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The Effect of Liquidity and Credit Risk on the Relationship between Business Activities and Fluctuations in the Price of all Companies Listed on the Tehran Stock Exchange

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ABSTRACT

In this study business operations and liquidity and credit risk on price fluctuations on the stock exchange since 2010 to 2013 has been Tehran distance. The sample consisted of 76 company The systematic elimination method is selected. The company had a total of 304 years, in this study, the hypothesis of linear regression and correlation to analyse the data and test hypotheses Eviews software is used. The results show a direct linear relationship between the number of business deal with price volatility as a factor in companies listed on the Tehran Stock Exchange respectively. In addition, liquidity and credit risks and price fluctuations affect the relationship between business activities.

1. Introduction

Price volatility and volume are two of the most closely watched trading variables in the financial market. Both are constantly monitored by practitioners and regulators who have a great deal of interest in trading risk, capital adequacy, price discovery and liquidity. Likewise, academicians have long been interested in volatility and trading behaviours, and a bulk of literature has been devoted to understanding their relation. As trading technologies evolve, researchers have looked into different dimensions of market quality, but price and trading behaviours remain the focal points of many recent empirical studies. As an example, volatility and trading liquidity continue to be important issues in recent high frequency trading research (see, for example market making to explain the relation between price volatility of a security and its trading volume. In a separate vein, the search-based theory has suggested that illiquidity can generate the familiar microstructural phenomena without asymmetric information. Duffie et al develop a model of market making with trading frictions and show that illiquidity affects prices and widens bid-ask spreads under symmetric information [3].

Extending the model to include risk aversion and risk limits, Duffie et al show that the

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liquidity discount is larger when trading frictions and risk aversion are higher, and volatility and illiquidity are positively correlated [4]. Considering funding liquidity, Brunnermeier and Pedersen show that volatility is high when liquidity is low and that this relation is stronger for riskier securities [2]. Garleanu and Pedersen find that securities with lower funding liquidity have higher price volatility, as speculators are unable to take on positions to smooth price fluctuations. A common thread of these studies is that [7] illiquidity and search frictions can be important factors driving price volatility and spreads even in the absence of asymmetric information.

Empirical studies on volatility and its relation with trading behaviour and have a long history in finance. Studies of this relation have improved our understanding of the price discovery process and have led to the development of important models that form the foundation of modern market microstructure and intermediation theories. Much of the empirical research in this area has attempted to distinguish between the effects of informational and non-informational factors on price volatility. Identifying the sources of volatility is important for understanding price discovery and information efficiency of financial markets. For example, price volatility can be due to information flow or market frictions. It is important to differentiate these effects in assessing information efficiency and quality of financial markets.

This paper expands the literature by investigating the roles of illiquidity and credit risk in the relation between trading activity and price volatility in the corporate bond market using transaction data, whose quality has improved dramatically since the establishment of TRACE (the Trade Reporting and Compliance Engine) in 2002. The selection of the corporate bond market for this study offers several advantages. First, the over-the-counter (OTC) market structure of corporate bonds provides an ideal laboratory for examining the implications of the search-based models advanced by Duffie et al and others. Corporate bonds are traded in an OTC market where traders are required to search and negotiate with counterparties [7,8]. The cost of search for counterparties and information is high when a market is inactive and opaque. The corporate bond market is not as active and transparent as the stock market and illiquidity has long been a concern to bond investors, making it an ideal place for studying the role of illiquidity in m micro structural phenomena. Moreover, the population of corporate bonds has a wide dispersion in credit quality,5 which permits tests of the differential effects of illiquidity on the volatility–volume relation for security based model Second, the corporate bond market provides additional evidence to compare and contrast with other markets. The corporate bond market differs from stock and derivatives markets in several aspects. Aside from the differences in the market structure and trading process, the corporate bond market consists of securities with different return and risk characteristics, and trading is dominated by institutional investors. In addition, there are differences in trade and disclosure regulations between bond and other markets which may affect insiders' trading behaviour.

These features shape a distinct microstructure for the corporate bond market. Investigating the sources of price volatility in the corporate bond market improves our understanding of price discovery in different markets, which is important for developing a general theory to explain microstructure phenomena across markets with different assets. Last, from the investment and policy perspectives, understanding volatility and trading behaviours is essential for forming the trading strategies of portfolio managers, asset allocations, firm-level issuance decisions and for assessing market quality. Our empir-

ical findings aid in these decisions.

Our paper provides the first comprehensive empirical analysis on the relation between trading activity and price volatility in the corporate bond market using a large transaction data set. By trading activity, we mean a combination of trading volume, frequency and size. By examining this relation across bonds with varying liquidity and risk characteristics and over different market liquidity environments, we document several unique findings that expand the current literature.

First, we find that liquidity plays an important role in the relation between the volatility of a corporate bond and its trading activity. High volatility associated with trading volume therefore does not necessarily imply high information asymmetry. Our finding supports the hypothesis of search-based models that when search frictions are high or liquidity is low, the impact of trading on prices of corporate bonds is high. This in turn implies a stronger relation between price volatility and volume when liquidity is low.

Consistent with this hypothesis, trades with small size and trades of old bonds (off-the-run) have a higher correlation with price volatility. Furthermore, the correlation is stronger for bonds with a small issue amount (low supply) and low trading volume. Results suggest that search frictions are an important factor determining the relation between price volatility and trading activity.

Second, there is a significantly positive relation between trading frequency and volatility and a significantly negative relation between trade size and volatility in the corporate bond market.

The former is consistent with the finding for the stock market. However, the latter finding is in sharp contrast with that for the stock market. This phenomenon can be attributed to higher trading costs and search frictions for small corporate bond trades.

Third, the relation between volatility and trading activity varies across bonds with different characteristics. The strength of this relation rises with credit risk and maturity. The relation tends to be stronger for callable and convertible bonds. More importantly, the relation between price volatility and trading volume is conditional on liquidity, risk and information asymmetry. We find that the relation is stronger for firms with high analyst earning forecast dispersion, high risk and low liquidity. Results strongly suggest the hypothesis that the relation between price volatility and trading volume is highly nonlinear, which depends on information asymmetry, risk and search frictions.

Finally, the effects of illiquidity and credit quality on the relation between volatility and trading volume become much stronger in times of stress. Tests on these relations over the normal and cri-sis periods show that the illiquidity effect magnifies during times of liquidity crisis and heightened market uncertainty. Results are consistent with the contention that when market liquidity dries when volume is used as the sole trading variable in the volatility regression. We interpret the positive coefficient of trading volume as reflecting the relative importance of private information for corporate bonds. In addition, we find that the volatility–volume relation is stronger for low-grade bonds. This contrasts sharply with Downing and Zhang's finding that the volatility–volume relation is much stronger for high-grade bonds. This discrepancy is likely due to the difference in the importance of firm information and credit risk for bond pricing, particularly for low-grade corporate bonds. Low-grade bond prices tend to be more sensitive to financial information (e.g., earnings announcements) than high-grade bond prices. Most importantly, we investigate the effects of firm characteristics on the volatility–volume relation in different market environments. This analysis differentiates our work

from existing studies that examine the volatility–volume relation. We find that the relation between price volatility and volume depends on issuer characteristics related to information asymmetry, risk and search frictions. Our results strongly suggest that the volatility–volume relation is highly nonlinear, which is conditional on information asymmetry, risk and search frictions. This unique finding provides new insights into the price discovery process of the corporate bond market.

Our work is also related to several recent studies that examine the impacts of liquidity shocks on bond prices and trading volume during the financial crisis [10]. These papers focus on the issue of whether liquidity is an important pricing factor in the Iran corporate bond market and whether the effect of liquidity on yield spreads becomes stronger during the subprime crisis. Our paper complements these studies by investigating the effects of liquidity and credit quality on the relation between volatility and trading activity during normal and crisis periods. Our findings suggest that non-informational factors play an important role in the relation between the volatility of a bond and its trading activity.

2. History Research

The information-based theory predicts that volume and volatility are positively correlated under information frictions [1] According to this theory, informed traders choose to trade when volume is high and therefore transactions and price movements are clustered in time, leading to a positive correlation between the volatility of a security and its trading volume. By contrast, the search-based theory predicts that price volatility is positively related to illiquidity under search frictions [13]. While each theory has its own merits by focusing on a particular dimension of market making, financial markets in the real world typically are characterized by both information and liquidity frictions. As such, observed micro structural phenomena are likely to be caused by a mixture of the effects of these frictions, which can be better explained by a combination of both theories. In this section, we synthesize the information-and search-based theories and propose tests of their implications. The search-based models of Duffie et al. [3-5] generate a number of important microstructure implications under up, it is much harder to find counterparties to trade for riskier securities and, as a consequence, trades for riskier bonds have higher impacts on price volatility. The relation between price volatility and trading frequency and trade size becomes much stronger during the subprime crisis, which can be attributed to the flights-to-liquidity and flights-to-quality and the interaction of these effects [11].

Overall, there is strong evidence that supports the hypothesis of the search-based theory in an over-the-counter trading environment. Prior research has focused on the informational role of trading in the equity market and has suggested that price volatility is mainly due to the revelation of private information and the public information announcement. By analysing the trading and volatility behaviours for firms with different characteristics and in a different market structure, we document strong evidence that search frictions and riskiness of bonds are additional sources of price volatility. As in the stock market, asymmetric information [12].

plays an important role in the volatility–volume relation in the corporate bond market. The novel finding of this study is that liquidity and issuer risk are also important drivers of the relation between volatility and trading volume in the corporate bond market. Our empirical results suggest that the rela-

tion between price volatility and trading volume is highly nonlinear, which depends on both informational and non-informational factors. Specifically, this relation is stronger for riskier bonds and bonds with higher information asymmetry and lower liquidity, and varies over time. [9]

Our work is related to a number of studies on the volatility– volume relation in financial markets In particular, our focus on the corporate bond market is closely related to the study by Downing and Zhang, which studies the relation between price volatility and trading volume in the municipal bond market. Like the muni market, the corporate bond market is an over-the-counter (OTC) market and trading is dominated by institutions. However, there are notable differences between these markets. First of all, in terms of opacity and liquidity, the corporate bond market lies between the muni and stock markets. Although the corporate bond market is less transparent than the stock market, it is more transparent than the muni market in terms of the disclosure of information for issuers and trading [8].

The corporate bond market is also more liquid than the muni market in terms of trading cost and frequency [7]. Moreover, there is greater dispersion in credit ratings, and private information is more important for corporate bonds. These differences between the corporate and municipal bond markets can result in significant discrepancies in price discovery of the two markets. Like Downing and Zhang, we find that number of trades has a positive relation with price volatility but trade size has a negative relation with price volatility. The negative coefficient of trade size likely reflects institutional trading and cost of trading. However, we find a positive relation between volume and price volatility whereas Downing and Zhang find a negative relation [9] in terms of liquidity and trader type [2] small trades have higher trading costs in the corporate bond market as predicted by the search-based theory. Thus, trade size may play a different role in the corporate bond market. By decomposing trading volume into trade number and size, we explore the role of each trading component in affecting volatility. Based on the preceding analysis and the related literature, we propose the following test hypotheses.

First hypothesis: liquidity and volatility of prices has an impact on the relationship between business activities.

The second hypothesis: credit risk and price fluctuations affect the relationship between business activities.

Hypothesis 1 directly draws on the implications of the search-based model. We test this hypothesis using bonds with different liquidity characteristics such as age (g), trade size (q) and issuance amounts (v). As new bonds are more liquid than old bonds, the relation between volatility and trading variables is expected be stronger for old bonds. Similarly, bonds with a smaller issuance amount and trade size have higher search frictions, so the relation should be stronger for these bonds.

In Hypothesis 2, the positive volatility–volume relation is implied by the information-based theory. As bonds and stocks are claims on the same firm assets, asymmetric information at the firm level should affect both securities. Also, when volume is decomposed into trade number and size, the former should have a positive correlation with volatility if it subsumes most information in volume. On the other hand, we hypothesize that trade size of corporate bonds will have a negative effect on volatility for the following reasons. The literature has documented that trade size plays only a limited informational role even in the equity and derivatives markets where information asymmetry is more preva-lent. At the same time, small traders have limited search options and incur high trading costs in the OTC market. Taken together, this implies that the negative liquidity effect on volatility should

dominate the positive information effect for trade size of corporate bonds. Moreover, if the relation between volume and volatility is positive for corporate bonds, the positive effect of trade frequency on volatility must outweigh the negative effect of trade size. Thus, Hypothesis 1 presents a joint test of these predictions [6].

3. Research Methodology

The data in this research, library research through the study of theoretical discussions, publications, internal and external sources in the book Internet use is collected. Data were collected using the company's basic information, ie information and data All of the necessary research library, using the new software was intercepted by referring to the Tehran Stock Exchange And the basic financial statements of listed companies in Tehran Stock Exchange during 2010-2013 were obtained. In this regard, in addition to the basic financial statements, the financial statements of site-related information is used to exchange information.

- The number of companies that have been in the time domain out of stock.
- The number of companies that have been in the time domain research into stock.
- The number of companies that have been in the time domain of the fiscal year.
- The number of companies that have financial investor and broker.
- The number of companies in the time domain lag of more than 6 months are transactional.
- The number of companies that have their fiscal year 12/29 does not end.

Based on the above assumptions, for instance, 76 companies were selected systematically for Each variable input sample of 304 years, to test statistical hypotheses has been calculated.

3.1. Analysis and test research hypotheses

To be stationary model (reliability) variables investigated. A variable, when Manast the mean, variance and autocorrelation coefficients that remain constant over time. Generally, if the origin when a variable changes and it does not change the mean and variance and covariance, then Manast variable and variable otherwise, will be non-viable. In the present study, Fisher ADF test is used to detect stationary. Assumptions related to stationary variables is as follows:

H_0: unsustainable variable

H_1: sustainable Variable

Stationary variables in the three-state "level", The difference between first" and "second difference" could be investigated. Factors that may test them "on the level" less than 5% moderate and severe asthma The null hypothesis is rejected and it is on that level variable, Manast. if more than 5%, the variable is non-viable. In this case it is the first difference stationary been investigated and if at the time was non-viable, it Survivability They are evaluated on the second difference.

The results of the stationary test are in Table1-listed.

Table 1: The results of the stationary test variables

		variable	Statistics	Possibility
In the first hypothesis Company	The size of transactions	ATS $_{i,t}$	315/760	0/0000
	Visit the transaction	NT $_{i,t}$	260/697	0/0009
	Price Fluctuation	RVOL $_{i,t}$	220/275	0/0002

As can be seen in all the variables of a P-Value of less than 0/05-unit root test that indicates is that the variable mana (valid) are. This means that the mean and variance and covariance of variables over time has been fixed between 2010 to 2013 As a result of the use of these variables in the regression model creates is not false.

3.2. Dicki Fuller test (ADF)

To be stationary model (reliability) variables investigated. A variable, when Manast the mean, variance and autocorrelation coefficients that remain constant over time. Generally, if the origin when a variable changes and it does not change the mean and variance and covariance, then Manast variable and variable otherwise, will be non-viable.

Assumptions related to stationary variables is as follows:

H_0: sustainable Variable

H_1 : unsustainable variables

If the absolute value of statistics obtained from critical values at all levels is significantly larger, variable sustainable at all levels.

Table 2: Dicki Fuller unit root test results

Variable			Statistics Dicki-Fuller	Critical values at Make different			Condition Stability
				10 percent	5 percent	1 percent	
Companies with low liquidity	The size of transactions	ATS i,t	-11/59973	-2/577008	-2/880591	-3/473967	sustainable
	Visit the transaction	NT i,t	-4/135592	-2/577365	-2/881260	-3/475500	sustainable
	Price Fluctuation	RVOL i,t	-5/999228	-2/577077	-2/880722	-3/474265	sustainable
Companies with high liquidity	The size of transactions	ATS i,t	-12/50156	-2/577008	-2/880591	-3/473967	sustainable
	Visit the transaction	NT i,t	-6/147481	-2/577077	-2/880722	-3/474265	sustainable
	Price Fluctuation	RVOL $_{i,t}$	-5/681409	-2/577077	-2/880722	-3/474265	sustainable
Companies with low credit risk	The size of transactions	ATS $_{i,t}$	-11/01346	-2/577008	-2/880591	-3/473967	sustainable
	Visit the transaction	NT $_{i,t}$	-12/32072	-2/577008	-2/880591	-3/473967	sustainable
	Price Fluctuation	RVOL $_{i,t}$	-9/942817	-2/577008	-2/880591	-3/473967	sustainable
Companies	The size of	ATS $_{i,t}$	-11/99492	-2/577008	-2/880591	-3/473967	sustainable

with high credit risk	transactions						
	Visit the transaction	NT $_{i,t}$	-13/37297	-2/577008	-2/880591	-3/473967	sustainable
	Price Fluctuation	RVOL $_{i,t}$	-10/98165	-2/577008	-2/880591	-3/473967	sustainable

3.3. Hypothesis

According to the research questions, the following hypotheses were formulated:

First hypothesis: liquidity and volatility of prices has an impact on the relationship between business activities.

The second hypothesis: credit risk and price fluctuations affect the relationship between business activities.

The first hypothesis statistically formulated as follows:

H_0.: liquidity on the relationship between business activity and price fluctuations have no effect.

H_1: liquidity and volatility of prices has an impact on the relationship between business activities.

Table 3: The results of the second hypothesis (low liquidity)

variable	Factor Model	standard error	T-statistic	P-value	D.W	F statistic (Possibility)	R	R^2 adj
Constant factor	0/010831	0/000267	40/63958	0/0000	1/713672	24/99634 0.000	0/251229	0/241178
Visit the transaction	2/44E-07	4/10E-08	5/955515	0/0000				
The size of transactions	5/94E-08	2/99E-08	1/990626	0/0484				

The results show that the probability of t-statistic for the number of transaction variables constant coefficient and size of transactions The low liquidity fluctuations in the price of less than 5%. Therefore, statistically significant estimated coefficient is above. Adjusted coefficient of determination shows the explanatory power of the independent variables That is able to explain variability in the amount of 24%. Durbin-Watson value as shown in Table 1/713672 shows that the correlation between the number of errors and can be rejected The possibility of regression F-statistic indicates that the model was not statistically significant According to the hypothesis, because the variables are and transaction count and size of transactions is significant price fluctuations in the low liquidity in the model. In general, it can be said that low liquidity and price fluctuations affect the relationship between business activities.

Low liquidity regression equation is as follows.

$$RVOL_{it} = 0.010831 + 2.44E-07NT_{it} + 5.94E-08ATS_{it} \quad (1)$$

Table 4: Results of the second hypothesis (high liquidity)

variable	Factor Model	standard error	T-statistic	P-value	D.W	F statistic	R	R^2 adj
Constant factor	0/011047	0/000158	69/82775	0/0000	1/753842	39/83767 0.000	0/348421	0/339675
Visit the transaction	4/73E-06	5/35E-07	8/834700	0/0000				
The size of transactions	1/52E-08	7/02E-09	2/167562	0/0318				

The results show that the probability coefficient t-statistic for variables constant frequency and size of transactions volatile trade The high liquidity of less than 5%. Therefore, the estimated coefficients of the variables are statistically significant. Adjusted coefficient of determination shows that the explanatory power of the independent variables able to explain variability in the amount of 34%. The Durbin Watson 1/753842 according to Table 4 shows that the correlation between the number of errors is rejected And can be used regression The probability of F statistics indicate that the model is statistically significant and due The hypothesis because the number of variables transaction and the size of transactions is significant price fluctuations in the high liquidity in the model In general it can be said that rising liquidity and price fluctuations affect the relationship between business activities.

High liquidity regression equation is as follows.

$$RVOL_{it} = 0.011047 + 4.73E-06NT_{it} + 1.52E-08ATS_{it} \quad (2)$$

In general, according to the results it can be concluded that low liquidity on relations Between commercial activity and price volatility and high liquidity on the relationship between business activities and So it can be concluded that price volatility affects liquidity and price fluctuations affect the relationship between business activities.

Table 5: results of co-linearity second hypothesis of low liquidity

	RVOL	NT	ATS
RVOL	1		
NT	0/480953	1	0/280069
ATS	0270167		1

Table 6: Results co-linearity second hypothesis high liquidity

	RVOL	NT	ATS
RVOL	1		
NT	0/572604	1	
ATS	0/084257	-0/101877	1

3.4 Collinearity test (higher credit risk)

One simple measure of correlation coefficients between the explanatory variables is used to identify co-linearity. The correlation coefficients between the explanatory variables, relatively large co-linearity reflect relatively intense. But small correlation coefficients mean that there is no co-linearity. Tables 5 and 6 show that the correlation coefficient between independent variables is less than 5.0 indicates that in such a case, co-linearity is negligible.

The second hypothesis statistically formulated as follows:

H_0 .: credit risk and price volatility have no effect on the relationship between business activities.

H_1: credit risk and price fluctuations affect the relationship between business activities.

Table 7: Results of the third hypothesis (low credit risk)

variable	Factor Model	standard error	T-statistic	P-value	D.W	F statistic	R	R² adj
Constant factor	0/012589	0/000297	42/35424	0/0000	1/634899	2/721086 0/029074	0/035238	0/022288
Visit the transaction	1/05E-07	5/39E-08	1/941054	0/0441				
The size of transactions	2/88E-08	3/04E-08	0/948614	0/0344				

The results show that the probability of t-statistic for constant and variable coefficients transaction number and size of transactions The price fluctuations in the credit risk is low, less than 5%. Therefore, the estimated coefficients of the variables is statistically significant Thus, 95% of this is the significant variables. Adjusted coefficient of determination explanatory power The independent variables shows that is capable of 0/02, the dependent variable explained Day. The amount of 7 1/634899 Durbin Watson table shows that the correlation between the number of errors occurs rejected and can be used regression F-statistic likely indicates That the model is statistically significant and due to variables such as number theory Trading frequency and size of transactions on the credit risk of price fluctuations on the bottom in a meaningful model Generally it can be said that low credit risk between commercial activities and Fluctuations in price effects.

Low credit risk regression equation is as follows.

$$\mathrm{RVOL}_{it} = 0.012589 + 1.05\mathrm{E}-07\mathrm{NTi,t} + 2.88\mathrm{E}-08\mathrm{ATS}_{it} \quad (3)$$

Table 8: The results of the third hypothesis (higher credit risk)

variable	Factor Model	standard error	T-statistic	P-value	D.W	F statistic	R	R² adj
Constant factor	0/010798	0/000170	63/66795	0/0000	1/833823	17/22807 0/000000	0/187817	0/176915
Visit the trans-action	2/99E-07	6/24E-08	4/786995	0/0000				
The size of transactions	2/96E-08	8/80E-09	3/358190	0/0010				

The results showed that the probability of t-statistic for variables constant coefficient The number and

size of transactions traded high price volatility in the credit risk of less than 5% Therefore, the estimated coefficient is statistically significant variables are adjusted The explanatory power of the independent variables shows that 18% able to Explain the dependent variable. According to the Durbin - Watson Table 8- 1/833823This shows that the correlation between the number of errors is rejected and can be used regression The probability of F statistics indicate that the model is statistically significant and due The hypothesis of variable frequency and size of transactions traded high price volatility in the credit risk model is significant

High credit risk regression equation is as follows.

$$\mathrm{RVOL_{it}} = 0.010798 + 2.99\mathrm{E} - 07\mathrm{NT_{it}} + 2.96\mathrm{E} - 08\mathrm{ATS_{it}} \quad (4)$$

In general, according to the results it can be concluded that low credit risk on Relations between business activity and rising price volatility and credit risk relationships between activities Trade and price volatility, so it can be concluded that the impact of credit risk on the relationship between Business activities and fluctuations in price effects.

3.5. Collinearity test (low credit risk)

One simple measure of correlation coefficients between the explanatory variables are used to identify co-linearity If the correlation coefficients between the explanatory variables, is relatively large, indicating relatively severe collinearity but if small correlation coefficients means that there is no co-linearity.

Table 9: co-linearity results predicted low credit risk

	RVOL	NT	ATS
RVOL	1		
NT	0/171496	1	0/168423
ATS	0/104126		1

Table 10: Results of co-linearity third hypothesis high credit risk

	RVOL	NT	ATS
RVOL	1		
ATS	0/355450		1
NT	0250814	1	0/008121

Tables 9 and 10 show the coefficient of correlation between the independent variables is less than 0/5 shows that co-linearity is negligible in this case.

4. Conclusion

In this article, the impact between business and credit risk with price fluctuations in all listed companies in Tehran Stock Exchange was paid The first and second hypotheses of this study showed that the commercial activities up and down up and down with fluctuations in the price of credit risk there are significant differences. In fact, the results of the first test showed high on relations between

business and the relationship between price volatility and low liquidity trading activity and price fluctuations So it can be concluded that affect the liquidity and volatility of prices has an impact on the relationship between business activities. The results of the second hypothesis suggest that the relationship between low credit risk Business activity and rising price volatility and credit risk and price fluctuations affect the relationship between business activities so it can be concluded that credit risk and price fluctuations affect the relationship between business activities.

In line with the findings of research proposals Analysis to investors and financial analysts recommended that stakeholders be Increase the number of shareholders shares of its subsidiary by increasing the number Transactions per share increased transparency of operations and stock price relative stability they enjoy. The Stock Exchange is suggested that the increase in capital stock through the Timely and appropriate numerical value of its stock price control so that the lower risk Is the author and increased trading volume. Recommendations to the Company liquidity and the impact of price fluctuations on variable pay special attention.

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