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Corporate Manipulations and Stock Price Movements

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ABSTRACT

Financial markets play a crucial role in modern economies, enabling the efficient transfer of capital from investors to business entities seeking financing. These markets serve as a platform where the supply and demand for capital meet, enabling companies to raise the funds they need to grow and develop, while investors earn a return on their investment. Although financial markets provide many opportunities for growth and value creation, they are also subject to various risks and uncertainties. One of the most serious risks that can undermine the integrity of the market is financial fraud. The conducted study has established that financial frauds cause significant declines in stock prices on financial markets, a finding that holds true across all observed periods. Specifically, it is evident that the stocks of accused companies experience a marked decline from the average ones, on the first day following the allegations, while market indices remain relatively stable. Within the first year, the stocks of these companies continue to lose value, whereas market indices maintain an upward trajectory. After three years, the stocks of all companies in the sample exhibit even greater average declines, while indices continue to rise. The correlation between the stock prices of accused companies and market indices diminishes over time, virtually disappearing in the long term. Market indices demonstrate resilience and sustained growth over time, whereas the affected companies experience a long-term loss of investor confidence and persistent declines in stock prices. The study findings confirm the proposed alternative hypothesis that financial fraud leads to significant stock price declines over time.

INTRODUCTION

Although financial markets offer numerous opportunities for growth and value creation, they are also susceptible to various risks and uncertainties. This study aims to examine the consequences of financial fraud on the stock prices of affected companies and how such events influence broader market trends. Through our study, we will demonstrate how stock prices change following public disclosure of financial irregularities, distinguishing between immediate, short-term market reactions and the long-term impacts that financial fraud can have on stock value. Additionally, we will analyse changes relative to the broader market by comparing stock price movements against a relevant index. In doing so, we aim to illustrate the extent to which financial fraud causes stock price fluctuations and how these fluctuations compare to the performance of the relevant market.

This study primarily utilized data on companies accused of financial fraud, gathered from research firms actively analysing companies suspected of involvement in corporate fraud. Additional data were sourced from Breakout Point GmbH, a specialized German company that monitors news and events related to companies accused of financial irregularities. Stock price movement data over time were collected using Bloomberg Terminal and the S&P Capital IQ database. These platforms provided access to historical stock price and index data, enabling the analysis of changes across various time frames.

The data processing involved analysing stock price changes to determine how many companies in the sample experienced negative versus positive price changes within each time frame. Additionally, a comparison was conducted between stock price movements and relevant market indices to ascertain whether the observed changes were specific to individual companies or part of broader market trends.

1. THE ROLE AND SIGNIFICANCE OF FINANCIAL MARKETS

Financial markets are defined as platforms where the supply and demand for financial resources meet, enabling the trading of financial instruments such as stocks, bonds, currencies, and derivatives (Mishkin, 2019). Their primary purpose is to ensure liquidity, allowing market participants to quickly buy or sell instruments without significantly impacting their price. Bodie et al. (2018) state that stock prices fluctuate in response to changes in market supply and demand, with various factors such as corporate earnings, interest rates, and global economic conditions influencing these prices. The prices of stocks, bonds, and other instruments reflect the collective expectations of market participants regarding future developments.

One of the most critical functions of financial markets is raising capital for businesses. Haugen (2010) emphasizes that financial markets facilitate the efficient allocation of capital within the economy, enabling investors to deploy their funds while providing businesses and governments with the necessary resources for their activities. Financial markets also allow for risk diversification, reducing investors' exposure to individual investments, thereby contributing to the stability of the financial system.

Levine (2005) outlines the functions of financial markets as facilitating the transfer of capital between savings and investments, enabling the pricing of financial instruments, and mitigating risk through diversification and derivative trading. They connect investors, who possess excess capital, with businesses, governments, and other organizations seeking funding for their projects and operations. Mishkin and Ekins (2018) highlight that financial markets play a pivotal role in the efficient allocation of resources, reducing transaction costs, and providing liquidity, enabling investors to easily buy and sell financial instruments. Furthermore, financial markets empower investors to diversify their investments and manage risks.

The transparency of financial markets ensures that all participants have access to relevant information, thereby reducing market uncertainties and improving market efficiency through lower transaction costs and increased confidence (Weller, 2017). Investor confidence in financial markets is built on the perception of stability and fair business practices, and any breach of this trust can lead to widespread capital withdrawals and market destabilization.

Diamond and Verrecchia (1991) argue that transparency in financial markets reduces uncertainty and enhances investor confidence by enabling better decision-making and lowering information and transaction costs. A lack of transparency often results in market manipulation, financial fraud, and market destabilization, which can significantly undermine investor trust.

2. WHITE-COLLAR CRIME AND STOCK MARKET CRIME

White-collar crime refers to illegal actions committed by individuals within business, political, or professional contexts who exploit their positions of power and trust for personal gain. These activities include fraud, embezzlement, and money laundering (Sutherland, 1983). Clinard and Yeager (1980) define white-collar crime as unlawful actions undertaken by individuals or organizations in positions of power or influence, characterized by deception and manipulation rather than physical violence. Such actions typically aim to secure financial gain through fraud, embezzlement, and other dishonest practices.

Piplica (2020) asserts that, at its core, white-collar crime consists of offenses committed by individuals or groups with relatively higher business status, whose illegal use of their professional positions and

influence enables them to obtain unlawful benefits, whether material or immaterial. The author further notes that the ingenuity displayed in unlawfully acquiring others' property often astonishes with its sophistication, speed, efficiency, immorality, and scope. Moreover, the perpetrators of such activities frequently remain "ahead of their time" and the national authorities tasked with detecting and prosecuting them. Benson and Simpson (2015) emphasize that white-collar crime is particularly challenging to prosecute due to its complexity, the high social status of the offenders, and the abstract nature of the harm it causes. Similarly, Le Maux and Smaili (2023) highlight that combating white-collar crime is complicated due to the sophisticated nature of these offenses and the high social status of the perpetrators.

Stock market crime represents one of the most severe forms of financial fraud on a global scale, with far-reaching consequences for financial markets, the economy, and society as a whole. According to Smith (2020), stock market crime encompasses deceptive practices such as insider trading, market manipulation, and the dissemination of false information, all of which can significantly impact the integrity of financial markets and broader economic stability. Brown (2018) identifies insider trading as one of the most well-known forms of stock market crime. This practice involves trading in a company's stocks or other securities by individuals with access to unpublished, materially significant information about the company, thereby undermining market fairness.

According to Smith (2020), history has witnessed some of the most infamous stock market frauds, such as the Enron scandal, where executives employed accounting fraud to artificially inflate stock prices, and Madoff's *Ponzi* scheme, which deceived investors for decades. These cases highlighted the vulnerability of financial markets to manipulation and underscored the need for stronger regulatory oversight. Additionally, they serve as examples of the extent to which certain individuals and organizations are willing to go to deceive, defraud, and achieve financial gain.

Müller (2021) analysed the Wirecard scandal as one of the largest cases of corporate fraud in history, involving the concealment of €1.9 billion. This collapse exposed significant failures in regulatory oversight and auditing, undermining investor confidence in the financial sector and prompting calls for stricter supervision of corporate governance and auditing practices. The Enron business scandal had far-reaching implications for financial markets, investors, employees, and overall trust in corporate integrity. In December 2001, Enron filed for bankruptcy, marking the largest corporate bankruptcy in U.S. history at the time. Furthermore, on June 25, 2002, WorldCom publicly disclosed that it had inflated its reported earnings by nearly \$4 billion due to improper accounting practices. The fraud resulted in substantial financial losses for shareholders, including pension funds and individual investors, and led to the loss of jobs for thousands of WorldCom employees.

Activist short sellers are specialized research firms focused on identifying and exposing financial fraud and other forms of corporate misconduct. Their business model relies on taking short positions in the stocks of companies under investigation. These research firms differ from traditional short-selling investors by publicly disclosing their short positions and accompanying these announcements with detailed reports alleging that the targeted company's stock is overvalued, fraudulent, or involved in other irregularities. A critical element of their success is the ability to identify companies with significant issues before these problems become known to the broader market.

Once sufficient evidence is gathered, these research firms take a short position in the company's stock. Subsequently, they publish their findings in the form of reports, often via websites, social media, or media outlets. The goal is to draw public and investor attention to the problems within the company, typically leading to a decline in the stock price. If their investigation proves accurate and the market reacts accordingly, they profit from their short position. One of the primary criticisms of activist short sellers is that they have a financial incentive to drive down stock prices, which may create a conflict of interest. On the other hand, proponents argue that this practice is essential for market health, as it helps uncover fraud that might otherwise go unnoticed.

3. RESULTS

Table 1 List of Companies Accused of Financial Fraud

<i>Company Name</i>	<i>Ticker Symbol</i>	<i>ISIN</i>	<i>Country</i>	<i>Research Company and Number of Reports</i>
Yalla Group Ltd	YALA	US98459U1034	UAE	Citron Research (3)
QUANTUMSCAPE CORP	QS	US74767V1098	USA	Hindenburg Research (2)
JOYY Inc	YY	US98426T1060	Singapore	Muddy Waters Research (2)
GREINKE AG	GLJ	DE000A161N30	Germany	Aurelius Value Research (1)
Nikola Corp	NKLA	US6541101050	USA	Blazing Research (1)
Remark Media Inc	MARK	US75954W1071	USA	Bonitas Research (1)
Gaotu Techedu Inc	GOTU	US36257Y1091	China	Gotham City Research (1)
Ideanomics Inc	IDEX	US45166V1061	USA	Scorpion Capital (1)
iQIYI Inc	IQ	US46267X1081	China	Swan Street Research (1)
Luckin Coffee	LK	US54951L1098	China	Viceroy Research (1)
Jumia Technologies AG	JMIA	US48138M1053	Germany	Wolfpack Research (1)
Xiaobai Maimai Inc	HX	US4282951098	China	EducationEquity Research (1)
Polarityte Inc	RGTPQ	US7310941080	USA	Ash Illuminat. Research (1)
Hailiang Education Group Inc	HLG	US40522L1089	China	MOX Reports (1)
Secoo Holding Ltd	SECO	US81367P1012	China	SoapBox Research (1)
Criteo S.A.	CRTO	US2267181046	France	Unemon Research (1)
Cogobuy Group	00400	KYG225371072	China	Zhongkui Research (1)
Pingtian Marine Enterprise Ltd	PME	KYG7114V1023	China	-
Neurotrope, Inc	NTRP	US64129T2078	USA	-
Cemtrex Inc	CETX	US15130G3039	USA	-
Sinosoft Technology Group	01297	KYG818751094	China	-

Source: Compiled by the authors based on data collected from research companies

Table 1 presents a list of 21 companies accused of financial fraud. The company name provides precise identification of the entity under investigation, while the stock ticker, also known as the *ticker symbol*, serves as a reference for recognizing the company's shares on stock exchanges and in financial reports. Additionally, the table includes the ISIN (*International Securities Identification Number*), a standardized code used for the accurate identification of securities in global markets. For each company, the country of registration is also listed, which is crucial for understanding the context in which the company operates, as well as for analysing the regulatory frameworks and legal systems that may have contributed to the detection or oversight of financial irregularities.

The table also shows the number of reports issued by research companies specializing in monitoring and uncovering financial fraud. Citron Research has the highest number of reports, with a total of three, while Hindenburg Research and Muddy Waters Research each issued two reports. The remaining companies, including Aurelius Value Research, Blazing Research, Bonitas Research, and others, issued one report each. In total, 21 reports were issued by 17 different research firms. The S&P 500, the most used index, is associated with the largest number of companies in the sample, specifically 17 companies are referenced by this index. Other indices, such as NASDAQ, DAX 30, and Hang Seng, are linked to fewer companies. The highest number of reports pertains to the consumer discretionary and healthcare sectors, with five reports each. The industrial and communication services sectors are also significantly

represented, while other sectors, such as finance, information technology, and technology, have a smaller number of reports.

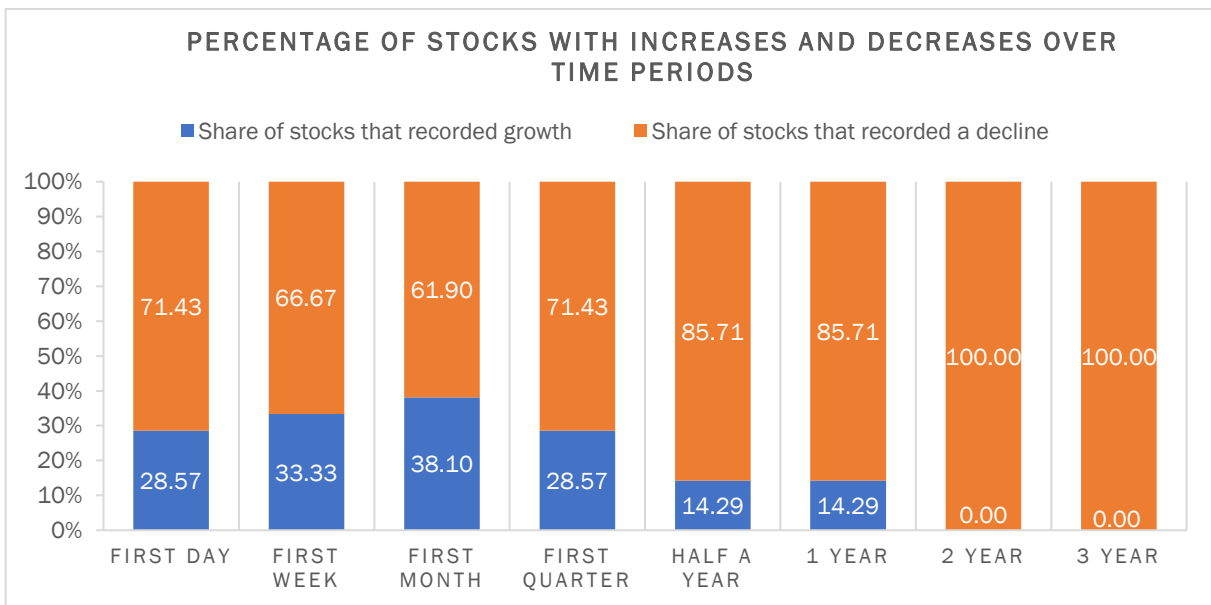


Chart 1. Proportion of Stocks in the Sample that Experienced an Increase or Decrease Over the Observed Time Period
Source: Compiled by the authors based on data collected from financial platforms Bloomberg and S&P Capital IQ

The chart shows that many stocks experienced a decline immediately following the revelation of fraud, with 71.43% of stocks decreasing in value on the first day. This percentage decreases slightly within the first month, where 66.67% of stocks report a decline, while 33.33% record an increase. Over time, the proportion of stocks with declining prices significantly increases. After six months, 85.71% of stocks report a decline, and this percentage rises to 100% after two and three years. The chart illustrates a general trend of decreasing stock values for companies accused of financial fraud, highlighting the long-term negative consequences of such allegations.

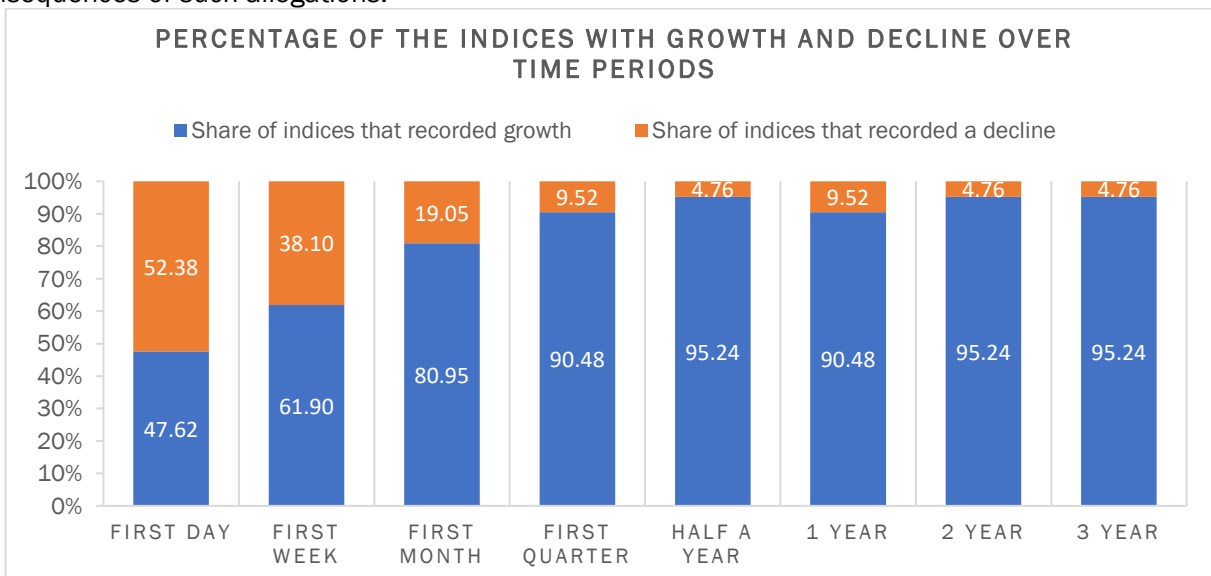


Chart 2. Proportion of Indices in the Sample That Experienced Increases or Decreases Over the Observed Time Period
Source: Compiled by the authors based on data collected from financial platforms Bloomberg and S&P Capital IQ

The chart illustrates the percentage of indices that recorded increases or decreases in value over various time periods following accusations of financial fraud against companies. The data shows that indices exhibited mixed results in the initial periods. For instance, on the first day after the accusations,

52.38% of indices showed a decline, while 42.62% showed an increase. Over time, the proportion of indices recording declines decreases, and more indices begin to show increases. For example, after the first month, 80.95% of indices reported an increase, a figure that rose even higher in later periods, such as the first quarter (90.48%) and half-year (95.24%). Long-term data demonstrates that the proportion of indices with growth remains consistently high, with only 4.76% of indices experiencing a decline in value.

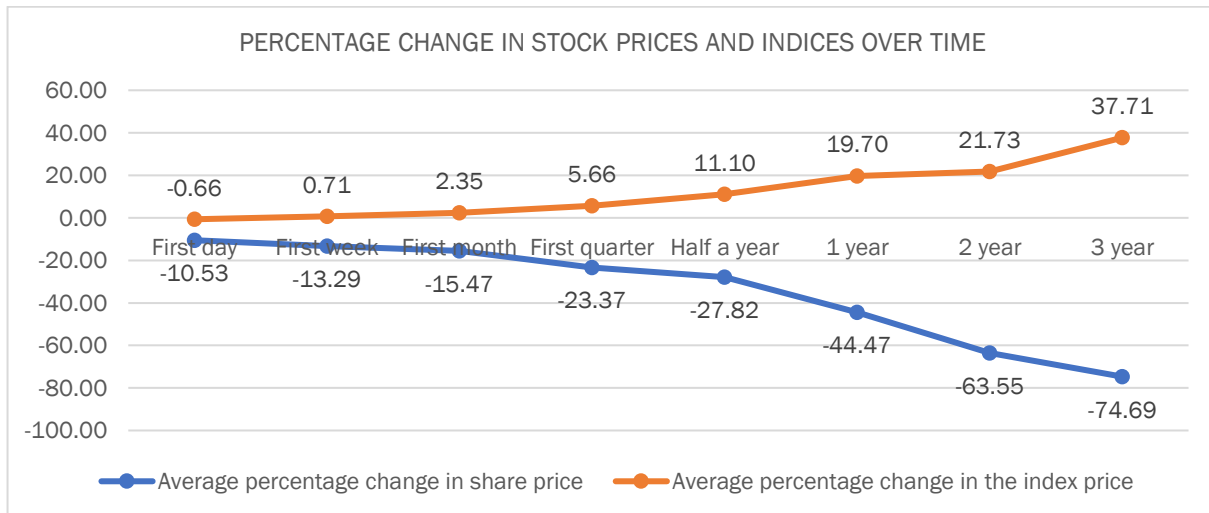


Chart 3. Average Percentage Change in Stock Prices and Benchmark Indices Across Observed Periods
 Source: Authors’ analysis based on data collected from financial platforms Bloomberg and S&P Capital IQ

Chart 3 presents a comparison of the average percentage change in stock prices of companies accused of financial fraud with the average percentage change in relevant indices over different time periods. The chart demonstrates that the average stock price experiences a significant decline immediately following the disclosure of allegations, beginning with a drop of -10.53% on the first day. This decline deepens progressively over time. By the end of the three-year period, the average stock price records a dramatic decrease of -74.69%, indicating the long-term destructive impact of such allegations on the value of these companies' stocks. In contrast, the orange line, representing changes in indices, displays a markedly different trend. Unlike the stock prices, the indices show growth over time. By the end of the three-year period, the indices report a significant average increase of 37.71%.

While stock prices experience a continuous downward trajectory over time, market indices exhibit growth. This divergence may also suggest a shift in the correlation between stock prices and indices over time, transitioning from a weakened correlation in the initial phases to a potentially negative correlation as the time horizon extends.

Table 2. Shapiro-Wilk test

Shapiro-Wilk	W	p
First day	0.933	0.162
First week	0.942	0.238
First month	0.932	0.154
First quarter	0.906	0.047
Half year	0.829	0.002
One year	0.935	0.172
Two years	0.944	0.262
Three years	0.881	0.015

Source: Authors’ analysis based on data collected from financial platforms Bloomberg and S&P Capital IQ

The results of the Shapiro-Wilk test indicate that the data for the first day, first week, first month, one year, and two years are normally distributed, as their p-values exceed the threshold of 0.05. Conversely, the data for the first quarter ($p = 0.047$), half-year ($p = 0.002$), and three years ($p = 0.015$) deviate from normal distribution, as their p-values fall below the 0.05 threshold. The latter suggests significant departures from normality in these periods.

Table 3. Pearsono Correlation Matrix

Correlation	<i>First day</i>	<i>First week</i>	<i>First month</i>	<i>First quarter</i>	<i>Half year</i>	<i>1 year</i>	<i>2 years</i>	<i>3 years</i>
First day	1.00	0.730	0.637	0.319	0.411	0.111	0.167	0.279
First week	0.730	1.00	0.905	0.584	0.134	-0.062	0.021	0.328
First month	0.637	0.905	1.00	0.572	0.056	-0.093	0.071	0.405
First quarter	0.319	0.584	0.572	1.00	0.458	0.179	-0.045	0.097
Half year	0.411	0.134	0.056	0.458	1.00	0.443	-0.054	-0.097
1 year	0.111	-0.062	-0.093	0.179	0.443	1.00	0.406	0.125
2 years	0.167	0.021	0.071	-0.045	-0.054	0.406	1.00	0.428
3 years	0.279	0.328	0.405	0.097	-0.097	0.125	0.428	1.00

Source: Authors' analysis based on data collected from financial platforms Bloomberg and S&P Capital IQ

Table 3 illustrates the Pearson correlation coefficients between changes in stock prices over different time periods following allegations of financial fraud. The table highlights how the relationship between stock price changes evolves over time, with stronger correlations observed in the short-term periods, which gradually weaken as the time horizon extends.

Table 4. Student's t-Test and Wilcoxon Test Results

	<i>Test</i>	<i>Statistic</i>	<i>df</i>	<i>p</i>
First day	Student	-3.795	20	< .001
	Wilcoxon	31.000		0.001
First week	Student	-2.924	20	0.004
	Wilcoxon	39.000		0.003
First month	Student	-2.282	20	0.017
	Wilcoxon	54.000		0.016
First quarter	Student	-2.681	20	0.007
	Wilcoxon	45.000		0.006
Half year	Student	-2.718	20	0.007
	Wilcoxon	32.000		0.001
1 year	Student	-6.500	20	< .001
	Wilcoxon	8.000		< .001
2 years	Student	-12.771	20	< .001
	Wilcoxon	0.000		< .001
3 years	Student	-15.246	20	< .001
	Wilcoxon	0.000		< .001

Source: Authors' analysis based on data collected from financial platforms Bloomberg and S&P Capital IQ

This table presents the results of two statistical tests—Student's t-test and the Wilcoxon test—applied to several time points: the first day, first week, first month, first quarter, half-year, one year, two years, and three years. Both tests are used to evaluate differences between samples, but they are suited to different assumptions about the distribution of the data. Student's t-test assumes that the data are normally distributed, whilst The Wilcoxon test, being a non-parametric method, is applied when the data distribution deviates from normality.

The results indicate statistically significant differences ($p < 0.05$) at all time points for both tests, signifying that the changes between time points were significant. For instance, on the first day, Student's t-test reports a statistic of -3.795 with a p -value of less than 0.001, indicating a substantial difference. Similarly, the Wilcoxon test confirms this difference with a p -value of 0.001. As time progresses, the differences become even more pronounced, with extremely low p -values, particularly after one year, two years, and three years, where both tests reveal highly significant differences ($p < 0.001$). The table confirms that the differences between time periods are consistent and statistically significant, regardless of whether a parametric or non-parametric test is applied.

4. DISCUSSION

The study examines two hypotheses to determine whether the disclosure of financial fraud has a significant impact on stock prices. The null hypothesis (H_0) posits that financial fraud does not result in a significant decline in the stock prices of the affected companies. In contrast, the alternative hypothesis (H_1) assumes that financial fraud leads to a significant decrease in the stock prices of the affected companies. The purpose of testing the results obtained in this research is to understand how the market reacts to such scandals and what the long-term consequences are for investors. The primary objective was to analyse how stock prices evolved over the three-year period following the disclosure of allegations and to compare these changes with the performance of relevant market indices. The results were evaluated across several time intervals: the first day, first week, first month, first quarter, half-year, one year, two years, and three years.

Companies accused of financial fraud experience a significant loss in value over time, while relevant market indices exhibit the opposite trend of consistent growth. On the first day following the announcement of allegations, the stocks of these companies show an average decline of -10.53%, whereas market indices remain nearly unchanged, with a slight decrease of -0.66%. As time progresses, the disparity between the performance of these stocks and the indices becomes increasingly pronounced. While the stock prices of accused companies continue to decline, registering an average drop of -74.69% after three years, the indices achieve a substantial gain of 37.71%. These findings suggest that allegations of financial fraud not only severely undermine investor confidence in the affected companies but also render these companies significantly less valuable in the long term. On the contrary, market indices, which represent a broader spectrum of companies, not only recover from any initial negative impact but also achieve growth, demonstrating the resilience and stability of the broader market despite individual scandals.

This study analysed key benchmark indices representing broader markets, serving as indicators of general market sentiment. Indices such as the S&P 500, NASDAQ, DAX 30, and Hang Seng reflect collections of stocks from leading companies in developed markets. During the analysed period, the benchmark indices demonstrated stability and growth, while the stocks of companies accused of financial fraud experienced significant declines. This divergence highlights the contrasting performance between stable market segments and individual companies facing allegations of financial misconduct.

When allegations of fraud are disclosed, the market reacts almost immediately, as investors quickly reassess their confidence in the affected company. Such situations often lead to sharp declines in stock prices, driven by panic selling and capital withdrawal. Immediately following the announcement of allegations of financial fraud, the market typically responds with remarkable speed, resulting in significant stock price drops for the implicated company in most cases. Algorithmic trading further amplifies this rapid reaction, as many trading algorithms automatically analyse news and initiate stock sales upon detecting negative sentiment. As a result, the stock price can experience a dramatic decline within just a few hours of the news release, reflecting the immediate shift in market sentiment and trust toward the company.

A week after the disclosure of allegations of financial fraud, the stock price typically continues to reflect the initial market reaction. Following the initial drop, the stock price may stabilize in some cases, although volatility often remains high as investors and analysts further assess the situation. If additional negative information emerges during the week, the stock price may experience further declines. Conversely, if the company demonstrates its ability to manage the crisis or mitigating factors come to light, the market may begin to stabilize the stock price. However, in most cases, the first week following the announcement of allegations sees 66.67% of companies experiencing a decline in stock prices, with an average drop of -13.29%.

Examining the effects during the first month, quarter, and half-year following the announcement of allegations provides insights into how the market stabilizes and shapes its perception of the risks associated with the accused companies. The first month after the disclosure of financial fraud allegations is often marked by significant fluctuations in stock prices as the market seeks to analyse and evaluate the available information. According to the data analysis, 61.90% of stocks experienced a decline during this period, while 38.10% managed to achieve growth. The average decline in stock prices of companies accused of financial fraud was -15.47%. These results indicate an additional drop compared to the first week, suggesting that uncertainty among investors persists. A month after the disclosure, the market continues to adjust to new information, with investors beginning to make more informed decisions based on further analyses and evaluations.

After three months, the market begins to reveal a clearer trend regarding the future of the accused companies. Data indicates that by the end of the first quarter, 71.43% of stocks recorded declines, with an average price drop of -23.37%, while only 28.57% of companies managed to achieve stock price growth. This result suggests that many investors, following a more thorough analysis, have lost confidence in companies under investigation for financial misconduct. The market starts to more realistically assess the long-term risks and potential consequences for the accused companies, which is reflected in a significant reduction in their value. Six months after the allegations were disclosed, the medium-term effects become even more pronounced. According to the data, 85.71% of stocks experienced declines during this period, with an average drop of -27.82%, while only 14.29% of companies managed to achieve growth. These figures suggest that by this point, the market has largely lost confidence in the accused companies. The negative sentiment surrounding these stocks is primarily a result of additional information that has reinforced suspicions about the financial stability and governance practices of these companies.

One year after the allegations were disclosed, the situation remains highly unfavourable for most stocks of the affected companies. According to the collected data, 85.71% of the stocks experienced declines during this period, while only 14.29% showed growth—the same ratio observed at the six-month mark but with a significantly steeper percentage decline in stock prices. The average drop in stock prices increased to -44.47%. This result suggests that investor confidence in these companies has not recovered, despite potential efforts by the companies to mitigate the damage. After two years, the long-term negative effects become even more apparent. The data shows that 100% of the stocks experienced declines, with no stock recording growth during this period. By this stage, investors clearly understand the long-term consequences of the allegations, which may include management changes, restructurings, or even potential bankruptcies. The market no longer anticipates recovery for most of these companies, resulting in further devaluation of their stock. Three years after the disclosure of the allegations, the negative trend remains consistent with the two-year period, with 100% of the stocks experiencing declines and an average price drop of -74.69%. This figure indicates that all companies in the sample have undergone a substantial loss of market capitalization. By this time, investors have almost entirely withdrawn from these stocks.

The relationship between index price movements and stock prices represents the extent to which individual stock prices align with relevant market indices. This correlation is critical for understanding the relationship between individual stocks and the broader market, as it can provide insights into how market trends influence specific stocks and how sensitive they are to macroeconomic changes.

In the short term, immediately following the announcement of allegations, the correlation between the stocks of accused companies and relevant market indices typically remains relatively high. During this phase, the decline in the stock prices of accused companies often coincides with a similar, though less pronounced, drop in market indices, as the market reacts to news of potential irregularities in the

operations of these companies. Short-term market responses may include the sale of not only the accused companies' stocks but also those of similar companies, leading to a temporary correlation between broader market movements and specific stock performance. However, after a few months, as investors have had sufficient time to analyse and assess the situation, the stocks of accused companies generally begin to diverge from the broader market. While relevant indices such as the S&P 500 or DAX 30 may exhibit signs of recovery or stable growth, the stocks of accused companies often remain under pressure and continue to decline. In the medium term, investors start to distinctly separate the performance of these stocks from the broader market, resulting in a progressively weaker correlation.

In the long term, the disparity between the performance of market indices and the stocks of accused companies becomes even more pronounced. After one to two years, the correlation between these stocks and the broader market virtually disappears. While indices may continue to rise, reflecting general economic conditions and positive macroeconomic trends, the stocks of accused companies often persist in declining or stagnating. Three years after the allegations are disclosed, this divergence becomes permanent, indicating that the market no longer sees any connection between overall market sentiment and the fate of these specific stocks. At this point, the market has clearly demonstrated that allegations of financial fraud can have irreversible consequences on stock value, rendering their performance almost entirely independent of general market movements.

The results of this study reveal a strong positive correlation between stock price changes over short time periods. For instance, the correlation between the first week and the first month is 0.905, indicating a strong connection between these two periods. Similarly, the correlation between the first day and the first week is 0.730, also demonstrating significant linkage. However, as longer time periods are observed, these correlations weaken. For example, the correlation between the first day and half-year is 0.411, still positive but notably weaker. Over extended periods, such as one or two years, correlations generally diminish and approach zero, suggesting a weaker linear relationship. These findings suggest that the connection between stock price changes is strongest during short timeframes immediately following the allegations. Over time, this relationship weakens, indicating the increasingly complex influence of various factors on stock price movements in longer time horizons.

The results of the analysis using Student's t-test and the Wilcoxon test consistently indicate a significant decline in the stock prices of all observed companies following allegations of financial fraud across all time intervals covered in the study. The negative t-values obtained from the Student's t-test clearly demonstrate a decline in stock prices. Lower t-values indicate a more pronounced drop compared to the null hypothesis, which posits no significant changes in stock prices. The p-values for all time intervals are notably low, in most cases below 0.001, signalling statistical significance at conventional significance levels (0.05 or 0.01). Even p-values that are slightly higher but still below 0.05 (e.g., 0.004, 0.007, and 0.017) confirm statistically significant declines in stock value. These results suggest that allegations of financial fraud have had a substantial negative impact on stock prices across all analysed time intervals, from the first day to three years after the allegations.

The Wilcoxon test, which is non-parametric and does not assume normality in the data distribution, corroborates these findings. For every time interval, the results of the Wilcoxon test show statistically significant p-values below 0.05, most often below 0.001. This further confirms that allegations of financial fraud significantly affected stock prices. While the Wilcoxon test is less sensitive to distributional assumptions compared to Student's t-test, the results of both tests are consistent, demonstrating significant declines in stock prices. For example, on the first day after the fraud was uncovered, the p-values for both tests are below 0.001, indicating a sharp decline in stock value immediately following the announcement. Similar patterns are observed in subsequent periods, such as the first week and the first month, where the p-values for both tests remain below the 0.05 threshold, confirming continued negative impacts on stock prices. As time progresses, even at one, two, and three years post-allegations, the p-values for both tests remain low, indicating that the decline in stock prices is a lasting consequence of financial fraud.

These results, derived from two distinct statistical tests, consistently reject the null hypothesis that financial fraud does not cause a decline in stock prices. Given the statistical significance of these findings, it can be concluded with great certainty that financial fraud leads to a significant decline in stock prices.

CONCLUSION

The stock values of accused companies experience a sharp short-term decline immediately following the announcement of allegations, while market indices remain almost unaffected. Over longer time periods, the decline in the stock prices of accused companies becomes increasingly pronounced, whereas market indices continue to show steady growth, highlighting the divergence between accused companies and the broader market. After three years, all accused companies record significant losses in value, while market indices demonstrate stable growth, underscoring the negative impact of financial fraud allegations. The correlation between the stock prices of accused companies and market indices decreases significantly over extended periods. Market indices exhibit resilience and growth over time despite scandals involving individual companies, whereas the stocks of accused companies experience long-term value erosion. This study confirms that the disclosure of financial fraud causes a substantial decline in the stock prices of the affected companies.

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