

The interrelation between capital markets and internal financial control: Analysis of regulatory frameworks, empirical evidence, and corporate failures

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Abstract. Capital markets operate on the basis of trust, which is directly linked to the reliability and transparency of the financial and non-financial information disclosed by issuers. At the core of this reliability lies the system of internal control. Internal control represents a process carried out by an organization's management and personnel, designed to provide reasonable assurance regarding the achievement of operational and strategic objectives. The effectiveness of internal control is a critical component of corporate governance, as it ensures the integrity of the financial data utilized by investors for decision-making. The primary objective of this study is to analyse and synthesise the empirical evidence demonstrating the quantitative impact of internal control quality on capital market valuation. This includes measuring the effects on the cost of equity, stock price volatility and the market risk premium (Ittonen 2010). The secondary objective is to identify the critical deficiencies within the main regulatory frameworks that have contributed to major corporate failures, and to assess the subsequent reforms introduced to restore investor confidence.

Key words: capital market, internal control, COSO, SOX, fraud.

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1. Introduction

The study adopts a qualitative-dominant mixed research design, combining structured literature review, narrative review, regulatory framework review, and comparative case-based analysis of major corporate failures. The research design is explanatory and analytical, aiming to identify causal mechanisms linking internal financial control quality to capital market outcomes. The methodology consists of four interrelated stages:

- Normative and conceptual analysis of international internal control frameworks (COSO 2013; COSO 2023), capital market regulations (SOX, Basel, EU governance frameworks), and professional guidance.
- Empirical synthesis of prior quantitative research measuring the pricing of internal control deficiencies through changes in cost of equity, volatility, and market valuation.
- Comparative case analysis of major financial scandals (Enron, WorldCom, Lehman Brothers, Wirecard, FTX), focusing on failures of internal financial control mechanisms rather than isolated managerial misconduct.
- Analytical generalization, identifying recurring structural weaknesses in internal control systems and their implications for capital market trust.

This design allows triangulation between theory, regulation, empirical findings, and real-world failures, strengthening the internal validity of conclusions.

Several limitations should be acknowledged. First, the study relies primarily on secondary data and published empirical research, rather than proprietary firm-level datasets. Second, while the case analyses provide strong illustrative evidence, they do not allow for statistical generalization. Third, regulatory responses and internal control practices evolve rapidly, particularly in areas such as sustainability reporting and digital assets, which may limit the temporal applicability of certain findings. Nevertheless, these limitations do not undermine the study's contribution, as its objective is theoretical integration and analytical synthesis, rather than hypothesis testing.

Capital markets represent organized mechanisms for the transfer of financial resources between economic entities seeking financing and investors who possess surplus capital. They include the equity market, the bond market, and derivative financial instruments, operating through primary and secondary segments. Their main role is to ensure the efficient allocation of capital by facilitating access to financing, improving liquidity, and supporting the formation of market prices through the mechanism of supply and demand. The stability and efficiency of

capital markets are strongly dependent on the quality of corporate governance and internal control exercised by market participants. A lack of reliable financial information and weak control mechanisms increases the risk of market shocks, undermines transparency, and erodes investor confidence, an essential factor for the proper functioning of these markets.

The analysis of this interrelation leads to the formulation of the central thesis of the present study: effective internal control is a necessary, yet not a sufficient, condition for ensuring long-term stability and trust in capital markets. Its sustainability depends critically on the external regulatory environment, the level of audit assurance, and the ethical corporate culture. The relevance of the topic has increased due to the expansion of the definition of internal control beyond traditional financial reporting. In 2023, the Committee of Sponsoring Organizations of the Treadway Commission (COSO), whose mission is to provide guidance on risk management, internal control, fraud prevention, and governance, issued supplementary guidelines for establishing effective Internal Control over Sustainability Reporting (ICSR) (COSO 2023; COSO 2013). This development reflects the growing importance of non-financial indicators, particularly ESG data, for investors and capital market participants. ICSR provides mechanisms for enhancing the reliability of ESG reporting, public disclosures, and corporate decision-making processes (COSO 2023; COSO 2013; Deloitte 2023). Consequently, internal control is evolving into a tool for integrated risk management that must be fully embedded within corporate strategy and operational practices (Deloitte 2023, COSO, 2023).

The historical context clearly demonstrates that failures of internal control have been a primary catalyst for systemic loss of trust and market instability. A series of high-profile corporate scandals in the early 2000s, including those of Enron and WorldCom, illustrates that weak control mechanisms may lead to large-scale accounting fraud and corporate collapses, with far-reaching consequences for investors and the financial system as a whole. In response to these crises, regulatory intervention, such as the Sarbanes–Oxley Act (SOX) in the United States, established effective internal control over financial reporting as a mandatory requirement for publicly listed companies (Sarbanes-Oxley Act 2002; Benston 2003).

2. Theoretical foundations and regulatory framework

The COSO framework is globally recognized as the standard for designing and evaluating internal control systems. The organization was established in 1985 (commonly known as the Treadway Commission) in response to the need to investigate the causal factors leading to fraudulent financial reporting. COSO is sponsored by five major professional associations (including AICPA, FEI, IIA) and includes representatives from industry, public accounting, investment firms, and the New York Stock Exchange, underscoring its central role in the capital markets ecosystem (COSO 1985). The five interrelated components of COSO (Control Environment, Risk Assessment, Control Activities, Information and Communication, and Monitoring) provide an integrated approach for achieving organizational objectives. The COSO Internal Control – Integrated Framework (2013) formalized internal control as a system designed to provide reasonable assurance regarding the achievement of objectives in operations, reporting, and compliance. A critical enhancement of the 2013 update was the explicit articulation of 17 principles, strengthening the link between risk assessment and control activities (COSO 2013). Professional analyses emphasize that COSO should not be treated as a checklist but as a risk-sensitive framework, where deficiencies in one component increase residual control risk across the system (KPMG 2016). The KPMG white paper highlights that ineffective integration between risk assessment and control activities often leads to false confidence in reporting reliability, especially in complex organizations with decentralized operations.

In 2023, COSO took a decisive step toward expanding its scope by issuing guidance on Internal Control over Sustainability Reporting (ICSR). This development is directly linked to the heightened expectations of stakeholders regarding sustainability and ESG disclosures. The guidelines aim to integrate ICSR into decision-making processes across the organization and enhance confidence in ESG information, which has an increasingly significant influence on market valuation (COSO 2023; Deloitte 2023).

The Sarbanes-Oxley Act (SOX) of 2002 was enacted to restore investor confidence by promoting transparency and accountability in financial practices. Section 404 is the most significant provision directly linking internal financial control to capital markets. Section 404(a) requires management of all publicly listed companies to assess and annually report on the effectiveness of internal control over financial reporting (ICFR). Section 404(b) additionally obliges the independent external auditor issue an opinion on management's assessment of the effectiveness of these internal controls. This requirement for dual assurance, from management and from the external auditor, is a key investor protection mechanism, reducing the likelihood of fraud and inaccuracies in financial statements. One of the primary dilemmas in implementing this law is balancing regulatory costs with achieved effectiveness. Initially, compliance costs were unexpectedly high (SEC 2009). As a result, reforms were introduced in 2007 (such as the Public Company Accounting Oversight Board's Auditing Standard No. 5), aiming to facilitate more efficient assessments and audits of internal control, particularly for smaller companies. This adjustment process demonstrates that regulatory policy must constantly seek the optimal balance between maximizing investor protection and minimizing economic burden for public companies. Ultimately, the success

of the regulation is measured not only by the failures it prevents, but also through the achievement of more effective internal financial control at economically efficient cost levels.

In the banking sector, internal control is closely tied to the regulatory capital requirements defined by the Basel Committee on Banking Supervision. The Basel IV framework (an enhancement of Basel III) introduces substantial reforms aimed at restoring confidence in the way banks calculate risk-weighted assets (Basel Committee 2023). A key reform is the restriction of banks' use of internal risk models in favor of more standardized approaches (Bank Capital Requirements 2025). For instance, banks with more than USD 100 billion in total assets are required to apply a new expanded risk-based approach, which mandates the calculation of RWA under two different methodologies. This shift reflects a fundamental change in the regulatory philosophy, indicating a degree of mistrust toward self-regulation and complex internal models that previously proved vulnerable to manipulation and misrepresentation prior to the 2008 financial crisis. By shifting control from internally determined parameters toward standardized, externally verifiable methods, regulators seek to enhance transparency and reduce systemic risk—thereby contributing to the stability and resilience of capital markets.

Within the European Union, the regulatory framework places strong emphasis on corporate governance and internal control. The European Banking Authority's (EBA) Guidelines on Internal Governance (under the Capital Requirements Directive CRD and the Investment Firms Directive IFD) require financial institutions to maintain a clear organizational structure, effective risk management, and adequate internal control mechanisms (EBA 2021). These guidelines consolidate and update previous requirements, introducing new chapters on corporate structure transparency, the role and responsibilities of the supervisory function, and the governance of IT systems and business continuity (EBA 2022). The focus on IT systems and organizational transparency is crucial for modern capital markets, where digitalization simultaneously increases efficiency and introduces new cyber risks.

The regulatory framework in Bulgaria establishes a multilayered system of control over financial institutions and publicly listed companies whose securities are traded on a regulated market. This system is structured around the Financial Supervision Commission as the primary regulatory authority and is supported by specific laws and ordinances that explicitly mandate the implementation of effective internal control and internal audit mechanisms. A synthesized overview of the key regulatory instruments is presented below (Table 1.).

Table 1.

Regulatory framework of the capital markets in Bulgaria and internal control requirements

Regulatory act or supervisory authority	Regulated entity	Internal Control Requirements or supervisory scope
Financial Supervision Commission (FSC)	Securities markets, investment intermediaries, public companies, collective investment schemes	Issues licenses; conducts supervision and imposes sanctions; requires internal control systems and independent internal audit; monitors transparency and investor protection (pursuant to the Financial Supervision Commission Act and the Markets in Financial Instruments Act).
Public Offering of Securities Act	Issuers and public companies	Obligation to provide reliable, complete, and timely periodic reports; annual report must include a declaration on the internal control and risk management systems related to financial reporting.
Ordinance No. 38 on the Requirements for the Activities of Investment Intermediaries	Investment intermediaries	Obligation to establish internal rules, policies, and procedures; mandatory compliance unit and internal audit function responsible for assessing the effectiveness of these processes.
Bulgarian Stock Exchange (BSE)	Public companies	Sets listing rules (corporate governance requirements); monitors trading on the stock exchange. Internal control ensures the reliability of financial data and timely disclosure of information.
Independent Financial Audit Act and Assurance on Sustainability Reporting	Public-interest entities	Independent audit covers the effectiveness of the internal control system; introduces an obligation for an additional report to the audit committee.
Accountancy Act	Enterprises and corporate groups	Management is responsible for organizing current accounting and providing a "true and fair view," which presupposes the establishment of internal control mechanisms.
National Corporate Governance Code	Public companies	Regulates the status of the audit committee; recommends establishing and maintaining systems for risk management, internal control, and internal audit.

Source: Own calculations

3. Empirical relationship: Pricing of control risk

Effective internal control functions as a mechanism for reducing information asymmetry between management and investors. Capital markets consistently react to signals of weak internal control. Empirical studies demonstrate that firms reporting material weaknesses experience: an increase in cost of equity; heightened stock price volatility; deterioration in analyst forecast accuracy.

Empirical researches consistently demonstrate that the disclosure of material weaknesses (MWs) in internal control leads to a significant negative event for investors. The mandatory disclosure of MWs under SOX Section 404 is associated with a substantial increase in the cost of equity (CoE), with estimates ranging from 50 to 150 basis points (Ittonen 2010). This increase in the cost of equity indicates that investors perceive inadequate internal control as a substantial non-financial risk that directly impacts the valuation of future cash flows. Investors require a higher premium to compensate for the heightened risk associated with potential fraud, misstatements, or ineffective management. Furthermore, the disclosure of MWs is followed by significant increases in stock price volatility (Ittonen 2010). The rise in volatility reflects the uncertainty of capital markets regarding the scope and severity of control deficiencies, as well as the future reliability of financial information, thereby intensifying the market penalty.

The market not only penalizes control weaknesses but also rewards their remediation. Analysis indicates that the elimination of material weaknesses improves labour investment efficiency. This carries an important implication: internal control is not merely a regulatory compliance function but a critical tool for enhancing operational effectiveness. Weak internal financial control leads to poor operational decision-making due to inaccurate or incomplete internal information, whereas strong internal control provides a reliable basis for resource optimization. At the same time, empirical evidence indicates that the negative impact on investment decisions is predominantly driven by more severe categories of weaknesses, which have a broad effect on internal reporting and those related to core accounting functions (Cao et al. 2022).

In the era of Internal Control over Sustainability Reporting (ICSR), the role of audit in validating non-financial information becomes central. High ESG performance enhances firm market value and reduces both overall and idiosyncratic risk (Brighi et al. 2025). However, this positive effect is significant only when ESG information is supported by high-quality external audit, particularly by auditors from the Big Four. This demonstrates that capital markets do not blindly trust internal control over sustainability but require independent external assurance to rely on the reliability of ESG data, effectively mitigating concerns related to greenwashing (Vaihekoski 2025). In the absence of such assurance, controversies regarding a company's ESG performance lead to a decline in market valuation and an increase in risk, highlighting the exceptional sensitivity of capital markets to deficiencies in sustainability governance and control.

Key academic studies concerning the interrelation between capital markets and internal financial control can be summarized as follows:

1) Internal financial control and market valuation

One of the most frequently cited empirical studies examining the impact of internal control on capital markets is the research by Li (2016), which suggests that public listed companies disclosing material weaknesses in their internal financial control exhibit an average market value reduction of approximately 13%. This study supports the thesis that investors use internal control disclosures as a signal of the reliability of financial statements and corporate sustainability. The mechanism of this influence is twofold: (1) weak internal control increases the probability of errors, fraud, and poor-quality reporting; (2) investors price this risk through higher rates of return (Cost of Equity) and stock price reduction. This establishes internal financial control as a direct determinant of the cost of capital and a strong empirical example of how deficient internal financial control is "punished" by capital markets.

2) Internal control and market reaction to financial results

Academic research in this area indicates that not only the overall valuation of the company responds to the quality of internal control, but also the market's reaction to reported earnings. The study by Liu (2024) demonstrates that companies with stronger internal controls have a higher earnings response coefficient, meaning the market reacts more strongly to reported earnings, reflecting greater confidence in their accuracy. In the absence of effective internal control, investors perceive earnings as less reliable, leading to a dampened market reaction. This illustrates that internal control is not merely a regulatory requirement but a key component of the capital market's information environment.

3) Internal control as a signal to stakeholders

According to a study by Alqaraleh (2024), investors and creditors perceive weak corporate governance and the absence of control mechanisms as a signal of heightened risk, even when financial indicators are stable. This effect is particularly pronounced in high-risk industries, where reporting reliability is key for risk assessment. Furthermore, research on internal audit practices (Hazaea et al. 2024) emphasizes that organizations maintaining effective internal audit practices demonstrate better financial and performance, indirectly enhancing external stakeholder confidence, including regulators, suppliers, and strategic partners.

4) The role of corporate governance in strengthening internal control and market reputation

Zheng (2025) highlights that supervisory authorities and boards of directors exert influence on the quality of internal control and, consequently, on the process of reducing earnings management and manipulation. This heightened assurance in reporting increases the firm's transparency and resilience to investors. The presence of effective senior management, an independent audit committee, and a clear system of control policies creates a positive perception in capital markets, often manifesting in lower risk premiums and higher stock liquidity.

Internal financial control plays a vital role both in the valuation of individual firms in capital markets and in building trust among stakeholders. The core mechanisms of influence include:

- improving the quality of financial reports;
- reducing information risk;
- strengthening the market reaction (ERC) to financial results;
- optimizing internal capital allocation;
- reinforcing market reputation and corporate confidence.

Weaknesses in internal control reduce market valuation, while the quality of internal control influences the market's reaction to financial results. Disclosures of internal control weaknesses serve as signals to investors, leading them to classify the investment as higher risk. These weaknesses decrease the firm's market value, which is significant because capital markets respond to internal control disclosures. Internal financial control enhances the quality of financial reporting, which in turn directly increases stakeholder confidence. Consequently, effective internal financial control is not merely an administrative function but a strategic asset that enhances enterprise value.

4. Prevention and detection of financial fraud through internal control systems: Analysis based on major financial scandals

The "Enron" case has been the subject of extensive academic research, as it illustrates an example of corporate governance failure and the inability of internal control mechanisms to prevent the collapse of a large corporation. The company employed complex special purpose entities (SPEs) and derivative instruments to conceal debt and inflate profits presented to investors, resulting in a misleading representation of its financial position (Healy & Palepu 2003). Enron's internal control system proved to be formalistic and ineffective; audits of subsidiaries and offshore structures were often superficial, and risks were not adequately assessed. The lack of transparency and auditor independence undermined the effectiveness of financial control, as management pursued aggressive profit-maximizing strategies, including mark-to-market accounting, which allowed for the immediate recognition of expected future profits. This practice led to excessive revenue inflation, even when actual cash flows did not correspond to reported earnings. One of the company's innovative practices, particularly in derivatives and energy futures, involved creating separate legal entities (Special Purpose Entities) to remove inefficient assets and liabilities from the balance sheet, thereby concealing losses and inflating fictitious profits. This resulted in high reported earnings and low levels of leverage. External auditing by Arthur Andersen was compromised due to conflicts of interest arising from the simultaneous provision of audit and consulting services. Internal control was ineffective and largely formal, lacking genuine independent oversight. At the same time, the board of directors failed to exercise effective supervision, prioritizing short-term increases in shareholder value over long-term stability.

From a risk management perspective, the Enron collapse illustrates the difference between risk and uncertainty, as conceptualized by economists such as Keynes: while risks can be quantified, the uncertainty surrounding the company's future outcomes was substantial, and the information available to investors was incomplete. This case highlights the necessity of an integrated approach to internal financial control that combines risk assessment, transparency in financial reporting, and cybersecurity. Following Enron's bankruptcy in 2001, the case was a catalyst for the enactment of the Sarbanes-Oxley Act (SOX 2002), which established stringent standards for internal control, accountability, and auditor independence. The lesson from Enron is that effective internal financial control requires more than formal procedures; it demands a substantive evaluation of both financial and non-financial risks, auditor objectivity, and integration of IT systems and cybersecurity (Benston 2003).

The key lesson for internal audit is that technology and software cannot substitute for the independence and objectivity of the auditor. The Enron case underscores the need for integrating risk analysis, financial reporting transparency, and cybersecurity within modern corporations. Enron's chief internal auditor, Sherron Watkins, is widely recognized as a key whistleblower in the scandal. In August 2001, Watkins wrote a memo to CEO Kenneth Lay warning of "massive accounting irregularities," potential unrecorded losses, and the risk of bankruptcy or severe reputational damage. Watkins emphasized that if investors and regulators were to uncover these practices, the consequences would be catastrophic. Despite these warnings, senior management and the board of directors failed to take any corrective actions (Watkins 2002). The Enron case thus illustrates several essential aspects of internal control: First, the internal auditor or internal control function carries a moral and professional obligation to report violations and deficiencies, despite inherent dependencies and pressure from senior leadership. Second,

while internal audit is a crucial mechanism for detecting irregularities and fraud, the effectiveness of internal control ultimately depends on the corporate governance structure and the willingness of management to act upon identified risks.

Another case comparable to Enron, often cited as a classic example of how the absence of effective internal control can lead to large-scale financial fraud and the collapse of a global corporation, is the "**WorldCom**" scandal (Hayes 2025). In 2002, it was revealed that the company had overstated its assets by approximately \$11 billion by capitalizing operating expenses as capital expenditures. The primary weakness that enabled such manipulation was an inadequate control environment: the absence of an independent board of directors, ineffective audit committees, and a near-total lack of oversight mechanisms to prevent the distortion of financial reports. From the perspective of internal financial control, the WorldCom case exposes several critical deficiencies:

- Control over accounting policies and procedures: Management unilaterally altered accounting rules without the approval of independent governance bodies, violating the principle of segregation of duties.
- Monitoring and oversight: Auditors and internal control units failed to exercise meaningful review over financial operations.
- Documentation and transparency: Fraudulent accounting entries were systematically recorded, yet no mechanisms existed to verify their accuracy.

The consequences of these control failures were catastrophic. Beyond the company's bankruptcy, the scandal played a central role in the adoption of the Sarbanes–Oxley Act (2002), which mandated that publicly traded companies establish, maintain, and regularly assess the effectiveness of internal controls over financial reporting. The Act also requires independent auditors to attest to management's assessment in the annual report. From an academic perspective, the WorldCom case reinforces the understanding that internal control is not merely a formal requirement but a critical safeguard for shareholder and investor interests, ensuring the reliability of financial reporting, and preserving the stability of capital markets. The absence of robust internal control creates an environment conducive to fraud, manipulation, and systemic corporate risks.

The bankruptcy of "**Lehman Brothers**" in 2008 is one of the most significant financial scandals in modern history and offers a crucial lesson on the importance of effective internal control within large financial institutions. The causes of the bankruptcy include excessive exposure to risky mortgage derivatives, insufficient liquidity management, and systematic concealment of debt obligations through the accounting practice known as "Repo 105" (Rezaee 2002). From the perspective of internal control, several major weaknesses can be identified within Lehman Brothers:

- Inadequate risk management: The lack of independent mechanisms for assessing credit and market risk led to the accumulation of excessively risky positions.
- Lack of timely reporting and transparency: The accounting entries related to transferring debts to short-term counterparties ("Repo 105") were not subject to adequate control and did not reflect the company's real financial position. The Repo 105 practice allowed assets to be temporarily removed from the balance sheet, concealing the high leverage.
- Insufficient segregation of duties between management and control bodies: Senior management exercised control over the auditing and risk-management functions, which compromised the independence and effectiveness of internal control. The external auditor, Ernst & Young, was aware that these transactions were designed to circumvent regulatory requirements and improve the appearance of quarterly or annual reports (Wiggins 2019).

The lack of effective internal control made it impossible to identify the accumulated risks early and allowed the concealment of the company's financial condition, ultimately resulting in sudden bankruptcy and contributing to the global financial crisis. The analysis demonstrates that internal control is not merely a formal procedure but a critical tool for risk management, financial reporting transparency, and investor protection (Kwaku & Mawautu 2014). Following the collapse of Lehman Brothers, regulators in the United States and worldwide introduced stricter requirements for risk management, internal control, and transparency, many of which were reflected in the Dodd-Frank Act (Dodd-Frank 2010). The Act emphasizes risk assessment, stress testing, and enhanced reporting obligations for major financial institutions, aiming to prevent similar systemic crises in the future.

In Europe, similar bankruptcies and financial scandals occurred during the same period. The "**Parmalat**" case of 2003 is a striking example of how systemic weaknesses in internal control can enable senior management to manipulate financial information. The multinational corporation, operating production facilities in more than 31 countries and selling products in over 60 markets across nearly all continents, falsified its balance sheet by recording fictitious assets and non-existent bank accounts amounting to €14 billion. Investigations revealed that the company failed to account for losses from its operations in Brazil and diverted €800 million to subsidiaries in the Cayman Islands without disclosure. According to Tomova and Atanasov (2004), the primary causes of the corporation's collapse were the sharp decline in the debt-to-equity ratio and the inadequate monitoring by internal control units.

A similar failure in oversight and weaknesses in internal control re-emerged in Europe years later. In 2020, **Wirecard** in Germany admitted the absence of €1.9 billion reported in trustee accounts in Asia (Pelizzon et al., 2020). The accusations against Wirecard include the manipulation of transactions involving a large network of

subsidiaries and partners to inflate revenue. German prosecutors argue that by recognizing revenues from so-called "third-party acquiring" entities, companies processing payments for Wirecard in jurisdictions where the company lacked an operating license, the company's management and accounting department misrepresented financial results for the years 2015–2018. Information about the fraud did not originate from internal financial control units but from investigative journalism. "The Financial Times" uncovered a series of suspicious transactions and fake contracts in one of the company's subsidiaries. Even external auditors Ernst & Young, commissioned by the German government in 2018, failed to issue an opinion on the substantial irregularities within the company. Due to this reputational damage, the audit company subsequently lost several major clients in the financial sector. The scandal, considered the largest European corporate fraud revealing fictitious assets and years of falsified revenues, highlights that effective oversight of financial markets is inseparable from reliable internal control systems at both corporate and regulatory levels (Taub 2023; Pelizzon et al. 2020). It underscores the need for continuous monitoring, auditor independence, and coordination action between national and European regulators to ensure the stability of capital markets and investor protection.

The largest U.S. bank failure since the 2008 financial crisis is considered to be the 2023 collapse of **Silicon Valley Bank**, an institution specializing in serving technology start-ups, venture capital funds, and innovative businesses. Over the years, the bank invested a significant portion of its deposits in long-term low-yield U.S. government securities. When interest rates began to rise sharply, the market value of these assets declined, prompting the bank to issue a public announcement regarding the need to raise additional capital. This triggered a mass withdrawal of deposits. The absence of internal control mechanisms, such as stress testing and scenario analysis, prevented the timely identification of the combined risk of mass withdrawals and asset depreciation. The case demonstrates that even with capital adequacy under regulatory standards (Basel III), ineffective internal control over risk management can lead to bankruptcy (Tran 2023). The main lesson is that structural changes are insufficient. The existence of a separate risk committee or a chief risk officer is meaningless if these functions lack the authority or expertise to challenge managerial decisions (Srinivasan 2023). In the case of Silicon Valley Bank, early liquidity assessments remained positive despite growing evidence of deterioration, indicating deficiencies in risk-escalation mechanisms (Fed 2023).

The case of "**Banco Popular Español**" represents the first full application of the Single Resolution Mechanism in the European Union and demonstrates the critical connection between internal control, risk management, and market confidence. Until 2017, Banco Popular was one of the oldest banks in Spain, serving primarily small and medium-sized enterprises. Although the bank formally met capital requirements, it failed to timely identify the accumulation of non-performing loans in its portfolio, particularly in the real estate sector, which undermined its liquidity and triggered a massive outflow of deposits. The European Central Bank declared the institution "failing or likely to fail," after which the Single Resolution Board arranged the immediate sale to Banco Santander for the symbolic price of €1 to prevent systemic risk. The case demonstrates that even with a regulatory framework and adequate capital ratios, weaknesses in internal controls over asset quality, liquidity, and stress testing can accelerate failure once market confidence is lost. The bank's public reports did not fully reflect the credit losses and the scale of non-performing loans. The intervention of regulatory authorities, including the European Central Bank and the Single Resolution Board, was crucial to avoiding a wider banking crisis. The case emphasized the need for enhanced supervision of asset quality and for effective internal control systems for managing credit risk (Toshkova & Popova 2017).

The Bulgarian experience regarding major corporate failures and the role of internal control in the presence of warning signs of weaknesses in the control process does not lag behind global cases. The bankruptcy of **Corporate Commercial Bank (KTB)** in 2014 represents one of the most significant financial and institutional collapses in modern Bulgarian history. Considering that the bank had long been among the leading financial institutions in Bulgaria, its insolvency, with a deficit of approximately 3.5 billion BGN, caused a severe shock to the Bulgarian banking system at the time. The main reasons included an unsustainable business model, a high concentration of credit risk toward a limited group of related parties, and the systemic failure of internal control mechanisms. From the perspective of internal control, the KTB case revealed several critical weaknesses. Risk management had been subordinated to the interests of the principal shareholder, thus compromising the functions of internal control and revealing the absence of independent and effective risk management. Supervisory oversight by the Bulgarian National Bank, the sector's regulatory authority, also failed to identify the concentration of loans to related parties, resulting in a violation of the fundamental principle of risk diversification. In addition, the Board of Directors did not exercise adequate monitoring over the bank's operational and financial activities, allowing procedures to be circumvented. The consequences of the KTB collapse led to strengthening banking and financial supervision, including amendments to the Credit Institutions Act and the Bank Deposit Guarantee Act. These legislative changes underline the importance of reliable internal control systems, combined with independent external oversight as key instruments for maintaining financial system stability and confidence in capital markets (Ivanov 2015).

Another example of a financial pyramid in Bulgarian practice is "**OneCoin**," created by Ruja Ignatova (Eberl 2024). The company was launched in 2014 as a cryptocurrency-based investment alternative, attracting

enormous interest from investors in Bulgaria and abroad. As early as 2015, the Financial Supervision Commission issued a public warning about the risks and terminated the company's operations in Bulgaria, after which it began transferring funds through foreign banks. Ruja Ignatova's company did not disclose any public information, nor was any real internal control exercised, while it promised returns through the purchase of "educational packages," the profitability of which depended solely on recruiting new participants rather than from any actual market value. In 2018, Bulgarian authorities, in cooperation with Europol, conducted searches of OneCoin's offices in Bulgaria and seized servers containing data. The case represents a model example of a modern financial pyramid involving individuals from various countries, using contemporary technologies to conceal the lack of a real business model. Here, the role of the external regulator, the Bulgarian Financial Supervision Commission, demonstrates the importance of its function as a supervisory authority in combating criminal schemes and fraudulent activities in Bulgaria.

The collapse of the cryptocurrency exchange **FTX** in 2022 has been described by federal prosecutors as "one of the largest financial frauds in American history." It triggered a massive outflow of funds, revealing an \$8 billion shortfall in customer accounts. The specific failure of internal control at FTX is unprecedented. CEO John J. Ray III (who previously oversaw the Enron bankruptcy) stated that he had never in his career seen "such a complete failure of corporate controls and such a complete absence of trustworthy financial information" (Moehring 2023). According to Kerr et al. (2023) the concrete failures included:

- the absence of board meetings for many of the entities;
- the inability to maintain centralized control over cash, the lack of accurate lists of bank accounts, and a total breakdown of liquidity forecasting;
- the absence of an accounting department and inadequate controls over financial disbursements.

Management pursued rapid growth while disregarding fundamental principles of corporate governance and ethical decision-making, rejecting recommendations for strengthening the control framework and concentrating practically unlimited power.

Internal control stands at a crossroads, facing the challenges of digital transformation, the integration of non-financial risks, and the need for faster and more comprehensive monitoring. Digitalization provides powerful tools for strengthening internal control. The use of data analysis technologies and artificial intelligence (AI) has become essential for internal auditors and controllers. These technologies allow for the analysis of large volumes of transactional data, making it possible to gain insights into the operational effectiveness of controls and to identify fraud indicators in real time (Coelho 2025). Financial institutions are increasingly adopting integrated risk models that combine controls over cybersecurity, anti-money-laundering processes, and fraud detection. This approach enables analysts to monitor a wide range of risk indicators simultaneously, prioritize signals, and coordinate investigations more rapidly (Deloitte 2024). Such integration is crucial, as it helps detect malicious actors who test various methods to bypass controls.

The collapse of FTX demonstrates that in unregulated or lightly regulated market segments (such as cryptocurrencies), the absence of basic control mechanisms can lead to catastrophic outcomes. In contrast to the traditional financial sector, where explicit obligations for data retention and reporting exist, the crypto industry lacks such standards. Regulators are beginning to view the absence of internal policies (e.g., data-retention policies) as a clear indication of a weak compliance culture and potential abuses (Thomson Reuters 2023). In response to these failures, professional organizations advocate for mandatory standards. The Institute of Internal Auditors proposes the mandatory introduction of independent internal audit functions within cryptocurrency exchanges. An internal audit function, that is independent from management and reports directly to the supervisory authority, is well positioned to ensure continuous and objective assessment of internal control effectiveness (IIA 2022). This regulatory response is a key step toward ensuring transparency and accountability which are necessary for building trust in this segment of the capital markets.

Despite advancements in technological monitoring, the roots of the largest financial failures remain in human behaviour and ethics, as evidenced in the cases of Lehman Brothers and FTX. The effectiveness of internal control critically depends on the control environment shaped by the "tone at the top." Corporate culture, promoted by transformational leaders, often involves creating a work environment that encourages employees to raise and challenge issues (whistleblowing) (Collier 2013). When senior management deliberately ignores controls or concentrates power, even the best-designed procedures can be overridden. Future direction of regulation and internal control practices must focus not only on technical procedures but also on developing internal accountability systems capable of counteracting the effects of poor "tone at the top", ensuring that ethics and transparency remain the guiding principles of corporate governance.

Major financial scandals reveal recurring failures of internal financial control rather than isolated ethical lapses. The following (Table 2.) synthesizes key scandals, highlighting specific control breakdowns and impact on financial reporting.

Table 2.

Failures of internal financial control mechanisms in major corporate scandals

Case	Key control failures	Impact on financial reporting	Regulatory implications
<i>Enron</i>	Ineffective risk assessment; override of controls; lack of auditor independence	Off-balance-sheet debt concealment; inflated earnings	SOX Act (2002); strengthened auditor independence
<i>WorldCom</i>	Absence of segregation of duties; weak monitoring	Capitalization of operating expenses	Mandatory ICFR assessments
<i>Lehman Brothers</i>	Inadequate risk management; lack of transparency	Concealment of leverage (Repo 105)	Basel reforms; Dodd–Frank
<i>Wirecard</i>	Ineffective group-level controls; reliance on third parties	Fictitious revenues and assets	EU audit reform; BaFin overhaul
<i>FTX</i>	Absence of basic accounting controls; no governance oversight	Missing customer funds; unreliable records	Calls for mandatory internal audit in crypto markets

Source: Author's synthesis based on Healy & Palepu (2003); Benston (2003); Wiggins & Metrick (2019); Pelizzon et al. (2020); Moehring (2023).

The common denominator across cases is the failure of internal financial control to function as an early-warning system. Controls existed formally but were either overridden, fragmented, or disconnected from risk management.

5. Conclusion

The relationship between capital markets and internal financial control is direct, measurable, and critical. The quality of internal control underpins investor confidence and market stability. Research confirms that capital markets effectively price control risk. The disclosure of material weaknesses leads to economically measurable penalties in the form of significantly increased cost of equity and volatility. Conversely, a well-structured and consistently applied internal control system, particularly when supported by high-quality external audit, enhances market valuation and reduces risk, especially in the emerging area of Integrated Corporate Sustainability Reporting. The regulatory framework adapts to new challenges: on one hand, it seeks to impose standardization (Basel IV) and limit reliance on internal models; while on the other hand, it expands the scope of control to include non-financial data (COSO ICSR). Corporate failures in recent years demonstrate that even in the absence of fraud and accounting techniques aimed at manipulating information, the complete lack of fundamental managerial controls can lead to collapse comparable to the largest historical scandals.

The theoretical contribution of this study lies in providing a synthesized view of the complex regulatory environment by integrating the COSO framework with the imperatives of SOX and specific financial regulations. The study emphasizes that internal control is not an isolated process but a systemic element whose effectiveness is influenced by all levels of corporate governance and external oversight. The practical contribution is expressed through the analysis of the largest financial failures, leading to the conclusion that shortcomings in ethics and culture outweigh mere technical compliance. Future research should focus on the following areas:

- Challenges in implementing internal control in decentralized markets: A detailed analysis is required of the mechanisms for enforcing mandatory internal audit and control standards (similar to SOX) in highly decentralized and digital market segments, such as cryptocurrency markets, considering the technological specificities of these assets.
- Effectiveness of board oversight: Following the failures and collapses of several banking institutions, it is crucial to examine mechanisms to enhance the competence and effectiveness of oversight by boards of directors and risk management committees, ensuring that structural changes lead to actual improvements in the control environment rather than mere formal compliance.

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