Impacts of Monetary Policy on Stock Market through Survey from Investors

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Abstract

Analyzing the impacts of the monetary policy on the stock market is very important to investors. There are many papers studying this relationship, but study based on investors is still limited. This paper is conducted by interviewing experts and Stock Investors in Vietnam. After having research results, the authors continue to use multi-variables method (EFA, regression analysis) and get the following outcomes: According to investors, the policy of interest rate, required reserved ration and exchange rate have impacts on Vietnam stock market; the policy of money supply does not have influence on the market. At the same time, interest rate has the strongest impact on stock market following by the required reserved ratio and the exchange rate.

Keywords: EFA, monetary policy, regression analysis, stock price

1. Introduction

Vietnam stock market was born in 2000 firstly in HCM city, but till 2005 the Stock center was established in Hanoi. Despite of being a newborn trading center, Vietnam Stock market has experienced in periods of both strong development and severe recession. From 2005-2008 the stock price reached a record height at 1137.69 points in Mar 12th 2007, then fell sharply to 245.74 point in Feb 24th 2009. Since this period, the market grows slowly with fluctuated level around 500 points (Vietstock, 2016).

Recently, there are tens of billions of transactions on the Stock Exchange daily in Vietnam. Profits from stocks are the main income for many young peoples or the accumulated pension of the old (Maskay, 2007). The change (degradation) of the stock market will impact on the turmoil in investors' lives because it directly relates to their main income. These changes are due to the impact of international market factors (Maskay, 2007) or the monetary policy (macroeconomic) of the state bank. Therefore; the study of impacts of policies especially monetary policy and information shock is considered as an important key which helps investors to make right decisions.

There have been many studies on fluctuation of the stock price and monetary policy. Most of them approved that stock indices react sensitively to changes of monetary policy (Zare, Azali, & Habibullah, 2013). Stock Investors always keep their eyes on market's changes in general and the monetary policy of the state bank in particular in order that they can make a right decision which will bring benefit. Hence, studying impacts of factors on stock price become a vital part which helps investors to make investing decision.

In Vietnam, nowadays there are some studies on macroeconomics or the monetary policy (Ton & Nguyen, 2015) however, most of them focused on studying and analyzing macro data. There is no study which really researches the impact of the monetary policy on the stock market through analyzing investor survey' result. Therefore; this report is proceeded to consider this relationship.

2. Method

2.1 Research Design

Manners of interviewing experts and making the factors as well as giving the observed variables, which have impact on stock market prices in Vietnam, are below:

The first is interviewing directly experts, who are stock investors having one year of experience. The second is making a list of about 20 investors to serve the interview process. During the interview process, the authors collected the views of experts on interview aspects. They made interview and achieved the last information based on information saturation theory (Figure 1). By interviewing each person, the autor will get some general information compared to other professionals. Continuing interview until 3 consecutive people does not give new information compared to the previous ones, it is considered the point of saturation of information. Currently, they stopped interviewing and filtered the information obtained from the interviewees
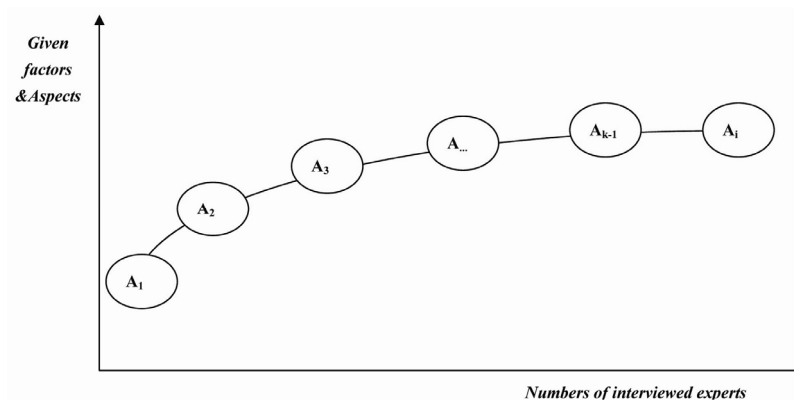

Figure 1. Interviewing expert methods

Once the interview finished, the authors proceeded to filter information obtained from experts and forming the same factors aspects (observed variables of each factor). They designed the preliminary questionnaire and performed a trial investigation in about 100 votes to review and edited the appropriate questionnaires to find out the interviewee's ability in the survey, as well as survey results of preliminary data analysis

After designing official questionnaires, the authors deliver about 200-500 survey notes to Vietnam Stock Investors (the research object).

2.2 Sample Size

Total studied samples are stock investors in Vietnam. However, within this title, studying all samples will be impossible. Therefore, the size of samples is selected towards the minimum rules to ensure reliability. For this research, the authors get sample of 200 according to the principle of Comrey & Lee (1992).

2.3 Data Collection Method

The authors conducted survey forms directly from stock investors at Vietnam Stock Exchange market. After recovery of the questionnaire, the authors conducted encoding and put it into SPSS for analysis.

2.4 Data Analysis

2.4.1 Assessment of Scale's Reliability

The elements are formed from three or more different questions to ensure the initial conditions to create initially assumed factor. To check the reliability of this scale of factors, the authors used Cronbach`s Alpha coefficients to measure the synthesis confidence level (Suanders et al., 2007) and overall variable correlations to examine the relationship among indicators in each factor. Criteria for assessing a reliable scale in research is a minimum Cronbach`s Alpha ratio of 0.6 (Hoang & Chu, 2008) and the overall variable correlation coefficient with a minimum of 0.3 (Nunnally & Burstein, 1994). The results of the reliability of scale test from research data as following:

2.4.2 Factor Analysis

After factors are analyzed by Cronbach's Alpha, the authors continue to put them into EFA test. According to Hair et al. (2006), analyzing factors will help researchers to draw significant potential factors from a set of smaller observed variables. Some standards are applied when analyzing EFA as follows: If KMO value is bigger than 0.5, factor analysis is appropriate; whereas if the value KMO is less than 0.5, factors analysis is not suitable with the data. Variance explained needs to be greater than 50% to ensure the change of observations. In order that scaling reaches assemblage value, according to Anderson & Gerbing (1988), the correlation coefficient and factor loading needs to be bigger or equal to 0.5 in one factor. The method of principal components with rotated component is used to ensure the smallest amount of factors according to Hoang & Chu (2008).

2.4.3 Regression Analysis

With factors which appeared after analyzing EFA, the authors conducted to put these factors into regression analysis to find out, among many tools of monetary policy, what is the kind of monetary policy indeed affects the stock market according to the Investors. The authors also review which the factors has stronger impact on the stock market through standardized beta coefficient.

3. Results

3.1 Assessment of Scale's Reliability

Basically, the assessment's result shows that all preliminary assessment results indicate the reliability of the scale factors with the coefficient Cronbach's alpha is greater than 0.6; total variable correlation coefficients are greater than 0.3. From this result, it clearly shows that the factors are designed with consistent internal scale (Table 1).

Table 1. Result of test the credibility of scale

Factor	Observed variables	Cronbach Alpha	Corrected Item-Total Correlation correlation coefficient
Interest rate policy	IR1	0.892	0.665
	IR2		0.771
	IR3		0.766
	IR4		
Required reserve ratio	RR1	0.809	0.672
	RR2		0.681
	RR3		0.625
Money supply	M1	0.732	0.600
	M2		0.567
	M3		0.500
Exchange rate	EX1	0.767	0.627
	EX2		0.616
	EX3		0.572
Impact of monetary policy on stock marktet	Y1	0.796	0.672
	Y2		0.676
	Y3		0.597

Source: Result from SPSS and collection of the authors.

3.2 Factor analysis

3.2.1 Analysis of Factors for Independent Variables

Results which are from analyzing factors with 4 independent variables and waiving observed variables with factor floading of less than 0.5 can be shown as belows:

Table 2. Result of test of the factor analysis for independent variable

	Component			
	1	2	3	4
IR4	.920			
IR2	.854			
IR3	.840			
IR1	.687			
RR2		.856		
RR1		.826		
RR3		.743		
EX2			.853	
EX1			.836	
EX3			.625	
M1				.844
M2				.816
M3				.755
KMO coefficient			0.795	
p-value (Barlett test)			0.000	
Total Variance Explained			72.14	

Source: Result from SPSS and collection of the authors.

The analysis results show in Table 2 that the KMO coefficient is 0.795, more than 0.5; Batlett testing with p-value is 0.000, less than 0.05; the Total Variance Explained is 72.14%, more than 50%; the loading factors are greater than 0.5; and the observed variables formed four factors. Thus, standards using factor analysis are consistent with research data

3.2.2 Analysis of Factors for Dependent Variables

In Table 3, The analysis results show that the KMO coefficient is 0.702, more than 0.5; Batlett testing with p-value is 0.000, less than 0.05; the variance is 71.46% , more than 50%; the loading factors are greater than 0.5; and the observed variables formed 1 factor. Thus, standards using factor analysis are consistent with research data collection.

Table 3. Result of test of the factor analysis for dependent variable

	Component
	1
Y2	.862
Y1	.860
Y3	.813
KMO coefficient	0.702
p-value (Barlett test)	0.000
Explained variance	71.46%

After obtaining the explored factors, the authors evaluated relationships between factors through analysis of correlation and regression analysis.

3.3 Correlation Analysis

Results showed in the correlation tables are all related variables in the same direction (correlation coefficients are +). In terms of the relationship to the dependent variable Y: IR variables most strongly correlated with the Y (0.697), followed by the variable RR (0.603) and the weakest variables correlated with Y: the variable M (0.138). (Table 4), however, the correlation is not significant in the regression impact assessment (one-way) of the independent variables on the dependent variable. Therefore, to clarify the impact of monetary policy on the stock market, the authors conducted a regression analysis.

Table 4. Relationship between pairs of variables

	Y	IR	RR	M	EX
Y	1				
IR	.697**	1			
RR	.603**	.484**	1		
M	.138*	.085	.035	1	
EX	.534**	.478**	.416**	.085	1

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Notes. Y: Assessing the impact of monetary policy on the Vietnam stock market; IR: Interest rate policy; RR: Required reserve ratio; M: Money supply; EX: Exchange rate.

3.4 Regression Analysis

Regression analysis indicates the impact of the independent variables on the dependent variables. In the independent initial hypothesis variables, there are some real independent variables having an impact on Y (p-value less than 0.05 regression analysis). For the variables with p-value larger than 0.05, the authors will proceed to remove these excess variables from the model because there is no impact on the dependent variable Y.

Initially, authors conducted to run regression with all variables under Enter method (taken at the same time all the variables in the model) and obtained the following results:

Table 5. Result of initial regression

		Unstandardized Coefficients		Standardized Coefficients	t	p-value	VIF
		B	Std. Error	Beta			
Model ban đầu	(Constant)	-.119	.236		-.504	.615	
	IR	.419	.046	.456	9.158	.000	1.490
	RR	.302	.048	.304	6.331	.000	1.386
	M	.074	.041	.073	1.792	.074	1.010
	EX	.184	.048	.184	3.841	.000	1.379
Adjusted R2		0.603					
Model final	(Constant)	.106	.200		.531	.596	
	IR	.424	.046	.461	9.227	.000	1.486
	RR	.301	.048	.302	6.267	.000	1.386
	EX	.188	.048	.188	3.924	.000	1.375
Adjusted R2		0.599					

Regression equation

> *Y= 0.106 + 0.424*Interest rate + 0.301*REQUIRED RESERVE RATIO + 0.188*Exchange rate*   (1)

Adjusted R2 at 0.599 shows that model explains 59.90% change of stock market through monetary policy factors (Interest rate, required reserve ratio, Exchange rate).

With standardized beta coefficient indicates the impact of monetary policy factors on the stock market. The results show that interest rate policy has the strongest impact on the stock market (0.461); next is required reserve ratio (0.302) and the exchange rate policy has the weakest impact on the stock market
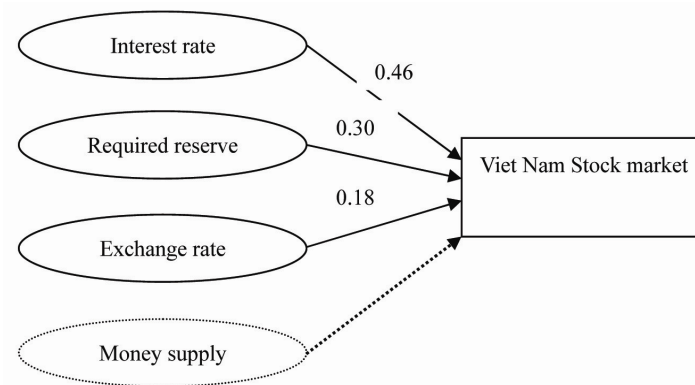
Figure 2. Result of regression analysis

4. Discussion

Interest rates have the opposite effect on the stock price. It shows that tightening the monetary (increasing interest rates) would make the stock market decrease. In the case of high inflation, state banks have tightened the monetary policy by raising interest rates, which in the short term will not affect the stock market, but in the long term will have negative affect to businesses, especially companies that use large amounts of bank loans for their business operations. The research results of interest rate is compatible with previous studies of Ali (2014); Dufour & Tessier (2006); Okpara (2010); Fischbacher (2012); Zare et al. (2013) and Gali & GAMBETTI (2013).

The policy of required reserve ratio also has the opposite effect on the stock price. Increasing the ratio of required reserve in banks limited the amount exchanged between banks and outside individual business. In the short time, companies can invest or make liquidity by external borrowings. However, in the longer term, increasing required reserve ratio will cause many difficulties for enterprises' business activities.

The exchange rate VND/USD has a negative impact on the stock price. It shows that adjusting exchange rate or currency devaluating will make stock market get worse. The reason comes from an increase in import price making difficulties for enterprises. It causes business activities in the country getting worse and stock price decreasing.

5. Conclusion and Recommendations for Further Research

Through analysing multi-variables data, the research result showed that policy factors impact on the stock price based on evaluation of investors (exchange rate, required reserve ratio policy have impact on Vietnam stock price, money suply has not impact on the stock price). Among them, interest rate policy has the most impact, next is required reserve ratio and exchange rate is the lowest. Money supply factor seems to have no impact on the stock price.

The study still exists some limits in the number of samples. Therefore, the authors propose that the following: study should extend sample size to support for the detailed and persuasive result. Besides, the authors would like to develop research method (coonfirm factor analysis-CFA) to measure the variables closely.

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