Constructing Exceptions to the Principle of Independence in Electronic Letters of Credit

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Abstract. The rise of electronic letters of credit has enhanced efficiency while challenging the traditional principle of independence due to issues like technical failures and the legitimacy of electronic records. This paper innovatively transcends the conventional "fraud exception" framework by systematically establishing two novel exception rules. First, it introduces the "Serious Technical Malfunction Exception," defining its elements as the severity, persistence, and transactional obstruction of the malfunction, coupled with the absence of gross negligence by the bank. It argues that in such cases, relief should be extended through deferred performance rather than absolute refusal of payment. Second, it establishes the "Manifestly Invalid Electronic Record Exception," emphasizing that when an electronic record is inherently invalid due to formal or substantive defects, the bank retains the right to refuse payment within the scope of its prima facie examination. To realize this institutional framework, this paper proposes specific pathways to refine the eUCP 2.0 rules: introducing a deferral mechanism for technical failures, refining standards for electronic record validity, and restructuring bank exemption clauses to shift risk allocation from "unilateral transfer" to "fair sharing." This research offers a solution for the electronic letter of credit rule system that combines theoretical innovation with practical value, effectively balancing the goals of efficiency and fairness in letter of credit transactions in the digital age.

Keywords: Electronic letter of credit, principle of Independence, exception construction, technical malfunction, invalid electronic record.

1. Introduction

In the digital era, letters of credit serve as a core tool for international trade settlement, with the principle of independence forming the cornerstone of their efficient operation. According to Article 4 of UCP600, the principle of independence means that a letter of credit is an independent transaction from any sales contract or other contract that may form the basis for its issuance. Even if the letter of credit contains any reference to such contracts, banks consider it unrelated to and not bound by those contracts. In other words, banks' document examination obligations are limited to formal review [1]. However, with the advancement of the digital era, traditional paper letters of credit are rapidly transitioning to electronic letters of credit [2]. While enhancing operational efficiency, electronic letters of credit also introduce a series of novel risks. Examples include technical fraud such as hacker attacks and system vulnerability exploitation, as well as technical failure risks like platform outages and network interruptions. Against this backdrop, the traditional exceptions to the principle of independence face significant challenges. For instance, the conventional exceptions struggle to address emerging issues like technical failures and the illegality of electronic records [3,4]. Although the ICC's eUCP 2.0 (Electronic Presentation Supplement to the Uniform Customs and Practice for Documentary Credits) provides a basic framework for electronic presentation, it still lacks provisions for liability exemptions under technical risks, leaving gaps in the regulatory system [5]. Therefore, this paper focuses on constructing exceptions to the principle of independence under electronic letters of credit. The core objective is to overcome the limitations of traditional fraud exceptions by establishing new exception rules, particularly supplementing the framework with exceptions for technical failures and invalid electronic records. This approach addresses the institutional demands for fairness and efficiency in the context of technological risks [5].

2. Literature Review

The principle of independence is the cornerstone of the letter of credit system, emphasizing that a letter of credit is independent of the underlying contract, and that banks assume payment obligations solely based on the apparent conformity of documents. However, the development of electronic letters of credit is challenging this principle and its traditional exceptions in multiple ways. Under the conventional letter of credit system, exceptions to the principle of independence are primarily manifested as the "fraud exception" [6,7]. Some scholars note the principle's pronounced "unidirectionality": while the letter of credit is independent of the underlying contract, the contract itself may be substantially affected by the terms of the letter of credit. Examples include suspension of payment obligations, alteration of contract content, or supplementation of contract terms [5]. Regarding fraud scenarios, scholars comparing U.S. and U.K. judicial practices have highlighted China's lack of uniform standards for fraud determination. They advocate adopting the "modified beneficiary fraud theory," emphasizing the necessity of proving the beneficiary's subjective intent. Even if documents are forged by a third party, fraud is established if the beneficiary knowingly submits false documents. Courts may then issue stop payment orders upon confirmation of fraud [3]. Other scholars propose, from a legislative improvement perspective, that the conditions for applying the fraud exception and judicial review standards should be clarified to prevent banks from abusing their right to refuse payment [8].

However, the rapid development of electronic letters of credit has challenged the traditional principle of independence and its exceptions. Scholars noted as early as the initial application of EDI (Electronic Data Interchange) technology that electronic presentation of documents rendered the "apparent compliance" principle difficult to apply. Computer-automated document review replaced manual judgment, and the legal validity of electronic documents was also questioned [2]. Entering the 21st century, the introduction of eUCP rules alongside technologies like blockchain and big data significantly enhanced operational efficiency for electronic letters of credit while introducing new risk types. Some scholars contend that while electronic letters of credit improve transaction transparency, the ambiguity of strict compliance principles and the rigor of bank document examination may paradoxically lead to rejections over minor discrepancies, potentially exacerbating credit crises [5]. eUCP 2.0 attempts to mitigate this issue through electronic document examination rules, but its practical effectiveness remains constrained by the rules' principle-based nature and variations in banking technology.

Further scholarly research has exposed structural flaws within electronic letters of credit. eUCP 2.0 exhibits a clear bias toward banks in risk allocation for technical failures, data corruption, and data breaches, leaving the presenting party to bear excessive uncertainty. The absence of "uniqueness" provisions for electronic bills of lading facilitates double sales or fraudulent claims of goods. Inconsistencies in the legal validity and evidentiary standards of electronic signatures undermine the judicial credibility of electronic documents [9]. From a security perspective, some scholars also point out that electronic letter of credit systems face technical risks such as hacker attacks and virus intrusions, necessitating reliance on technologies like electronic signatures and electronic authentication to ensure transaction security [5].

Addressing the issue of "invalid electronic data," some scholars argue from the perspectives of electronic signatures and electronic evidence that current legal recognition of electronic data still suffers from inconsistent standards and unreliability. Particularly in judicial practice, authenticity, integrity, and relevance of electronic evidence are frequently questioned [5]. On the other hand, academic discussions remain insufficient regarding whether "technical failures" should constitute exceptions. However, some scholars argue that eUCP 2.0's near-total shifting of technical risks to the presenting party is manifestly unfair. They recommend introducing exemption or extension mechanisms for the presenting party in cases of system failures or data corruption [9].

In summary, existing research has conducted in-depth explorations from perspectives including the theoretical foundations of traditional fraud exceptions, the impact of digitization on the letter of credit system, and the legal allocation of technical risks. It is widely acknowledged that while

electronic letters of credit enhance efficiency, they also introduce new uncertainties, necessitating the expansion and reconstruction of the exception framework for the independence principle. However, existing research primarily focuses on describing technical risks and critiquing rules, lacking operational theoretical support and institutional design for systematically constructing new exceptions under electronic letters of credit. Therefore, this study proposes that beyond the traditional "fraud exception," new exceptions centered on invalid electronic data and technical failures should be established. This can be achieved by improving the legal framework for electronic signatures, clarifying the "uniqueness" rule for electronic bills of lading, and refining the allocation of rights and obligations between banks and document presenters in the eUCP. Such measures will enhance the legal system's capacity to address technological risks while safeguarding transaction efficiency, thereby promoting the healthy and sustainable development of electronic letters of credit.

3. The Development of Letters of Credit and the Determination of New Exceptions to the Principle of Independence

3.1. Evolution of Electronic Letters of Credit and Legal Regulations

The digital era is propelling letters of credit through profound evolution—from "document electronicization" to "systematic electronic presentation," and now toward "blockchain letters of credit" [2, 10]. Electronic presentation systems like Bolero and ESS, alongside emerging blockchain-based letter of credit platforms, have significantly enhanced transaction efficiency and transparency [4, 11].

Correspondingly, the legal framework and governing law systems for electronic letters of credit are also evolving. The UCP 600 established by the International Chamber of Commerce serves as the widely followed commercial practice, while its supplementary rules specifically for electronic presentation, eUCP 2.0, provide a fundamental framework for electronic document examination [12]. At the domestic legal level, China's Electronic Signature Law, E-Commerce Law, and relevant judicial interpretations from the Supreme People's Court collectively form the foundation for recognizing the legal validity of electronic records.

However, the existing regulatory framework—particularly the core eUCP 2.0—exhibits limitations when confronting technology-driven risks, including an overemphasis on principles, insufficient operational feasibility, and imbalanced allocation of rights and obligations [5.9]. For instance, Article e13(b) of eUCP 2.0 nearly entirely exempts banks from liability arising from failures in data processing systems outside their control, disproportionately shifting risks to the party presenting documents [13]. This lag in institutional provision has created an urgent need to reconstruct exceptions to the independence principle.

3.2. Determining New Exceptions to the Principle of Independence under Electronic Letters of Credit

The operation of electronic letters of credit relies heavily on a stable technological environment and valid electronic records. When these elements change due to reasons beyond the parties' control, adhering to the traditional principle of independence would violate the principles of fairness and good faith. Therefore, it is necessary to establish new exceptions beyond the traditional "fraud exception."

3.2.1. New exception 1: serious technical malfunctiong

This paper defines "Severe Technical Malfunction" as a persistent technical obstacle affecting the core functionality of an electronic letter of credit, arising from causes beyond the fault of either the bank or the presenting party and unable to be promptly resolved. Such malfunctions may stem from systemic outages of the technical platform itself, regional network disruptions, or catastrophic events.

"Severe technical failure" must satisfy four essential elements. First, the failure must be both severe and persistent. Transient, quickly resolvable technical fluctuations should not qualify as exceptions; the failure must substantially impede the ongoing transaction process. Second, the failure

must render effective presentation, examination, or payment operations impossible. Examples include a bank system crash preventing receipt or review of electronic records, or a payment gateway failure obstructing fund transfers. Third, the bank must not have acted with negligence or gross negligence. The bank must have exercised due diligence, including selecting reliable technical service providers and implementing reasonable system maintenance and security measures. If the bank demonstrates gross negligence in selecting or managing its technical platform, it cannot invoke this exception. Finally, the relevant parties bear a duty to promptly notify counterparties of the failure, its estimated impact, and mitigation measures to minimize losses.

In such circumstances, granting banks absolute refusal rights may be overly stringent and undermine the payment guarantee function of letters of credit. A more balanced legal outcome would be for banks to have the right to suspend processing of the relevant transaction while extending the presentation period or the validity period of the letter of credit accordingly. If the failure persists and renders the bank completely unable to determine the apparent conformity of documents, or exposes the transaction to uncontrollable risks, consideration may be given to exempting or limiting the bank's payment liability under certain conditions. However, this does not constitute a new, independent right to refuse payment, but rather a remedy and adjustment of liability arising from uncontrollable technical factors that render performance impossible.

3.2.2. New exception 2: manifestly invalid or illegal electronic records

This paper defines "electronic records that are manifestly invalid or illegal" as those that are inherently devoid of legal effect or unenforceable due to inherent technical defects or non-compliance with mandatory legal provisions. Examples include electronic signatures deemed invalid for failing to meet the standards for reliable electronic signatures under the Electronic Signature Law; or electronic bills of lading lacking the legally required "uniqueness" control mechanism, thereby failing to function as instruments of title [14].

"Manifestly invalid or illegal electronic records" must satisfy the following three elements. First, the invalidity or illegality must be "manifest," meaning it can be detected within the reasonable scope of a bank's superficial review without requiring in-depth investigation or reliance on external evidence. This aligns with the bank's role in document examination. Examples include format errors, inability to open the record, or absence of legally mandated essential elements. Second, this invalidity or illegality must not result from the bank's operational error. If the bank damages the data during receipt or processing, liability rests with the bank. Third, the determination of invalidity or illegality must comply with relevant legal provisions, specifically invoking specific clauses from the Electronic Signature Law, eUCP rules, or other applicable laws as the basis for judgment.

For electronic records that are clearly invalid or illegal, they inherently fail to meet the fundamental documentary requirements of a letter of credit. In such cases, banks have the right to refuse payment or negotiation. This essentially represents the logical extension of the "surface compliance" principle into the electronic environment. A legally invalid record does not constitute a "compliant" presentation of documents. This is legally equivalent to handling forged or materially fraudulent paper documents, as both involve fundamental defects in the documents themselves that invalidate the bank's payment obligation.

4. Implementation Pathways and Institutional Safeguards for New Exception Rules under Electronic Letters of Credit

4.1. Refining eUCP 2.0 Rules

First, incorporate "serious technical failure" as a statutory ground for extension. Current eUCP 2.0 lacks systematic remedies for technical failures; Article e7(b) even treats unreadable external systems as direct non-conformities, effectively shifting all technical risks beyond the presenter's control onto them—a severe breach of fairness. Therefore, eUCP 2.0 should first introduce provisions explicitly stipulating that when persistent technical failures affecting core functions occur through no fault of

the presenting party, the presentation period and the validity period of the letter of credit shall automatically suspend. This does not negate the principle of independence but, grounded in equitable legal reasoning, provides a neutral "pause" mechanism to restore fairness when objective technical obstacles cause an instantaneous imbalance in the rights and obligations of the parties. From a societal perspective, this measure prevents entire transactions from failing due to isolated technical issues, safeguards the stability of trade relationships, and encourages market participants to adopt electronic transaction methods more actively, thereby enhancing the overall efficiency of international trade flows.

Second, refine the rules for determining and handling "invalid electronic records." eUCP 2.0 lacks clear criteria for what constitutes a "superficially valid" electronic record, granting banks excessive discretion in practice and fostering disputes. Rules should be further detailed, authorizing banks to request replacement or clarification from the presenter upon discovering obvious invalidity during superficial review, with the right to refuse payment if rectification is impossible. This refinement is crucial for guiding and standardizing good faith conduct among all parties. Presenters bear the obligation to submit compliant, valid records. Banks must base their judgments on objective, transparent technical standards rather than subjective discretion. Constraining both parties through clear rules embodies the procedural manifestation of the good faith principle. Its positive societal impact lies in reducing disputes while enhancing the predictability and credibility of electronic letter of credit transactions.

Finally, bank exemption clauses must be restructured to balance rights and obligations. Article e13(a) and (b) of eUCP 2.0 grant banks overly broad exemptions, particularly regarding external system failures and data processing, which nearly absolve banks of liability and create a significant imbalance of rights and obligations [15]. Revisions should adhere to fairness principles by interpreting bank exemption clauses restrictively. For banks to invoke exemptions, they must have exercised reasonable care commensurate with their professional institutional status—including prudent selection of technical partners, implementation of industry-standard security measures, and establishment of robust system monitoring and contingency plans. Banks exhibiting gross negligence in managing technical platforms shall forfeit exemption rights. This restructuring aims to shift the risk allocation model from "risk transfer" to "risk sharing." Its positive social impact lies in incentivizing banks, as the stronger party, to proactively enhance system security and stability. This fundamentally reduces the technological risks faced by the entire industry and promotes the healthy development of the electronic letter of credit ecosystem.

4.2. Defining Parties' Duties of Care and Liability Boundaries

The introduction of new exception rules does not create privileges for any party but rather establishes a fairer and more equitable framework of rights and responsibilities.

Banks' obligations stem not only from contracts but also from their social responsibility as professional institutions and dominant players. Requiring banks to prudently select and manage technology platforms while promptly notifying of failures embodies the principle of good faith in the digital context. Banks cannot merely reap the efficiency dividends of digitization while evading their fundamental duty as service providers to ensure security. Holding them liable for gross negligence in selecting third-party platforms reduces systemic risks at their source. The societal impact lies in advancing the optimization and upgrading of financial service infrastructure, thereby protecting a broader range of trade participants.

Beneficiaries' obligations are equally bound by the principle of good faith. They must ensure the authenticity and legitimacy of electronic records, which is both a responsibility to counterparties and the cornerstone of maintaining the credibility of the letter of credit chain. The new rules grant beneficiaries rights to remedies while simultaneously reinforcing their responsibilities, creating a balanced closed-loop of rights and obligations.

Clarifying the liability of technology platforms transforms intangible technological risks into tangible legal responsibilities. This fosters a positive market selection mechanism, enabling secure

and stable platforms to stand out, thereby enhancing overall transaction security and optimizing the business environment.

5. Conclusion

Addressing the challenges posed by electronic letters of credit to traditional independence principles and their "fraud exceptions," this paper synthesizes new risks under electronic letters of credit through literature review. It creatively proposes two novel exceptions: the severe technical failure exception and the manifestly invalid or illegal electronic record exception. The study's value lies in uncovering latent risks within eUCP 2.0 and offering resolution pathways, thereby providing new proposals for refining institutional rules. Practically, this paper constructs new exception rules to mitigate international trade payment issues in the digital age. It also addresses the imbalance of rights and responsibilities between presenters and banks during letter of credit presentation and examination. Due to space constraints, the paper does not delve into other potential exceptions, such as: whether banks have the right to take protective measures when letter of credit information is illegally exploited due to data breaches, jeopardizing transaction security; whether banks should bear liability when third-party platforms commit gross negligence or fraud, coupled with significant bank misconduct in selecting and supervising such platforms. Consequently, both academia and practitioners should further explore topics like data security vulnerabilities and third-party service provider liability, providing additional theoretical foundations and institutional recommendations for systematically refining the electronic letter of credit framework.

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