

The Impact of Accounting Information Quality on Shareholders' Investment Decisions

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Abstract. Accounting information quality is a core factor affecting investor decision-making and capital market efficiency. In recent years, frequent financial fraud cases have intensified concerns over how deteriorating accounting information affects investor behavior. This study examines the Luckin Coffee financial fraud case using the event study methodology to investigate whether poor accounting information quality triggers negative investor reactions and whether market responses differ between the fraud suspicion disclosure stage and the official confirmation stage. Based on stock trading data from IPO to pre-delisting, two key event dates and a [-5,+5] event window are selected. Abnormal returns (AR) and cumulative abnormal returns (CAR) are calculated using the market model. The results show significantly negative AR and CAR at both stages, with a substantially stronger reaction during the confirmation stage. The findings highlight the severe market consequences of accounting fraud and provide implications for firms, investors, and regulators in strengthening information disclosure and market supervision.

Keywords: Accounting Information Quality, Financial Fraud, Investor Reaction

1. Introduction

In modern capital markets, accounting information is a critical link between corporate operations and investors' decision-making. Its quality directly affects investment rationality and the efficiency of resource allocation. From the decision-usefulness perspective, relevant and reliable financial information enables investors to access firm value and make informed economic choices.

Prior studies show that high-quality accounting information mitigates information asymmetry. Akerlof noted that management's informational advantage over actual firm performance may cause adverse selection and moral hazard, while Healy and Palepu proved such information reduces asymmetry and boosts investor confidence [1,2]. In terms of investment efficiency, Biddle et al. found high-quality financial reporting eases financing constraints and reduces inefficient investment, and Chen et al. confirmed improved transparency enhances capital allocation efficiency [3,4]. Signaling theory further explains how credible financial reporting conveys positive signals about corporate governance and operational stability. Spence's early work emphasizes the importance of credible signals in markets with asymmetric information [5]. Lawati and Sanad verified high-quality internal control enhances investors' information trust and capital market liquidity [6]; Yashwant B G et al. proved investors' perception of accounting information quality directly affects their risk

management and investment decisions [7]. Gul et al. held that sound internal control and governance prevent financial fraud, and Barth et al. highlighted International Accounting Standards' role in improving information quality and global capital market efficiency via standardization [8,9].

Frequent financial fraud cases in recent years provide a realistic context for examining the consequences of accounting information deterioration. The Luckin Coffee scandal, which triggered drastic stock price fluctuations during both the suspicion disclosure and confirmation stages, offers a representative case. This study employs an event study methodology to analyze the impact of accounting information quality deterioration at different stages on investors' investment decisions. The findings enrich the literature on accounting information quality and investor behavior and provide implications for improving corporate information disclosure practices, optimizing investor decision-making, and enhancing capital market regulation.

2. Theoretical background and hypotheses

2.1. Accounting information quality and market reaction

In capital markets, publicly disclosed accounting information constitutes a primary basis for firm valuation and investment decision-making. Due to inherent information asymmetry between corporate managers and external investors, the quality of accounting information plays a critical role in shaping market expectations and investor behavior.

High-quality accounting information provides a faithful representation of a firm's financial position, operating performance, and cash flow prospects, thereby reducing valuation uncertainty and mitigating adverse selection and moral hazard problems. By contrast, distorted or manipulated accounting information increases information asymmetry and misleads investors regarding firm value, which may result in abrupt market corrections once negative information is revealed.

From the perspective of signaling theory, accounting disclosures function not only as information carriers but also as signals conveying managerial credibility and corporate governance quality. Reliable financial reporting sends positive signals to the market, reinforcing investor confidence, while financial fraud sends strong negative signals indicating opportunistic behavior. Once such negative signals are identified, investors tend to revise expectations rapidly, leading to sharp stock price declines. Accordingly, deterioration in accounting information quality is expected to trigger negative market reactions, which can be directly observed through abnormal stock returns.

2.2. Hypothesis development

The financial fraud scandal involving Luckin Coffee provides a natural experimental setting to examine investor reactions to accounting information quality deterioration at different stages. Specifically, the event unfolded in two distinct phases: the initial disclosure of fraud suspicion and the subsequent confirmation of fraudulent activities. The disclosure of fraud suspicion alerts investors to potential misrepresentation in financial reporting, leading to a reassessment of firm value and negative market reactions. When fraud is officially confirmed by the firm, accounting information quality is fully invalidated, resulting in a more severe loss of investor confidence and stronger negative market responses.

Based on the above analysis, the following hypotheses are proposed:

H1: Deterioration in accounting information quality leads to negative investor reactions, as reflected by significantly negative abnormal returns.

H2: The negative market reaction during the fraud confirmation stage is significantly stronger than that during the fraud suspicion stage.

3. Research design

3.1. Sample selection and data collection

This study selects Luckin Coffee Inc. (stock ticker: LKNCY) as the research sample. The observation period spans from May 17, 2019 (the IPO date) to June 30, 2020 (prior to delisting), covering a total of 253 trading days.

The data sources are as follows: (1) Daily stock trading data of Luckin Coffee, including opening price, closing price, trading volume, and other key market indicators; (2) Market benchmark data are obtained from the NASDAQ Composite Index (^IXIC), which is used to estimate normal returns; (3) Key event dates related to the financial fraud are verified through company announcements, SEC disclosure documents, and reports from authoritative financial media outlets.

3.2. Event definition and event window specification

3.2.1. Key event dates

Two major event dates are identified in this study: Event 1 (T0): January 31, 2020—Muddy Waters released a short-selling report accusing Luckin Coffee of fabricating transaction data, thereby exposing suspected financial fraud; Event 2 (T0): April 2, 2020—Luckin Coffee officially announced that it had fabricated RMB 2.2 billion in transactions from the second to the fourth quarter of 2019, confirming the existence of financial fraud.

3.2.2. Event window design

Following Using Daily Stock Returns: The Case of Event Studies and considering the specific characteristics of the Luckin Coffee fraud, the following windows are defined:

- Estimation Window: For Event 1: from May 17, 2019, to December 31, 2019 (159 trading days); for Event 2: from May 17, 2019, to March 1, 2020 (202 trading days). These periods are used to estimate the parameters of the market model.
- Event Window: The event window is set as $[-5,+5]$, covering five trading days before and after the event date to capture both immediate market reactions and short-term lagged effects on investor decision-making.
- Clean Window: A one-month gap is imposed between the estimation window and the event window to mitigate potential contamination from information leakage prior to the event.

3.3. Variable definitions and measurements

3.3.1. Dependent variables: proxies for investor decision-making

Investor reactions are measured using abnormal returns (AR) and cumulative abnormal returns (CAR).

- **Abnormal Return (AR_{it}):** AR represents the firm's stock return after removing the impact of overall market movements, capturing the net effect of the event on stock prices. It is calculated as:

$$AR_{it} = R_{it} - E(R_{it}) \quad (1)$$

Where R_{it} denotes the actual return of Luckin Coffee on day t , and $E(R_{it})$ represents the normal (expected) return on day t .

- **Cumulative Abnormal Return (CAR [t1, t2]):** CAR is the aggregated abnormal return over the event window and reflects the total impact of the event on investor decision-making:

$$CAR_{[t_1 t_2]} = \sum_{t=t_1}^{t_2} AR_{it} \quad (2)$$

3.3.2. Control variable

Following conventional event study methodology in capital market research, market-wide fluctuations are controlled for using the return of the NASDAQ Composite Index (R_{mt}), calculated as:

$$R_{mt} = \frac{I_{mt} - I_{m,t-1}}{I_{m,t-1}} \quad (3)$$

where I_{mt} denotes the closing value of the NASDAQ Composite Index on day t .

3.4. Model specification

3.4.1. Normal return estimation: market model

The market model is employed to estimate normal returns, assuming a linear relationship between the firm's stock return and the market return:

$$R_{it} = \alpha_i + \beta_i R_{mt} + \varepsilon_{it} \quad (4)$$

where R_{it} is the actual return of Luckin Coffee on day t , R_{mt} is the market return, α_i is the intercept term, β_i represents the systematic risk coefficient, and ε_{it} is the error term. The parameters α_i and β_i are estimated using data from the estimation window, and the expected return during the event window is calculated as:

$$E(R_{it}) = \hat{\alpha}_i + \hat{\beta}_i R_{mt} \quad (5)$$

3.4.2. Significance testing

To examine whether abnormal returns during the event window are statistically different from zero, t-tests are conducted as follows:

$$t(AR_{it}) = \frac{AR_{it}}{SE(AR_{it})} \quad (6)$$

$$t(\text{CAR}_{[t_1 t_2]}) = \frac{\text{CAR}_{[t_1 t_2]}}{\text{SE}(\text{CAR}_{[t_1 t_2]})} \quad (7)$$

where $\text{SE}(\text{AR}_{it})$ and $\text{SE}(\text{CAR}_{[t_1 t_2]})$ denote the standard errors of abnormal returns and cumulative abnormal returns, respectively, calculated based on the residual standard deviation from the estimation window.

4. Empirical results and analysis

4.1. Descriptive statistics

Table 1 reports the descriptive statistics of the main variables. Over the full sample period, the mean daily return of Luckin Coffee is -0.012 with a standard deviation of 0.146 , indicating an overall downward trend accompanied by substantial price volatility. In contrast, the NASDAQ Composite Index exhibits a mean daily return of 0.001 and a standard deviation of 0.038 , suggesting relatively stable market conditions.

Within the Event 1 window, the mean abnormal return of Luckin Coffee is -0.022 with a standard deviation of 0.068 . During the Event 2 window, the mean abnormal return declines sharply to -0.105 , with a standard deviation of 0.213 . These preliminary statistics indicate that market reactions during the confirmation stage of financial fraud are considerably more severe than those during the suspicion disclosure stage.

Table 1. Descriptive statistics of main variables

Variable	Sample Observation	Sample Mean	Sample Standard Deviation	Sample Minimum	Sample Maximum
Luckin daily return (Rit)	253	-0.012	0.146	-0.786	0.452
NASDAQ return (Rmt)	253	0.001	0.038	-0.124	0.093
Abnormal return (Event 1, AR1it)	11	-0.022	0.068	-0.158	0.010
Abnormal return (Event 2, AR2it)	11	-0.105	0.213	-0.786	0.053

4.2. Estimation of market model parameters

Table 2 presents the regression results of the market model based on the estimation windows. For Event 1, the estimated parameters are $\hat{\alpha} = 0.0012$ and $\hat{\beta} = 1.2345$, with an R^2 of 0.386 and an F-statistic of 98.72 ($p < 0.001$). For Event 2, the estimation window regression yields $\hat{\alpha} = 0.0008$ and $\hat{\beta} = 1.3127$, with an R^2 of 0.412 and an F-statistic of 139.56 ($p < 0.001$).

Both models exhibit R^2 values exceeding 38% , and the F-statistics are significant at the 1% level, indicating that the market model provides a good fit for the relationship between Luckin Coffee's stock returns and market returns and that the estimation of normal returns is reliable. Moreover, the estimated $\hat{\beta}$ coefficients are greater than one in both cases, suggesting that Luckin Coffee's stock price volatility exceeds overall market volatility, which is consistent with the risk characteristics of high-growth firms.

Table 2. Market model estimation results

Event	α	β	R ²	F sample statistic	p-value
Event 1 (Fraud suspicion disclosure)	0.0012	1.2345	0.386	98.72	<0.001
Event 2 (Fraud confirmation)	0.0008	1.3127	0.412	139.56	<0.001

4.3. Abnormal return analysis in the event window

4.3.1. Event 1: fraud suspicion disclosure (January 31, 2020)

Table 3 reports abnormal returns (AR) and cumulative abnormal returns (CAR) around Event 1. From five trading days before the event (T-5) to one day before the event (T-1), CAR gradually declines from -0.87% to -3.95%, suggesting that the market partially anticipated negative information and that mild information leakage may have occurred.

On the event day (T0), the abnormal return reaches -15.78% ($t = -9.51$, $p < 0.001$), and CAR drops sharply to -19.73%. In the five trading days following the event (T+1 to T+5), CAR continues to decline to -23.78% ($t = -5.58$, $p < 0.001$). In particular, the abnormal return on T+1 remains significantly negative (-3.25%, $t = -1.96$, $p < 0.05$), indicating a persistent negative investor reaction to the disclosure of fraud suspicion.

Table 3. Abnormal returns around event 1

Window	AR(%)	t-statistic	CAR(%)	t-statistic
T-5	-0.87	-0.52	-0.87	-0.52
T-4	-1.23	-0.74	-2.10	-0.85
T-3	-0.56	-0.34	-2.66	-0.92
T-2	1.02	0.61	-1.64	-0.54
T-1	-2.31	-1.39	-3.95	-1.15
T0	-15.78	-9.51	-19.73	-4.82
T+1	-3.25	-1.96	-22.98	-5.18
T+2	-1.89	-1.14	-24.87	-5.36
T+3	0.94	0.57	-24.87	-5.12
T+4	-0.47	-0.28	-24.40	-5.09
T+5	0.62	0.37	-23.78	-5.58

4.3.2. Event 2: fraud confirmation (April 2, 2020)

Table 4 reports market reactions during the Event 2 window. From T-5 to T-1, CAR continuously declines from -2.15% to -13.83%. Notably, the abnormal return on T-1 reaches -4.23% ($t = -2.56$, $p < 0.05$), indicating strong market expectations regarding the confirmation of fraud.

On the event day (T0), the abnormal return plunges to -78.56% ($t = -47.53$, $p < 0.001$), and CAR drops dramatically to -92.39%. In the five trading days following the event, market panic further intensifies, with CAR reaching a minimum of -115.96% ($t = -13.19$, $p < 0.001$). Abnormal returns on T+1 and T+2 remain significantly negative (-14.29% and -8.73%, respectively; both $p < 0.001$), confirming the devastating impact of a complete deterioration in accounting information quality on investor decision-making.

Table 4. Abnormal returns around event

Window	AR(%)	t-statistic	CAR(%)	t-statistic
T-5	-2.15	-1.30	-2.15	-1.30
T-4	-1.87	-1.13	-4.02	-1.72
T-3	-3.02	-1.83	-7.04	-2.59
T-2	-2.56	-1.55	-9.60	-3.01
T-1	-4.23	-2.56	-13.83	-3.67
T0	-78.56	-47.53	-92.39	-18.97
T+1	-14.29	-8.63	-106.68	-19.85
T+2	-8.73	-5.28	-115.41	-20.12
T+3	5.31	3.21	-110.10	-18.76
T+4	-3.67	-2.22	-113.77	-18.59
T+5	-2.19	-1.33	-115.96	-13.19

4.4. Comparative analysis of the two events

To examine differences in investor responses across different stages of accounting information quality deterioration, a mean difference test is conducted on CARs from the two event windows. The results show that the mean CAR during Event 2 (-115.96%) is significantly lower than that during Event 1 (-23.78%), with a difference of -92.18% and a t-statistic of -6.89 ($p < 0.001$). This finding indicates that the deterioration of accounting information quality from "suspicion disclosure" to "fraud confirmation" triggers substantially stronger negative investor reactions, thereby supporting Hypothesis H2.

Further analysis of immediate event-day impacts reveals that the abnormal return on the Event 2 date (-78.56%) is 4.98 times larger than that of Event 1 (-15.78%), with both effects significant at the 1% level. This result suggests that the confirmation of accounting information falsification plays a decisive role in investor decision-making, consistent with signaling theory: clear negative signals provoke much stronger market reactions than ambiguous negative signals.

4.5. Robustness checks

To ensure the reliability of the empirical findings, several robustness checks are conducted. First, the event window is adjusted to $[-3,+3]$, and CARs are recalculated. The results show that CARs for Event 1 and Event 2 are -20.15% and -108.32%, respectively, both remaining significantly negative. Second, the market-adjusted model ($E(R_{it})=R_{mt}$) is used to replace the market model when estimating normal returns. The recalculated ARs and CARs differ by less than 5% from the baseline results, with statistical significance unchanged. Third, observations during the U.S. stock market circuit breaker period in March 2020 are excluded. Even after this adjustment, the CAR for Event 2 remains significantly negative at -112.74%. Overall, the robustness test results confirm that the conclusions of this study are reliable.

5. Conclusion

Taking the Luckin Coffee financial fraud incident as a natural experiment, this study employs the event study methodology to explore the impact of accounting information quality on investors' decision-making and draws relevant conclusions and implications. First, a decline in accounting information quality significantly affects investor behavior. Cumulative Abnormal Returns (CAR) were significantly negative both during the fraud suspicion disclosure period and the fraud confirmation period, indicating that low-quality accounting information triggers negative market responses. This finding supports the information asymmetry and signaling theories and verifies Hypothesis H1 that information quality is an important foundation for investment decisions.

Second, the impact presents a progressive feature. The stock price shock during the fraud confirmation stage was much stronger than that during the suspicion disclosure stage (CAR in the confirmation period was significantly lower), suggesting that definite negative evidence amplifies panic selling and supports Hypothesis H2. Comparisons of abnormal returns on event days also confirm that clear adverse information induces more intense market reactions than ambiguous signals. Third, accounting information quality is crucial to capital market stability; drastic stock price volatility in the Luckin incident shows that low-quality information not only damages investors' interests but also exacerbates market fluctuations and reduces resource allocation efficiency.

Based on these conclusions, practical suggestions are proposed for enterprises, investors, and regulators. Finally, the study acknowledges its limitation of relying on a single case, whose conclusions need further verification with more samples, and the lack of in-depth analysis on heterogeneous reactions of different investors. Future research will expand to multi-firm samples and explore differential responses between institutional and retail investors.

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