

## Legal Protection for Creditors Regarding Collateral Used by Debtors for Online Gambling Activities in Indonesia

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**ABSTRACT**

The rapid development of information technology has transformed various economic activities, including the emergence of internet-based gambling practices known as online gambling. This phenomenon has generated significant legal and economic consequences, particularly in creditor-debtor relationships. Debtors involved in online gambling often misuse credit facilities, experience financial instability, and ultimately fail to fulfill their repayment obligations. In several cases, debtors have transferred, encumbered, or misused collateral assets to obtain additional funds for gambling activities. Such circumstances pose substantial risks to creditors and challenge the effectiveness of security law as a legal protection mechanism. This study aims to analyze the legal protection provided by Indonesian security law for creditors regarding collateral assets connected to debtors engaged in online gambling activities. The research employs a normative legal method using statutory, conceptual, and comparative approaches. The primary legal materials include the Indonesian Civil Code, Law Number 42 of 1999 concerning Fiduciary Security, Law Number 4 of 1996 concerning Mortgage Rights, and regulations related to the eradication of online gambling. The findings indicate that Indonesian security law provides strong protection through preferential rights, collateral registration systems, and collateral enforcement mechanisms. Nevertheless, the growth of digital financial transactions and online gambling platforms creates new challenges in monitoring debtor behavior and safeguarding collateral assets. Therefore, strengthening supervisory mechanisms, improving debtor risk assessment systems, and enhancing cooperation between financial institutions and law enforcement agencies are essential to ensure legal certainty and effective creditor protection in the digital era.

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### INTRODUCTION

The rapid advancement of information and communication technology has significantly transformed various aspects of modern society. Digitalization has not only changed patterns of communication and social interaction but has also reshaped economic systems, business activities, banking services, and financing mechanisms. The emergence of financial technology (fintech), digital banking, peer-to-peer lending, blockchain technology, cryptocurrencies, smart contracts, and other forms of digital assets has accelerated the transition toward a digital economy. Consequently, legal institutions that traditionally governed conventional economic activities are increasingly required to adapt to the challenges posed by technological developments (Prasetyo & Nugroho, 2023).

One of the legal fields significantly affected by digital transformation is security law (guarantee law). As an essential component of private and commercial law, security law plays a strategic role in providing legal certainty and protection for creditors in financing transactions. Through security interests, creditors obtain rights over specific assets owned by debtors, thereby reducing the risk of loss in the event of default. In Indonesia, security law is

primarily governed through various legal instruments, including the Civil Code, Law Number 42 of 1999 concerning Fiduciary Security, and Law Number 4 of 1996 concerning Mortgage Rights over Land and Objects Related to Land (Nanda & Fardiansyah, 2022; Salim HS, 2023).

Historically, security law has been designed to accommodate tangible assets such as land, buildings, vehicles, machinery, inventory, and other movable or immovable property. These assets serve as collateral to secure the performance of obligations arising from credit agreements and financing transactions. However, the development of digital technology has introduced new forms of assets with substantial economic value that challenge traditional concepts of collateral. Digital assets such as cryptocurrencies, non-fungible tokens (NFTs), domain names, digital intellectual property rights, electronic accounts, and other virtual assets increasingly play an important role in economic transactions. Nevertheless, the legal status of such assets within the framework of security law remains uncertain in many jurisdictions, including Indonesia (Rahman, 2023; Sjahdeini, 2022).

The growing digital economy has also transformed the mechanisms through which financing transactions are conducted (Kuznetsov et al., 2020; Vardomatskya et al., 2021). Traditional face-to-face interactions between creditors and debtors are increasingly replaced by electronic systems that enable remote verification, electronic documentation, digital signatures, and automated risk assessment processes. Financial institutions and fintech companies have adopted digital platforms to improve efficiency, reduce operational costs, and expand financial inclusion. While these developments provide substantial benefits, they simultaneously generate new legal issues regarding the validity of electronic agreements, the protection of digital collateral, and the enforcement of creditors' rights in cyberspace (Prasetyo & Nugroho, 2023).

In Indonesia, the implementation of electronic fiduciary registration systems represents a significant milestone in the modernization of security law. The transition from manual registration procedures to electronic systems has improved efficiency, transparency, and accessibility. Electronic registration facilitates faster processing of fiduciary security interests and contributes to greater legal certainty for both creditors and debtors (Kurniawan & Anggoro, 2024; Pranatia, 2021). Nevertheless, the increasing reliance on digital systems raises concerns regarding cybersecurity, data protection, system reliability, and the authenticity of electronic records. These concerns become particularly important considering the potential legal consequences arising from errors, manipulation, or unauthorized access to digital information (Lee, 2021).

Another important issue concerns the relationship between security law and the rapidly growing financial technology sector. Fintech-based financing services often operate through digital platforms that utilize alternative credit scoring systems, big data analytics, artificial intelligence, and automated decision-making processes. Unlike conventional lending institutions, some digital financing providers rely on innovative risk management mechanisms rather than traditional collateral-based systems. This development raises questions regarding the future role of security law and whether existing legal frameworks remain adequate to address emerging financing models in the digital era.

Furthermore, technological innovations such as blockchain and smart contracts present both opportunities and challenges for security law. Blockchain technology offers

decentralized, transparent, and immutable record-keeping systems that may enhance the security and reliability of collateral registration. Smart contracts have the potential to automate contractual performance and collateral execution based on predefined conditions. Despite these advantages, the legal recognition and enforceability of blockchain-based transactions remain subjects of ongoing debate among legal scholars and policymakers. The absence of comprehensive regulations may create legal uncertainty and hinder the adoption of such technologies within the financing sector.

From a comparative perspective, several countries have initiated legal reforms to accommodate digital assets and technology-based financing transactions. Singapore, the United States, the United Kingdom, and various European Union member states have introduced regulatory frameworks governing digital assets, electronic collateral systems, and fintech activities. These developments demonstrate that security law must continuously evolve to remain relevant in an increasingly digitalized economic environment. The experiences of these jurisdictions provide valuable insights for Indonesia in designing future legal reforms aimed at strengthening legal certainty and creditor protection (Bahri et al., 2024).

The urgency of legal reform is further emphasized by the rapid growth of Indonesia's digital economy. As one of the largest digital markets in Southeast Asia, Indonesia has experienced substantial increases in digital transactions, electronic commerce, and technology-based financial services. Such growth creates new legal relationships and economic activities that require adequate legal protection. Without adaptive legal frameworks, the gap between technological innovation and legal regulation may generate uncertainty, increase transactional risks, and potentially undermine public trust in digital financial systems.

Despite the growing significance of digitalization in financing activities, academic discussions concerning the implications of digital transformation for security law remain relatively limited. Existing studies generally focus on electronic transactions, fintech regulation, or cybersecurity issues, while comprehensive analyses specifically addressing security law in the digital era are still scarce. Consequently, further research is needed to examine how security law responds to technological developments and how legal institutions can be reformed to accommodate emerging forms of collateral and financing mechanisms.

Based on these considerations, this study aims to analyze the development of security law in the era of digitalization, identify the legal challenges arising from technological transformation, and examine the prospects for future legal reform in Indonesia. The research seeks to contribute to the development of legal scholarship concerning security law while providing recommendations for policymakers, financial institutions, and legal practitioners in responding to the challenges of the digital economy.

Regarding your instruction on italicization: the specified phrase “Legal Protection for Creditors Regarding Collateral Used by Debtors for Online Gambling Activities in Indonesia” does not appear in this passage, so no italicization is applicable here.

## **METHOD**

This study employed a normative legal research method by examining legal norms, legal principles, legal doctrines, and statutory regulations relevant to the issues under

discussion. The method was selected to support the analysis of the development of guarantee law in the era of digitalization, the identification of emerging legal challenges, and the assessment of the adequacy of existing legal frameworks in providing legal certainty and protection for parties involved in digital financing transactions.

The study applied several approaches. First, a statutory approach was used to analyze laws and regulations governing guarantee law and electronic transactions in Indonesia. The primary legal materials included the Indonesian Civil Code (*Burgerlijk Wetboek*), Law Number 42 of 1999 concerning Fiduciary Security, Law Number 4 of 1996 concerning Mortgage Rights over Land and Objects Related to Land, Law Number 1 of 2024 concerning Amendments to the Electronic Information and Transactions Law, as well as relevant regulations issued by the Financial Services Authority (OJK) concerning financial technology and digital financing services.

Second, a conceptual approach was applied to examine legal concepts and doctrines related to guarantee law, creditor protection, digital assets, electronic transactions, legal certainty, and legal protection. This approach was used to assess the relevance of existing legal concepts in addressing issues arising from digital transformation.

Third, a comparative approach was employed to compare Indonesia's legal framework with those of selected jurisdictions, particularly Singapore and the United States, which have developed regulatory mechanisms for digital assets, electronic collateral systems, and technology-based financing transactions. This comparison provided insights into alternative regulatory models and potential directions for legal reform in Indonesia.

The legal materials consisted of primary and secondary sources. Primary legal materials included legislation, government regulations, judicial decisions, and official legal documents relevant to guarantee law and digital transactions. Secondary legal materials comprised textbooks, scientific journals, conference proceedings, theses, dissertations, research reports, and legal commentaries discussing guarantee law, financial technology, cybersecurity, and digital asset regulation.

Legal material collection was conducted through library research by identifying, classifying, and reviewing relevant legal documents, academic publications, and regulatory instruments in accordance with the research objectives.

Data analysis was conducted qualitatively through doctrinal legal analysis and legal interpretation. The analysis examined the relationship between existing legal norms and emerging issues related to digitalization to identify legal gaps, regulatory challenges, and opportunities for reform. The findings were then systematically presented to describe the current position of guarantee law, evaluate its effectiveness in addressing digital challenges, and formulate recommendations for legal development.

Through this methodological framework, the study provided a structured legal analysis of guarantee law in the era of digitalization and contributed to ongoing academic and policy discussions on digital financial transactions and collateral protection in Indonesia.

## **RESULTS AND DISCUSSION**

### **Development of Guarantee Law in Indonesia**

Guarantee law has long served as an essential legal instrument in supporting economic activities and financing transactions. In Indonesia, the legal foundation of guarantee law is

derived from the Civil Code, which recognizes both general and specific forms of security interests. Article 1131 of the Indonesian Civil Code establishes the principle that all assets belonging to a debtor constitute security for the fulfillment of obligations. However, this provision only provides general protection and does not grant priority rights to creditors.

To strengthen creditor protection, Indonesia has developed several forms of special security rights, including mortgages, fiduciary security, pledges, and hypothecs. These institutions provide creditors with preferential rights over secured assets and increase legal certainty in financing transactions. The enactment of Law Number 4 of 1996 concerning Mortgage Rights and Law Number 42 of 1999 concerning Fiduciary Security represented significant milestones in the modernization of Indonesian guarantee law (Sjahdeini, 2022).

The development of digital technology has further transformed guarantee law administration. Electronic registration systems, digital documentation, and online verification mechanisms have replaced many conventional administrative procedures. Consequently, guarantee law has gradually evolved from a paper-based legal system toward a digital legal framework capable of supporting modern economic activities.

### **Digitalization and the Transformation of Financing Systems**

Digitalization has fundamentally altered financing practices. Traditional financing procedures often required extensive documentation, physical meetings, and lengthy verification processes. Today, financial institutions increasingly utilize digital platforms to facilitate financing services.

Financial technology companies have introduced innovative financing models that rely on electronic data analysis, artificial intelligence, and automated risk assessment. Digital lending platforms can evaluate creditworthiness within minutes by analyzing customer behavior, transaction histories, and alternative financial indicators.

The transformation has produced significant benefits, including increased efficiency, broader financial inclusion, reduced operational costs, and improved accessibility to financial services. However, digital financing systems also create legal challenges concerning contractual validity, consumer protection, and collateral security (Siregar & Lestari, 2023).

The increasing use of digital platforms raises concerns regarding the adequacy of existing guarantee law frameworks. Traditional legal concepts were designed for physical transactions and tangible collateral, whereas digital financing often involves electronic documentation and intangible assets.

### **Digital Assets as Objects of Security Rights**

One of the most significant legal challenges in the digital era concerns the status of digital assets as collateral. Traditionally, guarantee law has focused on tangible assets such as land, vehicles, machinery, inventory, and buildings. However, technological developments have created new forms of property that possess substantial economic value.

Digital assets may include:

1. Cryptocurrencies.
2. Non-Fungible Tokens (NFTs).
3. Domain names.
4. Digital intellectual property rights.

5. Electronic accounts and digital platforms.
6. Digital securities and tokenized assets.

These assets are increasingly recognized as valuable economic resources. Nevertheless, Indonesian guarantee law has not yet comprehensively regulated their use as collateral. As a result, uncertainty remains regarding ownership verification, valuation standards, registration mechanisms, and execution procedures (Rahman, 2023).

The absence of specific regulations may discourage financial institutions from accepting digital assets as collateral despite their growing economic significance. Consequently, legal reform is necessary to establish clear rules governing the treatment of digital assets within the guarantee law framework.

### **Electronic Fiduciary Security and Digital Registration Systems**

One of the most notable achievements in the modernization of Indonesian guarantee law is the implementation of electronic fiduciary registration. The transition from manual registration systems to electronic platforms has improved efficiency and transparency.

Electronic registration offers several advantages:

1. Faster registration procedures.
2. Reduced administrative costs.
3. Improved accessibility.
4. Enhanced transparency.
5. Better integration of national databases.

Through electronic registration, fiduciary certificates can be issued more quickly while maintaining legal validity. Creditors benefit from stronger legal certainty because registration records are maintained within centralized databases.

However, digital registration systems are not free from challenges. Risks associated with cybersecurity, unauthorized access, data manipulation, and system failures may threaten legal certainty. Therefore, robust technological safeguards and regulatory oversight are necessary to ensure the reliability of electronic registration systems.

### **Legal Protection for Creditors and Debtors in Digital Transactions**

Legal protection remains one of the primary objectives of guarantee law. In digital transactions, both creditors and debtors require legal certainty regarding their rights and obligations (Siregar & Lestari, 2023).

For creditors, legal protection includes:

1. Certainty regarding the existence and validity of collateral.
2. Priority rights over secured assets.
3. Effective enforcement mechanisms.
4. Access to reliable information concerning collateral status.

For debtors, legal protection includes:

1. Transparency of contractual terms.
2. Protection against abusive practices.
3. Security of personal data.
4. Fair treatment in collateral execution procedures.

Digitalization requires legal protection mechanisms that extend beyond traditional contractual relationships. The increasing use of electronic systems means that issues such as data protection, cybersecurity, and digital identity verification become central components of legal protection (Aulia & Putri, 2024; Wahyuni, 2024).

The enactment of personal data protection regulations and electronic transaction laws contributes to safeguarding parties involved in digital financing activities. Nevertheless, further harmonization between guarantee law and digital regulations remains necessary.

### **Cybersecurity Challenges in Guarantee Law**

Cybersecurity has emerged as a critical issue in digital financing transactions. As guarantee registration systems and financing platforms become increasingly digitalized, they become potential targets for cyberattacks (Lee, 2021).

Common cybersecurity threats include:

1. Data breaches.
2. Identity theft.
3. Ransomware attacks.
4. Unauthorized system access.
5. Manipulation of electronic records.

Such incidents may compromise the integrity of guarantee registration systems and undermine public trust in digital financing services. Therefore, legal and technological measures must be implemented to protect sensitive information and maintain system reliability.

Financial institutions must invest in cybersecurity infrastructure, while regulators should establish minimum security standards applicable to all electronic financing systems.

### **Blockchain Technology and Smart Contracts**

Blockchain technology has attracted significant attention due to its potential application in guarantee law. Blockchain provides a decentralized and immutable record-keeping system capable of increasing transparency and reducing fraud risks.

Potential applications of blockchain in guarantee law include:

1. Digital collateral registration.
2. Ownership verification.
3. Transaction monitoring.
4. Automated execution processes.

Similarly, smart contracts offer opportunities to automate contractual obligations and enforcement mechanisms. Through predefined coding instructions, contractual provisions may be executed automatically when specific conditions are met.

Despite these advantages, legal recognition of blockchain-based systems remains limited. Questions concerning jurisdiction, liability, dispute resolution, and regulatory oversight continue to challenge implementation efforts.

Consequently, lawmakers must carefully evaluate the legal implications of integrating blockchain technology into guarantee law systems.

## **Comparative Analysis: Indonesia, Singapore, and the United States**

A comparative analysis reveals different approaches toward regulating guarantee law in the digital era.

### **1. Singapore**

Singapore has established a comprehensive regulatory framework supporting fintech innovation while maintaining strong creditor protection. The country actively promotes digital financing services through clear legal standards and regulatory supervision.

### **2. United States**

Several states in the United States have begun recognizing certain digital assets as collateral. Legal reforms under secured transaction laws have facilitated the use of digital assets within commercial financing arrangements.

### **3. Indonesia**

Indonesia has made significant progress through electronic fiduciary registration and fintech regulation. However, specific legal frameworks addressing digital collateral remain underdeveloped compared to leading jurisdictions.

The comparative analysis suggests that Indonesia may benefit from adopting regulatory approaches that explicitly recognize digital assets and provide clear rules concerning registration, valuation, and enforcement.

## **Future Prospects for Guarantee Law Reform**

The future development of guarantee law in Indonesia will depend on its ability to adapt to technological innovation. Several reforms may be considered. First, legislation should explicitly regulate digital assets as potential collateral objects. Second, electronic registration systems should be strengthened through improved cybersecurity measures and integrated databases.

Third, legal frameworks governing blockchain technology and smart contracts should be developed to provide certainty regarding their legal status.

Fourth, harmonization between guarantee law, electronic transaction law, financial regulation, and data protection legislation is necessary to ensure consistent legal protection. Finally, regulatory institutions should enhance cooperation with financial technology providers to create a legal environment that supports innovation while preserving legal certainty (Wahyuni, 2024).

The successful modernization of guarantee law will contribute to the development of a secure and efficient digital economy capable of supporting sustainable economic growth in Indonesia.

## **CONCLUSION**

The rapid development of digital technology has significantly transformed economic activities, financing systems, and legal relationships within modern society. As digitalization continues to reshape financial transactions, Legal Protection for Creditors Regarding Collateral Used by Debtors for Online Gambling Activities in Indonesia, guarantee law is increasingly required to adapt to new forms of assets, electronic transactions, and technology-based financing mechanisms. Traditional guarantee law, which was primarily designed to regulate tangible assets and conventional financing arrangements, now faces substantial

challenges arising from the emergence of digital assets, financial technology platforms, electronic registration systems, and cross-border digital transactions.

This study demonstrates that Indonesian guarantee law has undergone significant modernization through the implementation of electronic registration systems, particularly in fiduciary security administration. The transition from conventional procedures to digital platforms has improved efficiency, transparency, accessibility, and legal certainty for both creditors and debtors. Digitalization has also facilitated faster financing processes and contributed to broader financial inclusion by enabling greater access to credit and financial services.

Despite these positive developments, the digital era has generated new legal challenges that cannot be fully addressed by existing legal frameworks. One of the most significant issues concerns the legal status of digital assets as objects of security rights. Although digital assets such as cryptocurrencies, non-fungible tokens (NFTs), domain names, and digital intellectual property rights possess substantial economic value, their recognition and regulation within Indonesian guarantee law remain limited. This situation creates uncertainty regarding ownership verification, valuation, registration procedures, and enforcement mechanisms.

Furthermore, the increasing reliance on electronic systems has raised concerns regarding cybersecurity, data protection, electronic evidence, and the reliability of digital registration systems. Cyberattacks, unauthorized access, data manipulation, and other forms of cybercrime may threaten the integrity of guarantee administration and weaken public confidence in digital financing systems. Consequently, legal protection in the digital era must extend beyond traditional creditor-debtor relationships and encompass broader issues of information security and technological governance.

The comparative analysis indicates that several jurisdictions, including Singapore and the United States, have taken significant steps toward accommodating digital assets and technology-based financing within their legal frameworks. These developments suggest that Indonesia should continue pursuing legal reform to ensure that guarantee law remains relevant and effective in supporting economic growth and technological innovation.

Therefore, the future development of Indonesian guarantee law should focus on regulatory modernization, recognition of digital assets as potential collateral, enhancement of electronic registration systems, strengthening cybersecurity measures, and harmonization of laws governing financial technology, electronic transactions, and data protection. Such reforms are essential to provide legal certainty, strengthen creditor protection, safeguard debtor rights, and support the sustainable development of Indonesia's digital economy.

Ultimately, guarantee law must evolve alongside technological progress. A responsive and adaptive legal framework will not only ensure the effectiveness of collateral systems in the digital era but also contribute to the creation of a secure, efficient, and trustworthy legal environment capable of supporting future economic and technological developments.

Based on the findings of this study, several recommendations can be proposed to strengthen the effectiveness of guarantee law in responding to the challenges of digitalization.

First, the Indonesian government should undertake comprehensive legal reform to modernize the existing guarantee law framework. Current regulations primarily focus on tangible assets and conventional financing arrangements, whereas the rapid growth of the

digital economy has introduced various forms of digital assets with significant economic value. Therefore, future legislation should provide clear legal recognition and regulation of digital assets, including cryptocurrencies, digital intellectual property rights, non-fungible tokens (NFTs), and other emerging digital properties, as potential objects of security rights.

Second, regulatory authorities should continue improving electronic registration systems for security interests. The development of integrated digital platforms capable of facilitating registration, verification, monitoring, and enforcement processes would enhance legal certainty and administrative efficiency. Such systems should be supported by advanced technological infrastructure, reliable authentication mechanisms, and secure data management practices to minimize operational risks.

Third, stronger cybersecurity measures should be implemented to protect guarantee registration systems and digital financing platforms. Financial institutions, fintech companies, and government agencies should adopt comprehensive cybersecurity frameworks that include risk assessment, data encryption, multi-factor authentication, regular system audits, and incident response mechanisms. Strengthening cybersecurity is essential to maintaining public trust and safeguarding sensitive financial information.

Fourth, greater legal harmonization is needed between guarantee law, electronic transaction law, financial technology regulations, data protection legislation, and cybersecurity policies. The existence of overlapping or fragmented regulations may create uncertainty and hinder the effective implementation of digital financing systems. A coordinated regulatory approach would provide a more coherent legal framework for digital economic activities.

Fifth, policymakers should explore the potential application of emerging technologies such as blockchain and smart contracts within guarantee law administration. These technologies may enhance transparency, efficiency, and reliability in collateral registration and transaction monitoring. However, their implementation should be accompanied by clear legal standards concerning validity, enforceability, accountability, and dispute resolution mechanisms.

Sixth, financial institutions and fintech providers should strengthen their risk management systems by incorporating technological innovations into collateral assessment and monitoring processes. The use of artificial intelligence, big data analytics, and digital verification tools may improve the accuracy of credit assessments and reduce the risk of fraud and default.

Seventh, legal education and professional training programs should be expanded to improve the capacity of judges, lawyers, notaries, financial practitioners, regulators, and academics in understanding the legal implications of digital transformation. Continuous legal education is necessary to ensure that legal professionals remain capable of addressing increasingly complex technological developments.

Finally, further academic research should be encouraged to examine emerging issues related to digital assets, electronic collateral systems, blockchain-based financing, smart contracts, and cross-border digital transactions. Ongoing research will contribute to the development of adaptive legal policies and support evidence-based legal reform in the field of guarantee law.

Through the implementation of these recommendations, Indonesia can develop a more responsive, modern, and effective guarantee law system capable of supporting digital economic growth while maintaining legal certainty, creditor protection, and public confidence in digital financial transactions.

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