

# Research on the Robustness of Financial Statements of Listed Companies based on Securities Law

Shengnan Zhou<sup>1</sup>, Shuaipeng Li<sup>2</sup>

<sup>1</sup>Administration of Pilot Free Trade Zone, Hefei High-tech Zone Management Committee, Hefei, Anhui, China

<sup>2</sup>Anhui Vocational College of Urban Management, Hefei, Anhui, China

**Abstract:** Based on A sample of Chinese A-share listed companies from 2008 to 2018, this study predicts that the robustness of financial reporting of listed companies will increase significantly since 1998 due to the promulgations of accounting reform and securities law. There is a lack of consistent definition of robustness in the available data. Therefore, based on Bayesian network rule, this paper uses multiple measures, including the change of cumulative accruals, the timeliness difference of earnings response to good and bad news, and the degree of continuous downward bias of net worth relative to market value. The improvement of the comparability and reliability of A-share statements is conducive to promoting the integration of A-share and B-share and deepening the internationalization of China's capital market in the future.

**Keywords:** Securities Law; Accounting Reform; Conservatism; Accruals; Earnings/Compensation Relationship; Net Worth/Market Value Ratio

## 1. Introduction

Changes in the stability of financial statements of listed companies issued by China's A-share market. In order to attract foreign capital and control foreign exchange from the early days of the establishment of China's emerging market, according to the different investment objects, the A-share and B-share stock markets are divided into two types. Among them, A-shares are mainly provided to Chinese citizens for trading transactions, and the company's financial statements are prepared in accordance with the accounting standards for Chinese listed companies; B shares are provided to foreign investors for trading, and the company's financial statements are

prepared in accordance with international accounting standards; If A listed company issues A shares and B shares at the same time, it needs to be prepared in accordance with China Accounting Standards for Listed Companies and international accounting standards respectively. In other words, such listed company needs to prepare financial statements in accordance with the two standards respectively.

In today's globalized capitalism, in order to eliminate the doubts and doubts about the financial statements of listed companies from all walks of life, the openness and transparency of financial statements is conducive to improving the credibility of enterprises and enhancing the authenticity of information disclosure of listed companies. In the stock market, the majority of shareholders can understand the changing information of listed companies faster and more timely. Therefore, in 1997, the "decoupling reform" was promoted, and accounting firms were forced to separate from their government agencies or universities and become partnership firms or limited liability firms independently to improve the independence of audit.

Since 1998, accounting reform has been carried out, adopting the robust structure of "the law of lower cost and market value", requiring listed companies to provide a number of regulations such as bad debt loss, inventory loss and long-term and short-term investment loss. The "Securities Law" has also been implemented at the same time, and the market has entered the legal system [1].

## 2. Development and Status Quo of Capital Market

China's capital market originated from the reform of national enterprises and the attraction of foreign investment, and has been

developed for decades. On November 26, 1990, under the authorization of The State Council, the People's Bank of China established the Shanghai Stock Exchange. On April 11, 1991, the Shenzhen Stock Exchange was established. In the process of promoting the reform and listing of enterprises, the government adhered to the system for reform, and only part of the shares were allowed to circulate, and relatively many enterprises were controlled by the state. Specifically, the shareholding structure of listed companies can be divided into tradable shares and non-tradable shares according to the investment subject; Non-tradable shares include state shares, legal person shares, employee shares and allotment shares, tradable shares are the shares that the public can buy [2].

In the 1990s, in order to attract foreign capital and supervise foreign exchange, China further divided the tradable shares into A shares, B shares and H shares according to the place of listing and the object of investment. A shares are traded in RMB, while B shares are traded in US dollars on the Shanghai Stock Exchange. As a result of China's accession to the World Trade Organization (WTO), the trading of B shares has been open to Chinese citizens since February 19, 2001. With the parallel development of A shares and B shares, qualified foreign investors are allowed to purchase A shares. Shares registered in China and listed in Hong Kong, collectively referred to as H shares, are prepared in accordance with Hong Kong accounting standards.

As early as 1979, China's accounting standards referred to the Soviet accounting system, the implementation of the central planned economy, the relative standard system is more rigid, in fact, the role is to assist the government to plan and control the production quota of enterprises.

After the reform and opening up, a large number of overseas funds poured into the joint venture, with the continuous growth of joint venture, gradually established joint venture accounting standards. Subsequently, the Accounting System for Pilot joint-stock Enterprises and the Accounting Standards for Enterprises were issued in 1992, but these systems were too vague and only provided conceptual ideas. Therefore, with the support of the World Bank, Deloitte Touche Tohmatsu International was hired to assist in drafting

specific accounting standards.

The Ministry of Finance established the Chinese Institute of Certified Public Accountants in 1995 to formulate auditing standards with reference to international practice, and the first batch of auditing standards was released a year later. In 1997, the association actively promoted the "decoupling reform", which mainly separated accounting firms from government agencies or universities and independently became partnership firms or limited liability companies, so as to enhance audit independence. Subsequently, the second and third batches of audit standards were issued to regulate the verification standards and professional ethics, so as to improve the human resources and audit quality [3] of accounting firms in China.

### 3. Research Design

Financial statements have a profound impact on accounting practice. How to standardize the preparation of financial statements is the measurement of net earnings, and the reasonable formulation of accounting standards and codes plays a vital role in corporate earnings. In the past, the stability of financial statements was explained by cross-sectional data analysis, but the conclusions of financial statements are from a variety of operations, so it is necessary to study the impact of various uncertain risks on the stability of financial statements in an empirical way.

This paper intends to use Bayesian decision analysis theory to study the impact of various uncertain factors on financial statements, so as to judge the stability of financial statements from what aspects. The development of today's listed companies is towards the blue sea and the sky, the world changes rapidly, the stock market fluctuates, and various influencing factors emerge endlessly.

Bayesian generally refers to the posterior distribution, the use of Bayesian network decision-making. Under incomplete information, some unknown states are estimated by subjective probability, and then the occurrence probability is modified by Bayesian formula. Finally, the optimal decision is made by using the expected value and the modified probability. The simplest expression of Bayesian theory is as follows:

$$P(A|B) = \frac{P(B|A)P(A)}{P(B|A)P(A) + P(B|\bar{A})P(\bar{A})} \quad (1)$$

Where event represents the complement  $\bar{A}$  of event  $A$  [4].

In decision theory, a decision or action taken is called an action. Each decision or action will bring a certain loss, which is usually a function of the action and the state of nature. Let be a finite set of possible actions;

$A = \{\alpha_1, \alpha_2, \dots, \alpha_a\}$   $a$

$\Omega = \{\omega_1, \omega_2, \dots, \omega_s\}$  Be a finite set of states of nature;  $s$

$\lambda(\alpha_i, \omega_j)$  Is the cost of taking action when the state of nature is  $\omega_j$

$\alpha_i$  Eigenvectors are dimensional random variables;  $X$   $n$

$p(X|\omega_j)$  Is the conditional probability density when the state of nature is;  $X$

$\omega_j$  Finally, let be the prior probability that the state of nature is, then according to the Bayesian theory Equation (1), the posterior probability is:  $P(\omega_j|X)$

$\omega_j$   $\alpha_i$

$$P(\omega_j|X) = \frac{P(X|\omega_j)P(\omega_j)}{P(X)} \quad (2)$$

Where

$$P(X) = \sum_{i=1}^c p(X|\omega_i) \cdot P(\omega_i) \quad (3)$$

Suppose one  $X$  is observed and the action is decided at the same time, which, if the true state is, will result in a loss being incurred.  $\alpha_i$

$\omega_j$   $\lambda(\alpha_i|\omega_j)$  Since is the probability that the state of nature is, the mathematical expectation of the loss associated with the action taken is:  $P(\omega_j|X)$

$\omega_j$   $\alpha_i$

$$R(\alpha_i|X) = \sum_{j=1}^s \lambda(\alpha_i|\omega_j) \cdot P(\omega_j|X) \quad (4)$$

In decision theory, the average loss is called risk, and the average loss under observed conditions is called conditional risk.  $X$

$R(\alpha_i|X)$  Whenever one is observed, we can always choose the action that minimizes the conditional risk in a way that minimizes the average loss.  $X$

Using multi-factor compound Bayesian decision, because A-share listed companies have perfect data statements, the financial statements of A-share listed companies are

used, and the research hypothesis is established as follows:

Hypothesis 1: Since the implementation of the accounting reform, the cumulative accrual of China's A-share listed companies has decreased significantly;

Hypothesis 2: Since the implementation of the accounting reform, China's A-share listed companies have significantly increased the difference in the reflected validity of earnings;

Hypothesis 3: Since the implementation of accounting reform, the ratio of net worth to market value of China's A-share listed companies has decreased significantly.

#### 4. Analysis of Empirical Results

This paper selects A-share listed companies with relatively complete financial and stock information from 2008 to 2018 as the research object, while B-share and H-share companies cannot form A unified standard to study due to different accounting system standards, so we select A-share listed companies prepared using Chinese accounting standards as the research object. R and SPSS are mainly used for data processing in this paper. The data are mainly from Shanghai Stock Exchange, Shenzhen Stock Exchange and Securities Association[5] of China.

##### 4.1 Annual Surplus, Annual Operating Cash Flow and Annual Accruals Change

In accounting, the difference between earnings and operating cash flow is an accrual, which represents management's discretion over the financial statements. If the accruals are significantly positive, the management of the listed company should use the accounting method of increasing earnings to estimate or calculate; On the contrary, if the accruals are significantly negative, the management of the listed company should adopt the accounting method of reducing the earnings to estimate or calculate. In a word, its accounting policy is relatively unsound.

Due to differences in company size, the above reported earnings, operating cash flow and accruals are subtracted from the initial total assets. The change of accruals has a certain relativity, and sometimes there is a reversal phenomenon. Due to the fact that business transactions are cognitive processes that are measured periodically, the robust treatment in the current period may lead to unstable results

of earnings in future periods. Therefore, this study not only compares the positive and negative accruals of each period to infer the robustness of the financial statements of each period, but also observe the difference between the accumulated net profit and the

accumulated operating cash flow of each period. In short, the robustness of financial statements can be judged by the positive and negative accruals. Based on the analysis of the collected data, we obtain:

**Table 1. ROA and CFOA of the Overall Market**

Year	Number of A-share enterprises	Measure of accrual underlying earnings			Cash basis earnings measure		
		ROA* < 0 (%)	ROA Average	ROA Median	CFOA* < 0 (%)	CFOA Average	CFOA Median number
2008	1602	11.24	0.078	0.023	65.96	0.058	0.062
2009	1696	21.32	0.038	0.068	37.48	0.061	0.069
2010	2041	13.24	0.030	0.076	66.79	0.068	0.073
2011	2306	15.32	0.008	0.065	20.72	0.072	0.075
2012	2447	10.88	0.012	0.049	21.96	0.085	0.081
2013	2463	10.04	0.049	0.044	23.40	0.091	0.087
2014	2508	16.20	0.012	0.036	21.19	0.104	0.091
2015	2728	14.43	0.074	0.089	28.03	0.125	0.093
2016	2928	20.23	0.050	0.051	19.58	0.142	0.097
2017	3438	16.35	0.026	0.032	66.37	0.167	0.103
2018	3563	15.42	0.038	0.041	61.76	0.184	0.106

As can be seen from Table 1 above, the cumulative turnover has little change in the study period, which is consistent with the trend of non-operating cumulative figures, and the median has a trend of gradual increase. Due to the improvement of relevant laws, regulations and systems such as securities law and accounting system, it can be seen that the financial statements and cumulative amount of the whole market have gradually become stable.

It can be seen from the balance sheet that the discrimination of accounting earnings comes from the degree of conservatism of financial statements. If the accounting treatment is more robust, the stock market reaction will be more drastic, and the change of stock income dividend will be greater. According to the definition of conservatism, the relationship between earnings and stock dividend will increase significantly. Therefore, the regression equation of earnings and stock dividend after adjusting the market average is designed:

**4.2 Earnings Reflect the Timeliness Difference between Good and Bad News**

$$APES_{it} = \alpha_0 + \alpha_1 * DAR_{it} + \beta_0 AR_{it} + \beta_1 AR_{it} DAR_{it} + \varepsilon_{it} \tag{5}$$

**Table 2. Differences in the Timeliness of Earnings Response to Good and Bad News**

Year	Number of samples	$\alpha_0$	$\alpha_1$	$\beta_0$	$\beta_1$	Adj.R <sup>2</sup> (%)	$(\beta_0 + \beta_1) / \beta_0$	bias **
Overall market								
2008-2012.	375	0.142	0.017	0.007	0.521	5.24	75.42	0.006
2013-2018.	4288	0.089	0.043	0.265	0.641	6.71	3.42	0.002
Shanghai Stock Market								
2008-2012.	562	0.725	0.061	0.314	0.174	3.12	1.55	0.004
2013-2018.	4953	0.066	0.351	0.068	0.668	4.62	10.82	0.001
Shenzhen Stock Market								
2008-2012.	658	0.031	0.039	0.009	0.017	6.27	2.89	0.005
2013-2018.	5489	0.079	0.064	0.347	0.809	2.81	3.33	0.003

Where, represents the adjusted earnings per share of the company in the first period, in which earnings per share is calculated to reduce the initial share price considering the

size difference;  $AEPS_{it}$  i t  $AR_{it}$  Represents the adjusted stock dividend of the company in the first period; i t  $DAR_{it}$  Represents the positive or negative variable of the adjusted

stock dividend;  $\varepsilon_{it}$  Represents the company's period-one error term.  $i$   $t$  Due to the definition of robustness, measured earnings for the comparison of good and bad news, should always be greater than 0;  $\beta_1$  It indicates the difference in the sensitivity of earnings to good and bad news.  $\beta_0 + \beta_1 / \beta_0$

Table 2 above shows that the change rule of the overall market is different from that of the Shanghai stock market and the Shenzhen stock market. The three measurement methods all indicate that the financial statements in 2018 are gradually becoming more stable [6].

$$BTM_{it} = \alpha + \beta_0 D2008 + \beta_1 R_{it} + \beta_2 R_{i,t-1} + \beta_3 R_{i,t-2} + \beta_4 R_{i,t-3} + \beta_5 R_{i,t-4} + \varepsilon_{it} \tag{6}$$

The regression model is as follows:

Where represents the net value/market value ratio of the Company for the period, which is the book value of common equity at the end of the period divided by its market value;  $BTM_{it}$   $i$   $t$   $D2008$  Is the dummy variable, 1 represents after 2008 and 0 represents before

### 4.3 Net Worth/Market Value Ratio

It is clearly stated in the balance sheet that the degree of downward misalignment of net equity relative to market value of equity represents the degree of conservatism. It is considered that the robustness of financial statements mainly comes from the regression of the ratio of net worth to market value on the stock dividend of the current period and the past periods, and the influence of stock dividend on the ratio of net worth to market value decreases with the increase of the number of deferments. Therefore, the regression model is constructed as [7] follows:

2008;  $R_{i,t-k}$  Represents the stock dividend of the company in the first period;  $i$   $t-k$   $\varepsilon_{it}$  Represents the error term of the company in the period.  $i$   $t$  According to this study, it is expected that the financial statements will become more robust and the net worth/market value ratio will become smaller after 2008 [8].

**Table 3. Net Worth/Market Value Ratio**

Market	Number of samples	A	$\beta_0$	$\beta_1$	$\beta_2$	$\beta_3$	$\beta_4$	$\beta_5$	Adj.R <sup>2</sup> (%)
Overall	5809	5.624 <sup>a</sup>	1.062	1.336	1.257	0.912	0.685	0.050	15.24
Shanghai	3116	5.011	0.792	1.527	1.462	1.021	1.236	0.036	19.62
Shenzhen	2693	5.624	1.261	1.076	1.032	0.782	0.614	0.085	9.83

It can be seen from Table 3 that the stock markets of the whole, Shanghai and Shenzhen can all reach the level of 1%.  $\beta_0$  Therefore, as the number of delays increases and decreases, accounting information cannot be timely feedback, thus affecting the cognitive time, and the phenomenon of delayed cognition decreases [9] with the passing of time [10].

### 5. Conclusion

In the context of continuous improvement of securities law, accounting system and other relevant laws, various financial data gradually tend to be reasonable and compliant, and the financial management system is also more perfect. Various accounting management methods are conducive to the financial operation of listed companies, thus strengthening the legal meaning of accounting practitioners. The following three conclusions are mainly drawn in this paper:

(1) With the improvement of securities law, accounting system and other relevant laws,

regulations and systems, it can be seen that the financial statements and cumulative amount of the whole market gradually tend to be stable, and the cumulative amount of A-share listed companies is significantly reduced;

(2) The three measurement methods all indicate that the financial statements in 2018 gradually tend to be stable, and the limitation difference of earnings of A-share listed companies has increased significantly;

(3) With the increase of deferment, accounting information cannot be timely feedback, thus affecting the cognitive time. The phenomenon of deferment decreases with time, so the ratio of net value to market value of China's A-share listed companies decreases significantly.

### References

[1] Zheng, H. W. Problems and Countermeasures of Financial Statement fraud in Listed Companies -- Taking "New Zhongji" as an example. Business

- and Management, 2019 (09): 35-39.
- [2] Qin, R. Analysis of financial statements of listed companies -- Taking "Rong 'a Real Estate" as an example. Business and Management, 2019 (04): 26-28.
- [3] Lv, F. & Zhen, X. Analysis of financial statements of listed companies -- Taking T Company as an example. World Economy, 2018 (24): 134-135.
- [4] He, L. F. Analysis of financial statements of A-share listed companies based on business convergence and strategic perspective. Contemporary Accounting, 2021 (22): 03.
- [5] Zhang, J. Analysis of financial statements of listed companies. Finance and Economics, 2022 (10): 134-136. (in Chinese)
- [6] Li, S. P. Research on credit risk of commercial banks based on Bayesian decision rule. Huaibei: Huaibei Normal University, (2017).
- [7] Zhao, Y. Y. Research on the Influence of Corporate Financial Information on the credit risk of commercial banks in China: Based on Bayesian analysis. Lanzhou: Lanzhou University of Finance and Economics, 2015.
- [8] Zhang, Y. & Wu, F. Legal deterrence and audit pricing in securities market: a quasi-natural experiment based on the new Securities Law. Journal of Finance and Economics, 2024 (03): 58-68.
- [9] Zhen, H. H. & Li, J. Rule of law construction and bond credit spreads: a quasi-natural experiment based on the new Securities Law. Financial Market Herald, 2024 (01): 53-63.
- [10] Ye, J., Diao, M., Wu, Y. R., Ye J. H., Diao M. X., Wu Y. R. The impact of strong capital market regulation on the risk of stock price crash: based on the implementation of the new Securities Law. Monthly Journal of Finance and Accounting, 2023 (20): 153-160.