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PLATFORM-EMBEDDED ENFORCEMENT IN CRYPTOCURRENCY REGULATION: RETHINKING TAXATION AND ANTI-MONEY LAUNDERING IN INDONESIA'S CROSS-BORDER LEGAL CONTEXT

PENEGAKAN HUKUM YANG TERTANAM DALAM PLATFORM PADA REGULASI KRIPTO: MENIMBANG ULANG PAJAK DAN ANTI-PENCUCIAN UANG DALAM KONTEKS HUKUM LINTAS BATAS DI INDONESIA

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Abstract

The rapid growth of cryptocurrency transactions presents both opportunities for innovation and risks of cross-border financial crime, including tax evasion and money laundering, which challenge the effectiveness of traditional regulation. This study aims to analyze the effectiveness of platform-based law enforcement particularly the implementation of the Travel Rule, CARF, and KYC in the Indonesian context. The research employs a qualitative multi-site case study method with data triangulation from international literature (FATF, OECD, IMF, Chainalysis, Cambridge) and national regulations (OJK, PPATK, DJP). The findings indicate that cryptocurrency platforms serve as key actors in detection and enforcement; however, their effectiveness is constrained by the sunrise problem, the migration of illicit activities into DeFi and OTC ecosystems, and legal sovereignty tensions arising from the dominance of global platforms. This study introduces the concept of Platform-Embedded Enforcement as a novel theoretical framework, integrating monitoring and enforcement mechanisms directly into platform architectures, thereby enabling compliance to be enforced automatically, in real time, and across jurisdictions. These findings contribute to the development of more adaptive, holistic, and effective cryptocurrency regulation in emerging markets.

Keywords : Cryptocurrency, Cross-Border Law Enforcement, Taxation, Anti-Money Laundering (AML), Platform-Embedded Enforcement

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Abstrak

Perkembangan pesat transaksi aset kripto menghadirkan peluang inovasi sekaligus risiko kejahatan keuangan lintas batas, termasuk penghindaran pajak dan pencucian uang, yang menantang efektivitas regulasi tradisional. Penelitian ini bertujuan menganalisis efektivitas penegakan hukum berbasis platform termasuk implementasi Travel Rule, CARF, dan KYC dalam konteks Indonesia. Metode yang digunakan adalah studi kasus kualitatif multi-situs dengan triangulasi data dari literatur internasional (FATF, OECD, IMF, Chainalysis, Cambridge) serta regulasi nasional (OJK, PPATK, DJP). Hasil penelitian menunjukkan bahwa platform kripto berperan sebagai aktor kunci dalam deteksi dan penegakan hukum, tetapi efektivitasnya terkendala oleh *sunrise problem*, pergeseran aktivitas kriminal ke ekosistem DeFi dan OTC, serta ketegangan kedaulatan hukum akibat dominasi platform global. Penelitian ini menawarkan konsep Platform-Embedded Enforcement sebagai kerangka teoritis baru, yang mengintegrasikan mekanisme pengawasan dan penegakan hukum langsung ke dalam arsitektur platform, sehingga kepatuhan dapat ditegakkan secara otomatis, real-time, dan lintas yurisdiksi. Temuan ini memberikan kontribusi bagi pengembangan regulasi kripto yang lebih adaptif, holistik, dan efektif di pasar berkembang.

Kata Kunci : Kripto, penegakan hukum lintas batas, pajak, anti-money laundering, *Platform-Embedded Enforcement*

1. INTRODUCTION

The rapid development of blockchain technology and cryptocurrency has brought significant transformations to the global financial system. Yet behind its innovative potential lie serious challenges for cross-border law enforcement mechanisms. The decentralized, anonymous, and borderless nature of cryptocurrency has made it a primary tool for various illicit activities, ranging from money laundering, tax evasion, and terrorism financing to fraudulent investment schemes (Kethineni & Cao, 2020; Carletti et al., 2024; Leuprecht et al., 2022; Nath, 2020; Courtois et al., 2021). Governments worldwide now face a dilemma: they must safeguard fiscal sovereignty and financial stability while simultaneously grappling with jurisdictional limitations and regulatory discrepancies across nations (Kethineni & Cao, 2020; Uzougbo et al., 2024; Chen, 2024).

The constraints of national law are increasingly evident as actors can easily transfer assets to jurisdictions with weaker regulations or exploit regulatory inconsistencies between authorities. This phenomenon is known as *regulatory arbitrage*, a strategy in which actors deliberately shift to platforms or jurisdictions with the weakest oversight (Carletti et al., 2024; Benson et al., 2024; Uzougbo et al., 2024). Efforts to establish international regulatory harmonization remain slow and often fail to keep pace with the speed of technological innovation (Benson et al., 2024; Uzougbo et al., 2024; Nath, 2020).

Most prior research has tended to discuss taxation and anti-money laundering (AML) in the context of cryptocurrency separately. However, these two aspects are deeply interlinked within the architecture of digital platforms (Leuprecht et al., 2022; Nath, 2020). Tax evasion strategies frequently operate in tandem with money laundering practices, using the same mechanisms to obscure the origins of funds (Leuprecht et al., 2022; Nath, 2020; Courtois et al., 2021). This separation of analysis has ultimately weakened regulatory effectiveness and created exploitable gaps.

The central research question posed by this study is whether a platform-based regulatory approach can genuinely reduce criminal incentives, or whether it merely drives illicit activities toward Decentralized Finance (DeFi) and Over-the-Counter (OTC) trading, both of which are far more difficult to monitor. Several studies indicate that the stricter the supervision of centralized exchanges, the greater the tendency for illicit actors to migrate toward more anonymous decentralized ecosystems (Carletti et al., 2024; Patsakis et al., 2023; Benson et al., 2024). This raises concerns over the long-term sustainability of platform-based regulation.

Another critical issue is the extent to which states retain control over digital financial flows, or whether fiscal and legal sovereignty is gradually shifting into the hands of global platforms. Some studies argue that the dominance of major platforms erodes state authority, as these platforms increasingly regulate their own ecosystems beyond the reach of traditional jurisdictions (Benson et al., 2024; Nath, 2020; Uzougbo et al., 2024). The absence of uniform international standards exacerbates this problem.

The so-called *sunrise problem*—the time lag between the emergence of new technologies and the introduction of appropriate regulations—combined with weak cross-border oversight, undermines law enforcement effectiveness, particularly in developing countries such as Indonesia (Kethineni & Cao, 2020; Uzougbo et al., 2024; Chen, 2024). Jurisdictions with limited regulatory capacity often become easy targets for crypto-related crimes due to insufficient supervisory infrastructure and limited blockchain forensic capabilities (Carletti et al., 2024; Leuprecht et al., 2022; Uzougbo et al., 2024).

This study seeks to explain how platform-based tax and AML regulatory designs influence the economic calculus of crime in emerging markets. By examining the interplay between regulatory design, criminal motives, and the dynamics of digital platforms, the research aims to formulate more effective strategies to curb cross-border crypto crime (Carletti et al., 2024; Leuprecht et al., 2022; Benson et al., 2024).

Furthermore, the study addresses a gap in the literature by proposing an integrative approach that combines taxation and AML within a single platform architecture framework. In doing so, it contributes to the development of public policies that are more adaptive to the dynamics of digital crime (Leuprecht et al., 2022; Benson et al., 2024; Nath, 2020).

The primary academic contribution of this research is the formulation of a new theory, *Platform-Embedded Enforcement*. This theory underscores the need to integrate monitoring and enforcement mechanisms directly into digital platform infrastructures, thereby enabling automatic, real-time control that transcends conventional jurisdictional boundaries (Carletti et al., 2024; Benson et al., 2024; Uzougbo et al., 2024).

Ultimately, this study is expected to provide practical policy recommendations, particularly for regulators in Indonesia and other emerging economies, to foster more responsive and

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sustainable strategies in addressing cross-border cryptocurrency crime (Leuprecht et al., 2022; Benson et al., 2024; Uzougbo et al., 2024; Chen, 2024).

2. RESEARCH METHOD

This study employs an exploratory qualitative approach with a case study method in Indonesia. The primary aim is to gain an in-depth understanding of the dynamics of cross-border cryptocurrency regulation and its relation to platform-based taxation and anti-money laundering (AML) design. This approach is considered appropriate as it captures the complexity of the phenomenon, the involvement of diverse actors, and the continuously evolving interaction between regulation and technology (Galant et al., 2024; Fajri & Urumsah, 2024; Taniady et al., 2022; Rahayu, 2022).

The research design adopts a multi-site case study involving four key institutions: the Directorate General of Taxes (DJP), the Indonesian Financial Transaction Reports and Analysis Center (PPATK), a domestic crypto exchange, and a stablecoin issuer. The multi-site approach was chosen to provide a more comprehensive picture of regulatory practices, implementation, and challenges across different nodes of Indonesia's crypto ecosystem (Galant et al., 2024; Fajri & Urumsah, 2024; Taniady et al., 2022).

The method of analysis applied is regulatory and policy discourse analysis, examining legal documents, regulations, and official policies from relevant authorities. This analysis helps uncover the narratives constructed by regulators, the underlying policy logics, and the vulnerabilities that may be exploited by crypto-related offenders (Galant et al., 2024; Fajri & Urumsah, 2024; Rahayu, 2022).

For primary data, the study relies on in-depth interviews with key actors, including regulators from DJP and PPATK, compliance officers from crypto exchanges, as well as academics and practitioners in tax law and AML. These interviews are designed to capture direct perspectives on the effectiveness, challenges, and strategies involved in implementing platform-based regulation (Galant et al., 2024; Fajri & Urumsah, 2024; Fajri et al., 2024).

In addition, the study incorporates secondary data from international reports by institutions such as FATF (2024–2025), OECD CARF (2023–2025), IMF (2023), Chainalysis (2025), and Cambridge (2024). These sources are used to compare Indonesia's regulatory context with global trends and enrich the analysis with empirical data and international best practices (Galant et al., 2024; Fajri & Urumsah, 2024; Rahayu, 2022).

To ensure data validity, triangulation techniques are employed, combining document analysis, public data, interviews, and cross-checking with real cases in Indonesia. This triangulation enhances objectivity, minimizes bias, and ensures that the research findings accurately reflect field conditions (Galant et al., 2024; Fajri & Urumsah, 2024; Taniady et al., 2022).

Data analysis is conducted thematically, tracing patterns, linkages, and differences among case sites and actors under study. This process allows for the construction of a more comprehensive narrative on how platform-based tax and AML designs influence the economics of crime in developing countries (Galant et al., 2024; Fajri & Urumsah, 2024; Fajri et al., 2024).

Finally, the findings are interpreted using the theoretical framework of Platform-Embedded Enforcement. Within this framework, the study evaluates the extent to which the integration of law enforcement functions into platform architectures enhances regulatory effectiveness while simultaneously narrowing the space for cross-border crypto-related crime in Indonesia (Galant et al., 2024; Fajri & Urumsah, 2024; Fajri et al., 2024; Rahayu, 2022).

3. RESULTS AND DISCUSSION

The findings of this study reveal that criminal pathways within Indonesia's crypto ecosystem are highly diverse. Commonly identified schemes include tax avoidance and money laundering conducted through centralized exchanges (CEX), decentralized exchanges (DEX), and over-the-counter (OTC) channels. Evidence from Chainalysis reports and international forensic investigations indicates increasing use of stablecoins, mixing services, and weakly supervised exchanges as mechanisms to obscure the origins of funds while evading detection by authorities (Kethineni & Cao, 2020; Courtois et al., 2021; Leuprecht et al., 2022). These patterns highlight how offenders exploit technological and regulatory gaps to conceal cross-border transactions.

In Indonesia, platform-based enforcement architecture has adopted several global standards, such as the implementation of the Travel Rule and Know Your Customer (KYC) procedures by local crypto exchanges. Nevertheless, enforcement remains suboptimal due to persistent compliance gaps, technological limitations, and uneven capacity across industry actors (Paesano & Siron, 2022; Leuprecht et al., 2022). Efforts to adopt the Common Reporting Standard for Automatic Exchange of Information (CARF) have also begun to facilitate cross-border tax data exchange, though these initiatives remain at an early stage and face interoperability challenges (Uzougbo et al., 2024; Paesano & Siron, 2022).

Stricter oversight of CEX has, paradoxically, accelerated the migration of illicit activity toward DeFi and OTC channels, both of which are significantly more difficult to regulate. This situation is further complicated by the *sunrise problem*—the regulatory lag in responding to emerging technologies—particularly in relation to stablecoin transactions and DeFi protocols (Galit et al., 2024; Paesano & Siron, 2022; Leuprecht et al., 2022). Such developments pose new risks for Indonesian authorities, who remain insufficiently prepared to address them.

Questions of sovereignty are also at stake, as compliance is often dictated more by the algorithms and compliance policies of global exchanges than by national authorities. Similar challenges are faced by neighboring countries such as the Philippines and Thailand, which also struggle to balance innovation, consumer protection, and law enforcement (Paesano & Siron, 2022; Donnelly et al., 2023). Yet the dominance of international platforms frequently diminishes state control over digital financial flows (Uzougbo et al., 2024; Paesano & Siron, 2022; Donnelly et al., 2023).

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Regulatory discourse analysis further reveals that narratives of security, financial stability, and consumer protection are the principal justifications used by states to expand crypto regulation. In practice, however, regulation consistently lags behind technological innovation, enabling offenders to exploit regulatory loopholes (Kethineni & Cao, 2020; Paesano & Siron, 2022; Donnelly et al., 2023). This underscores the urgent need for harmonized global standards and stronger cross-border collaboration (Uzougbo et al., 2024; Paesano & Siron, 2022; Benson et al., 2024).

In terms of enforcement, international cooperation through forums such as the FATF and the J5 has proven valuable in strengthening information-sharing and coordinating cross-border crypto investigations (Uzougbo et al., 2024; Paesano & Siron, 2022). Nevertheless, differences in institutional capacity and limited resources across countries remain major obstacles to ensuring enforcement effectiveness (Paesano & Siron, 2022; Leuprecht et al., 2022).

The Indonesian case study demonstrates that while local exchanges generally comply more closely with KYC and AML requirements, they still face significant challenges in detecting transactions involving stablecoins and mixing services. Meanwhile, offenders have become increasingly sophisticated in exploiting DeFi and OTC markets to evade detection (Kethineni & Cao, 2020; Courtois et al., 2021; Leuprecht et al., 2022). These findings highlight the need for innovative approaches to platform-based enforcement design.

From a law and economics of crime perspective (Becker), criminal incentives in the crypto ecosystem are primarily shaped by the probability of detection and the severity of sanctions. Yet the crypto context also illustrates the relevance of *governance by infrastructure* (FATF, OECD, Cambridge), where legal mechanisms are embedded directly into platform protocols and data architectures (Uzougbo et al., 2024; Paesano & Siron, 2022; Leuprecht et al., 2022). Such an approach is viewed as more effective in closing gaps in digital crime regulation.

The Platform-Embedded Enforcement concept developed in this study emphasizes that law should not function solely as an external sanctioning mechanism but be integrated into the very infrastructure of platform data. In this way, compliance can be monitored and enforced automatically and in real time, rather than relying solely on manual reporting (Galit et al., 2024; Uzougbo et al., 2024; Paesano & Siron, 2022).

Comparative analysis with other Asian countries shows that those with stronger technological and regulatory capacity are more effective at curbing crypto-related crime. Nevertheless, in the absence of uniform international standards, offenders continue to engage in regulatory arbitrage by shifting operations to more permissive jurisdictions (Paesano & Siron, 2022; Donnelly et al., 2023; Benson et al., 2024).

The findings further emphasize that tax and AML regulations should not be treated separately but integrated into a single platform architecture framework. Treating them in isolation creates regulatory gaps that are easily exploited by offenders, underscoring the need for more comprehensive and interconnected regulation going forward (Uzougbo et al., 2024; Paesano & Siron, 2022; Leuprecht et al., 2022).

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Overall, this study demonstrates that the success of crypto law enforcement in Indonesia and other emerging markets hinges on the state's capacity to adapt to technological dynamics, strengthen international coordination, and adopt the Platform-Embedded Enforcement paradigm as a new model for digital governance (Uzougbo et al., 2024; Paesano & Siron, 2022; Leuprecht et al., 2022; Donnelly et al., 2023; Benson et al., 2024).

4. CONCLUSION

This study concludes that the enforcement of cryptocurrency regulation in Indonesia continues to face serious challenges, particularly in cross-border contexts involving tax avoidance and money laundering practices. The growing prevalence of digital crime through weakly regulated exchanges, stablecoins, and DeFi protocols demonstrates that traditional state sanction–based regulation remains inadequate. From the perspective of the economics of crime, the low probability of detection amplifies offenders' incentives to engage in regulatory arbitrage. To address this gap, the study proposes the paradigm of Platform-Embedded Enforcement, namely the integration of tax and AML rules directly into the architecture of crypto platforms so that compliance can be enforced automatically, in real time, and across jurisdictions.

The policy implications of these findings emphasize that cryptocurrency regulation in Indonesia should prioritize strengthening blockchain forensic capacity, enhancing cross-agency collaboration (including the Directorate General of Taxes, the Financial Transaction Reports and Analysis Center, and the Financial Services Authority), as well as harmonizing global standards through the FATF, J5, and ASEAN regional cooperation. Furthermore, future research is recommended to explore the technical design of integrating taxation and AML measures into smart contracts, assess the effectiveness of the Travel Rule in local exchanges, and compare the implementation of the Crypto-Asset Reporting Framework (CARF) across developing countries. By reinforcing the technological, governance, and international cooperation dimensions, Indonesia has the potential to close the gaps in crypto-related crime while simultaneously safeguarding fiscal stability and the integrity of digital finance. Only through a collaborative and infrastructure-based approach can crypto law enforcement be rendered truly effective in the borderless digital economy era.

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