Legal and Regulatory Challenges of Digital Asset Custodianship: Strengthening Thailand's Capital Market

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Abstracts

This study explores the legal and regulatory challenges of digital asset custodianship in Thailand's capital market, particularly in the context of balancing innovation with investor protection. Following the 2022 Zipmex collapse in South East Asia, critical weaknesses in Thailand's regulatory framework were exposed, underscoring the need for stronger oversight of digital asset custodianship. This paper applies key regulatory theories, including Regulatory State Theory, Investor Protection Theory, and Risk-Based Regulation, to assess Thailand's approach in comparison with international best practices from Singapore, Japan, and the United States. While Thailand's Securities and Exchange Commission (SEC) has made progress with measures such as asset segregation and cybersecurity standards, significant gaps persist in the areas of cross-border regulation and custodial accountability. The study concludes by recommending a shift toward a technology-neutral regulatory framework and the introduction of enhanced custodial liability to bolster investor confidence and drive market growth.

Keywords: digital asset custodianship, investor protection, Thailand, cryptocurrency regulation, regulatory framework, cross-border regulation, technology-neutral regulation

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Introduction

The immediate advancement of digital assets, specifically cryptocurrencies, has presented significant obstacles to international regulatory structures. Recent events and advancements in Thailand's digital asset industry have highlighted the necessity of strong governance, safeguards for investors, and extensive regulatory monitoring. As a key player in Southeast Asia's financial sector, Thailand faces both the opportunities and challenges of navigating this evolving landscape while ensuring that the credibility and integrity of its capital market are preserved.

This study focuses on the legal and regulatory challenges surrounding digital asset custodianship in Thailand, particularly examining how regulatory frameworks impact the development of the capital market. By assessing the effectiveness of current regulations and identifying governance gaps, this research aims to propose improvements that will strengthen the role of digital asset custodianship in fostering a more secure, transparent, and resilient capital market in Thailand.

Background

The rise of digital assets, especially cryptocurrencies, is causing a profound transformation in the global financial landscape. The market capitalization of all cryptocurrencies combined as of September 2024 is an astounding $3.2 trillion, up from $2.08 trillion in August 2024 (CoinMarketCap, 2024). Due to this explosive expansion, there is a global regulatory revolution occurring as nations scramble to create frameworks that strike a balance between investor protection and innovation.

Thailand has become a leading player in this global shift and is a major player in the financial sector in Southeast Asia. The country's projected revenue for the cryptocurrency market is expected to reach $550 million by the end of 2024, surpassing earlier projections of $502.8 million. With an estimated user base of 8.5 million by 2025, Thailand's cryptocurrency adoption rate is outpacing regional averages, underscoring the urgent need for robust regulatory mechanisms (Statista, 2024).

The Problem

Despite the introduction of digital asset regulations in Thailand, the collapse of Zipmex in 2022 revealed challenges in the legal framework. This collapse led to investor losses amounting to millions and caused a significant loss of market confidence across Southeast Asia. The incident highlights the global challenge of regulating decentralized financial systems in a fast-changing industry.

As Blandin et al. (2019) emphasize, regulatory frameworks often struggle to keep up with rapid technological advances, creating gaps in investor protection, market stability, and the credibility of regulatory authorities. While the Thai Securities and Exchange Commission (SEC) has taken steps to regulate the digital asset market, events like the Zipmex collapse show the ongoing challenges in maintaining market stability and protecting investors.

The Zipmex collapse is not unique; it is part of a broader global issue of building strong regulatory frameworks for digital assets. Thailand's response offers valuable lessons in balancing innovation, investor protection, and market stability.

This research aims to explore how Thailand’s evolving regulatory landscape can serve as a model for protecting investors while encouraging innovation in the digital asset space. By using a comparative analysis of regulatory frameworks in Thailand, other major financial hubs, including the principles established by the international organization, the study will provide important recommendations for policymakers and regulators for future policy changes, ensuring that regulatory frameworks support responsible innovation and protect the market from systemic risks.

Research Questions

The main inquiry taking this research is the following: How effective is Thailand's current regulations governing digital asset custodianship protect investors while encouraging innovation in the cryptocurrency space?

The comparison of Thailand's regulatory framework to international best practices, particularly those in United States (U.S.), Singapore and Japan and the International Organization of Securities Commissions (IOSCO) , the challenges in enforcing regulations pertaining to digital assets across borders, and the careful balancing act between incentives for innovation and investor protection will all serve to support this overarching investigation.

The secondary research questions are:

a) How do Thailand's regulations on digital asset custodianship compare to international best practices, particularly those in U.S., Singapore and Japan, and to the standards recommended by IOSCO??

b) What are the key challenges in enforcing digital asset regulations across borders, and how can Thailand enhance its framework to address these issues?

c) How can Thailand strike a compromise between the requirement to safeguard investors and the necessity to promote innovation in the realm of digital assets?

d) How can Thailand balance investor protection with the need to foster innovation in the digital asset space?

e) To what extent have the SEC's recent regulatory amendments addressed vulnerabilities exposed by incidents like the Zipmex collapse?

f) In what ways can Thailand implement regulations to mitigate the risks of regulatory arbitrage in the market for digital assets?

Theoretical Frameworks

This study uses several theoretical framework to examine the complexities of digital asset custodianship regulation in Thailand's capital market. By integrating several key theories and concepts, it provides a comprehensive lens through which to analyze the unique challenges and opportunities exhibited by digital assets in an evolving market context.

Regulatory State Theory

Majone (1997) proposes Regulatory State Theory, which suggests that modern states increasingly act as regulators rather than direct economic actors. In the context of digital assets, governments shape market behavior through regulatory oversight, rule-making, and licensing. This theory provides a foundation for examining how Thailand’s Securities and Exchange Commission (SEC) and other regulatory bodies govern digital asset custodianship to ensure market stability and investor protection.

Regulatory State Theory helps explain Thailand’s efforts to regulate a rapid-evolving market by enforcing rules on custodianship, such as requiring cold wallet storage, asset segregation, and transparency. It also emphasizes the shift from market facilitation to market regulation in response to risks posed by new technologies like cryptocurrencies.

Investor Protection Theory

La Porta et al. (2000) developed Investor Protection Theory, which discusses that legal protections for investors are critical for financial market development and stability. In this context, the theory helps to explore whether Thailand’s regulatory framework for digital asset custodianship adequately protects investors, especially in the challenge of the Zipmex collapse.

This theory is relevant for understanding how regulatory efforts such as asset segregation, liability standards, and custodial responsibilities reduce investor risk. It also guides the assessment of Thailand's success in preventing market failures and fraud by comparing its investor protection mechanisms with those of Singapore, Japan, and the U.S.

Risk-Based Regulation (RBR)

Risk-Based Regulation (RBR), as adopted by the Organisation for Economic Co-operation and Development(OECD) (OECD (2010), proposes that regulatory bodies should allocate resources and regulatory efforts based on the assessment of risks. This approach is particularly useful in markets like digital assets, where technological complexity and market volatility introduce new risks.

In the context of this research, this theory helps assess how Thailand's regulatory authorities prioritize risks (e.g., cybersecurity, custodial insolvency, cross-border transactions) and allocate regulatory resources to areas with the greatest potential for harm. A comparison with international standards will reveal whether Thailand's approach is effective in minimizing risks to both investors and the market.

Technology Neutrality Principle

Technology Neutrality, a principle advocated by organizations such as IOSCO, suggests that regulations should focus on the nature of financial activities rather than the specific technologies used. This principle is critical in regulating digital assets, where rapid technological advancements make it difficult for regulators to target specific innovations.

This principle can guide the comparison of how Thailand, Singapore, Japan, and the U.S. regulate digital asset custodianship without over-specifying the technology involved. It provides insights into how regulatory frameworks can remain flexible and adaptive while ensuring security and investor protection.

Literature Review

This section critically reviews the existing literature on digital asset regulation, investor protection, and market development, focusing on Thailand's regulatory response in comparison to international standards. By examining key studies, the review highlights how regulatory frameworks in Thailand, U.S., Singapore, and Japan, address the risks and opportunities associated with digital asset custodianship, and how effective these frameworks balance innovation and investor protection. The literature included in this review is limited to sources available in English and Thai.

2.1.Regulatory Frameworks for Digital Asset Custodianship

Majone (1997)'s Regulatory State Theory highlights the shift in the governance modes from market facilitation (Positive State) to regulatory oversight (Regulatory State) where regulation replaces direct government intervention, particularly in rapidly evolving sectors like digital assets. This approach is sinificantly relevant in explaining Thailand's increasing regulatory contribution in the digital asset business, especially following the collapse of Zipmex in 2022. The Thai government's response, through the implementation of the rules imposed by the SEC, aligning with a broader global trend where governments take on the role of regulators to address market collapses and ensure investor protection.

The collapse of Zipmex in 2022 exposed weaknesses in the country's regulatory oversight of digital asset custodianship. According to Blandin et al. (2019), a fragmented global regulatory landscape due to a rapidly evolving global market of crypto assets has created challenges in standardizing custodianship practices which creates significant regulatory gaps resulting in market failures and investor losses.

In response, recent regulatory reforms following the Zipmex incident aim to establish clearer rules for custodians, such as requiring cold wallet storage for customer assets. However, there is still a need for further development, particularly in the area of enforcement and compliance monitoring.

In comparison, Singapore's Monetary Authority of Singapore (MAS) has implemented Guidelines on Consumer Protection Measures for Digital Payment Token (DPT) Service Providers, mandating asset segregation and transparency in custodial arrangements (MAS, 2019). Similarly, Japan's Financial Services Agency (FSA) introduced strict custodial liability rules following the Mt. Gox collapse, including mandatory insurance coverage for customer assets (Ishikawa, 2020).

As blockchain technology and decentralized financial systems (DeFi) evolve, Thailand's regulatory framework will need to address cross-border risks and decentralized custodial models. Proactive measures, such as insurance mandates and enhanced transparency requirements similar to Japan's FSA, will be critical to building investor confidence and securing global market participation.

2.2.Investor Protection and Market Stability

La Porta et al. (2000)'s Investor Protection Theory provides the importance of legal protections in fostering market stability and investor confidence. This theory is highly applicable in the context of digital assets, where the absence of strong investor protections can lead to market failures and loss of credibility in the market. Countries that have displayed strong investor protection within their regulatory framework by implemented clear regulations for custodianship have seen higher levels of investor participation and market growth.

In Thailand, the collapse of Zipmex revealed gaps in the regulatory framework for protecting digital asset investors. In response, the Thai SEC introduced new regulations that mandate asset segregation and cybersecurity standards for custodians. However, as seen in Blandin et al. (2019), effective investor protection requires more than just custodial reforms; it also involves transparency and disclosure requirements that give investors confidence in the security of their assets.

In comparison, Singapore's MAS mandates that DPT providers disclose risk-related information and maintain clear segregation of customer assets, ensuring a higher level of investor protection (MAS, 2019). The United States Securities and Exchange Commission (U.S. SEC) , through Staff Accounting Bulletin No. 121 (SAB 121), requires custodians to treat digital assets as liabilities on their balance sheets, enhancing transparency and providing clear accountability in the event of custodial failure (SEC, 2022).

Thailand could benefit from adopting U.S.-framework of transparency requirements, particularly by mandating risk disclosures and treating custodial assets as liabilities, which would help investors better understand the risks associated with digital asset custodianship. Additionally, introducing investor compensation schemes, similar to Japan's FSA insurance requirements, could provide a safety net for investors in case of custodial insolvency.

2.3.Risk-Based Regulation and Cybersecurity in Custodianship

Risk-Based Regulation (RBR), as emphasizes by the OECD (2010), allows that regulatory bodies should prioritize high-risk areas and allocate resources accordingly. This theory is particularly relevant in the digital asset market, where the risks of cyberthreats and custodial insolvency are substantial.

In Thailand, the SEC has introduced comprehensive cybersecurity guidelines for digital asset custodians, including mandatory use of cold wallet storage for the majority of customer assets and stringent requirements for data protection and multi-signature authentication. These measures are designed to mitigate the risks of hacking and unauthorized access to digital assets.

In the United States, the SEC's Staff Accounting Bulletin No. 121 (SAB 121) focuses on ensuring that custodians disclose cybersecurity risks and treat digital assets as liabilities. This creates accountability and provides transparency for investors, reducing the risks associated with custodial mismanagement and cybersecurity vulnerabilities (SEC, 2022). Additionally, FINRA Notice 20-23 emphasizes the importance of cybersecurity protocols for broker-dealers and custodians, ensuring that these entities address high-risk areas related to the safekeeping of digital assets (FINRA, 2020).

Ishikawa (2020) highlights the importance of cybersecurity protocols and custodial liability in Japan's post-Mt. Gox regulatory reforms. These include mandatory insurance coverage for customer assets and strict capital reserve requirements to ensure custodial solvency. This focus on custodial liability and capital reserve requirements in Japan has adopted a risk-based approach. The Japanese regulatory framework prioritizes solvency risk by ensuring that custodians have sufficient reserves and insurance coverage to mitigate the risk of insolvency and safeguard investor assets.

Furthermore, Singapore's MAS emphasizes transparency and risk disclosures in its guidelines for Digital Payment Token (DPT) service providers, ensuring that customers are informed of the risks associated with digital asset custodianship (MAS, 2019). This approach has aligned with RBR because it prioritizes transparency as a way to mitigate investor risks.

By requiring service providers to disclose where and how customer assets are stored, the MAS reduces the risk of custodial mismanagement or undisclosed vulnerabilities.

2.4.Comparative International Regulation of Digital Assets

The regulatory frameworks for digital assets in Singapore, Japan, and the U.S. offer detailed insights into best practices for digital asset custodianship. Each jurisdiction has implemented regulatory responses to address the challenges of custodial liability, cybersecurity, and investor protection:

- The U.S. SEC enforces strict rules on asset segregation and investor protection through regulations such as SEC's Custody Rule (Rule 206(4)-2) under the Investment Advisers Act of 1940, which requires investment advisers to maintain client assets with a qualified custodian in segregated accounts. Similarly, SEC Rule 15c3-3 (Customer Protection Rule) mandates that broker-dealers segregate customer assets from the firm's own assets, ensuring that customer funds are protected from the firm's financial risks (SEC, 2009).
- Singapore's Monetary Authority of Singapore (MAS) mandates AML/CFT compliance, robust cybersecurity measures, and risk disclosures for Digital Payment Token (DPT) service providers, ensuring that investors are informed about the risks associated with their assets and that custodians operate transparently (MAS, 2019).
- Japan's Financial Services Agency (FSA) introduced comprehensive reforms after the Mt. Gox hack, which included stricter rules for custodial liability,

mandatory insurance coverage, and capital reserve requirements to protect investor assets in case of custodial insolvency (Ishikawa, 2020).

2.5.Technology Neutrality and Global Regulatory Standards

The Technology Neutrality Principle, as advocated by IOSCO (2022), argues that regulations should focus on financial activities rather than specific technologies. This principle is particularly relevant to digital asset regulation, where technologies like blockchain and decentralized finance (DeFi) are evolving rapidly.

For Thailand, adopting technology-neutral regulations will allow the country to adapt to future innovations in the digital asset market without requiring constant updates to the regulatory framework.

Methodology

This study employs a qualitative research design, which is particularly suited to our research question that seeks to understand the effectiveness of Thailand's digital asset custodianship regulations in protecting investors while fostering innovation. Given the dynamic and evolving nature of digital asset regulation, a qualitative approach enables a comprehensive exploration of both existing laws and their real-world application.

Justification of Methodology

The qualitative approach is justified by the need to gain deep insights into the regulatory landscape and its impact on investor protection and market innovation due to the rapid advancements of the digital assets nature, and capturing this changeability requires an adaptable and context-driven methodology.

This approach allows for an in-depth analysis not only of legal texts but also of the practical implications of regulatory frameworks. The qualitative methodology also facilitates the identification of regulatory gaps and areas where Thailand's practices could align more closely with international standards.

Research Design

Our research design consists of two main components:

1) Document Analysis: A comprehensive review and analysis of existing regulatory frameworks, policy documents, and official reports, both in Thailand and in benchmark jurisdictions.

2) Case Study Analysis: Examination of specific cases (such as the Zipmex incident) to understand the practical implications of current regulations.

Data Collection

Data will be collected through:

i. Document analysis:

Regulatory documents from the U.S. SEC, Thai SEC, MSA, FSA, and international bodies (e.g., IOSCO and OECD)

ii. Case studies:

Official reports and legal documents related to significant incidents in Thailand's digital asset market

Analysis

This section evaluates the effectiveness of Thailand's regulatory framework for digital asset custodianship by assessing how it protects investors to ensure market integrity, and risk management while fosters innovation of the financial market. The analysis is structured according to the Regulatory State Theory (Majone, 1997), Investor Protection Theory (La Porta et al., 2000), and the Risk-Based Regulation (RBR) (OECD, 2010), all of which were introduced in the Problem Statement, Research Questions, and Literature Review, this analysis will compare Thailand's regulatory approach to international best practices, particularly those recommended by IOSCO recommendations, highlighting the regulatory gaps and potential areas for improvement.

1. Thailand's Regulatory Challenges in Digital Asset Custodianship

Thailand's digital asset custodianship framework, while evolving, faces several significant challenges, particularly in areas such as custodial liability, cross-border enforcement, and adaptability to new technologies. The Zipmex collapse in 2022 emphasizes many of these regulatory weaknesses, exposing gaps in investor protection and custodial accountability.

1.1 Custodial Liability and Investor Protection: The Zipmex Case

The collapse of Zipmex, one of Thailand's largest cryptocurrency exchanges, in 2022 is a key example of the limitations in Thailand's regulatory framework. When Zipmex suspended withdrawals due to liquidity issues, investors lost millions, and many were left without recourse. This incident highlighted the absence of clear custodial liability and the lack of mandatory investor compensation mechanisms in Thailand's regulatory framework.

Case Study: The Zipmex Collapse

- Timeline: In July 2022, Zipmex, citing financial difficulties, suspended withdrawals, which led to millions in losses for investors.
- Regulatory Response: The Thai SEC ordered Zipmex to resume trading and improve transparency, but the incident highlighted the lack of preemptive custodial liability laws.
- Investor Impact: Thousands of investors were left without access to their funds, with no clear path for recovery, showcasing the need for stronger custodial responsibility and investor compensation mechanisms.

Investor Protection Theory (La Porta et al., 2000) suggests that robust legal protections are necessary to build investor confidence and maintain market stability. In this context, the Zipmex case exposed the regulatory oversights that must be addressed to ensure that digital asset custodians are held accountable for managing customer assets responsibly to protect the investor's losess.

In response to the collapse of Zipmex's incident, Thailand's SEC has developed the regulation of the asset segregation for digital asset custodians, however, it does not explicitly require custodians to treat customer assets as liabilities, as is the practice in the U.S..

1.2 Cross-border Regulation and Enforcement Gaps

The global nature of digital assets and the rise of Decentralized Finance (DeFi) present significant challenges for Thailand's SEC in regulating cross-border custodianship. As digital assets are often stored with foreign custodians operating in jurisdictions outside of Thailand's regulatory reach, ensuring compliance with Thailand's asset segregation and security requirements becomes increasingly difficult.

Zetzsche et al. (2020) point out that the fragmented global regulatory landscape leaves digital assets vulnerable to jurisdictional gaps, as foreign custodians may not be subject to the same regulatory oversight as domestic custodians. This leads to several key challenges:

1.2.1 Inconsistent Regulatory Standards

Foreign custodians may operate under different legal frameworks with varying standards for asset segregation, cybersecurity, and custodial accountability. Even though Thailand's SEC mandates asset segregation for all custodians, the lack of uniform international standards means that foreign custodians may not follow the same rigorous protocols. This creates vulnerabilities for Thai investors whose assets are stored abroad, particularly in jurisdictions with weaker regulatory frameworks.

1.2.2 Limited Enforcement Capabilities

Thailand's SEC lacks the authority to enforce its regulations beyond Thailand's borders. Without formal agreements or cooperation with foreign regulators, it is difficult to ensure that foreign custodians comply with Thai regulations. The absence of international regulatory agreements or cybersecurity audits for foreign custodians further exacerbates the problem, leaving cross-border custodianship largely unmonitored and unregulated.

1.2.3 Cybersecurity Risks

Cross-border custodianship also presents significant cybersecurity risks, as foreign custodians may not adhere to Thailand's cybersecurity standards. Thailand's SEC mandates robust cybersecurity protocols, but foreign custodians may operate under less stringent rules, increasing the risk of hacks, data breaches, and unauthorized access to investor assets.

Challenge	Description
Inconsistent Regulatory Standards	Foreign custodians operate under different legal frameworks, potentially exposing Thai investors to weaker protections.
Limited Enforcement Capabilities	Thailand's SEC lacks the authority to enforce regulations on foreign custodians without formal cooperation agreements.
Cybersecurity Risks	Foreign custodians may not adhere to Thailand's cybersecurity standards, increasing the risk of hacks or data breaches.

Table 1: Key Challenges in Cross-border Regulation:

1.3 Technology-Specific Regulations Limiting Innovation

Thailand's regulatory framework for digital asset custodianship remains technology-specific, focusing heavily on solutions like cold wallet storage. While this approach provides immediate protection against hacking and theft, it limits regulatory flexibility and innovation, especially as new technologies emerge, such as Decentralized Finance (DeFi) and smart contracts. This technology-specific focus may hinder Thailand's ability to adapt to future innovations in the digital asset space.

The International Organization of Securities Commissions (IOSCO) recommends adopting a technology-neutral approach for regulating digital assets, focusing on the risks and activities rather than specific technologies. According to IOSCO (2022), technology-neutral regulations allow regulators to maintain oversight while giving the market flexibility to evolve with new technologies. By focusing on financial activities and risk management, regulators can ensure that the core principles of transparency, investor protection, and cybersecurity are upheld without needing to constantly revise the regulatory framework to accommodate every technological advancement.

2. Recommendations in Regulatory Framework

Despite significant progress in developing its regulatory framework for digital asset custodianship, Thailand faces key areas where improvement is necessary to better align with international best practices. These areas include enhancing custodial accountability, improving cross-border enforcement, and adopting a technology-neutral approach to foster innovation and ensure market integrity.

2.1. Enhancing Custodial Liability and Investor Protection

The Zipmex collapse in 2022 highlighted the need for explicit custodial liability and investor compensation mechanisms in Thailand's regulatory framework. Despite implementing asset segregation, Thailand's SEC has not required custodians to treat customer assets as liabilities, which would hold custodians directly accountable for safeguarding customer assets. As Investor Protection Theory (La Porta et al., 2000) suggests, robust legal protections are crucial for building investor confidence and maintaining market stability.

In comparison, Japan's Financial Services Agency (FSA) introduced custodial liability laws and mandatory insurance coverage after the Mt. Gox incident, ensuring that custodians are accountable and that investors are protected from losses (Ishikawa, 2020). Singapore's Monetary Authority of Singapore (MAS) requires asset segregation and risk disclosures for Digital Payment Token (DPT) service providers but lacks a comprehensive investor compensation scheme (Monetary Authority of Singapore, 2019).

Thailand should enhance custodial liability laws similar to those in Japan, where mandatory insurance coverage ensures that investors are protected from custodial insolvency. Additionally, introducing an investor compensation scheme could provide a protection for investors when custodians fail. This would strengthen investor confidence in the digital asset market, mitigating the losses that were experienced in the Zipmex case.

Country	Custodial Liability Rules	Investor Compensation Mechanisms	Thailand's Gaps
Thailand	No explicit custodial liability laws, only asset segregation	No compensation scheme	No custodial liability or insurance requirements
U.S.	Assets treated as liabilities, full custodial accountability	No mandatory insurance, but strong disclosure	No equivalent liability or transparency requirements
Singapore	Asset segregation, risk disclosures	No mandatory compensation scheme	Lacks mandatory custodial insurance
Japan	Mandatory insurance, custodial liability laws	Compensation through insurance coverage	No investor compensation mechanism

Table 2: Custodial Liability and Investor Protection (Thailand vs. U.S., Singapore, Japan)

2.2 Addressing Cross-Border Regulation and Enforcement Gaps

While Thailand's regulatory framework mandates asset segregation for both domestic and foreign custodians, the challenge lies in the enforcement and oversight of these regulations. Foreign custodians often operate in jurisdictions with differing regulatory standards, making it difficult to ensure compliance with Thailand's stringent security and asset protection requirements. The cross-border nature of digital assets exacerbates these challenges, creating gaps in regulatory enforcement and leaving Thai investors exposed to risks from foreign custodians.

2.2.1 Inconsistent International Standards and Compliance Challenges

As Zetzsche et al. (2020) emphasize, the global decentralized nature of digital assets and the absence of a unified global regulatory framework pose significant enforcement challenges. Foreign custodians may not be subject to the same level of scrutiny or regulatory oversight as domestic custodians. This creates vulnerabilities for Thai investors when custodians based in other jurisdictions do not follow Thailand's cybersecurity protocols, asset segregation rules, or investor protection standards.

2.2.2 Weak Enforcement and Monitoring Mechanisms

Thailand's SEC faces difficulties in monitoring and enforcing compliance on foreign custodians, particularly those storing Thai investor assets. Although the law requires asset segregation, the effectiveness of this requirement depends on consistent monitoring, audits, and regulatory cooperation with foreign jurisdictions.

2.3 Transitioning to a Technology-Neutral Framework to Encourage Innovation

At present, Thailand’s technology-specific regulations create barriers to the adoption of newer technologies and stifle innovation. This is in contrast to the technology-neutral frameworks recommended by IOSCO (2022), which allow regulators to focus on financial activities and risks rather than being tied to specific technologies. Such an approach enables markets to evolve with future innovations.

To foster a more flexible regulatory environment, Thailand should shift its focus from prescriptive technologies to risk management and outcomes-based regulation, similar to the Singapore MAS model. In this framework, the regulation of digital assets would be centered on managing risks like cybersecurity and custodial mismanagement, allowing custodians to implement the most appropriate technological solutions based on their business needs and security requirements.

Additionally, Thailand could benefit from creating regulatory sandboxes that allow custodians and fintech firms to experiment with emerging technologies in a controlled environment. This would enable regulators to monitor risks while encouraging technological development. Finally, strengthening international cooperation with regulators in jurisdictions that already use technology-neutral frameworks, such as Singapore and the U.S., will help Thailand align its regulatory framework with global standards, ensuring both domestic innovation and international competitiveness.

Conclusions

Global Overview

This paper focuses on the legal and regulatory challenges surrounding digital asset custodianship in Thailand, particularly in light of the Zipmex collapse in 2022. It critically analyzes how Thailand's regulatory framework addresses investor protection, custodial accountability, and technological innovation. By comparing Thailand's approach to international best practices from Singapore, Japan, and the U.S., the paper provides recommendations for strengthening Thailand's custodial liability, cross-border regulation, and technology-neutral framework to foster market growth and investor confidence.

Answer the Research Questions

The main research question asked how effective Thailand's regulations governing digital asset custodianship are in protecting investors while encouraging innovation. The research finds that while Thailand's SEC has introduced measures such as asset segregation and cold wallet storage, these are not sufficient to fully protect investors or foster innovation. Custodial liability and cross-border enforcement gaps remain key issues. Thailand's current technology-specific regulations hinder the adoption of emerging technologies like DeFi. To address these gaps, the research recommends transitioning to a technology-neutral framework and enhancing custodial accountability.

Expected Findings

The research anticipated finding that Thailand's regulatory framework would have significant gaps in investor protection and custodial liability. This expectation was confirmed by the analysis of the Zipmex collapse, which highlighted the absence of clear custodial liability and investor compensation mechanisms. Furthermore, the research expected that cross-border regulatory enforcement would be challenging due to the decentralized nature of digital assets, which was also validated by the findings.

Unexpected Findings

One unexpected finding was the extent to which technology-specific regulations in Thailand limit innovation. The emphasis on cold wallet storage and other established technologies restricts the ability of custodians to adopt newer solutions like smart contracts and DeFi platforms

Limitations of the Study

The study's primary limitation is its focus on Thailand's regulatory framework, with limited exploration of the specific compliance challenges faced by foreign custodians. Another limitation is the reliance on case studies like Zipmex, which may not fully represent the broader regulatory landscape for digital assets. Moreover, the study does not extensively cover the enforcement challenges related to decentralized platforms, which are critical in understanding the full scope of regulatory issues in cross-border custodianship.

Recommendations for Future Studies

Future research should focus on how Thai law can evolve quickly enough to accommodate the rapid development of digital asset technology while maintaining robust investor protection. The fast-paced nature of innovations such as Decentralized Finance (DeFi), smart contracts, and new blockchain protocols demands a regulatory framework that is both flexible and adaptable. Future studies should explore how technology-neutral regulations can be implemented to manage these emerging technologies without stifling innovation.

Moreover, research should examine the effectiveness of enforcement mechanisms in Thailand, particularly in the context of cross-border custodianship and how the law can ensure that foreign custodians comply with Thai cybersecurity and asset protection standards.

Finally, future studies could assess the feasibility of establishing regulatory sandboxes in Thailand to test new financial technologies in a controlled environment. This would allow regulators to monitor the risks associated with emerging technologies while ensuring that investor protections remain at the forefront.

General Summary

This study addressed the regulatory challenges of digital asset custodianship in Thailand, focusing on how the country's laws balance investor protection with technological innovation. When the research began, it was clear that gaps in investor protection and cross-border enforcement were critical issues. By comparing Thailand's regulations to international standards, the study identified areas for improvement, particularly in custodial liability, cross-border cooperation, and transitioning to a technology-neutral framework. Moving forward, Thailand should adopt more flexible regulations to accommodate emerging technologies and ensure investor protection in a rapidly evolving digital asset landscape.

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