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Role of fintech in financial reporting and audit fraud prevention and safeguarding equity investment

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Abstract

The aim of this paper is to discover the audit-related causes of financial scandals and suggest how emerging technologies can offer solutions thereto. Specifically, this paper seeks to look at the facilitators of financial statements fraud and explain unique Fintech advancements that will make a contribution in financial information reliability in case of equity investments. The study makes use of the case studies of financial frauds to document the evidence of audit-associated issues in historical financial scandals. A complete and interdisciplinary literature evaluation at the intersection of business, accounting, and engineering, gives a basis to endorse technology advancements that can solve diagnosed issues in accounting and auditing. The findings of the study depicts that Blockchain, Internet of Things, Smart Contracts and Artificial Intelligence solutions have distinct functionality and can effectively clear up numerous financial reporting and audit-associated problems. Jointly, they have got a sturdy capability to enhance the reliability of the information in financial statements and commonly exchange how companies operate. This implied that the proposed and defined technology advancements must be of interest to all publicly listed companies and investors, as they can assist in safeguarding equity investments, as a result construct buyers' will have trust towards the enterprise. Aside from implications for capital markets individuals, the findings of the study can materially benefit diverse stakeholder groups, the broader enterprise surroundings, and the financial system. Given the latest generation advancements in technology, the findings of the study provide insights into how the position of an external auditor would possibly evolve in the future.

Keywords: Audit fraud; Equity Investment; Financial Reporting; FINTECH; Blockchain

1. Introduction

A capital market is a place where the supply and the demand of market participants meet, and where the asset price is determined within the valuation process. Since asset valuation is based on public statistics, the primary function of gatekeepers is to ensure that the facts available to investors' are accurate. Gatekeeper institutions range from auditors, financial analysts, regulators, stock exchanges, rating agencies, lenders, tax authorities to media and watchdogs. Their common function is that they all endure fiduciary obligations towards capital market participants, even though they are hired (and paid) by the companies. In this paper, we narrow down the discussion to one type of gate-keeping institution: the auditors and we inspect their role in safeguarding equity investments in capital markets.

The information used by investors in valuation models comes ordinarily from financial statements. Given the possibility of unintended mistakes or purposeful manipulation, public companies must have their monetary reports audited by external auditors, independent of the enterprise's management. The reason of an impartial auditor is to apply professional judgment to identify and determine risks of material misstatement and discover potential frauds in a company's financial statements. Specifically, an auditor is to offer "an opinion as to whether or not the monetary

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statements present fairly, in all material respects, an entity's financial position, outcomes of operations, and cash flows in conformity with GAAP". Despite consecutive regulation amendments focused at more transparent and better quality financial reporting, the reliability thereof continues to be problematic.

This paper investigates whether or not fintech—the fusion of finance and technology (Goldstein et al., 2019)—can assist triumph over or mitigate the shortcomings of financial reporting and auditing that historically result in a number of the biggest financial scandals. To safeguard equity investments better in the future, many measures were brought, usually in form of new, stricter regulation, amendments to accounting and auditing standards. Despite extreme debate and numerous reforms, troubles with the reliability of financial statements and the quality of auditors reports still ambiguous. In this paper, we do not try and endorse yet some other regulatory or managerial improvement. Rather, we examine how current technologies can mitigate or cast off auditor's screw ups. Specifically, we examine how blockchain, smart contracts, internet of things and machine learning can help safeguard equity investments in capital markets by improving the reliability of financial statements and improving the quality of audit process and its results.

The contribution of this paper is four-fold. First, we upload to the educational debate on the role of audit in safeguarding equity investments in capital markets. Second, that is the primary paper that seeks solutions to the audit-associated monetary scandals in generation, no longer in imposing yet every other law. Third, as discussed in academic literature, equity investors' losses are even more severe in situations when the accumulated terrible news reaches a certain tipping point, and leads to decline in stock price (i.e., a crash). Fourth, given the recent technology advancements, our findings and conclusions provide insights into how the function of an external auditor might evolve within the future. External audit feature has been of importance to traders of publicly listed companies for a long term. Yet, disruptive audit disasters had to take place to begin a severe dialogue on a way to adjust and improve the gap, and how to shape the relationship among an auditor and a client.

There are some factors associated with the monetary facts that are being posted to the investor's network. First, there is a question about how a company translates and consists of financial reporting regulation when making ready their financial statements. The hassle arises particularly while there are loopholes within the regulation that in the long run "allow" for misrepresenting the actual financial standing inside the accounting facts.

1.1. Research Gap

The present paper is the only which talks about the audit related solutions and their implementation through technological advancements.

Objectives

- To identify the problems in audit and safeguarding equity investments.
- To seek solutions to the audit-related financial scandals in technology and their implementation.
- To determine the uses of FINTECH in transparency, audit process, risk management.
- To explain the future prospects of FINTECH in auditor's job.

2. Audit-Related Problems in Safeguarding Equity Investments

External audit function has been of importance to investors of publicly listed companies for a long time. Yet, disruptive audit failures needed to happen to start a serious discussion on how to regulate and improve the space, and how to structure the relationship between an auditor and a client. In the following paragraphs, we present the key problems in the space of financial reporting and auditing.

2.1. Falsification of Records and Information Mutability

There are a few points regarding financial information that needs to be informed to the investors so that they can plan their portfolio accordingly. To begin with, there is a question concerning how an organization interprets and incorporates financial reporting regulations while preparing their financial statements and how they communicate information with the interest parties. The issue emerges especially when there are loopholes in the law that eventually "permit" for misrepresenting the actual financial position in the bookkeeping records.

2.2. Diffusion of Responsibility

A person or an entity is responsible when it satisfies certain objective conditions for being a subject for blame or praise, and we indeed blame or approve. Card (2005) notes that due to the agentic shift, hierarchical entities (corporations)

suffer from erosion of agency that makes it difficult to identify the action ownership. When not explicitly assigned, diffusion of responsibility arises, particularly within big groups (Leary and Forsyth, 1987). Darley and Latane (1968) explain it as a socio-psychological phenomenon whereby a person is less likely to take responsibility for action or inaction when others are present.

An individual or an entity is responsible when they fulfill certain objectives and they become the subject to blame or approve. Card (2005) noticed that due to the agentic shift, hierarchical corporations experience the ill effects of disintegration of organization that makes it hard to identify the proprietorship activities. When not unequivocally doled out, dispersion of obligation emerges, especially inside enormous gatherings (Leary and Forsyth, 1987). Darley and Latane (1968) make sense of it as a socio-mental peculiarity by which an individual is less inclined to make an obligation regarding move or inaction when others are available.

2.3. Auditor's Remuneration Priority over Intrinsic Audit Objectives

Companies are established to make profits, and despite that many business and academics not agree with the fact that companies are only for Friedman's shareholder value maximization (1970), by and by profits most often take priority over other corporate results. Mostly, income need is acknowledged by the organizations depending on their circumstances, regardless of whether it is unsafe to a few stakeholders. It varies for firms that give audit services. They have a lawful obligation towards "the general public" to give valid and reliable audit report besides being for-profit organizations. However, they paid by the audited company. As they would never do something to jeopardize their income (Dunn, 1996), they are normally disposed to satisfy the client. At the point when an organization acts falsely, an auditor may participate in client's misbehavior because of financial incentives, and a relentless irreconcilable circumstance may happen (Sezer et al., 2015).

2.4. Auditor's Dependency

Most likely the greatest test with regards to auditor's job in safeguarding equity investments is guaranteeing its independence (Bazerman and Gino, 2012), particularly when in a long term relationship with a client. As stated under law, "the auditor has an obligation to design and perform the audit to get sensible confirmation about whether the financial summaries are liberated from material misquote, whether affected by any mistake or fraud. Accordingly, external auditors have the ability to find and unveil any misquote done by the organization's managers that could harm investors. Practically speaking, when too reliant upon a client, this capability disappears, and the quality of audit diminishes. Auditors' independence is one of a critical element that may create blocks in the quality of audit report. This applies additionally to the internal audit, as its job is to check the executives' activities and choices even before external assessment.

The list of financial reporting- and audit-related failures that affect the riskiness and returns of equity investments is far from finished. Our goal here was, however, to point to the main reasons for fraud in the analysed cases in order to have a deeper understanding of the problems in practice. In the next section, we propose how particular emerging technologies can help fight financial fraud and prevent subsequent losses incurred by equity investors.

3. Safeguarding Equity Investments: FINTECH Solutions

3.1. Blockchain Technology for Information Reliability

The commitment of blockchain technology in financial reporting and auditing is to fix current difficulties (Simon et al., 2017) and beat various issues that generally prompted serious financial scandals. Blockchain has the potential to improve the information reliability of financial reports. The contemporary accounting system depends on duplicate entries, periodical controls and multiple verification technologies that are to make the system ethical (Deloitte, 2016). It is very labour-intensive as still many errands are done manually. Blockchain technology can be applied to recordkeeping processes, including how exchanges are started, handled, approved, recorded, reported, and how information is stored (CPA Canada et al., 2017).

Accounting includes processing and analysing a large amount of data, which yields failures, blunders, and space for manipulation. Proficiency can be improved when data is stored in an organized manner, with full interoperability. Blockchain technology is a "disseminated database that is organized as a list of requested blocks, where the committed blocks are unchanging" (Club et al., 2019). Apparently, blockchain is an accountancy-based technology that treats information as transactions. In contrast with conventional accounting software, blockchain considers keeping all information well organized, stored and easily accessible in a matter of moments. Such a solution can support efficiency,

exactness, speed and interoperability in routine accounting processes (Paine, 2018) and give an extraordinary stage to ensuing use, e.g., by external auditors.

The advantages, accounting and auditing can get from executing blockchain, stem straightforwardly from the technology design and its attributes. Blockchain brings, major areas of strength for decentralization, and alter safe record of every single verifiable transaction. There is a case that blockchain permits 'triple-entry bookkeeping, where an exchange prompts not two however three entries: debit, credit and a cryptographic mark to confirm an exchange's validity (Wiatt, 2019). Information is encoded and approved by members prior to being added to the ledger. The new entry is confirmed through a foreordained component: an agreement convention (Club et al., 2019), for example 51% of the individuals from the chain need to consent to it. Upon exchange acknowledgment, the whole ledger is refreshed. Different sections, which address transactions, are assembled into a 'block', which is added to the ledger (Welker, 2018). Along these lines, each block contains data that can be followed back to past blocks, as they are completely associated on a chain with a protected hash that is created utilizing a cryptographic confidential key, hard to break (translate).

Blockchain technology makes it difficult to reverse any transaction that have proactively been verified, which is in accordance with the contention that non-reversibility can further develop transparency in bookkeeping handling. Any recommended change would possibly happen in the event that it was supported by most of members, not simply by a single person. This makes changes exceptionally infeasible and decreases information adjusting possibilities, for legitimate or ill-legitimate reasons.

In the current bookkeeping system, changes made to the records can be followed back provided that the audit trail has been implemented in to the software. In any case, no record of the balances exists, and it is difficult to check who changed the information. On the other hand, blockchain technology has an implicit "auditing function." Blocks that store data, are connected to each and are changeless, hence blockchain record gives balances as well as the entire history of transactions. This empowers the identifiability of individual transaction (changes). Blockchain can likewise safely store or connect documentation supporting exchanges (contracts, arrangements, purchase orders, invoices) in an encoded way (CPA Canada et al., 2017).

One more component of information security is its vulnerability to outside modification and different types of hacking. Current bookkeeping frameworks are regularly safeguarded by the server and database login subtleties, at times with two-step verification. Anybody who has the login subtleties can access the database, and possibly change or annihilate records (information is impermanent). In the blockchain based bookkeeping framework, whenever data is kept in touch with the chain (a block is added), it turns out to be basically immutable. This framework configuration leaves no room for altering, hacking, or misrepresentation except if again most of members agree to the change.

Blockchain ledger qualities (continuity, unavailability, irreversibility) can effectively keep the executives from cooking the books (making imaginary exchanges, evolving records, backdating options, and so forth). The transparency of blockchain-based bookkeeping framework could help external auditors by giving already verified, right information (Deloitte, 2016) and make it simple for bookkeepers to access and analyze the material related-party transactions (Dai and Vasarhelyi, 2017). Thusly, blockchain not just builds the possibility of detecting fraud (even without an external auditor set up), yet in addition forestalls the board to reduce earning manipulation. This vigorous compositional plan guarantees monetary data reliability more than contemporary bookkeeping system. This is significant for equity investors since they work with data already verified at its entry, and not just by the external auditor. On the organization's end, it develops a reputation of the fact that with blockchain innovation it can make a more reliable and precise image of its monetary standing.

3.2. Internet of Things for Automated Recording

Recent upgrades in business processes frequently target computerization since assignments performed manually are costly and erroneous. Internet of things (from now on, 'IoT') can build up blockchain technology related to accounting entry automation. IoT framework comprises of sensors and actuators implanted in physical objects that are "connected through wired and wireless networks, frequently utilizing a similar Internet Protocol (IP) that interfaces the Web" (Chui et al., 2010). That's what the thought is in the event that various 'things' can be associated with the web, so they can be associated with one another (O'Leary, 2013). As sensors send information to the cloud, data is gathered, and programming can deal with it to perform an action.

IoT is now changing manufacturing, supply chain and different enterprises. It can likewise upgrade the accounting system. Existing enterprise resource planning (ERP) arrangements currently offer a rising degree of automation and resultant efficiencies (Sprakman et al., 2018).

Coordinating IoT with blockchain in the accounting system makes a more thorough arrangement: IoT sensors give automatic entries in regards to physical assets, while exchanges recorded on blockchain supplement the computerization with information about other, for the most part monetary positions. IoT joined with Blockchain is otherwise called the Web of Confided in Things (in the future, 'IoTT') as blockchain innovation gives trust (confirmation) to IoT results.

Integrating IoT with blockchain in the accounting system creates a more comprehensive solution: IoT sensors provide automatic entries regarding physical assets, while transactions recorded on blockchain complement the automation with data about other, mainly financial positions. IoT combined with Blockchain is also known as the Internet of Trusted Things (hereafter, 'IoTT') as blockchain technology provides trust (verification) to IoT outcomes.

Notably, IoT may also enhance fair value accounting and disclosure, thus contributing to more proper valuations. IoT provides a multitude of data about various assets. It can track not only the amount of inventory but also its quality. Similarly, sensors, video cameras or chips embedded in property or machinery can provide a more accurate record of a fixed asset. IoT may likewise upgrade fair worth bookkeeping and exposure, in this way adding to additional legitimate valuations. IoT gives a huge number of information about different resources. It can follow how much stock as well as its quality. Likewise, sensors, camcorders or chips implanted in property or hardware can give a more exact record of a decent resource.

3.3. Smart Contracts for Improving Financial Records and Assigned Responsibility

Smart contracts are “user-defined programs that determine rules-administering transactions” (Delmolino et al., 2016) that can be coordinated into the blockchain. Blockchain users program their own guidelines into a smart contract.

Numerous IFRS, US GAAP or national accounting standards could be composed into smart contracts, to homologate accounting concepts and financial analysis. The ongoing constraint of smart contracts is that rules should be unequivocal. In any case, specialists are highlighting the possibility of applying ML to smart contracts, which prompts an 'astute agreement' that can gain from the previous experiences and be appropriate to the new circumstances and conditions (Sukkar, 2019).

There are a considerable amount of potential smart contracts applications in the analysed cases. Blockchain technology along with smart contracts can give proof of any possible anomalies in revenue recognition (Wang and Kogan, 2017). Once the information is on the blockchain, smart contracts perform accounting functions automatically, accordingly diminishing human blunder or deliberate manipulation of ledger records. Another advantage is that any party, internal or external, can check whether transactions are in-compliance with encoded rules (Dai et al., 2017). This can prevent organizations from hiding from their auditors that specific offsets are conflicting with the general practices or bookkeeping norms. Essentially, investors can regulate both the records in budget summaries and general governance in the organization that is translated into the blockchain by means of smart contracts.

Lastly, smart contracts could assist with defeating the diffusion of responsibility issue. Activities, and respective responsibilities, can be unequivocally relegated to people or groups. This arrangement empowers additionally clear separation of the organization's and the auditor's responsibility for fraud. Blockchain along with IoT and smart contracts might soon empower what a few specialists at any point call completely mechanized audit (Deloitte, 2016). Some degree of automatic execution is as of now feasible with existing software, yet smart contracts give the likelihood to carry it to a whole new level.

3.4. Machine Learning for Fraud Detection

Artificial intelligence (AI) is a broad platform that is best depicted as "that action dedicated to making machines intelligent. Artificial intelligence software assists business in taking decisions. In bookkeeping and auditing, artificial intelligence can facilitate decisions that are connected with monetary information.

Artificial intelligence goes from extremely basic strategies and applications to very critical frameworks. As a matter of fact, computer based intelligence methods have been being used since the 1950s. In auditing, one of the primary applications that discernibly further developed the audit cycle were expert system that was critical thinking devices (Arnold et al., 2004). In spite of various advantages of expert systems, their usefulness is restricted on the grounds that they depend on a simple rule-based logic and are performing great only where data is organized, and the degree of obscure as well as variance is low. Hence, during the 1990s, in finance, specialists began supplanting expert systems with machine learning systems (Buchanan, 2019).

AI (after, ML) — a further developed type of computer based intelligence — mechanizes logical model structure by learning from information that was fed into the system, recognizing patterns, and making decisions with minimum human interference. ML utilizes a probabilistic system to think of a model that best makes sense of (fits) observed information (Ghahramani, 2015). This model consequently recognizes warnings in the new information inputs. This implies less human work, not so much expense, but rather more accuracy, while their clients (auditors) can supervise the models results, and thereby they can identify the irregularities or fraud. ML can likewise lessen the slack time between the data demand and its delivery request, because it is capable for separating particular data from large datasets almost in real-time, which takes days if a human was employed instead (Smith, 2017).

3.5. Emerging Technologies for Auditor Independence

As auditor independence is basic for audit quality. As per ICAEW, independence can be compromised by "personal circumstance, self-survey, being in a backing position, over-familiarity, or intimidation" (ICAEW, 2020). We contend that utilizing fintech solutions can automate the auditing system, which diminishes audit expenses, and thereby leading to auditor's independence. Current bookkeeping system mostly based on manual entries and allow information adjustment, thus there is requirement of auditors and regulators to guarantee the reliability of financial statements. Blockchain and IoT offer transparency, permanence, fewer errors, and an outsider is no longer required to confirm the validity of most bookkeeping information. With arising technologies, financial reporting and audit can turn out to be more transparent and the auditor report can be more objective and independent.

4. Conclusion

Organizations commit frauds, yet that doesn't occur in a vacuum. Roszkowska and Mele (2020) see that in each monetary outrage, a deceitful organization stayed in a connection of interrelations with a few outer entities. They recommend that organization's activities can be emphatically impacted by what they call outer impacts: establishments or people that mutually comprise company's immediate environment, who have their own aims and objectives, and on the grounds that organizations continually connect with them, they influence firm directors' way of behaving. Hereto, Boatright (2004) underscores the significance of regulating organizations, as they assume an essential part in forestalling corporate frauds, protecting value ventures and interests of the general public. To be sure, as well as bookkeeping inconsistencies, a failure of the auditor appears to be among the primary drivers of corporate frauds concentrated by Soltani (2014). Against this scenery, to battle financial frauds, improvement should be done both at the organization and at the auditor side and they should also look for better and advanced solutions like FINTECH to tackle the frauds.

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