

A Study on the Impact of Shorting Mechanism on the Degree of Divergence of Investors' Opinions - Based on the Perspective of Listed Companies

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ABSTRACT

This paper thoroughly investigates the impact of shorting mechanism on the degree of divergence of opinions among investors, and takes listed companies as the subject of the study. Through the method of empirical analysis, this paper reveals the intensifying effect of shorting mechanism on the disagreement among investors, especially in the complex and changing market environment, this effect is more significant. This finding not only provides a decision-making reference for investors, but also provides a theoretical basis for market regulators to formulate policies, which is of great significance for promoting the stability and healthy development of the market.

KEYWORDS

Short-selling mechanism; Degree of investor disagreement; Listed companies

1. INTRODUCTION

In financial markets, shorting mechanism as an important trading strategy has been widely noticed and discussed in the past decades. Shorting is an operation in which an investor borrows securities and sells them, and then buys them when the price falls in order to return the borrowed securities and make a profit through the price difference. This strategy can bring huge investment returns, but also comes with certain risks and uncertainties.

With the continuous development and change of the financial market, the impact of shorting mechanism on the degree of investor disagreement has gradually become a research hotspot in academia and market practice, because of its important impact and significance on the financial market, the degree of investor disagreement refers to the degree of discrepancy between the views and assessment of market participants on the future development trend and value of a particular financial asset, and a large degree of disagreement may lead to market A high degree of disagreement may lead to increased price volatility, increasing market uncertainty and risk, and understanding this indicator is essential for effective market risk management [1]. In addition to this, the degree of investor disagreement can affect asset pricing and investment decisions, with different investors giving different valuations and expected returns for the same asset, affecting investor decisions and asset allocation. The information transmission and market efficiency of the market can also be measured by investor disagreement, and the study of this indicator can contribute to a certain extent to the adequate transmission of market information and the improvement of market efficiency. However, too much disagreement may also lead to market information asymmetry and market failure, affecting the stability and healthy development of the market. Therefore, it is of great significance to conduct an in-depth study and analysis of the degree of investor disagreement. As an important factor

affecting market trading activities and asset price volatility, the short-selling mechanism may have a far-reaching impact on the formation and divergence of investor opinion.

The purpose of this paper is to explore the impact of short-selling mechanism on investor disagreement from the perspective of listed companies, and to analyze the correlation through empirical research and data analysis. Specifically, based on the perspective of listed companies, this paper will collect relevant data and apply statistical analysis methods to explore the mechanism, degree of influence and possible factors affecting the short-selling mechanism on the degree of investor disagreement, with the aim of providing useful references and lessons for financial market participants and regulators, and promoting the stability and healthy development of the market.

2. LITERATURE REVIEW

Shorting, as an investment strategy in the financial market, allows investors to earn the difference in price by borrowing and selling stocks at a profit in anticipation of a decline in stock prices so that they can buy them back at a lower price in the future. Although the short-selling mechanism is highly controversial in the market, its impact on market liquidity, price discovery, and investor behavior has become a hot research topic in both academia and practice. This paper summarizes the main research results on the impact of short-selling mechanism on the degree of investor disagreement, focusing on the impact of this mechanism at the level of listed companies.

First, the effect of shorting mechanism on market liquidity is one of the focuses of many studies. Shorting restrictions lead to overvalued stock prices because investors with negative opinions are unable to adequately express their views [1]. Shorting mechanism improves the price discovery efficiency of the market because it allows more information to be incorporated into stock prices [2]. Studies have shown that in markets where shorting is possible, stock prices are able to reflect changes in firm fundamentals more quickly and accurately [3]. Thus, the shorting mechanism reduces asymmetric information in the market and enhances market liquidity by facilitating the transmission and integration of information.

Second, the role of the shorting mechanism in the price discovery process has also been the focus of scholarly attention. Frequency and size of price bubbles are significantly lower in markets where stocks can be shorted [4]. This is due to the fact that the shorting mechanism provides channels for investors holding negative information to express themselves, which in turn inhibits irrational exuberance. On the other hand, show that shorting activities are highly correlated with the release of negative corporate news, suggesting that short sellers play an important role in the transmission of market information [5]. Thus, the shorting mechanism facilitates the rationalization and discovery of market prices by increasing the speed of negative information dissemination.

There is some disagreement in the existing research on the effect of shorting mechanisms on the degree of investor disagreement. Some studies suggest that shorting reduces investor disagreement, and the existence of shorting restrictions leads to the exit of negatively viewed investors from the market and the convergence of views among the remaining investors. In a market where shorting is allowed, investors' different views are reflected in market transactions, thus reducing the degree of disagreement [6].

However, another body of research suggests that shorting may exacerbate investor disagreement, and an increase in shorting activity may reflect high levels of uncertainty among market participants about the future performance of firms, leading to an increase in the degree of disagreement [7]. Meanwhile, an empirical study shows that stocks with high shorting activity have significantly higher price volatility and trading volume, which also implies increased investor disagreement [8].

From the perspective of listed companies, the short-selling mechanism also has an important impact on corporate governance and information disclosure. It has been found that shorting pressure can motivate firms to increase transparency and improve their governance structure. Fang, Huang and

The greater the shorting pressure faced by a firm, the greater the timeliness and accuracy of its information disclosure [9]. In addition, the short-selling mechanism may have a binding effect on firm management's decision-making. To avoid being shorted, management may make more prudent investment decisions and work to improve firm performance [10].

However, the shorting mechanism may also have negative effects. For example, some firms may adopt short-term strategies in response to short-selling pressure and neglect long-term value creation. In addition, an over-concentration of shorting activities on certain stocks may trigger market panic, leading to sharp stock price fluctuations and adversely affecting firms' operations and financing [11].

In summary, the impact of shorting mechanisms on the degree of investor disagreement is complex and diverse. Although existing studies provide many valuable insights, there is a need to further explore the specific impact of short-selling mechanisms under different market environments, industry characteristics, and firm characteristics. Future research can combine more empirical data and case studies to reveal in depth the mechanism of short-selling mechanism in different contexts and its long-term impact on market stability and firm development.

3. RESEARCH DESIGN

3.1. Sample Selection and Data Source

This paper takes all A-shares from 2010 to 2022 as the research sample, which is screened according to the following criteria: (1) excluding enterprises with missing relevant data; (2) excluding ST enterprises; (3) excluding listed enterprises in the financial industry; and (4) conducting a before-and-after 1% data winsor treatment for the explanatory variables. The research sample is finally obtained. The basic financial data of enterprises and stock market data were obtained from the Cathay Pacific database (CSMAR), and the data processing software was Excel and Stata 14.0.

3.2. Model Construction

$$\text{Disagreement}_{it} = \alpha + \beta_1 \text{Post}_t + \beta_2 \text{Treatment}_i + \beta_3 (\text{Post}_t * \text{Treatment}_i) + \gamma X_{it} + \lambda_t + \mu_i + \epsilon_{it}$$

3.3. Interpretation of Variables

The variables are explained in Table 1.

Table 1. Interpretation of variables

Variable Type	Variable Name	Variable Symbols
Explanatory Variables	Continuous variable	Dependent variable (independent variable)
Explained Variable	Annual turnover rate (number of shares outstanding) (%)	ToverOsY
	Annual turnover rate (total shares) (%)	ToverTIY
Control Variables	Total assets	TotalAssets
	Gearing ratio	AssetLiabilityRatio
	Total Shareholders' Equity	A300000
	Net assets per share	A300000
	Return on Equity (ROE) B	T60300

4. EMPIRICAL ANALYSIS

4.1. Descriptive Statistical Analysis

Descriptive statistics were analyzed as shown in Table 2.

Table 2. Descriptive statistical analysis

Variable Name	Sample Size	Maximum	Minimum	Mean	Standard Deviation	Median	Variance	kurtosis	Skewness	CV
Continuous variables (independent variables)	98	310.458	-168.915	2.854	36.643	0.039	1342.681	56.755	5.195	12.84
ToverOsY	100	100	1	50.5	29.011	50.5	841.667	-1.2	0	0.574
TotalAssets	100	100	1	50.5	29.011	50.5	841.667	-1.2	0	0.574
Trdynt	100	18	1	10.18	4.81	10	23.139	-1.197	0.003	0.473
Stkcd	100	9	1	5.49	1.845	5.5	3.404	-0.988	-0.063	0.336
AssetLiability Ratio	100	99	1	49.57	28.899	49.5	835.157	-1.213	0.012	0.583
ToverTIY	100	100	1	50.5	29.011	50.5	841.667	-1.2	0	0.574
A300000	100	100	1	50.5	29.011	50.5	841.667	-1.2	0	0.574
T60300	99	99	1	50	28.723	50	825	-1.2	0	0.574
ROEB	100	99	1	49.71	28.724	49.5	825.077	-1.208	0.02	0.578

This set of descriptive statistical analyses reveals the characteristics of the variables: the continuous variable (dependent variable) shows a wide range of data and a high degree of dispersion, with high kurtosis and skewness, indicating a distribution that is spiky and right-skewed. ToverOsY, TotalAssets, ToverTIY, A300000, and ROEB have the same statistical characteristics, with a range of 1 to 100, and mean and median are both 50.5, with a flat and symmetric distribution and low variability. Trdynt ranges from 1 to 18, with a mean of 10.18, showing less dispersion and slight symmetry. Stkcd ranges from 1 to 9, with the least amount of variability, and the data are more concentrated. Overall, there were significant differences in the distribution and dispersion of the data for each variable.

4.2. Robustness Tests

Robustness tests were analyzed as shown in Table 3.

Table 3. Robustness tests

	Non-standardized coefficient		Standardized coefficient	t	P	R ²	Adjustment of R ²	F
	B	standard error	Beta					
a constant (math.)	0.2	0		2503004 16.2	0.000* **	1	1	F=1.91139237 19927348e+25 , P=0.000***
Stkcd	0	0	0	-0.001	1			
Trdynt	0	0	0	-0.001	0.999			
Continuous variables (independent variables)	0	0	0	0	1			
T60300	0.2	0	0.2	3819910 76.1	0.000* **			
A300000	0.4	0	0.4	1451946 409	0.000* **			
TotalAssets	0.4	0	0.4	1451946 409	0.000* **			
ROEB	0	0	0	-0.001	0.999			
AssetLiabilityRatio	0	0	0	-0.001	0.999			
Dependent variable: ToverOsY								
Note: ***, **, * represent 1%, 5%, and 10% significance levels, respectively.								

According to the results of the robustness test, the constant term of the model has a significant positive effect on the degree of divergence of investor opinion (ToverOsY), while Stkcd, Trdynt, Continuous Variable and ROEB and AssetLiabilityRatio do not have a significant effect on the ToverOsY (all with a p-value close to 1). However, T60300, A300000 and TotalAssets have a significant positive effect on ToverOsY with standardized coefficients of 0.2 and 0.4, respectively, and p-values of 0.000, indicating that these variables have a strong positive effect on investor disagreement. The R² and adjusted R² of the model are both 1, indicating that the explanatory power of the model is very strong, and the overall F-test also shows that the model is overall significant (F=1.9113923719927348e+25, p=0.000***).

5. QUANTILE REGRESSION

Quantile regression were analyzed as shown in Table 4.

Table 4. Quantile regression

	Quart ile0.1	Quart ile0.2	Quart ile0.3	Quart ile0.4	Quart ile0.5	Quart ile0.6	Quart ile0.7	Quart ile0.8	Quart ile0.9
	0	0	0	0	0	0	0	0	0
const	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)
Continuous variables (independent variables)	0	0	0	0	0	0	0	0	0
	-1	-1	-1	-1	-1	-1	-1	-1	-1
TotalAssets	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)
Stkcd	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-1	-	-	-
	0.999	0.996	0.999	0.981	0.999		0.999	0.996	0.999
ROEB	0	0	0	0	0	0	0	0	0
	-1	-1	-1	-1	-1	-1	-1	-1	-1
Trdynt	0	0	0	0	0	0	0	0	0
	-	-	-	-	-	-1	-	-	-
	0.997	0.997	0.999	0.989	0.999		0.999	0.996	0.999
A300000	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)
T60300	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)	(0.00 0***)
AssetLiabilityRatio	0	0	0	0	0	0	0	0	0
	-1	-1	-1	-1	-1	-1	-1	-1	-1
R ²	1	1	1	1	1	1	1	1	1
implicit variable: ToverOsY									
Note: ***, **, * represent 1%, 5%, and 10% significance levels, respectively.									

According to the results of quantile regression analysis, the constant term has a significant positive effect on the degree of divergence of investor opinion (Tover OsY) across all quartiles (p-value of 0.000***). TotalAssets, A300000, and T60300 also show a significant positive effect on Tover OsY across all quartiles (p-value of 0.000***), while Stkcd, ROEB, Trdynt, AssetLiabilityRatio and the continuous variable (dependent variable) are insignificant at all quartiles (p-value close to 1). R² is 1 at all quartiles, indicating that the explanatory power of the model is extremely high.

6. CONCLUSION

Combining the results of the above three analyses, the following conclusions can be drawn:

(1) The effect of shorting (dependent variable) on the degree of divergence of opinion of investors in the market (Tover OsY) is not significant:

Both descriptive statistics analysis and robustness test analysis show that there is no significant effect of continuous variable (dependent variable) on Tover OsY. The results of quantile regression analysis are also consistent, the continuous variable is not significant at all quartiles with p-value close to 1.

This indicates that shorting itself is not a significant factor influencing the degree of investor disagreement.

(2) Significant effect of other variables on investor opinion divergence:

Both the robustness test and quantile regression analysis show that TotalAssets, A300000 and T60300 have a significant positive effect on Tover OsY. In particular, TotalAssets and A300000 have standardized coefficients of 0.4, indicating that these variables have strong explanatory power on the degree of divergence of investor opinion.

(3) The explanatory power of the model is extremely high:

The R^2 of the model is 1 for both the robustness test and the quantile regression analysis, suggesting that these variables almost completely explain the variation in investor opinion divergence. This result, although rare, may be due to data characteristics or some special circumstances in statistical models.

In summary, shorting behavior does not have a significant effect on the degree of investor disagreement in the market, whereas TotalAssets, A300000 and T60300 are significant factors affecting the degree of investor disagreement. These findings have important implications for understanding market behavior and formulating related policies.

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