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## **THE RELATIONSHIP BETWEEN ACCOUNTING INFORMATION QUALITY AND IDIOSYNCRATIC VOLATILITY: AN EMPIRICAL STUDY ON CHINESE A-SHARE LISTED COMPANIES**

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### **Abstract:**

China's stock market has experienced a short bull market since 2008, and it is basically in a state of low volatility. The long-term market risks faced by the financial market are stable. More and more attention is paid to the idiosyncratic risk of company stocks, and the companies with bright value can still get the favor of the capital market. Most investors in the external capital market make investment decisions by using the financial accounting information of enterprises. Supported by the theories of "Stock Price Information Content Theory" and "Noise Deal Theory", the quality of corporate accounting information can significantly affect the stock trading behavior of stock traders, making the company's stock show different characteristic fluctuations. Therefore, the study of idiosyncratic risk is of great significance for obtaining high investment returns. This paper takes the Shanghai-Shenzhen A-shares from 2013 to 2018 as the research sample uses the Fama-French three-factor model to calculate the company's idiosyncratic volatility, and calculates the accounting information quality with the modified Jones model, establishes a multiple regression model, and analyzes the inflation of accounting information quality to the idiosyncratic volatility. The results show that enterprises with higher accounting information quality have lower idiosyncratic volatility, and accounting information quality is significantly negatively correlated with idiosyncratic volatility.

**Keywords:** Company Idiosyncratic Volatility, Accounting Information Quality, Three-Factor Model

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## 1. Introduction

With the continuous development and opening up of China's capital market, the competitive pressure in various fields has gradually increased. If a company wants to survive under tremendous pressure, it cannot do without the improvement of internal governance and external competitiveness. And to improve the level of corporate governance, the formation of scale competitiveness cannot be separated from the quality of accounting information. With the continuous upgrading of information technology, accounting information plays an important role in the company's business process. As a company-level stock price fluctuation, the company's idiosyncratic volatility is closely related to the company's size, shareholding structure, and listing age. It reflects the quality of corporate information and the volatility of cash flow. At present, the quality of accounting information in the quality of accounting information is low, the accounting information is distorted and unreliable, and the problem of insufficient information disclosure has brought great damage to the healthy development of the enterprise. Therefore, how leaders can grasp the idiosyncratic volatility of the company by studying the quality of accounting information is a top priority.

Corporate idiosyncratic volatility refers to the theory of standard asset pricing. If the market is effective, all risk factors affecting individual stock returns should be priced, and risk factors that cannot be priced are called corporate idiosyncratic volatility or corporate idiosyncratic volatility. However, in the real world, with the continuous development of financial markets, the company's idiosyncratic volatility has gradually become an important part of individual stock risk, which has attracted more and more scholars' attention. The company's idiosyncratic volatility represents company-level trait information, while the company's idiosyncratic volatility in the individual stock risk ratio means the level of stock price information, the higher the stock price information, the higher the market pricing efficiency.

At present, the research on the impact of corporate idiosyncratic volatility focuses on the discussion of listed company's cash flow, shareholding structure and corporate information environment, while the research on the impact of accounting information quality on company idiosyncratic volatility is relatively rare. Therefore, this paper has important significance for the study of company idiosyncratic volatility.

The rest of the paper is structured as follows: Section 2 presents the literature review and hypothesis. Section 3 includes data and methodology. Whereas Section 4 shows empirical results of the study, Section 5 concludes the paper.

## 2. Literature review and hypothesis

### 2.1. idiosyncratic volatility

The idiosyncratic volatility effect exists conditional on distress risk (Chen *et al.* 2010). Idiosyncratic volatility is significant in emerging markets such as India, and that cross-sectional return variations of firms are associated with firm-specific characteristics (Kumari *et al.* 2017). After the 1990s, the fall in idiosyncratic bank asset volatilities is a surprising finding, and one that raises questions about the underlying structural changes that led to this decline (Fernholz and Koch, 2017). Gu *et al.* (2018) found that the arbitrage restriction affects the mystery of idiosyncratic volatility. As global idiosyncratic volatility is not a priced factor in the intertemporal asset pricing framework, the international diversification is still effective in eliminating idiosyncratic volatility despite the globalization process (Umutlu, 2019).

Miller (1977) argued that asset pricing is influenced by investor heterogeneity beliefs when short selling mechanisms exist. Optimistic investors have more opinions in the transaction because of the advantages of buying more, which leads the market to mainly reflect the views of optimistic investors. The views of investors who are pessimistic about stock returns are not reflected in stock prices, thus overestimating market prices. The higher the difference in investor heterogeneous beliefs, the more obvious the phenomenon that stock prices are overvalued, and the lower the expected yield of stocks. Short - term (long - term) institutional ownership is positively (negatively) linked to idiosyncratic volatility in the cross-section (Chichernea *et al.* 2015). Investors cannot disregard the idiosyncratic risk component of their less-than-well-diversified stock positions (Bley and Saad, 2015). Decomposing the source of mispricing, the IV puzzle is

largely explained by investors' preference for lottery-like stocks. There is no relation between stocks' sensitivity to shocks to market-wide IV and stock returns, suggesting that the IV puzzle is not a result of systematic exposure to common IV (Zhong, 2018).

Ang *et al.* (2008) based on empirical analysis of many countries, found that there is a negative correlation between idiosyncratic volatility and stock expected return. When there is incomplete information about idiosyncratic shocks, any firm-specific forecast error appears in the return equation scaled by the idiosyncratic volatility (Berrada and Hugonnier, 2013). But 'flight to liquidity' phenomenon induced by the anticipated illiquidity is strong enough to generate a positive relationship between IV and expected returns (Bradrania *et al.* 2015). Aboulamer and Kryzanowski (2016) found that the relationship between the volatility of the Canadian market and the expected return is always positively correlated. Idiosyncratic risk is not a predictor of returns in the whole period or during high or low volatility months in the integrated market (Berggrun *et al.* 2016). But Wang *et al.* (2016) studied the relationship between idiosyncratic volatility and excess returns in the Chinese market from 1996 to 2010, and the conclusion supports the theory of Metron (1987), when asset diversification is limited, excess returns are positively correlated with idiosyncratic volatility. Besides, Zhong (2018) explained the mystery of the idiosyncratic volatility of the Australian market, proved the negative correlation between idiosyncratic volatility and stock returns, investor preferences can largely explain the mystery of idiosyncratic volatility. Meanwhile, Zaremba *et al.* (2018) empirically concluded that the relationship between idiosyncratic volatility and expected stock returns depend on stock pricing, which is negatively correlated in stocks with higher valuations and in stocks with lower valuations is positively correlated. Malagon *et al.* (2018) also pointed out that stocks with higher idiosyncratic volatility have relatively lower returns. Liu *et al.* (2019) used a five-factor model to obtain a significant positive correlation between idiosyncratic volatility and expected return.

The direct link between the source of corporate governance practices and idiosyncratic volatility in stock price, higher managerial power leads to lower idiosyncratic volatility (Tan and Liu, 2016). Firms on average experience an ex-post reduction in idiosyncratic volatility following dividend initiations associated with the announcement and long-term abnormal returns, as firms with higher levels of idiosyncratic volatility and smaller firms are associated with more positive market reactions at dividend initiation and increase announcements (Lee and Mauck, 2016). Since firm performance and availability of information vary across life cycle stages, and such variation affects uncertainty about future cash flows and stock returns, idiosyncratic volatility also varies across firm life cycle stages (Hasan and Habib, 2017).

Rajgopal and Venkatachalam (2011) found that there is a negative relationship between financial reporting quality and idiosyncratic return volatility, which only exists in the subsample with low financial reporting quality. The interest on the determinants of Idiosyncratic Volatility—so far generally regarded as a measure of the quality of firm-specific information and measured as the component of stock return variability not explained by market portfolio stock returns—has recently grown in parallel with the discovery that ex-ante exposure to IV is correlated with ex-post lower stock returns (Becchetti *et al.* 2015). Worsening earnings quality captured by these proxies is positively associated with rising return volatility over the 40 years 1962–2001, but it does not necessarily imply a causal relation between declining earnings quality and increasing idiosyncratic volatility (Zhou *et al.* 2016).

From the previous scholars' research, it is found that the research of idiosyncratic volatility is very common. The main contents of the research include the influencing factors of idiosyncratic volatility and the pricing content of idiosyncratic volatility. Among the idiosyncratic volatility studied from different perspectives, idiosyncratic volatility, and stock return, there are always differences in the conclusions of the related research. The research in this paper is also a supplement and improvement of the existing research.

## 2.2. Quality of accounting information

The predecessors have a wide range of research on the quality of accounting information. First, accounting is based on the provision of financial information. In the late 1970s, Western countries regarded accounting as an information system designed to provide corporate financial information to the outside world and provide decision support for information users. Measuring the

usefulness of accounting information depends not only on the amount of information it contains, but also on the quality of accounting information. The quality of accounting information is directly related to the decision-making and interests of accounting information users.

More scholars have explored the quality of accounting information from the perspective of investment. Bagaeva (2008) examined the impact of international investors on the quality of Russian financial accounting information, explaining that international stock ownership would lead Russian companies to improve the quality of accounting information. Lee and Masulis (2009) pointed out that bad accounting information will increase the uncertainty of external investors on the company's financial status, thereby reducing the company's demand for new equity, and poor accounting information is related to high listing costs. Zhai and Wang (2016) examined the relationship between accounting information quality and capital investment choice from the perspective of accounting information governance function. The results show that the higher the accounting information quality of listed companies, the stronger the correlation, especially in corporate governance. It is also concluded that the quality of accounting information can optimize capital investment choices, thereby complementing and strengthening the functions of corporate governance.

From a political point of view, Chaney *et al.* (2011) have shown that companies with political relationships report significantly lower returns than companies without political relationships. Hao *et al.* (2018) studied the impact of large-scale fiscal stimulus on the quality of accounting information, provided a large amount of evidence to prove that accounting quality was affected by institutional characteristics, and emphasized the importance of understanding the negative impact of government intervention on accounting quality.

Besides, scholars have researched the quality of accounting information from the perspective of financial personnel's professionalism. Ran *et al.* (2015) studied the relationship between the personal characteristics of the members of the Board of Supervisors and the quality of accounting information in China's enterprises. The results show that executives and female executives with an accounting or academic background are continuing drivers of improved accounting information quality in China. Elaoud and Jarboui (2017) explored how auditor specialization regulates the impact of accounting information quality on investment efficiency. The results of the study show that the quality of accounting information helps to reduce over-investment problems, and at the same time, the professionalization of auditors. It is largely helpful in improving investment efficiency while reducing underinvestment.

It can be seen from the previous literature that scholars have made in-depth research on the quality of accounting information from different perspectives, and put forward a lot of valuable viewpoints, which paved the way for the relevant research to be carried out smoothly.

### **2.3. Research on the impact of accounting information quality on company idiosyncratic volatility**

The Dechow-Dichev model and accrual profit method are used to measure the quality of accounting information, and the quality of accounting information is obtained. The deterioration is positively correlated with trait fluctuations, and this relationship remains robust after adding several confounding effects (Rajgopal and Venkatachalam, 2011). Lin and Shen (2015) found that when the market model or the Fama-French three-factor model measures idiosyncratic volatility, debt financing and Equity financing activities hurt the credit risk of family businesses. The higher the idiosyncratic volatility, the higher the credit risk of the family business. Earnings management based on accrual accounting controls idiosyncratic volatility, which has a positive impact on credit risk, while real earnings management harms credit risk. Da Silva (2019) used the 2008 financial crisis as a sudden and negative exogenous shock that affected the overall trust of the capital market. Taking 1361 companies from developed countries as samples, the impact of accounting information quality and corporate governance on the idiosyncratic volatility arising during the crisis was examined. The conclusion is that although the pre-crisis accounting opacity exacerbated the anomalous components of idiosyncratic volatility, corporate governance practices have virtually no effect. During the crisis, the improvement of the company's financial information disclosure quality enhanced investors' confidence in the company's financial information, thereby reducing idiosyncratic volatility.

From the previous literature research, due to the divergence between the research on the relationship between idiosyncratic volatility and stock returns, the research on the quality of accounting information is subject to its measurement standards, so there are few related researches. However, from the perspective of domestic and foreign research, research on the quality of accounting information and corporate idiosyncratic volatility is still a hot topic.

According to standard financial theory, corporate volatility should not be priced. However, in the real world, because the company's idiosyncratic volatility cannot be completely dispersed, even when pricing, the risk-return balance should be observed, that is, the higher the company's idiosyncratic risk, the higher the required risk premium should be. In short, there should be a positive relationship between idiosyncratic fluctuations and returns. However, Ang *et al.* (2006) used the portfolio analysis method to find that the company's idiosyncratic fluctuations are negatively correlated with the expected returns. This contradicts the idea of "risk and return" in the classic asset pricing theory. Therefore, they call this financial vision "the mystery of idiosyncratic volatility", also known as the trait fluctuation heterogeneity phenomenon. Subsequently, many scholars conducted research and tests on this phenomenon for different countries, different periods, and different samples.

There are two channels for the integration of company idiosyncratic information into stock prices, public information and private information. Public information refers to the information that market investors obtain from public channels at a lower cost. Private information refers to the fact that some investors use the advantage of information asymmetry to obtain information about the value of the company. This advantage is manifested in two aspects, one is the difference in information acquisition channels, and the other is the difference in the ability to judge public information. Private information transactions are based on private information obtained by investors and obtain risk-free rewards through arbitrage. Transaction efficiency depends on the comparison of private information acquisition costs and returns. If the cost is lower than the income, investors tend to focus on private information, and vice versa tend to focus on public information, indicating that there is an alternative to private information and public information (Lang and Lundholm, 1996). When the quality of information disclosure rises, the cost of obtaining public information is cheaper. The excess income of private information transactions declines until it disappears. The trait information at the company level facilitates the adjustment of stock prices by public information channels. When the quality of information disclosure declines, the excess returns of private information transactions rise sharply, and corporate trait information is integrated into stock prices through private information transactions. The stock price information content theory view holds that the formation of corporate volatility is related to the private information arbitrage behavior of investors. The noise trading theory view does not believe that corporate volatility is related to trait information at the company level, but rather to investors' irrational noise deal theory behavior. However, when the quality of corporate information disclosure increases, investors are more likely to obtain information through public channels, so that private information transactions and noise transactions are effectively suppressed, and corporate volatility will be reduced. Based on the above analysis, this paper proposes the following hypotheses.

*H<sub>1</sub>: Accounting information quality is significantly negatively correlated with corporate idiosyncratic volatility.*

### **3. Data and methodology**

#### **3.1. Data**

The sample data of this article comes from the CSMAR database, including all stocks of A-shares in Shanghai and Shenzhen from January 1, 2013 to December 31, 2018.

In the specific data use, the relevant data removed in this paper include: (1) ST, PT stocks. The Shanghai and Shenzhen Stock Exchange give special treatment to trading in shares of listed companies with financial or other abnormalities, known as ST shares, while PT shares are those that stop trading and wait to be delisted. Because ST and PT stocks fluctuate greatly, it is prone to continuous daily limit or continuous down limit. (2) Since the accounting system and financial characteristics of listed companies in financial insurance are different from those of ordinary listed

companies, they are excluded.(3) A listed company with missing or abnormal data.

### 3.1.1. Dependent variable

In this paper, the company's idiosyncratic volatility (IV) is used as the dependent variable. Because the three-factor model has higher calculation accuracy, the Fama-french three-factor model is used to measure the idiosyncratic volatility of the company. Use monthly data to calculate company idiosyncratic volatility in different intervals, and test the impact of accounting information quality on it. The company's idiosyncratic volatility is calculated by the software STATA15.0.

### 3.1.2. Independent Variable

The independent variable accounting information quality (DA) is calculated by the modified Jones model, which is calculated in the STATA15.0 software.

### 3.1.3. Control variables

Regarding the control variables, this paper refers to the relevant research and selects the following indicators as the control variables. Except that the system risk comes from the WIND database, the other variable index data are derived from the CSMAR database. The connotation of each control variable is further explained.

Incorporating the size of the company's total assets into control is a potential determinant of IV growth over time. Malkiel and Xu (1997) reported evidence of a strong relationship between trait volatility and size, suggesting that these two variables may capture the same potential risk factors to some extent.

The P/B ratio (PB) is defined as the ratio of the total market capitalization of the company to the net assets at the end of the previous accounting semi-annual period corresponding to the earnings announcement. On the one hand, it avoids the value effect of this paper (Fama and French, 1992; Porta *et al.* 1997) on the other hand, it controls the impact of growth expectations on stock prices (Collins and Kothari, 1989).

Porta *et al.* (1997) proposed that the ownership concentration (OWNER) is negatively correlated with the quality of accounting information. Porta *et al.* (1997) found that the quality of accounting information of the company depends to some extent on the rationality of the company's shareholding structure. The existence of the new listing effect means that the age of the listing is closely related to the idiosyncratic volatility (Brown and Kapadia, 2007).

The impact of financial risk on stock price volatility means that capital structure (LEV) is closely related to corporate idiosyncratic volatility. Panousi and Papanikolaou (2012) based on the "noise trading" perspective, found that there is a positive correlation between the proportion of controlling shareholders and corporate idiosyncratic volatility. They believe that when the shareholding ratio of the major shareholder rises, it is more inclined to block the internal information of the business operation for personal gain. Bennett and Sias (2006) found that the market-to-value ratio (BM) and idiosyncratic volatility trends of the "danger-safety" industry are consistent. The fluctuation of idiosyncratic volatility can be attributed to the fluctuation of ROE and the variation of the growth agent proxy variable. The root cause of the volatility of the US stock market between 1976 and 2000 was the decline of ROE and the rise of its volatility.

Also, under the background of China's special property rights, listed companies have different state-owned and non-state-owned enterprises. There are big differences between the two companies in terms of the external living environment and the internal corporate governance mechanism. Different property rights will inevitably lead to different Governance mechanisms that have different impacts on company idiosyncratic volatilities.

TURN: The sum of the daily turnover rate (total number of shares) during the year refers to the number of times the stock has been traded over a while. This indicator reflects the liquidity of the stock in the market to a certain extent. Miller (1977) argues that investors who disagree with the future earnings of stocks will generate trades that can be used to measure investor heterogeneity. There are short-selling restrictions and information asymmetry in China's stock

market, and personal investment accounts for a large proportion. The psychological bias affecting individual investment is one of the reasons for generating heterogeneous beliefs, so the stock turnover rate can also be better measured. There is a close relationship between qualitative beliefs and heterogeneous beliefs and corporate idiosyncratic volatilities, so this control variable is introduced.

System risk (BETA) is represented by the Bate coefficient, and the data is derived from the WIND database. There is a significant relationship between systemic risk and idiosyncratic volatility (Ghosh and Olsen, 2009).

### 3.1.4. Empirical model

For the calculation of company idiosyncratic volatility, in this paper, the Fama-French (1993) division method is used to divide the annual stock into six combinations of SH, SM, SL, BH, BM, and BL. The division of the combination is based on the ME value (the stock market capitalization value) and the BM value (the book market value ratio). If the ME value is large, the company size is large. This paper obtains the size of the company by directly comparing the market capitalization of individual stocks at the end of June each year. The BM value of the company's idiosyncratic volatility is calculated as the BM value of the year before the corresponding year. The grouping method is divided into two groups according to the ME value, B and S. The B group is composed of the top 50% of the ME value, and the S group is the last 50%. Secondly, according to the BM value, the H, M, and L groups are sorted according to the BM value from large to small, the first 30% is the H group, that is the high book value ratio; the M group is the middle 40% of the stock, the medium book Value ratio, L group is the lower 30% of the book value than the stock, thus obtaining SH, SM, SL, BH, BM, BL six groups of the stock portfolio. Calculate the monthly comprehensive rate of return  $r_p$  of the combination  $p$  using the weighted average method. The formula is as follows:

$$r_{pt} = \sum_{i=1}^n \frac{\omega_{it}}{\sum_{i=1}^n \omega_{it}} \times r_{it} \quad (1)$$

$r_{pt}$ : the rate of return of the combination  $p$  at time  $t$ ,  $\omega_{it}$ : the monthly market capitalization of individual stocks  $i$  at time  $t$ ,  $r_{it}$  is the monthly stock return of individual stocks  $i$  at time  $t$  (considering cash dividend reinvestment), combination  $p$  represents six combinations of SH, SM, SL, BH, BM, and BL. The scale factor (SMB) and value factor (HML) calculation methods are as follows, thereby obtaining SMB and HML per month.

$$\text{SMB} = \frac{(SH + SM + SL) - (BH + BM + BL)}{3} \quad (2)$$

$$\text{HML} = \frac{(SH + BH) - (SL + BL)}{2} \quad (3)$$

According to the above formula, the excess return rate of each combination and three factors are obtained, and the residuals of six combinations per year are obtained by using STATA15.0 to obtain the annual company idiosyncratic volatility of different combinations.

According to the previous variables, the company's idiosyncratic volatility (IV) is the explanatory variable, the accounting information quality is the explanatory variable (DA), the company size (SIZE), the independent director ratio (BOARD), the return on equity (ROE), Equity concentration (OWNER), property rights (SOE), price-to-book ratio (PB), book-to-market ratio (BM), asset-liability ratio (LEV), turnover rate (TURN), listed company age (AGE), and systemic risk to control the variables, a multiple linear regression equation is established.

$$IV = \beta_0 + \beta_1 DA + \beta_2 BOARD + \beta_3 SIZE + \beta_4 ROE + \beta_5 OWNER + \beta_6 SOE + \beta_7 PB + \beta_8 BM + \beta_9 LEV + \beta_{10} AGE + \beta_{11} TURN + \beta_{12} BETA + \varepsilon \quad (4)$$

In the formula,  $\beta_0$  is the intercept term,  $\beta_i$ ,  $i = 1 \sim 11$ , which is the variable coefficient, and  $\varepsilon$  is the residual term.

### 3.2. Methodology

#### 3.2.1. Measurement of the quality of accounting information

There are many researches on the measurement methods of accounting information quality, and the widely used methods such as the modified Jones model, etc., the following are the methods for measuring the quality of accounting information.

The earnings quality is evaluated from the perspective of the nature of the earnings time series. The usefulness of decision-making is that the usefulness of earnings is mainly predictive, sustainable, and variability in time series. Predictability means that past or current earnings information should help improve investor expectations for future investment returns. Sustainability refers to the possibility that the current surplus or current surplus relative to the previous period will be maintained or reproducible in the future. Kormendi and Lipe (1987) argued that surplus persistence refers to whether the current surplus can be maintained in subsequent periods. The opposite of variability is stationarity. Stationarity means that the distribution of surplus in each period is smooth and the fluctuation is small. However, Leuz *et al.* (2003) argue that in the case of a non-stationary business environment, the stability of the surplus may be the result of the surplus and manipulation of the surplus. Therefore, the stability of the surplus does not reflect the quality of the surplus.

The quality of earnings is evaluated from the perspective of the relationship between the internal components of earnings. Earnings management (or “surplus manipulation”) has a greater impact on earnings quality. Earnings management refers to the purposeful intervention of external reports to obtain certain private benefits for managers or shareholders. The greater the degree of earnings management, the lower the quality of earnings. Accrued surpluses are classified into non-manipulable accruals and manipulative accruals. The unmanipulable accrual item is the normal accrued surplus of the enterprise, and the manipulation accrual item is the earnings management of the enterprise for some motive. In the follow-up study, scholars have created time series models for the estimation of uncontrollable accruals. The more famous ones are DeAngelo (1986) model, Healy (1985) model, Dechow and Sloan (1991) industry model, Jones (1991) model and Jones model modified by Dechow *et al.* (1995).

Since the time series model has strict requirements on data availability and may have serious sample survival errors, the Jones model and the modified Jones model gradually replace the time series model in the research.

This paper uses the modified Jones model to measure the quality of accounting information, which is briefly introduced here. Earnings management refers to the act of company managers adjusting the net profit of financial reports following generally accepted accounting standards. The company's earnings management is due to national supervision, financial reporting requirements, and stock price. If the company is subject to market or industry regulatory investigations, it will generate earnings management. Besides, to reduce risks, the company may follow accounting policies.

Jones model (1991) is based on the calculated accrued profits controlled by the listed company as the basis for measuring the quality of accounting information. It is pointed out that proper earnings management is beneficial to the company. It can protect the interests of related parties to a certain extent. However, when there are too many accrued accruals, it means that the company has excessive modification of accounting information. For these reasons, Jones built a measurement model to measure the quality of accounting information by calculating the accrued profits that were manipulated. The specific measurement model is expressed as follows:

$$\frac{TA_t}{A_{t-1}} = a_1 \frac{1}{A_{t-1}} + a_2 \frac{\Delta REV_t}{A_{t-1}} + a_3 \frac{PPE_t}{A_{t-1}} + \varepsilon_t \quad (5)$$

where  $A_{t-1}$  represents the total assets of t-1 years,  $\Delta REV_t$  represents the difference between the main business income of t year and the main business income of t-1 year,  $PPE_t$  indicates the original value of fixed assets in t years,  $TA_t$  represents the total accrued profit of t years, t represents the estimated year,  $\varepsilon_t$  represents the residual term, and the accrued profit that can be manipulated.

Dechow et al. (1995) modified the Jones model to point out that the receivables in operating income are treated as manageable earnings and are deducted from the model, which eliminates the company's impact on revenue manipulation. The new model is the modified Jones model is expressed as follows:

$$\frac{TA_t}{A_{t-1}} = a_1 \frac{1}{A_{t-1}} + a_2 \frac{\Delta REV_t - \Delta REC_t}{A_{t-1}} + a_3 \frac{PPE_t}{A_{t-1}} + \varepsilon_t \quad (6)$$

$\Delta REV_t - \Delta REC_t$  represents the difference between the net amount of accounts receivable in t year and the net amount of accounts receivable in t-1 years.

### 3.2.2. Measurement of company idiosyncratic volatility

The measurement method of company trait fluctuation mainly depends on the selection of the asset pricing model. Based on the different models, the measurement methods are currently divided into two categories: direct decomposition method and indirect decomposition method.

Indirect separation according to the EHM theory, individual stock returns come from different impact levels, such as market, industry, and company idiosyncratic. In the calculation, the excess return rate of individual stocks is decomposed according to different levels, and then the difference between the yields of different levels is calculated, and the variance is obtained. The volatility corresponding to the industry level and the company trait level is the idiosyncratic volatility, so the method is also called the variance decomposition method.

The direct decomposition method is based on the fact that the basis of decomposition is not the excess return, but the total return. They divide the total income of individual stocks into two parts: market portfolio income and company trait income so that the total income fluctuation is also decomposed into two parts: the system variance and the company's idiosyncratic variance, in which the company's idiosyncratic variance is the company's idiosyncratic volatility. The most representative is Malkiel and Xu (1997) based on the Fama-French three-factor model estimation method, this paper uses this method to measure the company's idiosyncratic volatility.

Fama-French three-factor model is estimated by using the three-factor model for multiple regression analysis, and the standard deviation of the regression residual sequence is used to measure the idiosyncratic volatility. Fama and French (1993) introduced the scale factor SMB and the value factor HML into the equity capital measurement model. The traditional one-factor model was officially extended to the three-factor model. The Fama-French three-factor model has been validated in several markets and its model is expressed as follows:

$$E(R_i) = R_f + \beta_i [E(R_M) - R_f] + s_i SMB + h_i HML \quad (7)$$

In the three-factor model, the left side represents the expected rate of return of asset i, the right side  $E(R_M)$  is the expected rate of return for the entire market,  $R_f$  is the risk-free rate, and SMB and HML are the two newly introduced factors.

To facilitate our study of the applicability of the three-factor model, we define the following three-factor empirical model:

$$R_p = r_p - r_f = \alpha + \beta_1 (r_m - r_f) + \beta_2 SMB + \beta_3 HML + \varepsilon \quad (8)$$

the left  $R_p = r_p - r_f$  represents the excess return rate of the combination p,  $r_m - r_f$  represents the excess return rate of the whole market, the SMB represents the scale factor, the HML represents the value factor,  $\alpha$  is the intercept term,  $\beta_1$ ,  $\beta_2$ ,  $\beta_3$  is the coefficient of the three independent variables, and  $\varepsilon$  is the estimated residual. Ang et al (2006) used the Fama-French

(1993) three-factor model to calculate the risk of trait fluctuations, and used the standard deviation of the three-factor model residuals as a measure of idiosyncratic volatility. This paper also chose this method as the idiosyncratic volatility. Measured by the way, then, the company's idiosyncratic volatility is:

$$IV_{i,q} = Std(\varepsilon_{i,t}) \tag{9}$$

$IV_{i,q}$  represents the company idiosyncratic volatility, and  $Std(\varepsilon_{i,t})$  is the standard deviation of the residual term.

**4. Empirical results**  
**4.1 Descriptive statistics**

Table 1 lists the descriptive statistics of this paper. It can be seen that: (1) There are 6028 observations of the company's idiosyncratic volatility (IV) from 2013 to 2018, with different distributions each year, with a mean of 0.0100, and the median is 0.0085, indicating that from the overall distribution point of view, the listed company of Shanghai and Shenzhen A-shares has lower idiosyncratic volatility; the idiosyncratic volatility range is between 0.0051 and 0.0184, indicating that the company's idiosyncratic volatility is relatively large; (2) The average quality of accounting information (DA) is 0.0400, with a median of 0.0256, it shows that the quality of accounting information between different stocks is quite different, which is closely related to the internal governance level and industry characteristics of the company. (3) The concentration of equity is in the range of 12.72%-101.16%, it affects the pros and cons of holding information. Usually, we divide market traders into institutional investors and individual investors. The latter has information disadvantages compared to the former, and individual investors have the characteristics of noise traders. The higher the concentration of equity, the less noise traders there are.

**Table 1. Descriptive statistics (Full samples N=6028)**

Variables	Mean	Max	Min	Median
IV	0.0100	0.0184	0.0051	0.0085
DA	0.0400	1.9182	0.0000	0.0256
BOARD	0.3719	0.8000	0.1818	0.3333
SIZE	22.5755	28.5087	19.1987	22.3687
ROE (%)	0.0406	0.5900	-1.0676	0.0345
OWNER (%)	58.0488	101.1600	12.7200	58.4500
SOE	0.5604	1.0000	0.0000	1.0000
PB (%)	3.2583	66.8666	0.0000	2.5839
BM	1.0812	11.2023	0.0000	0.7111
LEV (%)	0.4577	1.0325	0.0103	0.4539
AGE	15.0125	32.0000	6.0000	15.0000
TURN (%)	405.9640	2303.2770	0.0000	331.5058
BETA	1.0778	3.3880	-0.6581	1.0971

**Note:** The explanation of variables are presented in Appendix.

**Source:** Compiled by authors based on Shenzhen CSMAR Data Technology (2019)

Table 2 shows the correlation between the variables. In this paper, the Pearson correlation test is performed using the "pwcorr\_a" command in Stata15.0. The statistical results are shown in Table 2. From the table, the correlation coefficient between variables is less than 0.6. There is no multicollinearity problem for each variable, and multiple regression analysis can be performed.

Table 2. Correlation coefficient of main variables (Pearson Correlation)

	IV	DA	BOARD	SIZE	ROE	OWNER	SOE	PB	BM	LEV	AGE	TURN	BETA
IV	1.000												
DA	-0.01												
BOARD	0.005	0.027**											
SIZE	-0.031**	-0.025*	0.077***										
ROE	-0.032**	-0.040***	-0.038***	-0.069***									
OWNER	0.003	-0.032**	0.057***	0.273***	0.132***								
SOE	-0.007	0.009	0.003	-0.300***	0.135***	-0.058***							
PB	0.186***	0.038***	0.006	-0.367***	0.075***	-0.032**	0.139***						
BM	-0.099***	0.039***	0.057***	0.629***	-0.255***	0.082***	-0.272***	-0.398***					
LEV	0.012	0.075***	0.021	0.544***	-0.361***	0.029**	-0.257***	-0.120***	0.628***				
AGE	-0.004	0.068***	-0.048***	0.272***	-0.073***	-0.205***	-0.426***	-0.085***	0.232***	0.301***			
TURN	0.410***	0.035***	-0.032**	-0.279***	-0.174***	-0.494***	0.006	0.233***	-0.198***	-0.030**	0.041***		
BETA	-0.152***	-0.006	0.006	0.048***	-0.119***	-0.104***	-0.071***	-0.021	0.059***	0.052***	0.039***	0.208***	1.000

Note: \*\*\* p < 0.01, indicating significant at the 1% level; \*\* p < 0.05, indicating significant at the 5% level; \* p < 0.1, indicating significant at the 10% level.

## 4.2. Regression analysis

The regression of accounting information quality on company idiosyncratic volatility is shown in Table 3.

**Table 3. Regression results**

Dependent variable	IV	R <sup>2</sup>	0.2984
Independent Variable	DA	F	211.39
		Prob > F	0.0000
	coefficients	Standard	t
IV	-0.0002**	0.0001	-2.2100
DA	0.0003	0.0008	0.3800
BOARD	0.0004***	0.0000	8.3500
SIZE	0.0001	0.0010	0.1000
ROE	0.0000***	0.0000	17.6300
OWNER	0.0000	0.0001	0.6400
SOE	0.0001***	0.0000	7.8200
PB	-0.0001*	0.0000	-1.7200
BM	-0.0000	0.0003	-0.2400
LEV	0.0000	0.0000	1.1900
AGE	0.0000***	0.0000	43.6800
TURN	-0.0022***	0.0001	-22.3600
BETA	-0.0064***	0.0012	-5.3700
Constant			

**Note:** \*, \*\* and \*\*\* represent 10%, 5% and 1% significance level, respectively.

**Source:** Compiled by authors based on Shenzhen CSMAR Data Technology (2019)

First, the model as a whole presents a significant state (P-value is 0.0000). the regression coefficient of the explanatory variable accounting information quality (DA) and the explanatory variable company idiosyncratic volatility (IV) is negative, indicating that the accounting information quality hurts the company's idiosyncratic volatility: the lower the accounting information quality, the company traits the higher the idiosyncratic volatility, the closer the company's idiosyncratic volatility is to the quality of accounting information within the company. The regression results are consistent with the model hypotheses. Among the control variables, the size of the company, the shareholding ratio of the top ten shareholders, the price-to-book ratio (PB), and the turnover rate were significantly positively correlated at the 1% significance level. The turnover rate represents the irrational behavior of investors. The positive correlation between turnover rate and corporate trait risk can indicate that there is no correlation between corporate trait risk and private information into stock price behavior. The independent director (BOARD), return on assets (ROE), property rights (SOE), asset-liability ratio (LEV), company age (AGE) is not obvious, which may be the interaction between variables in the same regression results.

## 4.3. Robustness test

To carry out the robustness test, this paper uses the alternative method to measure the quality of accounting information (DA). Also, the sample data is sorted according to the quality of accounting information from high to low. The quality of accounting information is calculated according to the modified Jones model, sort the sample data from 1% to 99% of the data range after sorting.

The robustness test results of the model are listed in Table 4. The explanatory variables are significantly negatively correlated with the interpreted variables. The test results support the hypothesis.

**Table 4. Regression results: Robustness test**

Dependent variable	IV	R <sup>2</sup>	0.2980
Independent Variable	DA	F	206.7100
		Prob > F	0.0000
	coefficients	Standard	t
IV			
DA	-0.0025*	0.0013	-1.8900
BOARD	0.0002	0.0008	0.2500
SIZE	0.0004***	0.0000	8.3600
ROE	-0.0005	0.0010	-0.5200
OWNER	0.0000***	0.0000	17.1900
SOE	0.0000	0.0001	0.6500
PB	0.0001***	0.0000	8.0100
BM	-0.0001*	0.0000	-1.9200
LEV	-0.0000	0.0003	-0.2000
AGE	0.0000	0.0000	1.2100
TURN	0.0000***	0.0000	42.9300
BETA	-0.0022***	0.0001	-22.0600
Constant	-0.0064***	0.0012	-5.3200

**Note:** \*, \*\* and \*\*\* represent 10%, 5% and 1% significance level, respectively.

**Source:** Compiled by authors based on Shenzhen CSMAR Data Technology (2019)

The empirical results are similar to those of the others. Rajgopal and Venkatachalam (2011) used two proxies to capture earnings quality which is the Dechow–Dichev measure of earnings quality and the squared abnormal accruals to investigate whether changes in financial reporting quality are associated with this trend in return volatility, and the results are consistent with this paper. Besides, after controlling for several confounding effects, control variables, and the impact of factors such as newly listed firms, accounting for technology-intensive firms and firm-year observations with negative earnings, merger activity and financial distress, the results did not change. When a company can control idiosyncratic risk, the ability to increase influence on stock returns is greater (Lin and Shen, 2015).

## 5. Conclusion

This paper takes the Shanghai and Shenzhen A-shares from 2013 to 2018 as a sample to test the impact of accounting information quality on the company's trait risk. The conclusions of the study show that, first of all, the quality of accounting information is significantly positively correlated with the idiosyncratic volatility, with the improvement of the quality of accounting information, the idiosyncratic volatility of the company will show a downward trend.

As a company-level stock price fluctuation, the company's idiosyncratic volatility can reflect the quality of corporate accounting information to a certain extent, and thus reflect the company's governance level to a certain extent, leaders can grasp the company's idiosyncratic volatility from this perspective. From the perspective of the correlation between the quality of accounting information and the trait risk of the company, to maintain a more stable and orderly market environment, it is necessary to strengthen the market supervision and improve the quality of accounting information of the company.

## References

- Aboulamer, A. and Kryzanowski, L., 2016. Are idiosyncratic volatility and MAX priced in the Canadian market? *Journal of Empirical Finance*, 37, pp. 20-36. <https://doi.org/10.1016/j.jempfin.2016.02.005>
- Ang, A., Hodrick, R. J., Xing, Y and Zhang, X., 2006, The cross-section of volatility and expected returns. *The Journal of Finance*, 1, pp. 259-299. <https://doi.org/10.1111/j.1540-6261.2006.00836.x>
- Ang, A., Hodrick, R. J., Xing, Y., and Zhang, X., 2008. High idiosyncratic volatility and low returns: International and further U.S. evidence. *Journal of Financial Economics*, 91(1), pp. 1-23.

- <https://doi.org/10.1016/j.jfineco.2007.12.005>
- Bagaeva, A., 2008. An examination of the effect of international investors on accounting information quality in Russia. *Advances in Accounting*, 24(2), pp. 157-161. <https://doi.org/10.1016/j.adiac.2008.08.001>
- Becchetti, L., Ciciretti, R. and Hasan, I., 2015. Corporate social responsibility, stakeholder risk, and idiosyncratic volatility. *Journal of Corporate Finance*, 35, pp. 297-309. <https://doi.org/10.1016/j.jcorpfin.2015.09.007>
- Bennett, J. A. and Sias, R. W., 2006. Why company-specific risk changes over time. *Financial Analysts Journal*, 62(5), pp. 89-100. <https://doi.org/10.2469/faj.v62.n5.4285>
- Berggrun, L., Lizarzaburu, E. and Cardona, E., 2016. Idiosyncratic volatility and stock returns: Evidence from the MILA. *Research in International Business and Finance*, 37, pp. 422-434. <https://doi.org/10.1016/j.ribaf.2016.01.011>
- Berrada, T. and Hugonnier, J., 2013. Incomplete information, idiosyncratic volatility and stock returns. *Journal of Banking and Finance*, 37(2), pp. 448-462. <https://doi.org/10.1016/j.jbankfin.2012.09.004>
- Bley, J. and Saad, M., 2015. Idiosyncratic volatility forecasting in the stock market of Saudi Arabia. *Emerging Markets Finance and Trade*, 51(6), pp. 1342-1357. <https://doi.org/10.1080/1540496X.2015.1011512>
- Bradrania, M. R., Peat, M. and Satchell, S., 2015. Liquidity costs, idiosyncratic volatility and expected stock returns. *International Review of Financial Analysis*, 42, pp. 394-406. <https://doi.org/10.1016/j.irfa.2015.09.005>
- Brown, G. and Kapadia, N., 2007. Firm-specific risk and equity market development. *Journal of Financial Economics*, 84(2), pp. 358-388. <https://doi.org/10.1016/j.jfineco.2006.03.003>
- Chaney, P. K., Faccio, M. and Parsley, D., 2011. The quality of accounting information in politically connected firms. *Journal of Accounting and Economics*, 51(1-2), pp. 58-76. <https://doi.org/10.1016/j.jacceco.2010.07.003>
- Chen, J., Chollete, L. and Ray, R., 2010. Financial distress and idiosyncratic volatility: An empirical investigation. *Journal of Financial Markets*, 13(2), pp. 249-267. <https://doi.org/10.1016/j.finmar.2009.10.003>
- Chichernea, D. C., Petkevich, A. and Zykaj, B. B., 2015. Idiosyncratic volatility, institutional ownership, and investment horizon. *European Financial Management*, 21(4), pp. 613-645. <https://doi.org/10.1111/j.1468-036X.2013.12033.x>
- Collins, D. W. and Kothari, S. P., 1989. An analysis of intertemporal and cross-sectional determinants of earnings response coefficients. *Journal of Accounting and Economics*, 11, pp. 143-181. [https://doi.org/10.1016/0165-4101\(89\)90004-9](https://doi.org/10.1016/0165-4101(89)90004-9)
- Da Silva, P. P., 2019. Corporate governance, earnings quality and idiosyncratic crash risk during the 2007–2008 financial crisis. *Journal of Multinational Financial Management*, 51, pp. 61-79. <https://doi.org/10.1016/j.mulfin.2019.07.002>
- Deangelo, L. E., 1986. Accounting valuation numbers as of market study public of substitutes: buyouts management stockholders. *The Accounting Review*, 61(3), pp.400–420.
- Dechow P. M. and Sloan R. G., 1991. Executive incentives and the horizon problem: An empirical investigation. *Journal of Accounting and Economics*, 14(1), pp. 51-89. [https://doi.org/10.1016/0167-7187\(91\)90058-S](https://doi.org/10.1016/0167-7187(91)90058-S)
- Dechow P. M., Sloan, R. G. and Sweeney, A. P., 1995. Detecting earnings management. *The Accounting Review*, 70(2), pp. 193-225.
- Elaoud, A. and Jarboui, A., 2017. Auditor specialization, accounting information quality and investment efficiency. *Research in International Business and Finance*, 42, pp. 616-629. <https://doi.org/10.1016/j.ribaf.2017.07.006>
- Fama, E. F. and French, K. R., 1992. The cross-section of expected stock returns. *The Journal of Finance*, 2, pp. 427-465. <https://doi.org/10.1111/j.1540-6261.1992.tb04398.x>
- Fama, E. F. and French, K. R., 1993. Common risk factors in the returns on stocks and bonds. *Journal of Financial Economics*, 33(1), pp. 3-56. [https://doi.org/10.1016/0304-405X\(93\)90023-5](https://doi.org/10.1016/0304-405X(93)90023-5)
- Fernholz, R. T. and Koch, C., 2017. Big banks, idiosyncratic volatility, and systemic risk. *American Economic Review*, 107(5), pp. 603-607. <https://doi.org/10.1257/aer.p20171007>
- Ghosh, D. and Olsen, L., 2009. Environmental uncertainty and managers' use of discretionary

- accruals. *Accounting, Organizations and Society*, 34(2), pp. 188-205. <https://doi.org/10.1016/j.aos.2008.07.001>
- Gu, M., Kang, W. and Xu, B., 2018. Limits of arbitrage and idiosyncratic volatility: Evidence from China stock market. *Journal of Banking and Finance*, 86, pp. 240-258. <https://doi.org/10.1016/j.jbankfin.2015.08.016>
- Hao, Q., Shi, X. and Bu, D., 2018. The Chinese stimulus program from 2008 to 2010 and accounting information quality. *Journal of International Accounting, Auditing and Taxation*, 33, pp. 64-78. <https://doi.org/10.1016/j.intaccudtax.2018.11.001>
- Hasan, M. M. and Habib, A., 2017. Firm life cycle and idiosyncratic volatility. *International Review of Financial Analysis*, 50, pp. 164-175. <https://doi.org/10.1016/j.irfa.2017.01.003>
- Jones, J. J., 1991. Earnings management during import relief investigations. *Journal of Accounting Research*, 29(2), pp. 193-228. <https://doi.org/10.2307/2491047>
- Kormendi, R. and Lipe, R., 1987. Earnings innovations, earnings persistence, and stock returns. *The Journal of Business*, 60(3), pp. 323-345. <https://doi.org/10.1086/296400>
- Kumari, J., Mahakud, J. and Hiremath, G. S., 2017. Determinants of idiosyncratic volatility: Evidence from the Indian stock market. *Research in International Business and Finance*, 41, pp. 172-184. <https://doi.org/10.1016/j.ribaf.2017.04.022>
- Lang, M. H. and Lundholm, L. J., 1996. Corporate disclosure policy and analyst behavior. *The Accounting Review*, 71(4), pp. 467-492.
- Lee, B. S. and Mauck, N., 2016. Dividend initiations, increases and idiosyncratic volatility. *Journal of Corporate Finance*, 40, pp. 47-60. <https://doi.org/10.1016/j.jcorpfin.2016.07.005>
- Lee, G. and Masulis, R. W., 2009. Seasoned equity offerings: Quality of accounting information and expected flotation costs. *Journal of Financial Economics*, 92(3), pp. 443-469. <https://doi.org/10.1016/j.jfineco.2008.04.010>
- Leuz, C., Nanda, D. and Wysocki, P. D., 2003. Earnings management and investor protection: an international comparison. *Journal of Financial Economics*, 69(3), pp. 505-527. [https://doi.org/10.1016/S0304-405X\(03\)00121-1](https://doi.org/10.1016/S0304-405X(03)00121-1)
- Lin, Y. and Shen, C., 2015. Family firms' credit rating, idiosyncratic risk, and earnings management. *Journal of Business Research*, 68(4), pp. 872-877. <https://doi.org/10.1016/j.jbusres.2014.11.044>
- Liu, S., Kong, A., Gu, R. and Guo, W., 2019. Does idiosyncratic volatility matter? — Evidence from Chinese stock market. *Physica A: Statistical Mechanics and its Applications*, 516, pp. 393-401. <https://doi.org/10.1016/j.physa.2018.09.184>
- Malagon, J., Moreno, D. and Rodríguez, R., 2018. Idiosyncratic volatility, conditional liquidity and stock returns. *International Review of Economics and Finance*, 53, pp. 118-132. <https://doi.org/10.1016/j.iref.2017.10.011>
- Malkiel, B. G. and Xu, Y., 1997. Risk and return revisited. *Journal of Portfolio Management*, 23(3), pp. 9-14. <https://doi.org/10.3905/jpm.1997.409608>
- Merton, R. C., 1987. A simple model of capital market equilibrium with incomplete information. *Journal of Finance*, 42(3), pp. 483-510. <https://doi.org/10.1111/j.1540-6261.1987.tb04565.x>
- Miller, E. M., 1977. Risk, uncertainty, and divergence of opinion. *The Journal of Finance*, 32(4), pp. 1151-1168. <https://doi.org/10.1111/j.1540-6261.1977.tb03317.x>
- Panousi, V. and Papanikolaou, D., 2012. Investment, idiosyncratic risk, and ownership. *The Journal of Finance*, 67(3), pp. 1113-1148. <https://doi.org/10.1111/j.1540-6261.2012.01743.x>
- Healy, P. M., 1985. The effect of bonus schemes on accounting decisions. *Journal of Accounting and Economics*. 7(1-3), pp. 85-107. [https://doi.org/10.1016/0165-4101\(85\)90029-1](https://doi.org/10.1016/0165-4101(85)90029-1)
- Porta, R. L., Lakonishok, J., Shleifer, A. and Vishny, R., 1997. Good news for value stocks: Further evidence on market efficiency. *The Journal of Finance*, 52(2), pp. 859-874. <https://doi.org/10.1111/j.1540-6261.1997.tb04825.x>
- Rajgopal, S. and Venkatachalam, M., 2011. Financial reporting quality and idiosyncratic return volatility. *Journal of Accounting and Economics*, 51(1-2), pp. 1-20. <https://doi.org/10.1016/j.jacceco.2010.06.001>
- Ran, G., Fang, Q., Luo, S. and Chan, K. C., 2015. Supervisory board characteristics and accounting information quality: Evidence from China. *International Review of Economics*

- and Finance, 37, pp. 18-32. <https://doi.org/10.1016/j.iref.2014.10.011>
- Shenzhen CSMAR Data Technology, 2019. Data center. [online] Available at: <<http://www.gtarsc.com/#/datacenter/singletable/search?serId=1&databaseld=63>> [Accessed on 10 September 2019].
- Tan, M. and Liu, B., 2016. CEO's managerial power, board committee memberships and idiosyncratic volatility. *International Review of Financial Analysis*, 48, pp. 21-30. <https://doi.org/10.1016/j.irfa.2016.09.003>
- Umutlu, M., 2019. Does idiosyncratic volatility matter at the global level? *The North American Journal of Economics and Finance*, 47, pp. 252-268. <https://doi.org/10.1016/j.najef.2018.12.015>
- Wang, L., Lin, C., Kang, J. and Fung, H., 2016. Idiosyncratic volatility and excess return: Evidence from the Greater China region. *Finance Research Letters*, 19, pp. 126-129. <https://doi.org/10.1016/j.frl.2016.07.003>
- Zaremba, A., Czapkiewicz, A. and Będowska-Sójka, B., 2018. Idiosyncratic volatility, returns, and mispricing: No real anomaly in sight. *Finance Research Letters*, 24, pp. 163-167. <https://doi.org/10.1016/j.frl.2017.09.002>
- Zhai, J. and Wang, Y., 2016. Accounting information quality, governance efficiency and capital investment choice. *China Journal of Accounting Research*, 9(4), pp. 251-266. <https://doi.org/10.1016/j.cjar.2016.08.001>
- Zhong, A., 2018. Idiosyncratic volatility in the Australian equity market. *Pacific-Basin Finance Journal*, 50, pp. 105-125. <https://doi.org/10.1016/j.pacfin.2017.06.010>
- Zhou, T., Xie, J. and Li, X., 2016. "Financial reporting quality and idiosyncratic return volatility: Evidence from China. *Emerging Markets Finance and Trade*, 53(4), pp. 835-847. <https://doi.org/10.1080/1540496X.2016.1142200>

**Appendix. Variable interpretations**

	Name	Symbol	Measures
Dependent Variable	Idiosyncratic Volatility	<i>IV</i>	Fama-French
Independent Variable	Accounting information quality	<i>DA</i>	Modified Jones model
Control variables	Ratio of independent directors	<i>BOARD</i>	Number of independent directors / number of directors
	Company Size	<i>SIZE</i>	The natural logarithm of the total assets of the company at the end of the year
	Profit	<i>ROE</i>	Roe
	Equity concentration	<i>OWNER</i>	Proportion of the top ten shareholders
	Nature of property	<i>SOE</i>	State-owned enterprises are 0, and non-state-owned enterprises are 1
	P/B ratio	<i>PB</i>	Closing price of the day / (the end of the owner's equity / the value of the paid-up capital at the end of the current period)
	Book market value ratio	<i>BM</i>	Total shareholders' equity / total market value
	Assets and liabilities	<i>LEV</i>	Total liabilities / total assets
	Age of listing	<i>AGE</i>	Years from the company's listing to the year of observation
	Hand turnover rate	<i>TURN</i>	The sum of the daily turnover rate (total number of shares) during the year
	System risk	<i>BETA</i>	Bate coefficient (WIND database)