

# A Multi-Dimensional Analysis of Financial Fraud in Listed Companies and Regulatory Insights - Taking Luckin Coffee Company as an example

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**Abstract.** In recent years, financial fraud of listed companies has been on a high trend, and the case of Luckin Coffee's 2.2-billion-yuan false trading has become the latest typical case. Based on the fraud triangle theory, the article integrates accounting, data science and other multidisciplinary perspectives, and for the first time puts forward a three-dimensional analysis framework of "accounting-governance-regulation" to analyze the whole process of systematic fraud from the second quarter to the fourth quarter of 2019 using fictitious online coupon sales, tampering IP The study analyzes the whole process of systematic counterfeiting using fictitious online coupon sales, tampering with IP data, and other means. The study finds that: 1. Pressure dimension - high dependence on external financing, huge pressure on performance betting; 2. Opportunity dimension - imbalance in corporate governance, internal control defects, audit failure; 3. Excuse dimension - industry "practice". -Rationalization of industry "practices" and employee compliance culture. Based on Benford's law and the financial index abnormality identification model, this paper extracts key warning signals such as "business data-financial data deviation of more than 30%" and points out that insufficient cross-border regulatory and enforcement coordination is the core contradiction. Finally, the paper proposes to build a comprehensive prevention and control system of "regulatory sandbox + blockchain audit evidence + real-time transaction monitoring" to strengthen internal governance and external supervision, protect investors' rights and interests, and safeguard the fairness and stability of the capital market for the science and technology innovation board (STB) and Chinese stocks.

**Keywords:** Luckin Coffee; Financial Fraud; Corporate Governance.

## 1. Introduction

Financial fraud in public companies has become a big problem around the world. According to data from the ACFE (2024), companies lose a lot of money every year because of fraud, with the average case causing a loss of around \$145,000. Luckin Coffee is a well-known example of this. In the beginning, the company grew very fast, but in 2020, it admitted that it made up \$310 million in fake sales. After that, the company quickly failed. Luckin Coffee was involved in fake transactions, cheating with related companies, and lying about how much money, it made. This caused its stock price to drop by 80%. The company was even stopped from trading several times and later had to leave the Nasdaq stock exchange. The leaders of the company were also punished. This case shows how serious financial fraud can be. It also pushed for stronger rules and laws, like the new version of China's Securities Law and the Holding Foreign Companies Accountable Act in the U.S[1]. Based on the fraud triangle theory, the reasons for Luckin Coffee's financial fraud can be divided into three parts [2]. First, stress factors. Luckin Coffee faced great pressure because most of its funding came from external investors. The company couldn't rely on its own profits to maintain operations, so it had to make its financial performance appear better than it actually was. In order to keep shareholders and investors confident, the management needed the financial statements to match expectations and show low financial risk, so that external investment would continue [3]. Second, the opportunity factor. Luckin Coffee had serious weaknesses in its internal control system, including problems like

a flawed corporate governance structure, gaps in the order system, and failure by external auditors to perform their duties [4]. The company had overly centralized decision-making power, with ineffective oversight and a weak reporting mechanism. In the order system, there were a large number of transactions coming from the same IP address, and unusually high order volumes occurred during late-night hours. The Chief Operating Officer (COO), who managed the system, had the ability to alter past transaction records. In addition, Luckin Coffee did not apply Benford's Law to monitor its financial data, and the distribution of the leading digits in its revenue figures clearly deviated from the expected pattern. The external auditors also failed to conduct on-site checks at stores with high reported sales and didn't verify the legitimacy of the IP addresses used in a large number of transactions. Third, the excuse factor. Luckin Coffee's management claimed that fraud was a common practice in the industry to justify their actions. They used training to brainwash employees, making them believe that such behavior was normal and acceptable. Because of this, many employees accepted the fraud to follow orders to protect their jobs. When studying cases, there is often a lack of integrated analysis across different disciplines. For example, combining accounting and data science can provide a more complete understanding of the roles each field plays in the industry. Through the case analysis this report explores how Luckin Coffee carried out financial fraud and compare with traditional methods of financial fraud, highlighting the differences and characteristics that made it difficult for investors to detect. This type of fraud is also unique to the coffee industry since people buy coffee daily and use coupons, giving stores a reason to fake large sales volumes. Furthermore, the cost of this fraud is lower than that of traditional enterprise fraud because it only requires online operation [5]. This research will analyze cases using the three-dimensional framework of "accounting-governance-supervision". Provide fraud prevention solutions for the science and technology innovation board and Chinese concept stocks. The main goal is to make company controls stronger and ensure that supervision works better. This will help protect investors and keep the stock market safe and fair for everyone.

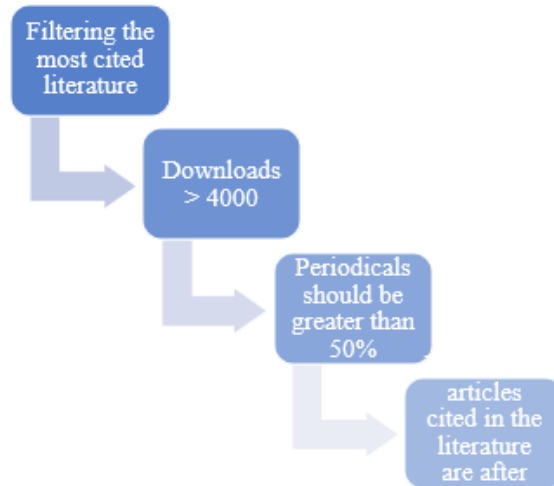
## **2. Methodology**

### **2.1. Case analysis method**

By examining the online accounts of the related incidents and drawing upon existing literature, this paper aims to perform an in-depth examination of its financial reporting data, identify the methods and specific areas of fraudulent activity, and thus carry out a comprehensive analysis of the entire case.

### **2.2. Systematic review of literature**

The entire relevant literature for 2020-2025 was retrieved and screened according to the fig1 process, resulting in 47 quality articles. The average number of downloads for these documents is approximately 8299.04 times, and the average number of citations per article is 24.96. These data represent the most recent citation figures from the past five years, confirming the reliability of the sources. Among these, journal articles account for 97.87%, providing a strong foundation for subsequent comprehensive analysis. Through the analysis and interpretation of these articles, this paper extracts the key information required for the analysis, with a particular focus on conducting an in-depth analysis of the regulatory loopholes underlying the financial fraud at Luckin Coffee.



**Fig 1.** Screening flow chart (Picture credit: Original).

### 3. Analysis

#### 3.1 Background description

Luckin Coffee Company adopts online APP reservation and offline store distribution to realize online and offline collaborative marketing. This made Luckin the largest coffee brand in China and helped it achieve a quick listing on Nasdaq on May 7, 2019. Due to the perfect performance of Luckin Coffee in the capital market and demand market, in the fourth quarter of 2019, Luckin Coffee attracted 64 new institutions to enter the market, the stock price once touched 51.38 US dollars, and the market value is also expanding; In January 2020, Luckin conducted additional financing, with a scale of more than 1.1 billion US dollars [6]. However, at a critical time in the company's development, on April 2, 2020, Luckin Co

ffee publicly announced that between the second quarter and the fourth quarter of 2019, the company fabricated 2.2 billion yuan of transaction volume, while also inflating related fees and costs. The public revelation of financial fraud caused the stock price to plummet that day, shrinking its market value to \$1.6 billion. Intercepting some of the firms' share price data for comparison, see table 1. On April 3 of the same year, the China Securities Regulatory Commission (CSRC) issued a statement strongly condemning such fraud in the financial market. Whether the new securities law can hold Luckin accountable in China and the consequences of Luckin's responsibility have attracted wide attention.

**Table 1.** Comparison of Luckin Coffee Stock Price Fluctuations

Data from Investing.com

Date	Close	Open	High	Low	Change%
2019/05/20	18.61	21.02	21.02	18.40	-8.68%
2020/01/17	50.02	49.15	51.38	49.06	3.07%
2020/01/31	32.49	36.01	36.17	26.75	-10.74%
2020/04/02	6.40	4.91	10.58	4.90	-75.57%
2020/06/26	1.38	2.10	2.46	1.16	-54.00%
2020/06/29	1.38	1.38	1.54	1.38	8.70%
Highest:51.38			Lowest:1.16		
Price Difference:50.22			Average:23.58		
Change Range: -92.64					

## 3.2 Current status review

### 3.2.1. Analysis of the characteristics of accounting fraud

Based on the screening and categorization of related literature, it is found that most studies have examined the financial fraud incident at Luckin Coffee from the perspectives of motivation, means, identification, legal regulation, and impact, and have made significant progress. Building on the content of these articles, this paper focuses on combining financial analysis with the interpretation of relevant regulatory documents to further analyze the qualitative aspects of the Luckin financial fraud incident.

According to the statement issued by Luckin, the financial fraud appeared after the second quarter of 2019 and can be analyzed financially in terms of changes in its balance sheet, income statement, and cash flow statement.

Looking at the cash flow statement, Luckin's operating cash flow is mostly negative, but the cash flow showed an upward trend in the second quarter of 2019 and reached a growth rate of nearly 83% in the third quarter, while its financing cash flow kept increasing in the same period. This indicates that it relies heavily on external financing to fill its funding gap.

For Luckin in the retail industry, inventory metrics are critical. An analysis of the data from the second and third quarters of 2019 shows that both inventory and total operating income are trending upward, but in the third quarter, when the company's revenue increased by 65% YoY, the number of inventories decreased instead of increasing. Typically, inventory changes positively with the increase in sales revenue, while Luckin moved in the opposite direction, a situation that is difficult to rationalize.

From the perspective of gross profit margin, the gross profit margin in the first quarter of 2019 grew at a rate of only 9.5% sequentially, which is not very obvious, but the data in the second and third quarters grew sharply, and the growth rate did not meet the normal law of sequential growth, which shows that there is a possibility of concealment of Luckin's financial data in 2019. Specific financial indicators can be found in the table 2.

Overall, the Luckin forgery case is an egregious case of financial fraud that falsified approximately \$2.2 billion in sales by means of inflated sales results and costs, and expenses, and is a huge wake-up call for the entire financial industry.

**Table 2.** Summary of Financial Indicators.

indicators	2019Q1	2019Q2	2019Q3
Operating cash flow (million)	-9973.29	-4806.63	-1614.51
Financing cash flow (million)	1947.56	81300	-3306.31
Gross margin growth % YoY	9.5	195.4	94.3
Inventories (million)	2811.88	3372.76	2987.01
Gross operating income (million)	7093.52	13300	22000

### 3.2.2. Corporate impact analysis

Since Luckin Coffee was involved in a financial fraud scandal of up to 2.2 billion yuan, the market's trust in it plummeted, leading to a sharp decline in its stock price. Meanwhile, Luckin Coffee's financial and consumer fraud prompted a class-action lawsuit from investors. On May 15, 2020, 14 investors jointly filed suit against Luckin Coffee. To deal with this crisis, Luckin Coffee has had to pay large legal fees, which further increases its risk of bankruptcy [7].

This directly caused turmoil within the board of directors and employee unemployment problems. In the early stage, Luckin Coffee adopted a strategy of rapid expansion by investing large-scale funds, mainly through high subsidies, and the most important business strategy was to increase the number of stores. Therefore, when Luckin issued a suspension announcement, most of its stores were severely affected by financial fraud incidents. They faced the risk of closing stores, resulting in a sharp increase in employee unemployment.

From the perspective of business operations, the reduction in reputation brings financing difficulties. As a pioneer coffee brand, Luckin's new retail model has been widely praised [8].

However, in this public opinion environment, high subsidies and marketing expenditures have brought tremendous pressure to Luckin. Currently, companies need continuous financing to maintain operations more than ever before. But Luckin's corporate image has been damaged, and its business reputation is constantly deteriorating, which makes it extremely difficult for corporate financing.

### **3.2.3. Analysis of the impact on the regulatory system**

First, it hurt the China Securities Regulatory Commission. Although the Luckin Coffee incident occurred in the United States, Luckin Coffee is essentially still the Chinese company's main business is also in China. The total sales amount of Luckin's false transaction this time was about 2.2 billion yuan, which involves a wide range of areas and is bad. The China Securities Regulatory Commission stated that it will pay close attention to the financial fraud incident of Luckin Coffee and strongly condemns Luckin Coffee. This incident had a significant negative impact on China and affected its reputation.

According to Article 2, Paragraph 4 of the newly promulgated Securities Law of China, an extraterritorial validity clause has been added, which is also called "long-arm jurisdiction". This clause stipulates that any securities issuance and trading activities carried out outside the People's Republic of China will be dealt with by the relevant provisions of this Law and will be held accountable for corresponding legal liability[9,10]. On April 27, 2020, the China Securities Regulatory Commission dispatched an investigation team to officially enter Luckin Coffee to investigate it under this regulation.

In addition, the China Securities Regulatory Commission emphasized that it would cooperate with global securities regulatory authorities to crack down on financial fraud in the capital market and protect the legitimate rights and interests of investors. In the future, the China Securities Regulatory Commission will continue to implement the "zero tolerance" requirement of the Financial Committee of the State Council for illegal and criminal activities in the capital market, work closely with domestic and foreign regulatory law enforcement departments to promote the investigation and handling of Luckin Coffee's financial fraud incidents by the law, and resolutely safeguard a fair and just market order and a healthy market ecology with the rule of law.

## **4. Conclusion**

This study takes the financial fraud of Luckin Coffee as an example, and analyzes the issue of corporate fraud from three aspects: the causes, key warning indicators, and the core contradiction in regulation. The main conclusions are as follows:

The fundamental cause of fraud: The combined effect of performance-based pressure and governance failure. Luckin Coffee systematically fabricated transaction data to meet the performance targets agreed upon by the investors, such as store growth rate and revenue scale. The corporate governance mechanism has failed: The board of directors' supervision is absent, and the audit committee has not performed its duties effectively, resulting in the fraud behavior remaining undetected for a long time [11].

Key warning indicators: In the case of Lululemon, the inflated revenue led to a deviation of up to 47% between its business data (order volume) and financial data (cash flow), far exceeding the warning threshold of 30%.

The core contradiction in supervision: conflict over cross-border law enforcement authority. During the investigation of the Lululemon incident by the regulatory authorities of China and the United States, there were issues such as delays in data retrieval and differences in legal application, which led to an extended processing period for the case.

Based on the findings of this study, this article puts forward the following suggestions from the perspectives of listed companies, auditing institutions, regulatory agencies, fraud characteristics, and regulatory recommendations. For the listed companies, it is suggested to establish an automatic comparison system for financial data to ensure the consistency of the data. Disclose key data quality indicators on a quarterly basis to enhance transparency. It is suggested that the auditing institutions

adopt blockchain storage technology to achieve the storage of auditing evidence. And for high-risk transactions, additional anti-fraud special tests will be conducted. For regulatory authorities, it is suggested to establish a 'regulatory sandbox' for pilot implementation of monitoring, enabling real-time monitoring of transactions, and regularly releasing a list of fraud case warnings. In the area of fraud analysis, it is crucial to identify typical tactics such as fictitious transactions and inflated revenues. Simultaneously, real-time dynamic monitoring must be implemented for any abnormal fluctuations in revenue and cost accounts. Finally, it is necessary to strengthen the internal control system and the supervisory functions of independent directors, to prevent the risk of fraud at the source. This study is mainly based on the publicly available financial reports and regulatory penalty documents of Luckin Coffee. No first-hand internal data from the company was obtained, which may result in insufficient analysis of some fraud details. Luckin Coffee, as a case of fraud among Chinese-listed companies, its uniqueness may limit the applicability of the research conclusions to small and medium-sized enterprises or other industries.

## Authors Contribution

All the authors contributed equally and their names were listed in alphabetical order.

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