

The Conceptual and Legal Framework of E-Commerce in Algeria: An Analytical Perspective from Accounting and Auditing

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Abstract: The study aims to provide an analytical reading of the four-part legislative framework (18-05, 15-03, 15-04, 23-09) governing e-commerce, electronic signatures, and the digital dinar in Algeria, and its impact on accounting and auditing practices. The paper seeks to clarify how the legislator regulates revenue recognition and grants evidentiary value to digital evidence as secure alternatives to traditional documents and currencies, thereby ensuring the reliability of financial statements in the emerging digital environment.

The study concludes that the integration of these four laws has established the foundations of accounting discipline by providing a transparent audit trail that reduces the risks of financial manipulation. The results also indicate that the Algerian legislator has granted electronic signatures and the digital dinar definitive evidentiary power equivalent to paper-based forms, which requires professionals to shift toward "systems auditing" in order to keep pace with new monetary and sovereignty transformations.

Keywords: E-commerce; Law 18-05, Digital Dinar, Electronic Signature, Systems Auditing.

JEL Codes: D80;O30; E42.

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Introduction:

The Algerian economy is experiencing a rapid digital transformation aimed at modernizing financial and commercial transactions. This is reflected in the establishment of a modern legal framework, beginning with Law 18-05 on e-commerce and culminating in Law 23-09, which introduced the digital dinar as a sovereign monetary transformation. This shift from a traditional to a digital environment is no longer merely a change in technical tools; rather, it imposes fundamental challenges on accounting and auditing practices, as legal texts have become the primary determinant of how revenue is recognized and digital evidence is regulated.

Accordingly, there is an urgent need to conduct an analytical assessment of the extent to which the Algerian legislative framework responds to the requirements of transparency and reliability in financial statements, particularly in light of the adoption of electronic signatures and modern payment mechanisms. Today, accountants and auditors face a reality that requires deconstructing the relationship between "legal text" and "professional impact" in order to ensure the protection of organizational assets and to mitigate the risks of financial fraud in a virtual environment characterized by complexity and rapid transaction flows.

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Research Problem: Based on the above, the following research question can be formulated:

How have the legislative texts governing e-commerce and electronic signatures (18-05, 15-04), along with the Monetary and Banking Law (23-09), contributed to establishing the foundations of accounting discipline and providing a reliable digital evidentiary environment for the auditing process?

Sub-Questions:

- What is the conceptual framework of e-commerce, and what are the digital and sovereign payment mechanisms adopted in Algerian legislation?
- How do the provisions of Law 18-05 and the laws governing electronic signatures contribute to regulating the documentary cycle and the accounting recognition of revenue?
- What are the implications of the penalty system and monetary control mechanisms (Law 23-09) on the assessment of audit risks and the continuity of the entity?

Study Hypotheses:

- The Algerian legal framework (particularly the digital dinar) provides a technical and sovereign structure that ensures the reliability of official payment channels.
- The provisions of Laws 18-05 and 15-04 establish a digital evidentiary system with legal authority equivalent to paper-based documents in accounting practice.
- The integration of the legal framework contributes to reducing the auditor's trust gap by providing a transparent "audit trail" that limits the risks of financial manipulation.

Study Objectives:

- To demonstrate the direct impact of recent legal texts on accounting recording procedures in digital enterprises.
- To highlight the role of electronic signatures and the digital dinar in strengthening the evidentiary support available to external auditors.
- To provide an analytical perspective that helps professionals (accountants and auditors) comply with new legislative requirements.

Study Methodology:

The study adopts a descriptive-analytical approach by first reviewing the concepts related to e-commerce, then proceeding to a qualitative analysis of the provisions of the laws (18-05, 15-03, 15-04, 23-09) and applying them to the professional context of accounting and auditing. This approach aims to derive the implications and outcomes resulting from this legislative interconnection.

First: The Conceptual Framework of E-Commerce and Digital Payment Mechanisms

1. The Nature of E-Commerce:

Definition of E-Commerce:

- According to the Organisation for Economic Co-operation and Development (OECD), the term e-commerce generally refers to: "All forms of transactions related to commercial activities that bring together individuals and enterprises, relying on the electronic processing and transmission of data, particularly texts, images, and sounds. It also refers to the impacts that the electronic exchange of commercial information can have on enterprises and on procedures that facilitate business activities, such as enterprise management, commercial negotiations and contracts, as well as legal and regulatory frameworks and settlements related to payments and taxation." (Maroumia, 2022, pp. 957-958)

- The World Trade Organization (WTO) defines e-commerce as: "Any process involving the purchase of goods or services conducted via internet networks using a computer, through methods specifically designed to receive and place orders, for the purpose of ordering goods or services electronically." (harma, maatallah, & telli, 2024, p. 95)

The European Union defines e-commerce as: "Activities carried out by electronic means, whether conducted between commercial enterprises, individually, or between them and public administrations." (serarma, 2022, p. 42)

- The Algerian legislator defines it in Article 6 of Law 18-05 as: "An activity whereby an electronic supplier offers or ensures the provision of goods and services remotely to an electronic consumer, through electronic communications." (Ministry of Finance, 2018, p. 05)

Characteristics of E-Commerce:

E-commerce is distinguished by several features that set it apart from traditional commerce, including: (yama, 2019, p. 04)

- **Personal targeting:** E-commerce targets specific individuals through customized online advertising by filtering user information related to the product, such as age, gender, and professional background.
- **Wide reach:** Since e-commerce does not require a physical marketplace in the traditional sense, users can access it anytime and anywhere using a computer. With a simple click on a website, they can browse products and complete purchases easily.
- **Ease of communication:** E-commerce provides a highly effective global communication mechanism as it enables two-way interaction between customers and merchants. For example, while television advertising does not allow direct customer feedback, e-commerce platforms make such interaction possible and immediate.

2. Electronic Payment Mechanisms:

Electronic payment mechanisms are defined, according to Article 6 of Law 18-05, as: "Any payment instrument authorized in accordance with the applicable legislation, which enables its holder to make payments either in proximity or remotely, through an electronic system." (Ministry of Finance, 2018, p. 05)

There are several forms of electronic payment mechanisms, the most important of which are:

- **Non-credit cards:** These are cards that do not provide access to credit, and they include: (Bourahla & Qadouri, 2019, p. 83)
- **Prepaid cards:** A payment and cash withdrawal instrument issued by a commercial bank or financial institution. It allows the holder to make purchases on the issuer's account and obtain cash as a loan from the issuer or others under its guarantee, as well as access certain services. The prepaid card is based on the idea that the user deposits a specific amount into the card account, and each purchase made using the card is deducted from the available balance.
- **Debit card:** This type of card requires the existence of a current bank account for the cardholder. It enables settlement or payment by allowing the beneficiary to withdraw funds directly from the cardholder's account, which is assumed to be debited.
- **Charge card:** A card issued by banks or other legally authorized entities, used by the holder to deduct amounts directly from their current account to pay for purchases or rentals.
- **Credit cards:** Credit cards emerged as a result of the evolution of money. They are plastic and magnetic cards issued by banks to their customers instead of carrying cash. They bear the

name and logo of the issuing institution, the holder's signature, and prominently display the card number, holder's name, account number, and expiration date. The main types include: (Bourahla & Qadouri, 2019, pp. 83-84)

- **Visa Card:** Issued by Visa International, this card is renewable, and the holder can settle all obligations within the grace period.
- **MasterCard:** The second most widespread card after Visa, accepted by many commercial institutions and merchants. It includes several types such as Gold MasterCard, Silver MasterCard, etc.

Other forms include: (kerdouci & brahmia, 2023, pp. 649-650)

- **Electronic commercial papers:** These are electronically processed documents, fully or partially, representing a monetary claim. They are negotiable instruments payable on demand or after a short term and serve as a substitute for cash settlement. They include electronic promissory notes, electronic bills of exchange, and electronic cheques.
- **Bank cards:** Also known as electronic payment cards, plastic money, credit cards, debit cards, or payment cards. They are magnetic cards issued by banks or authorized financial institutions, allowing users to pay for goods and services via electronic payment terminals, online platforms, or withdraw cash from ATMs.
- **Smart cards:** These are plastic cards embedded with an electronic chip containing the holder's financial and personal data. They allow payments at compatible points of sale, with the transaction amount deducted until the balance is fully exhausted. They can be recharged within limits set by the bank according to the card type.
- **Electronic money:** A set of protocols and digital signatures that allow electronic messages to replace traditional currency, or a monetary value stored on an electronic device in the form of credit units held by the consumer.
- **Contactless payment methods:** These include: (Sahraoui & Laaraf, 2020, pp. 113-114)
 - **Contactless payment cards:** An advanced form of traditional cards that allow transactions by simply bringing the card near a payment terminal without inserting it or entering a PIN (for amounts within the set limit). The transaction is completed instantly upon visual or audio confirmation.
 - **Smartphone contactless payments:** A technology based on Near Field Communication (NFC), where the phone replaces the bank card and payment is made by bringing the device close to the terminal. It also includes payments via mobile wallet applications using QR code scanning for direct transfer completion.
 - **Contactless wristband payments:** One of the latest electronic payment tools, it is a wearable wristband that allows users to pay by simply scanning it remotely via a payment device without physical contact. It is waterproof, fast, and eliminates the need for a wallet, and it can be recharged through mobile applications or bank branches.

3. The Algerian Digital Dinar as a Sovereign Digital Transformation:

The Algerian digital dinar represents the state's strategic orientation toward the comprehensive digitization of the banking system. Article 02 of Law 23-09 (Monetary and Banking Law) stipulates that it shall have "legal tender status and unlimited discharge power," while being recognized as an official means of payment subject to strict management and control rules by the Bank of Algeria. The main models and projects for implementing this digital

transformation—considered final yet continuously adaptable—are as follows: (guessouri & abba, 2024, p. 162)

- **First project model:** Issued exclusively by the Bank of Algeria, with all transactions recorded using Blockchain technology controlled by the central bank, which manages the platform, databases, and digital currency supply oversight.
- **Second project model:** Involves financial institutions holding digital dinar accounts with the Bank of Algeria. Three major commercial banks were selected (Banque Nationale d'Algérie BNA, Banque Extérieure d'Algérie BEA, and Crédit Populaire d'Algérie CPA), in addition to Algérie Poste, to provide digital wallets for end users and technical infrastructure. It also includes the development of a digital "Know Your Customer" (KYC) system to ensure data security.

- **Final level (individuals):** Individuals can obtain digital wallets via their smartphones and technological devices through authorized intermediaries (even without necessarily holding a traditional bank account). They submit "physical cash" to banking institutions, which is converted into "digital currency" used for remote or direct payments via QR code technology.

Second: Qualitative Analysis of the Legal Framework of E-Commerce in Algeria from an Accounting and Auditing Perspective

The digital legal framework in Algeria is an integrated system, starting with Law 18-05, which regulates accounting and control processing, supported by Law 15-03, which establishes the technical rules for evidence and the protection of financial data. It further extends to Law 15-04, which grants evidentiary value to electronic signatures as a substitute for paper-based documents before auditors, and finally Law 23-09, which introduces the "digital dinar" as a sovereign monetary asset. Together, these laws form a coherent legislative framework that ensures the reliability of financial statements and activates proactive control mechanisms in the digital environment. This can be demonstrated through the following detailed analysis points:

✓ Control of Cross-Border Financial Flows:

Article 07 of Law 18-05 is considered the cornerstone of foreign exchange control. From an accounting and auditing perspective, the following can be observed: (Ministry of Finance, 2018, p. 06) adapted

- **Bank domiciliation as an evidentiary tool:** The obligation to transfer revenues to the supplier's "domiciled account in Algeria" provides the auditor with conclusive evidence of revenue recognition.
- **Accounting treatment of exchange differences:** The exemption from foreign exchange control procedures within certain limits requires the accountant to maintain high precision in recording transactions in Algerian dinars, while monitoring foreign currency fluctuations in accordance with the Financial Accounting System (SCF).

✓ Reliability of the Digital Entity and Internal Control:

Articles 08 and 09 impose a strict system for identifying the electronic trader: (Ministry of Finance, 2018, p. 06) adapted

- **National registry as audit reference:** The supplier's registration in the National Database of the National Centre of the Commercial Register (CNRC) serves as external confirmation used by auditors to verify that the supplier is not a fictitious entity.

- **Local hosting (.dz):** Enhances the ability of regulatory authorities to trace accounting data and store it locally, facilitating information systems auditing.

✓ **Transparency of Invoicing and Legal Validity of the Electronic Contract:**

Articles 11, 12, and 13 are closely linked to the daily work of accountants: (Ministry of Finance, 2018, pp. 06-07) adapted

- **Commercial offer as a "purchase order document":** Article 11 defines mandatory data (tax number, price, taxes), which are compulsory elements in accounting invoices. The analysis shows that the law aims to harmonize concepts between commercial law and tax law.
- **Three-stage confirmation process (Article 12):** From an internal audit perspective, these stages represent an electronic documentary cycle that prevents premature revenue recognition before explicit order confirmation, thereby reducing errors in financial statements.
- **Cancellation and withdrawal conditions (Article 13):** Accounting-wise, this affects the estimation of provisions and sales returns, providing a clear legal framework for adjusting accounting entries when consumers withdraw from purchases.

✓ **Accounting and Control Treatment of Pre-Orders:**

Article 15 is a key provision for accountants and auditors, as it regulates cash flow and its relationship with inventory: (Ministry of Finance, 2018, p. 07) adapted

- **Prohibition of payment before stock availability:** Legally, payment cannot be received unless the product is available. Accounting-wise, this prevents recording "customer advances" without corresponding inventory assets, facilitating inventory–sales reconciliation.
- **Mandatory refund:** In case payment is received and the product is unavailable, the supplier is obliged to refund the amount. This requires the accountant to accurately recognize refund provisions or short-term receivables to ensure faithful financial reporting.

✓ **Documentation of Delivery and Evidentiary Value of the "Receipt":**

Article 17 represents a key link in the audit trail: (Ministry of Finance, 2018, p. 07) adapted

- **Receipt as evidence:** The "delivery receipt" referred to in the article serves as the legal and accounting document confirming the transfer of ownership and risk from supplier to consumer.
- **Revenue recognition:** Accountants and auditors cannot finally recognize revenue (Revenue Recognition) without this signed receipt, in accordance with the revenue recognition principle under the Financial Accounting System (SCF).

✓ **Legal Liability and Its Impact on Accounting Estimates:**

Articles 14, 18, and 19 affect contingent liabilities: (Ministry of Finance, 2018, p. 07) adapted

- **Contract cancellation and compensation (Article 14):** Grants consumers the right to compensation in case of breach. Accounting-wise, entities must estimate potential liabilities arising from legal disputes.
- **Statutory liability (Article 18):** The supplier remains responsible for fulfilling obligations even when third parties (such as delivery companies) are involved. Auditors must verify the existence of service level agreements (SLAs) to ensure asset protection.
- **Electronic copy submission (Article 19):** Ensures the availability of a digital archive of transactions. From an auditing perspective, this facilitates remote auditing and verification of consistency between contracts and accounting records.

✓ **Invoices and Documentary Flows:**

Articles 20, 21, and 25 set key controls for accountants: (Ministry of Finance, 2018, p. 08) adapted

- **Mandatory invoicing (Article 20):** Every e-commerce transaction must be accompanied by an invoice in accordance with applicable tax law and the SCF, confirming that digital transactions are equivalent to traditional ones in accounting terms.
- **Unsolicited sales (Article 21):** This is a strong control provision; suppliers cannot claim payment for unsolicited goods. Accounting-wise, it prevents fictitious revenues or doubtful receivables arising from unordered deliveries.
- **Record retention and submission (Article 25):** Mandatory electronic submission of records to the National Centre of the Commercial Register (CNRC) provides a reference database for auditors and tax authorities to verify declared turnover against digital records.

✓ **Returns Management and Inventory Control:**

Articles 22, 23, and 24 directly affect financial statement accuracy: (Ministry of Finance, 2018) adapted

- **Returns management:** The defined return period of 4 days and refund period of 15 days requires accurate accounting treatment of sales returns and their impact on cash and inventory accounts.
- **Prohibition of orders for unavailable products (Article 24):** A strong internal control measure that prevents "pending sales" and ensures full consistency between sales records and physical inventory.

✓ **Electronic Payment System and Banking Control:**

This is one of the most modern and impactful areas for digital auditing: (Ministry of Finance, 2018, p. 08) adapted

- **Exclusive use of authorized payment platforms (Article 27):** Restricting payments to authorized banks and Algérie Poste facilitates bank reconciliation and ensures transparent financial flows outside the informal economy.
- **Information security and certification (Article 28):** Mandatory electronic certification ensures data integrity and increases auditor confidence in financial records.
- **Central Bank supervision (Article 29):** Oversight by the Bank of Algeria reduces operational risk and supports auditors in assessing information system risks.

✓ **Online Advertising Controls and Data Protection:**

Articles 30 and 34 impose additional obligations affecting corporate transparency and compliance: (Ministry of Finance, 2018, p. 09) adapted

- **Transparency in promotional offers (Article 30):** Mandatory disclosure of discounts and gifts prevents financial misrepresentation. Auditors must ensure that discounts are properly reflected in accounting records and financial statements.
- **Right to objection and privacy (Articles 31–32):** Requires a technical internal control system allowing users to opt out of advertising within 24 hours; failure creates legal and financial risks.
- **Burden of proof (Article 33):** The supplier bears the burden of proving customer consent, requiring well-maintained technical logs as audit evidence.

✓ Regulation, Inspection, and Sanctions System:

This is the most sensitive area in risk assessment: (Ministry of Finance, 2018, p. 09) adapted

- **Multiple regulatory authorities (Article 36):** Requires secure and tamper-proof electronic archiving systems accessible to regulatory authorities.
- **Legal and financial risks (Articles 37–38):** Heavy penalties and potential business closure represent going concern risks. Auditors must evaluate compliance due to the potential termination of the entity.

✓ Accounting Impact of Sanctions and Settlement Fines:

Articles 39–49 are critical for assessing financial risks and liabilities: (Ministry of Finance, 2018, p. 10) adapted

- **Suspension of payment platforms (Article 39):** Not only a financial penalty but also an operational risk that halts cash flows and threatens going concern status.
- **Settlement fines and reduction mechanism (Articles 45–47):** Represent financial settlements recorded as extraordinary expenses.
- **Strict deadlines (Article 48):** Require immediate liquidity and strong administrative readiness to avoid escalation of penalties.
- **Domain name suspension (Articles 42–43):** Leads to loss of digital presence and impairment of intangible assets and digital goodwill.
- **Transitional period and compliance (Article 49):** The 6-month compliance period served as a test of firms' ability to adapt their accounting and IT systems to e-invoicing and electronic payment requirements.

Based on the advanced qualitative analysis of Law 18-05 provisions, the following matrix (Table 1) illustrates the mapping of these legislative texts onto the Financial Accounting System (SCF) and their direct impact on structuring internal controls:

Table 1: Mapping Law 18-05 Provisions to the Financial Accounting System (SCF) and Internal Control

Article	Legal and Control Mandate	Accounting Adaptation (SCF)	Audit and Verification Perspective
Art. 07	Mandatory bank domiciliation in Algeria for foreign trade revenues.	Accurate recording of foreign exchange differences and currency fluctuations under SCF.	Domiciliation acts as a definitive external confirmation to verify revenue legitimacy.
Art. 08-09	Mandatory registration in the National Database (CNRC) and local hosting (.dz).	Full disclosure of the entity's digital identity and legal framework in the financial notes.	Reference for auditors to eliminate fictitious entities; facilitates local IT systems auditing.

Art. 11	Defining mandatory commercial offer data (Tax ID, prices, duties).	Harmonizing commercial offer specifications with tax-compliant invoice requirements.	Ensures conceptual alignment between commercial law and tax regulatory frameworks.
Art. 12	Three-stage electronic confirmation process for order completion.	Prevents premature or speculative revenue recognition prior to explicit customer consent.	Acts as an electronic documentary cycle that minimizes material misstatements in financial statements.
Art. 13	Regulating electronic consumer cancellation and withdrawal rights.	Direct impact on estimating sales returns and forming appropriate financial provisions.	Provides an objective framework for auditors to evaluate reversing accounting entries.
Art. 15	Prohibition of payment collection prior to verifying stock availability.	Restricts recording customer advances as recognized revenue without matching inventory assets.	Enables auditors to perform precise periodic reconciliations between inventory and sales logs.
Art. 17	Mandatory delivery receipt to confirm the fulfillment of the transaction.	The definitive milestone for finalized Revenue Recognition under SCF principles.	Auditors restrict revenue recognition unless supported by a digitally signed delivery receipt.
Art. 14, 18, 19	Statutory liability, legal compensations, and digital archiving.	Estimating contingent liabilities and provisions for legal disputes or third-party breaches.	Verification of Service Level Agreements (SLAs) and facilitating remote auditing via digital archives.
Art. 20, 21, 25	Compulsory invoicing, prohibition of unsolicited sales, and record retention.	Generating compliant invoices; eliminating fictitious revenues or doubtful debts from unordered goods.	Cross-checking declared turnover with digital records transmitted to the National Registry (CNRC).

Art. 22-24	4-day return window and prohibition of orders for unavailable inventory.	Precise tracking of cash and inventory accounts based on the mandated 15-day refund window.	Eliminates "pending sales" distortion, ensuring absolute alignment between sales and physical stock.
Art. 27-29	Exclusive authorized payment platforms and Bank of Algeria oversight.	Streamlining bank reconciliation and ensuring cash flows remain within formal economic channels.	Grants auditors high confidence in financial data integrity; significantly reduces operational risk.
Art. 37-49	Strict penal system, settlement fines, and domain name suspensions.	Recording settlement fines as extraordinary expenses; recognizing asset impairment for digital goodwill.	Critical evaluation of the Going Concern assumption due to business closure risks and tight deadlines.

Source: Prepared by the researcher, based on the above-mentioned context

The Algerian legislator did not limit itself to regulating e-commerce only, but also reinforced it with judicial evidentiary mechanisms through Law 15-03. Article 10 of this law establishes strict technical standards (confidentiality, integrity, and data preservation) that ensure, for accountants and auditors, that the electronic document has the same legal evidentiary value as the original paper document. Article 11 further considers the electronic acknowledgment of receipt as an official seal, thereby regulating the timing of financial transactions in accounting and preventing manipulation of dates, which enhances the reliability of financial statements in the digital environment. (Ministère des Finances, 2015, p. 05) adapted Moreover, the e-commerce system is not complete without a deterrent framework ensuring the protection of financial data. This is enshrined in Law 15-03, where Articles 17 and 18 impose strict penalties ranging from one to five years of imprisonment for anyone who manipulates electronic signature components or uses revoked certificates. From an auditing perspective, these provisions require companies to implement access control mechanisms to protect the digital signatures of financial officers. (Ministère des Finances, 2015, p. 06) adapted

As an extension of the technical framework safeguarding data integrity, the following matrix (Table 2) translates the direct impact of Law 15-03 provisions on electronic record safety and strict accounting cut-off periods:

Table 2: Implications of Law 15-03 on Data Integrity and Accounting Cut-off

Article	Legislative and Penal Mandate	Impact on Accounting Practice	Audit and Control Evaluation
Art. 10	Enforcing strict technical standards (confidentiality, integrity, preservation) for e-documents.	Guarantees that electronic journal entries and subsidiary ledgers remain unaltered post-recording.	Equates e-documents with paper; mandates auditors to test cybersecurity and financial software controls.
Art. 11	Recognizing electronic acknowledgment of receipt as an official sovereign seal.	Regulates precise accounting cut-off periods, preventing arbitrary revenue shifting across fiscal years.	Provides objective, tamper-proof audit evidence against retroactive document backdating.
Art. 17-18	Heavy penalties (1-5 years imprisonment) for signature tampering or using revoked certificates.	Disclosing potential legal liabilities or identity fraud exposures within the financial notes.	Forces internal control systems to implement strict logical access controls over financial officers' digital keys.

Source: Prepared by the researcher, based on the above-mentioned context

Accordingly, Law 15-04 established the general legal framework for electronic signatures, drawing on references from Public Accounting Law 90-21 and the Commercial Code. This framework removes the traditional restriction on paper documents and allows auditors to rely on “digital evidence” in examining financial statements, provided that the validity and non-expiration of electronic certificates are properly verified in accordance with modern auditing standards.

✓ **Technical Reliability of Electronic Certificates and Their Impact on Audit Quality:**

Based on Article 2 of Law 15-04, electronic signatures are no longer merely a technical procedure; they have become an integrated system for managing digital identity within the organization. The use of "private cryptographic keys" (Article 2, paragraph 8) grants accounting documents the attribute of "non-repudiation", meaning that the signatory cannot deny the financial commitment recorded digitally.

From an auditing perspective, the "electronic certification certificate" (Article 2, paragraph 7), issued by a "trusted third party", provides auditors with an objective means of verifying the identity of parties. This helps reduce audit risk associated with manual document verification and ensures the integrity of financial statements against digital manipulation. (Ministry of Finance, 2015, p. 07) adapted

Reliability Standards in Digital Archiving and Auditing:

The digital accounting environment poses significant challenges related to document integrity, which the Algerian legislator addressed through: (Ministry of Finance, 2015, p. 08) adapted

- Article 4, which requires electronic documents to be preserved in their “original form,” placing responsibility on auditors to verify the quality of digital archiving systems.
- Article 8, which is a cornerstone of modern accounting practice, emphasizing the “qualified electronic signature” as the sole equivalent of a handwritten signature.
- Article 11, which provides technical safeguards (such as anti-tampering and data protection measures), offering auditors reasonable assurance regarding data integrity.

From a control perspective, the auditor’s role shifts from traditional paper-based verification to systems-based auditing, focusing on compliance with legal and technical requirements governing digital signatures and authentication mechanisms.

✓ **Control of Financial Authority Through Certification Certificates:**

Article 15 of Law 15-04 represents a key pillar in digital financial governance, as it allows the inclusion of the "signatory’s capacity" and “transaction value limits” within the electronic certification certificate. From an auditing standpoint, this represents a shift from ex-post documentary control to "ex-ante automated control".

By programming spending limits into the financial officer’s electronic certificate, an automated internal control system is activated, preventing unauthorized financial transactions. Furthermore, the establishment of the "National Authority for Electronic Certification" under Article 16 provides a secure environment that allows auditors to rely on these certificates as conclusive audit evidence, thereby enhancing the quality of financial disclosure and the credibility of financial reporting in the Algerian digital environment. (Ministry of Finance, 2015, p. 09, adapted)

✓ **Institutional Role of Certification Authorities in Enhancing Financial Transparency:**

The Algerian legislator completed the legal framework of e-commerce by establishing a hierarchical regulatory structure ensuring transaction security. Articles 18 and 28 require periodic audits of electronic certification providers.

From an accounting perspective, this institutional system ensures that financial data remains under sovereign regulatory oversight, especially with the mandatory retention of certificates and data (Article 28, paragraph 3) for use as legal evidence in disputes.

Thus, the concept of auditing extends beyond examining company accounts to verifying the reliability of the certification authority itself, creating a secure digital environment that enhances financial transparency and reduces tax and financial fraud. This aligns with international trends in modernizing accounting and auditing practices. (Ministry of Finance, 2015, pp. 09-10) adapted

✓ **Continuity Safeguards and Financial Solvency of Certification Service Providers:**

The Algerian legislator concluded the regulatory framework of Law 15-04 by imposing strict requirements on certification service providers. Article 34 links licensing to adequate financial capacity, ensuring the reliability of third-party actors in electronic transactions.

Article 30 further strengthens system reliability by requiring service continuity even in cases of technical or financial failure, and by allowing the use of accredited auditing firms to verify compliance.

From an accounting perspective, these legal safeguards create a low-risk environment that enhances the credibility of financial statements generated under such systems, supporting the

transition toward a transparent and well-regulated digital economy. (Ministry of Finance, 2015, p. 11) adapted

✓ Sanctions System and Professional Responsibility as a Guarantee of Digital Evidence Integrity:

The Algerian legislator also included a strong deterrent framework in Law 15-04, establishing under Articles 64–75 a system of financial and criminal sanctions affecting service providers, users, and even auditors.

Article 73 highlights the protection of audit confidentiality, while Articles 53 and 54 impose civil liability on service providers for any negligence affecting data integrity.

From an accounting perspective, this integrated legal framework transforms the electronic signature from a mere technical tool into a legally protected document supported by civil and criminal guarantees. This enables auditors to rely on it as conclusive evidence in forming professional opinions on the fairness and accuracy of financial statements, confirming the readiness of the Algerian legal environment for full digital transformation in accounting practice. (Ministry of Finance, 2015, pp. 13-15) adapted

Based on the general rules governing digital certificates in Law 15-04, the following matrix (Table 3) illustrates the shift from historical ex-post voucher verification to proactive ex-ante systems control and conclusive audit evidence:

Table 3: Impact of Law 15-04 on Digital Audit Evidence and Financial Governance

Article / Component	Legal and Technical Provision	Accounting Adaptation (SCF)	Audit and "Through-Systems" Perspective
Art. 02 (p. 7 and 8)	Cryptographic private keys and digital certificates issued by a trusted third party.	Establishes absolute non-repudiation for all digitally signed transactions and financial commitments.	Minimizes substantive testing risks; relies on cryptographic validation to confirm transacting parties' identities.
Art. 04 and 08	Mandating e-document preservation in "original form"; equating qualified e-signatures with manual ones.	Removes the traditional dependency on paper; validates fully digital source documents for accounting entries.	Shifts the auditor's role toward "Auditing through Systems" by evaluating the integrity of digital archiving software.
Art. 11	Technical requirements preventing forgery and protecting cryptographic keys from derivation.	Bolsters the reliability and accuracy of underlying financial databases and generated reports.	Provides external auditors with reasonable assurance regarding data integrity and anti-tampering defenses.

Art. 15	Embedding the signatory's professional capacity and transaction value ceilings within the certificate.	Automates budgetary controls and spending thresholds based on pre-programmed financial authorization.	Marks a paradigm shift from historical ex-post voucher testing to ex-ante automated systems control.
Art. 16, 18, 28, 30, 34	National Authority oversight, mandatory audit of service providers, financial solvency, and continuity.	Financial data remains under sovereign, low-risk regulation, granting financial statements high credibility.	Extends audit scope to verify the certification authority's credentials; introduces accredited compliance auditing.
Art. 53, 54, 64-75	Civil/criminal liability frameworks and safeguarding "audit confidentiality" (Art. 73).	Insures digital vouchers with legal and financial guarantees, elevating financial disclosure quality.	Empowers auditors to express a definitive, protected professional opinion on the fairness of financial statements.

Source: Prepared by the researcher, based on the above-mentioned context

Within the framework of modernizing the monetary foundation of these transactions, Law 23-09 was introduced to establish the emergence of the “digital dinar” and to define the organizational and supervisory structure of the Bank of Algeria in accordance with commercial accounting principles.

✓ **The accounting implications of adopting the "digital dinar" under Law 23-09:**

The promulgation of Law 23-09 on currency and banking represents a historic turning point in the Algerian financial system, as Article (2) of the law granted legal status to the “Algerian digital dinar” as a digital currency issued by the central bank.

From an accounting perspective, the legislator's recognition of the unlimited legal tender status of the digital dinar (Article 4) requires updating accounting practices related to the recognition and measurement of digital monetary assets. In addition, subjecting the Bank of Algeria to “commercial accounting” rules (Article 9) reflects a trend toward unifying financial reporting language with international standards, which facilitates financial auditing tasks and enhances transparency in managing the digital monetary base, positioning Algeria among the leading countries in regulating sovereign digital currencies. (Ministry of Finance, 2023, pp. 04-05) adapted

✓ **The organizational and supervisory structure of the Bank of Algeria under the digital transformation:**

Law 23-09 strengthened financial oversight mechanisms by stipulating in Article (29) the appointment of highly qualified auditors in banking accounting, and granting them in Article (30) broad authority to carry out audit and supervisory activities deemed appropriate, as well as to submit reports on year-end financial statements.

From an applied accounting perspective, Article (31) precisely defines the financial rules for closing annual accounts and forming reserves. This reflects the state's intention to establish a robust digital accounting system that does not merely focus on issuing the digital dinar, but also embeds it within a governance and control framework designed to prevent fraud and material errors. (Ministry of Finance, 2023, p. 07) adapted, It also holds the responsible parties accountable for confidentiality and professional secrecy (Article 14). (Ministry of Finance, 2023, p. 05)

✓ **Financial disclosure and transparency mechanisms in Bank of Algeria reports:**

To embody the principle of transparency in public financial management, the legislator under Law 23-09 established a strict financial disclosure framework. Article (33) requires the Bank of Algeria to publish a detailed annual report on monetary policy and banking supervision, which must be mandatorily submitted to Parliament for discussion, thereby giving legislative oversight a formal role in evaluating financial performance.

In addition, Article (34) requires the monthly publication of the bank's closed account positions in the Official Gazette. This accounting procedure enables specialists and auditors to periodically monitor monetary aggregates and reserve movements, thereby enhancing the reliability of the state's monetary financial statements and reducing the information gap between the monetary authority and the public. (Ministry of Finance, 2023, p. 08) adapted

✓ **Accounting supervision of monetary policy instruments and emergency liquidity:**

To ensure financial stability, Articles (43, 44, 46) grant the Bank of Algeria broad powers to intervene in the money market through instruments such as outright purchases and sales and rediscount operations, with the possibility of adapting these instruments to Islamic finance and green financing. This requires advanced accounting systems to process such operations. Additionally, Article (47) activates the bank's role as a "lender of last resort" by providing emergency liquidity to banks facing temporary difficulties, subject to adequate guarantees and recovery plans. This represents a proactive regulatory mechanism to protect the banking system from insolvency risks and ensure the continuity of trust in both digital and traditional financial transactions. (Ministry of Finance, 2023, p. 09) adapted

✓ **Legal framework for currency coverage and management of special assets:**

Law 23-09 further consolidates monetary credibility by defining the coverage of currency issuance in Article (40), which includes gold, foreign currencies, and treasury bonds. This imposes accounting discipline by matching monetary liabilities with high-quality real assets. (Ministry of Finance, 2023, p. 08) adapted

The legislator also distinguished in Articles (55 and 56) between the state's financial assets and those of the Bank of Algeria, allowing the bank to invest its own funds in real estate or sovereign bonds within certain limits (40% as a general rule), subject to approval by the Board of Directors. This accounting separation between own assets and state-managed assets reflects the bank's operational independence and confirms its adherence to commercial accounting rules in managing its own investments. (Ministry of Finance, 2023, p. 10) adapted

✓ **Legal framework for payment system security and electronic payment oversight:**

The legislator, in Articles (58, 59, 60), established strict rules to protect national payment systems, assigning the Bank of Algeria responsibility for ensuring their safety and efficiency and monitoring clearing and settlement operations. Legally, the law grants immunity to

balances held in settlement accounts from freezing or seizure (Article 58), ensuring liquidity continuity and preventing systemic disruptions. It also empowers the bank to verify the integrity of non-credit payment instruments (digital and electronic) and reject any instrument lacking sufficient guarantees, while requiring participants to bear system operating costs and regulate client fees. This creates a tightly controlled regulatory environment ensuring transaction security and protecting all parties' rights. (Ministry of Finance, 2023, p. 11) adapted

The regulatory role of the Monetary and Banking Council in setting accounting and banking standards:

The Monetary and Banking Council, under Articles (61, 64, 65), is the supreme monetary authority responsible for defining banking practice standards in Algeria. Article (64) is particularly important for accounting research, as it grants the Council authority to set "accounting rules and standards" applicable to banks, financial institutions, and digital operations, in line with international developments. This legislative mandate ensures flexibility in the accounting system and its ability to adapt to financial technology and Islamic finance developments, making the Council's regulations a key reference for accountants and auditors in assessing compliance with national and international standards. (Ministry of Finance, 2023, pp. 11-12) adapted

✓ Legal framework for banking operations and Islamic finance and their enforcement:

Articles (68–74) define banking operations comprehensively, explicitly including "Islamic banking" and "electronic currency." Article (72) requires conventional banks operating Islamic windows to ensure financial, accounting, and administrative separation from the rest of the bank's structure, requiring separate financial statements. Article (73) strengthens oversight through the requirement of a "Sharia compliance certificate" before marketing any product, while Article (74) expands payment instruments to include all modern technological methods, placing digital currencies under direct regulatory supervision. (Ministry of Finance, 2023, p. 13) adapted

✓ Scope of banking activity and rules governing financial contributions:

Articles (75–82) define exclusivity in banking operations, reserving core banking activities to banks while allowing reliance on licensed payment service providers (Article 76). Article (80) introduces a special regime for public investment contributions, stipulating that such funds are not considered traditional deposits, remain owned by contributors, and do not generate interest, and must be held in special accounts at the Bank of Algeria until deployment. This precise accounting separation between deposits and investment funds protects contributors' rights and clearly defines the bank's role as an investment agent, which must be accurately reflected in the financial position of the bank. (Ministry of Finance, 2023, p. 14) adapted

Culminating this regulatory transition, the following matrix (Table 4) summarizes the accounting implications and macro-prudential control mechanisms arising from adopting the sovereign Central Bank Digital Currency (CBDC) and aligning the central bank with commercial accounting standards under Law 23-09:

Table 4: Financial and Audit Framework for the Sovereign Digital Dinar (Law 23-09)

Legislative Pillar (Law 23-09)	Banking and Legal Provision	Applied Accounting Adaptation	Sovereign Audit and Proactive Control View
Legal Tender and Discharge Power	Enshrining the Digital Dinar as official central bank currency with unlimited discharge power.	Updating practices to measure and present "Sovereign Digital Cash" at absolute face value without volatility.	Minimizes the auditor's trust gap and limits informal economy risks by securing official payment routes.
Commercial Accounting Compliance	Subjecting the Bank of Algeria to commercial accounting principles rather than public accounting.	Aligning central bank financial reporting with global frameworks; structures formal year-end closures and reserves.	Maximizes monetary supply transparency; simplifies annual financial auditing of sovereign monetary accounts.
Audit, Disclosure, and Governance	Appointing highly qualified auditors; publishing monthly financial statements and annual parliamentary reports.	Absolute commitment to strict periodic disclosure of monetary masses and reserves on a monthly/annual basis.	Activates a robust governance system that eliminates fraud; reduces the information asymmetry gap with the public.
Monetary Policy Controls and Emergency Liquidity	Defining currency backing assets (gold, forex) and enforcing "lender of last resort" emergency liquidity rules.	Innovating accounting treatments for purchase/sale/discount actions, adapted for Islamic finance and green financing.	Enforces discipline by backing monetary liabilities with high-quality assets; acts as a proactive macro-prudential control.
Asset Separation and Payment System Security	Separating bank equity from state funds; shielding settlement accounts from seizure; regulating digital payment tools.	Strict accounting segregation of the bank's own investment portfolio (capped at 40%) from state-managed assets.	Guarantees unhindered digital liquidity flow; prevents systemic failures; establishes an ironclad environment for payment logs.

Monetary and Banking Council Mandate	Empowering the Council to set financial and accounting standards for banks and digital transactions.	Secures regulatory flexibility to adapt national accounting rules to financial technology and digital assets.	Establishes the Council's decrees as the primary statutory benchmark for auditors to evaluate regulatory compliance.
Islamic Banking and Investment Contribution Regimes	Enforcing strict financial, administrative, and accounting segregation for Islamic banking windows.	Generating completely segregated financial statements to prevent asset mixing; separating deposits from investments.	Verifying Sharia-compliance certificates; safeguarding investor rights by accurately presenting the bank's fiduciary role.

Source: Prepared by the researcher, based on the above-mentioned context

In conclusion, the qualitative analysis of Laws (18-05, 15-03, 15-04, and 23-09) shows that the Algerian legislator has shifted e-commerce from a "technical practice" framework to a strict "accounting and regulatory discipline" framework. From an accounting perspective, these laws have become the main reference for determining revenue recognition timing based on confirmation stages and digital delivery receipts, while also updating the measurement of monetary assets with the emergence of the digital dinar.

From an auditing perspective, this framework has provided an integrated audit evidence environment, where electronic signatures and digital certificates have evolved from mere technical tools into conclusive audit evidence that enhances auditor confidence in the integrity of financial data and supports entity verification. This legislative coherence reduces audit risks associated with virtual transactions and requires professionals to adopt "systems-based auditing" to ensure the truthfulness and fairness of financial statements in Algeria's emerging digital environment.

Conclusion:

This analytical study has highlighted the organic relationship between the digital legislative framework and the accounting and auditing environment in Algeria. It has been shown that the shift toward e-commerce and the adoption of the "digital dinar" is not merely a technical upgrade, but rather a reconfiguration of the concepts of accounting recognition and measurement. The convergence of Laws (18-05, 15-03, 15-04, and 23-09) has created a solid legal framework that strengthens the confidence of accountants and auditors in dealing with virtual financial flows, transforming them from intangible entities into documented transactions endowed with full legal evidentiary value.

Study findings: The study reached the following conclusions:

- Law 18-05 established accounting discipline by linking revenue recognition to the moment of confirmation and actual digital receipt;

- Laws 15-03 and 15-04 granted electronic signatures full evidentiary legal value equivalent to paper-based documents before auditors;
- The “digital dinar” introduced under Law 23-09 provides a transparent audit trail that facilitates real-time monetary oversight;
- The legislative framework has reduced audit risks through supplier registries (“supplier database”) and electronic certification systems;
- The digital sanctions regime has become a key determinant in assessing “going concern risk” from an external audit perspective.

Study recommendations:

- Update the Financial Accounting System (SCF) to include clear measurement standards for sovereign digital assets and digital currency;
- Shift from traditional “document-based auditing” to “systems-based auditing,” including the examination of algorithms and digital certificates;
- Require entities to develop cyber internal control systems to protect electronic signatures and digital wallets;
- Activate electronic integration between the Bank of Algeria and tax authorities to ensure consistency between monetary flows and invoicing records;
- Intensify training programs for accountants and auditors on digital legislation and financial blockchain technologies.

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