

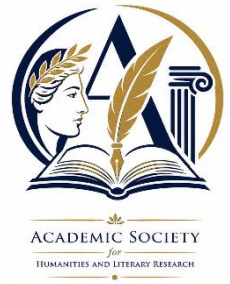
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Digital Governance Substitution Theory: Reconsidering the Relationship Between FinTech and ESG Governance

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Abstract

Two of the most significant advancements in the field of corporate governance in today's world are environmental, social, and governance (ESG) mechanisms and financial technology (FinTech). Current literature mostly assumes that these forces are complementary, as FinTech can drive better results for ESG oversight by fostering better data collection, monitoring, and disclosure. This paper argues against this assumption by suggesting that traditional ESG governance mechanisms can be partially replaced by FinTech. The paper is based on the perspectives of agency theory, information asymmetry theory, and institutional theory, and the paper introduces Digital Governance Substitution Theory (DGST) that argues digital technologies in the FinTech ecosystem perform governance roles previously carried out by boards, auditors, disclosure systems and stakeholder monitoring mechanisms. AI, blockchain, big-data analytics, and real-time reporting systems facilitate transparency, limit information asymmetry, and help limit managerial opportunism, in ways that are similar to the ways that ESG governance does. ESG governance, in the traditional sense, may lose some of its effectiveness as the FinTech ecosystem matures, due to the same informational issue that both governance types are tackling. Four propositions are put forward to account for this relationship and the conditions under which substitution is likely to occur. The paper brings a new theoretical angle to the study of ESG and corporate governance as well as FinTech, which shifts the focus from the technology as a governance enabler to a possible substitute.

Keywords: ESG governance, FinTech, information asymmetry, agency theory, digital governance, corporate governance

1. Introduction

Over the past two decades, there has been significant change in corporate governance literature. ESG governance has gained increasing prominence in corporate accountability, urging companies to enhance transparency, stakeholder engagement, and sustainable practices (Edmans, 2022; Wang et al., 2025). ESG governance has become a key component of corporate accountability, prompting companies to focus on improving transparency, stakeholder engagement, and sustainable practices. Information on ESG is increasingly being harnessed by investors, regulators and civil society to measure company behaviour and risk (Narula et al., 2024; Rau & Yu, 2023). On the other side, FinTech innovations such as artificial intelligence (AI), blockchain, machine learning, and big-data analytics have revolutionized the production, verification, and dissemination of information (Dong & Yu, 2023; Doumi et al., 2024). Although these developments originate from different domains, they address a common challenge: information asymmetry between managers and external stakeholders. Agency theory argues that managers have better information and can take advantage of this when monitoring mechanisms are not effective, to their own benefit. Traditional ESG governance seeks to reduce this asymmetry through board oversight, disclosure requirements, external assurance, and stakeholder scrutiny. However, more and more, FinTech does the same by means of digital monitoring, automated verification and transparency in real time.

The prevailing approach to existing literature suggests that FinTech and ESG governance are complementary. Digital technologies are widely known as tools that help to enhance the quality of ESG reporting, to measure sustainability, and to reinforce governance processes (Ding et al., 2024; Trotta et al., 2023). This is a very intuitive notion that fails to consider, however, that technology could be a means of governance without relying on current governance systems. Here is another argument presented in this paper. It suggests that, in part, FinTech can replace the traditional ESG governance, which similarly addresses information asymmetry, increases transparency, and mitigates managerial opportunism. The added governance value of other governance mechanisms could diminish in the context of credible and continuous monitoring offered by digital systems. This argument does not mean that the role of the boards or governance becomes redundant. Instead, it implies that the effectiveness of governance is dependent on the organisation's degree of digital embeddedness.

The paper introduces Digital Governance Substitution Theory (DGST) to account for the phenomenon. DGST views governance as a process of information processing and not just an organizational structure. The theory's emphasis on functions highlights the benefits of digital technologies for replacing some of the functions that were formerly carried out by humans in governance. This paper combines agency theory, information asymmetry theory, and institutional theory to make this argument and makes four propositions that can be tested empirically.

2. Theoretical Development

Agency Theory and Governance Functions

Agency theory provides the foundation for understanding why governance mechanisms exist. Jensen and Meckling (1976) argue that the separation of ownership and control creates conflicts between principals and agents. Because managers possess superior information about organizational activities, they may engage in actions that maximize personal utility rather than

shareholder welfare. Agency costs arise from monitoring expenditures, incentive alignment mechanisms, and residual losses resulting from imperfect control (Del Gesso & Lodhi, 2024).

ESG governance mechanisms are responses to these agency issues. Independent boards oversee management; disclosure makes reports more transparent; audit committees ensure high reporting standards; and stakeholder engagement extends accountability. Institutional mechanisms might vary, but they all aim to decrease the information gap and increase the likelihood that opportunistic behaviour is identified and penalised. ESG governance is thus mainly viewed as an informational institution. The effectiveness of its use depends on how great the difference is between what managers know and what the stakeholders can observe (Gregory, 2025). This is relevant because it helps to focus on the information functions of governance structures rather than on governance structures themselves.

Information Asymmetry and Functional Substitution

Information asymmetry theory deepens this argument. In the case where the parties have significantly different amounts of information, it can be shown that markets do not function efficiently, as Akerlof (1970) illustrates. In corporate settings, managers typically hold superior information regarding risks, operational performance, and future prospects. Governance mechanisms therefore emerge as institutional solutions to informational deficiencies. But governance is not the only way to cut down information asymmetry. Financial analysts, external auditors, rating agencies, and disclosure systems all contribute to information production and verification (Chen et al., 2012; Muller & Riedl, 2002). The key to FinTech is that it can do these things on an automated, continuous, and scaled basis.

AI systems can scan and process large volumes of structured and unstructured data to detect any irregularities and conflicts of interest within an organization's operations. Big data analytics combine data from multiple sources to create insights which may not be available through a traditional governance process (Han et al., 2022). Blockchain technology generates immutable records which are independently verifiable without depending on managerial representations. Real-time reporting systems minimize the gap between corporate actions and what's observed by stakeholders (Hui & Tucker, 2025; Yu et al., 2025). Such technologies thus mimic very closely the role of traditional governance mechanisms. Anomaly detection using AI is similar to audit committee monitoring. Blockchain verification does a similar thing as external audit. Real time reporting also promotes transparency, in a similar way to disclosure laws. Digital platforms enhance stakeholder monitoring by democratizing access to information. The critical implication is that governance mechanisms and FinTech systems increasingly address the same informational problem. If two mechanisms have the same function, then they can be substituted.

Institutional Theory and the Limits of Substitution

Institutional theory explains why substitution is neither universal nor complete. Organizations are rooted in larger institutional environments which are defined by regulations, norms and cultural expectations. Governance mechanisms provide both information and legitimacy. Boards, committees and stakeholder engagement processes are signals of compliance with societal expectations of responsible corporate conduct. Digital technologies can reproduce informational functions but not fully reproduce normative and symbolic functions. Stakeholders are generally accustomed to seeing governance structures, irrespective of the

quality of the underlying information systems. Institutional pressures and legitimacy considerations thus constrain substitution.

Moreover, many governance activities require exercising judgment rather than processing information. There are limits to automation for contextual reasoning involving trade-offs of prioritizing stakeholders, balancing competing ethical considerations, and making strategic decisions on capital allocation and executive succession. The same holds true for the allocation of responsibility and accountability. When negative outcomes arise, stakeholders and affected groups have a right to an answer and to whom accountability is to be allocated. This is something technology will not be able to provide. Balance should be the focus rather than taking a complete substitution approach. Technology can take the lead on Governance processes where the focus is on monitoring, verification, and transparency. However, balance will dominate in processes where judgment, legitimacy, and accountability play a primary role.

3. Digital Governance Substitution Theory

Digital Governance Substitution Theory (DGST) proposes that digital technologies embedded within FinTech ecosystems can partially substitute for traditional ESG governance mechanisms because both perform overlapping functions of information production, transparency enhancement, and managerial oversight. The theory rests on four mechanisms.

First, verification substitution happens when blockchain and digital audit trails take over verification tasks typically done by auditors and control systems. Second, detection substitution happens when irregularities and opportunistic behaviour are detected by AI analytics faster than through periodic human oversight. Third, disclosure substitution occurs when reporting systems that operate in real-time constrain managers' ability to control the timing and presentation of information. Fourth, aggregation substitution occurs when big data analytics create independent information, which decreases stakeholders' reliance on corporate disclosures. All of these mechanisms create digital transparency: a state where organizational activities are made continuously observable, traceable, and verifiable. As digital transparency grows, the value of traditional governance mechanisms of a reporting system diminishes. DGST is concerned with the marginal value of traditional governance mechanisms within the context of digital governance and does not predict the total substitution of governance. Therefore, governance changes from direct observation and monitoring to the oversight of the technological systems themselves.

4. Conceptual Framework and Propositions

The conceptual framework has two parallel pathways. The first pathway runs from ESG governance to transparency with information asymmetry and agency costs followed by corporate outcomes. The second pathway runs from FinTech development to digital transparency with information asymmetry and agency costs followed by corporate outcomes. Since both pathways meet at the same mediating mechanism, information asymmetry, the effects of both are expected to interact.

Proposition 1: ESG governance reduces information asymmetry between managers and external stakeholders.

Proposition 2: FinTech ecosystem development reduces information asymmetry through digital transparency, automated verification, and real-time monitoring.

Proposition 3: ESG governance and FinTech development operate through overlapping monitoring and transparency mechanisms.

Proposition 4: The effectiveness of ESG governance in reducing agency costs diminishes as FinTech ecosystem development increases.

Proposition 4 represents the core contribution of DGST. The theory predicts not that governance becomes ineffective, but that its marginal contribution declines when digital systems already perform similar informational functions.

5. Implications and Future Research

DGST has multiple implications. In the case of ESG studies, DGST shows that the assessment of the effectiveness of governance should include the digital infrastructure as a moderating variable. Without considering the evolution of FinTech, studies will provide partial answers to governance effects. In corporate governance theories, DGST also broadens the concept of governance beyond boards and formal governance structures. Governance then becomes a function that can be executed via the institutional and the technological systems.

For FinTech, DGST changes the position of the digital technologies from governance as the financial innovations to governance as the innovations of the digital technologies. The governance aspects of innovations such as AI, blockchain and digital reporting systems require more theory. Examples of the theories that can be tested are earnings management, risk of stock price crashes, the cost of capital, greenwashing and firm value. If DGST is valid, the development of FinTech will diminish the effect of traditional governance on these aspects. This would show that digital governance is increasingly taking the place of institutional governance.

6. Conclusion

In this article, we question the common view held by many that there is an inherent relationship between FinTech and ESG governance; each will contribute to one another by providing a solution to the same issue (solving for the information asymmetry, and thus limiting regime opportunism). Using theories of agency, theories of information asymmetry, and institutional theory as a foundation for the new theory of Digital Governance Substitution, this article seeks to provide an explanation for how digital technologies are increasingly able to replace traditional forms of governance.

The central idea of this paper is quite clear - both ESG governance and FinTech are trying to resolve information asymmetry and constrain the opportunism of management. Moreover, with the increasing complexity of the FinTech ecosystem, many of the functions that were traditionally performed by governance institutions (monitoring, verifying, and ensuring transparency) are now also performed by the various layers of the FinTech ecosystem. Therefore, as the level of digitalization within a particular organizational context increase, it is likely that the effectiveness of governance based upon traditional means of governance will be reduced.

Thus, while we are not predicting the complete removal of governance, we do suggest that governance is undergoing a fundamental reconfiguration in which, to the extent that information is capable of being codified, tracked, and verified through technological means, governance will be replaced. Where legitimacy, accountability, and judgment will continue to

be required, human beings will remain a necessary part of the governance process. Understanding how this balance between institutional governance and digital governance will continue to shift is an important topic for future research and policy development.

References

1. Akerlof, G. A. (1970). The Market for “Lemons”: Quality Uncertainty and the Market Mechanism. *The Quarterly Journal of Economics*, 84(3), 488–500. <https://doi.org/10.2307/1879431>
2. Chen, X., Cheng, Q., & Lo, A. K. (2012). Accounting restatements and external financing choices*. *Contemporary Accounting Research*, 30(2), 750–779. <https://doi.org/10.1111/j.1911-3846.2012.01171.x>
3. Del Gesso, C., & Lodhi, R. N. (2024). Theories underlying environmental, social and governance (ESG) disclosure: a systematic review of accounting studies. *Journal of Accounting Literature*, 47(2), 433–461. <https://doi.org/10.1108/jal-08-2023-0143>
4. Ding, J., Li, L., & Zhao, J. (2024). How does fintech prompt corporations toward ESG sustainable development? Evidence from China. *Energy Economics*, 131, 107387. <https://doi.org/10.1016/j.eneco.2024.107387>
5. Dong, X., & Yu, M. (2023). Does FinTech development facilitate firms’ innovation? Evidence from China. *International Review of Financial Analysis*, 89, 102805. <https://doi.org/10.1016/j.irfa.2023.102805>
6. Doumi, A. F., Begum, H., Doumi, F. B., & Alam, A. S. a. F. (2024). Factors influencing access to finance among Jordanian SMEs: Examining the role of P2P lending fintech, information asymmetry, transaction cost, and financial literacy. *Journal of the Knowledge Economy*, 16(5), 15579–15606. <https://doi.org/10.1007/s13132-024-02434-6>
7. Edmans, A. (2022). The end of ESG. *Financial Management*, 52(1), 3–17. <https://doi.org/10.1111/fima.12413>
8. Gregory, R. P. (2025). Do ESG activities reduce agency costs? *International Review of Economics & Finance*, 104, 104780. <https://doi.org/10.1016/j.iref.2025.104780>
9. Han, H., Shiwakoti, R. K., Jarvis, R., Mordi, C., & Botchie, D. (2022). Accounting and auditing with blockchain technology and artificial Intelligence: A literature review. *International Journal of Accounting Information Systems*, 48, 100598. <https://doi.org/10.1016/j.accinf.2022.100598>
10. Hui, X., & Tucker, C. (2025). Decentralization, blockchain, Artificial intelligence (AI): challenges and opportunities. *Journal of Product Innovation Management*, 42(5), 947–957. <https://doi.org/10.1111/jpim.12800>
11. Jensen, M. C., & Meckling, W. H. (1976). Theory of the firm: Managerial behavior, agency costs and ownership structure. *Journal of Financial Economics*, 3(4), 305–360. [https://doi.org/10.1016/0304-405x\(76\)90026-x](https://doi.org/10.1016/0304-405x(76)90026-x)
12. Muller, K. A., III, & Riedl, E. J. (2002). External monitoring of property appraisal estimates and information asymmetry. *Journal of Accounting Research*, 40(3), 865–881. <https://doi.org/10.1111/1475-679x.00074>
13. Narula, R., Rao, P., Kumar, S., & Paltrinieri, A. (2024). ESG investing & firm performance: Retrospections of past & reflections of future. *Corporate Social Responsibility and Environmental Management*, 32(1), 1096–1121. <https://doi.org/10.1002/csr.2982>

14. Rau, P. R., & Yu, T. (2023). A survey on ESG: investors, institutions and firms. *China Finance Review International*, 14(1), 3–33. <https://doi.org/10.1108/cfri-12-2022-0260>
15. Trotta, A., Rania, F., & Strano, E. (2023). Exploring the linkages between FinTech and ESG: A bibliometric perspective. *Research in International Business and Finance*, 69, 102200. <https://doi.org/10.1016/j.ribaf.2023.102200>
16. Wang, K., Bai, Y., Dong, Z., & Zhu, J. (2025). Heterogeneous impact of ESG Disclosure: A meta-analysis. *Journal of Cleaner Production*, 516, 145804. <https://doi.org/10.1016/j.jclepro.2025.145804>
17. Yu, R., Liu, F., Cheng, T. C. E., & Xu, X. (2025). AI-Blockchain synergy for resilient agricultural supply chains: an evolutionary game analysis. *International Journal of Production Research*, 64(8), 3244–3270. <https://doi.org/10.1080/00207543.2025.2604309>