts.[78]

When comprehensive legal harmonisation proves neither feasible nor desirable, the central issue shifts from eliminating regulatory diversity to managing it effectively across jurisdictions. Cross border digital asset governance should therefore establish common regulatory principles that accommodate differences among national legal systems while reducing fragmentation and uncertainty. This approach does not require states to adopt identical legal rules or surrender their regulatory autonomy. Instead, regulatory coordination enables jurisdictions to cooperate while maintaining their distinct legal traditions, institutional structures, supervisory capacities, and regulatory priorities. Such coordination can create greater consistency in regulatory interpretation, strengthen communication among competent authorities, and improve the management of transactions that extend beyond national boundaries. This approach carries particular importance for emerging market economies, where governments continue to develop and adjust regulatory responses to technological innovation and changing financial practices. By treating regulatory diversity as a condition that requires effective coordination rather than complete legal uniformity, states can strengthen legal certainty, institutional cooperation, and regulatory interoperability while retaining sufficient

[77] Yuchen Wu and others, 'Digital Trade Policy, Innovation, and Employment: Evidence from Cross-Border e-Commerce Pilot Zones', *Technological Forecasting and Social Change*, 230 (2026), 124754 https://doi.org/10.1016/j.techfore.2026.124754

[78] Bin Dai and Shiyao Min, 'Can Cross-Border E-Commerce Reform Reduce Supply Chain Risks?', *Journal of the Knowledge Economy*, 15.3 (2023), 14998–26 https://doi.org/10.1007/s13132-023-01689-9

flexibility to develop digital asset policies according to their national circumstances.[79]

The first principle is respect for regulatory sovereignty. International regulatory coordination should not require states to abandon their domestic regulatory autonomy or adopt identical legal frameworks. Different jurisdictions inevitably pursue distinct public policy objectives reflecting their economic priorities, financial market structures, and institutional capacities. Effective financial regulation increasingly depends upon regulatory flexibility rather than legal uniformity, particularly in rapidly evolving technological environments. Accordingly, regulatory coordination should preserve national discretion while establishing mechanisms capable of mitigating the cross-border consequences of regulatory divergence. As the doctrine of state sovereignty in public international law, which recognizes that every sovereign state has exclusive authority to regulate people, property, and economic activities within its territorial jurisdiction. Unlike generic international governance models, the proposed Cross-Border Regulatory Coordination Framework is specifically derived from the comparative findings of this study concerning the regulatory relationship between Kazakhstan and Uzbekistan. The first stage, Regulatory Compatibility Assessment, directly responds to the differences identified in the legal classification of digital assets and licensing architecture. Uzbekistan regulates crypto-assets through a centralized licensing regime administered by the National Agency for Perspective Projects (NAPP), whereas Kazakhstan adopts a dual regulatory structure involving the Astana Financial Services Authority (AFSA), the National Bank of Kazakhstan, and the Ministry of Digital Development under a bifurcated legal framework centred on the Astana International Financial Centre (AIFC). Rather than requiring identical legislation, compatibility assessment enables both jurisdictions to identify whether their respective legal definitions, licensing requirements, prudential obligations, and investor protection mechanisms provide sufficiently comparable regulatory outcomes to support cross-border transactions. This approach acknowledges the persistence of different regulatory philosophies while establishing a common analytical basis for future cooperation.[80]

The second principle is functional equivalence. Cross-border coordination should recognise that different legal mechanisms may achieve comparable regulatory objectives. Regulatory equivalence should therefore be assessed according to regulatory outcomes such as investor protection, market integrity, financial stability, and anti-money laundering effectiveness rather than the formal similarity of legal provisions. The third principle is mutual recognition supported

[79] Zhan Cao and Yi Liu, 'Development of Cross-Border E-Commerce, Digital Finance Development, and the Digital Transformation of Manufacturing Enterprises', *International Review of Financial Analysis*, 110 (2026), 104835 https://doi.org/10.1016/j.irfa.2025.104835

[80] Wen Liu and Zhenlong Miao, 'Can Digital Product Innovation Enhance Corporate Market Competitiveness?', *Finance Research Letters*, 86 (2025), 108325 https://doi.org/10.1016/j.frl.2025.108325

by regulatory interoperability. Instead of requiring jurisdictions to replicate one another's licensing regimes, supervisory authorities should establish procedures for recognising equivalent regulatory standards, exchanging supervisory information, and coordinating compliance requirements for cross-border digital asset service providers. Such arrangements reduce unnecessary regulatory duplication while improving legal certainty for market participants operating across multiple jurisdictions. Recent OECD and Financial Stability Board reports likewise emphasise that effective cross-border governance increasingly depends upon regulatory interoperability, supervisory cooperation, and coordinated implementation rather than complete legal harmonisation.[81]

Kazakhstan and Uzbekistan have similar regulatory objectives (such as investor protection, financial stability, market integrity and compliance with AML/CFT requirements) but different institutional arrangements and legislative techniques to regulate digital assets. In the assessment of equivalence, formal legislative similarity should be replaced by the assessment of regulatory outcomes. The comparative legal method in this research has followed this functional approach and shows that regulatory pluralism does not have to be an obstacle to effective cross-border collaboration where equivalent regulatory safeguards can be established. Finally, regulatory coordination should adopt a risk-based approach. Because digital asset activities generate varying levels of systemic risk, coordination efforts should prioritise areas with the greatest cross-border implications, including anti-money laundering and counter-terrorist financing (AML/CFT), stablecoin supervision, consumer protection, cyber resilience, and crisis management. By concentrating regulatory cooperation on high-risk activities while preserving domestic flexibility in lower-risk areas, regulatory coordination offers a more proportionate and institutionally realistic governance model for emerging market jurisdictions than comprehensive legal harmonisation.[82]

The effectiveness of cross-border regulatory coordination ultimately depends upon the establishment of structured supervisory coordination capable of facilitating continuous communication, information exchange, and joint oversight among competent regulatory authorities. Supervisory coordination therefore represents the institutional mechanism through which mutual recognition is translated into practical regulatory effectiveness. The increasing necessity of supervisory coordination reflects the changing structure of digital asset markets. Unlike conventional financial institutions operating primarily within national jurisdictions, digital asset ecosystems involve multiple actors including virtual

[81] Hazrat Hassan and Dan Cao, 'Digital Ecosystems and Firm Performance in Emerging Markets: The Role of Knowledge Accessibility', *Economic Modelling*, 159 (2026), 107575 https://doi.org/10.1016/j.econmod.2026.107575

[82] Yu Wei and others, 'The Trump Shockwave: How Presidential Tenure Redefined Cross-Asset Spillovers in Cryptocurrency, Commodity, and Capital Markets', *Finance Research Letters*, 89 (2026), 109357 https://doi.org/10.1016/j.frl.2025.109357

asset service providers (VASPs), exchanges, custodians, stablecoin issuers, decentralised finance platforms, and blockchain infrastructure providers that frequently operate across several jurisdictions simultaneously. According to the Financial Stability Board (FSB), crypto-asset activities have become increasingly interconnected with the traditional financial system, while differences in supervisory practices continue to create significant regulatory gaps capable of facilitating regulatory arbitrage and weakening market oversight. Likewise, the IMF has observed that fragmented supervision reduces regulators' ability to identify systemic risks arising from cross-border crypto-asset activities, particularly where supervisory information remains confined within domestic jurisdictions. These developments indicate that effective regulation increasingly depends upon the coordination of supervisory authorities rather than the unilateral exercise of domestic regulatory powers.[83]

One of the main causes of regulatory fragmentation is the lack of institutionalised interaction between competent agencies and this is what the paper specifically addresses. Supervisory coordination would mainly include cooperation between the National Agency for Perspective Projects (NAPP) of Uzbekistan, the Astana Financial Services Authority (AFSA), the National Bank of Kazakhstan and other relevant financial intelligence authorities, considering the present regulatory architecture. Regular cross-border exchange of information, joint cross-border oversight Such cooperation may include Virtual Asset Service Providers, shared risk assessments, mutual notification of regulatory breaches and combined implementation of AML/CFT procedures. Supervisory coordination enhances legal clarity without requiring either jurisdiction to surrender its existing regulatory paradigm, by fostering institutional interoperability, not legislative uniformity.[84]

Building upon these developments, this research proposes that cross-border enforcement should operate through four complementary mechanisms. First, participating jurisdictions should establish reciprocal legal assistance arrangements enabling competent authorities to exchange evidence, regulatory findings, and investigative information relevant to digital asset activities. Second, administrative enforcement should incorporate mutual assistance procedures allowing regulators to coordinate sanctions, compliance orders, and supervisory interventions against virtual asset service providers operating across multiple jurisdictions. Third, effective asset recovery mechanisms should be developed to facilitate the identification, freezing, confiscation, and restitution of digital assets

[83] Suleman Bawa and Issahaku Bawa, 'Beyond the Firm: How Regional Digital Ecosystems Shape Innovation Trajectories in Emerging Markets', *Strategic Business Research*, 2.1 (2026), 100043 https://doi.org/10.1016/j.sbr.2025.100043

[84] Juliano Heinen, 'Regulatory Border Effects in Digital Trade: Estimating the GDPR's Asymmetric Impact on EU Enterprises' Cross-Border e-Commerce through a Triple Difference-in-Differences Design', *International Review of Economics & Finance*, 110 (2026), 105587 https://doi.org/10.1016/j.iref.2026.105587

associated with regulatory violations, fraud, money laundering, or other financial crimes. Finally, participating jurisdictions should promote specialised cross-border dispute resolution mechanisms capable of resolving regulatory and commercial disputes efficiently while ensuring procedural fairness and legal certainty for market participants.[85]

Importantly, coordinated enforcement should not be interpreted as transferring sovereign enforcement powers to supranational institutions. Each jurisdiction retains exclusive authority to exercise coercive powers within its own territory in accordance with domestic constitutional and administrative law. Cross-border enforcement instead operates through structured cooperation based upon reciprocity, mutual legal assistance, and coordinated administrative action. This approach preserves the territorial jurisdiction of states while enhancing their collective capacity to address regulatory violations that transcend national borders. In this respect, enforcement coordination complements rather than replaces domestic regulatory authority.[86]

Accordingly, cross-border enforcement and dispute resolution complete the proposed framework of cross-border regulatory coordination by ensuring that regulatory cooperation remains effective throughout the entire regulatory cycle. Beginning with regulatory compatibility assessment, progressing through functional equivalence, mutual recognition, and supervisory coordination, and culminating in coordinated enforcement, the framework demonstrates that effective governance of digital assets cannot rely upon isolated domestic regulation. Rather, sustainable digital asset governance requires an integrated model of regulatory cooperation in which national authorities preserve regulatory sovereignty while collectively ensuring legal certainty, market integrity, financial stability, and investor protection across increasingly interconnected digital financial markets. This integrated framework therefore offers a practical governance model for emerging jurisdictions such as Uzbekistan and Kazakhstan, where regulatory development remains ongoing and institutional cooperation can be embedded from the early stages of regulatory design.[87]

Each stage represents an incremental level of institutional cooperation, involving domestic regulatory authorities including financial regulators, central banks, securities authorities, financial intelligence units, and specialised digital asset agencies with technical guidance from international standard-setting bodies

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[85] Zerun Wang and others, 'Digital Leadership and the Development of Firms' Cross-Border E-Commerce', *International Review of Economics & Finance*, 106 (2026), 104857 https://doi.org/10.1016/j.iref.2025.104857

[86] Sheng Peng, 'Building Digital Advantage through Data Connectivity: Cross-Border Data Flow and the Evolution of Regional Trade', *International Review of Economics & Finance*, 106 (2026), 104880 https://doi.org/10.1016/j.iref.2025.104880

[87] Ziyue Xuan and Qun Yan, 'Digital Transformation of Enterprises, Degree of Internationalization, and Performance in Cross-Border Mergers and Acquisitions', *Finance Research Letters*, 86 (2025), 108445 https://doi.org/10.1016/j.frl.2025.108445

such as the Financial Stability Board (FSB), International Monetary Fund (IMF), Financial Action Task Force (FATF), and International Organization of Securities Commissions (IOSCO). Progression to subsequent stages should depend upon objective regulatory benchmarks, including compatibility of legal frameworks, equivalence of regulatory outcomes, supervisory capacity, information-sharing mechanisms, and compliance with international standards. Jurisdictions that fail to satisfy these requirements should undertake targeted regulatory reforms before advancing to higher levels of cross-border cooperation.[88]

The effectiveness of the proposed framework should be evaluated through measurable governance indicators rather than legislative uniformity alone. Key indicators include reductions in jurisdictional conflicts, improved supervisory information exchange, greater consistency of enforcement actions, enhanced compliance with AML/CFT standards, reduced opportunities for regulatory arbitrage, strengthened investor protection, and increased legal certainty for cross-border digital asset transactions. Conversely, jurisdictions demonstrating inadequate supervisory capacity, ineffective regulatory enforcement, persistent non-compliance with international standards, or failures in regulatory cooperation should remain at the relevant implementation stage until corrective measures have been completed. Accordingly, the proposed framework establishes an adaptive governance model in which regulatory cooperation develops progressively through objective institutional performance, enabling emerging market jurisdictions such as Uzbekistan and Kazakhstan to strengthen cross-border digital asset governance without compromising domestic regulatory autonomy.[89]

The proposed Cross-Border Regulatory Coordination Framework may be operationalised through a sequential implementation process using Uzbekistan and Kazakhstan as comparative jurisdictions. The implementation begins with a Regulatory Compatibility Assessment, in which both jurisdictions evaluate the compatibility of their domestic regulatory frameworks concerning the legal classification of digital assets, licensing requirements for virtual asset service providers (VASPs), investor protection, prudential supervision, AML/CFT compliance, and institutional capacity.[90] Given that both countries have established dedicated regulatory regimes for digital assets although through different legislative and institutional arrangements they provide an appropriate

[88] Kejie Chen, Shiwen Luo, and David Yoon Kin tong, 'Cross Border E-Commerce Development and Enterprise Digital Technology Innovation—Empirical Evidence from Listed Companies in China', *Heliyon*, 10.15 (2024), e34744 https://doi.org/10.1016/j.heliyon.2024.e34744

[89] Lennart Ante, 'From Adoption to Continuance: Stablecoins in Cross-Border Remittances and the Role of Digital and Financial Literacy', *Telematics and Informatics*, 97 (2025), 102230 https://doi.org/10.1016/j.tele.2024.102230

[90] Vincenzo Vignieri and Riccardo Santoni, 'Is Digital Transformation a Catalyst of Knowledge Assets for Public Value Creation?', *Journal of Intellectual Capital*, 27.4 (2026), 997–1027 https://doi.org/10.1108/JIC-03-2025-0091

basis for compatibility assessment rather than comprehensive legislative harmonisation. Where compatibility is demonstrated, regulators should proceed to a Functional Equivalence Assessment to determine whether the two regulatory systems achieve substantially equivalent outcomes despite differences in legal design. Only after equivalence has been established should Uzbekistan and Kazakhstan implement Mutual Recognition Arrangements for specific regulatory functions, followed by structured Supervisory Coordination through regular information exchange, joint risk assessments, coordinated supervision of cross-border VASPs, and reciprocal administrative assistance. The final stage involves Cross-Border Enforcement and Dispute Resolution, whereby both jurisdictions cooperate in evidence sharing, coordinated investigations, asset recovery, and administrative enforcement while preserving their respective sovereign jurisdiction.[91]

The effectiveness of this implementation framework should be evaluated through objective regulatory performance indicators rather than the formal convergence of domestic legislation. Successful implementation would be reflected in increased compatibility between licensing regimes, improved supervisory cooperation, enhanced compliance with FATF standards, more efficient information exchange, reduced regulatory arbitrage, stronger investor protection, and greater legal certainty for cross-border digital asset transactions between Uzbekistan and Kazakhstan. Conversely, progression to each successive stage should depend upon the satisfactory fulfilment of predefined regulatory benchmarks. Where either jurisdiction demonstrates significant deficiencies including inadequate supervisory capacity, ineffective AML/CFT implementation, weak institutional coordination, or persistent regulatory non-compliance implementation should remain at the corresponding stage until corrective regulatory reforms have been completed. Consequently, the proposed framework functions not as a rigid harmonisation model but as an adaptive governance mechanism that enables Uzbekistan and Kazakhstan to progressively strengthen cross-border regulatory cooperation while preserving domestic regulatory autonomy and accommodating differences in their respective legal systems.[92]

Conclusion

The comparative analysis demonstrates that Uzbekistan and Kazakhstan pursue similar regulatory objectives through fundamentally different institutional governance models. Uzbekistan adopts a centralised regulatory approach that emphasises legal recognition, policy coherence, and market development through

[91] Zhixiong Gao and others, 'A Curvilinear Relationship between Intangible Assets and High-Quality Enterprise Development: Evidence from Chinese-Listed Companies in Cross-Border e-Commerce', *Heliyon*, 12.12 (2026), e45155 https://doi.org/10.1016/j.heliyon.2026.e45155

[92] Zhe Wang, Dianchun Jiang, and Ming Zhang, 'Seeking New Location Advantages: Analysis of Emerging Digital Cross-Border M&As—Based on TIMG Index', *International Business Review*, 33.2 (2024), 102243 https://doi.org/10.1016/j.ibusrev.2023.102243

a single supervisory authority, whereas Kazakhstan employs a multi-agency governance model designed to strengthen prudential supervision, institutional accountability, and financial market integrity. These findings indicate that the effectiveness of digital asset governance is determined not merely by the comprehensiveness of legislative provisions, but by the coherence between legal norms, institutional architecture, supervisory coordination, and regulatory implementation. Consequently, cross-border legal uncertainty arises not simply from differences in substantive legal rules, but from institutional divergence that produces inconsistent jurisdictional arrangements, overlapping compliance obligations, fragmented supervision, and limited regulatory interoperability. Building upon these comparative findings, this study argues that effective cross-border digital asset governance should not be pursued through comprehensive legislative harmonisation, but through a Cross-Border Regulatory Coordination Framework based on five complementary coordination mechanisms: (i) regulatory compatibility assessments to identify equivalent legal standards; (ii) functional equivalence evaluations to recognise comparable regulatory outcomes despite different legal designs; (iii) mutual recognition arrangements for licensing, compliance procedures, and virtual asset service providers (VASPs); (iv) supervisory coordination through institutional information-sharing, joint risk assessments, and coordinated regulatory oversight between competent authorities; and (v) cross-border enforcement cooperation through reciprocal legal assistance, coordinated investigations, and administrative cooperation. Collectively, these mechanisms enhance legal certainty, reduce regulatory fragmentation, and strengthen cross-border digital asset governance while preserving national regulatory sovereignty.

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