

Artificial Intelligence and Blockchain for Real-Time Financial ReportingAuthor: Anthony Etel¹*Affiliation:*

1. *Business School, Holy Spirit University of Kaslik, P.O. Box 446, Jounieh, Lebanon*
2. *CIRAME Research Center, Holy Spirit University of Kaslik, P.O. Box 446, Jounieh, Lebanon*

Abstract:

This study examines how Artificial Intelligence (AI) and blockchain can support real-time financial reporting. Using secondary empirical evidence from academic research, the study focuses on reporting quality, accuracy, transparency, internal controls, and reporting timeliness. The findings indicate that AI can automate accounting procedures, detect unusual transactions, and strengthen internal controls, while blockchain can improve transaction traceability and accounting information quality. However, neither technology completely eliminates accounting risks. The study concludes that AI and blockchain are complementary technologies: blockchain can provide a reliable transaction infrastructure, while AI can continuously analyze and interpret financial information. Successful implementation still requires human oversight, strong governance, cybersecurity, and appropriate regulation.

Keywords:

Artificial Intelligence, Blockchain, Real-Time Financial Reporting, Financial Reporting Quality, Internal Controls, Continuous Accounting

Introduction:

Traditional financial reporting is usually prepared periodically and often involves manual processing, reconciliation, and verification. These processes can create a delay between economic transactions and the availability of financial information. The development of AI and blockchain creates an opportunity to move toward more continuous financial reporting.

The main research problem is whether these technologies can improve financial reporting sufficiently to support a reliable real-time reporting environment. This study therefore asks: (1) How can AI improve financial reporting? (2) How can blockchain improve financial reporting quality and transparency? (3) How can both technologies work together? and (4) What limitations may prevent their successful implementation?

Literature Review:

Previous research suggests that AI can automate accounting tasks and improve the efficiency of auditing and financial reporting. Kokina and Davenport (2017) explain that AI can automate parts of accounting and auditing while changing the role of accounting professionals. More recent evidence also indicates that automation is associated with fewer internal-control weaknesses (Ashraf, 2025).

Blockchain has also received increasing attention in accounting. Dai and Vasarhelyi (2017) proposed blockchain as a foundation for real-time accounting and assurance. Fang and Liu (2023), using 33,242 firm-year observations, found that blockchain adoption improves accounting information quality. Other empirical evidence suggests that blockchain-based electronic invoicing can improve accrual quality, earnings informativeness, and reduce accounting restatements.

However, blockchain does not automatically eliminate earnings management. Autore et al. (2024) found evidence that blockchain adoption within supply chains can be associated with increased earnings management in some circumstances. This demonstrates that technology must be supported by appropriate governance (Athari et al., 2023) and human monitoring (Chaanine et al., 2023). Beainy and Kamel (2026) argue on the other side that Cryptocurrencies' decentralized nature may render financial reporting harder to track, while others refute this argument considering that technology increases financial transparency (Saber & Sassine, 2022).

Methodology:

This research uses a secondary empirical research design. Information is collected from peer-reviewed academic studies and established regulatory sources. The study compares empirical findings concerning AI, blockchain, financial reporting quality, internal controls, reporting timeliness, and earnings management. The main explanatory variables are AI/automation adoption and blockchain adoption. The main outcomes are financial reporting quality, accounting information quality, reporting timeliness, internal control quality, and earnings management. The research uses comparative evidence synthesis rather than creating artificial primary data.

Results:

The reviewed evidence generally indicates positive effects from both technologies. AI and automation are associated with improved internal controls and financial reporting processes. Blockchain adoption is associated with improved accounting information quality and, in some studies, improved accrual quality, earnings informativeness, and fewer reporting errors.

The results also show that technology does not remove all risks. Automation can reduce human monitoring, while blockchain may change managerial incentives and does not guarantee that all financial information is accurate. Overall, the evidence suggests that blockchain is most useful for creating a traceable transaction record, while AI is most useful for continuously analyzing that information.

Technology	Main Effect	Evidence
Artificial Intelligence	Automation and stronger controls	Generally positive
Blockchain	Higher information quality and traceability	Generally positive
AI + Blockchain	Potential for continuous reporting	Promising, but more research needed

Discussion and Conclusion:

The evidence indicates that AI and blockchain can significantly contribute to the development of real-time financial reporting. AI provides automation, anomaly detection, and continuous analysis, while blockchain provides a traceable and difficult-to-alter transaction record. Their combination could reduce reporting delays and improve the quality and accessibility of financial information. However, implementation requires human oversight, cybersecurity, data-quality controls, system integration, and appropriate regulation. The main limitation of this study is that it relies on secondary evidence rather than an original firm-level dataset. Future research should examine companies that use AI and blockchain simultaneously and measure their effects on reporting delays, restatements, internal controls, and earnings management as well as integrating sustainability (Kaspard et al., 2025 ; Kaspard et al., 2026) because the latter is becoming increasingly important in our modern environment.

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