



BUILDING AN ECONOMETRIC MODEL OF SELECTED FACTORS' IMPACT ON STOCK PRICE: A CASE STUDY

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Abstract. Fluctuation of stock price in commercial banks in developing countries such as Vietnam will reflect the business health of bank system and the whole economy. Good business management requires us to consider the impacts of multi macro factors on stock price, and it contributes to promoting business plan and economic policies for economic growth and stabilizing macroeconomic factors. By data collection method through statistics, analysis, synthesis, comparison, quantitative analysis to generate qualitative comments and discussion; using econometric method to perform regression equation and evaluate quantitative results, the article analyzed and evaluated the impacts of seven (7) macroeconomic factors on stock price of a joint stock commercial bank, Sacombank (STB) in Vietnam in the period of 2014-2019, both positive and negative sides. The results of quantitative research, in a seven factor model, show that the increase in GDP growth, reduction in CPI and lending rate has a significant effect on increasing STB stock price with the highest impact coefficient, the second is decreasing the risk free rate. This research finding and recommended policy also can be used as reference in policy for commercial bank system in many developing countries.

Keywords: bank stock price; GDP growth; inflation; risk free rate; market interest rate

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JEL Classifications: M21, N1

1. Introduction

Commercial bank system in Vietnam in recent years plays a key role in helping the whole economy. In the context that GDP growth in Vietnam has been increasing during 2014-2019 and inflation goes down and up and Vietnam stock market has been growing much, it is necessary to evaluate impacts of internal and external macro economic factors on bank performance, esp. bank stock price. From these analytical results, we could suggest bank and government policies to encourage and stabilize the growth of bank system and stock market in developing countries such as Vietnam.

Looking at the below chart, we find out that Sacombank (STB) stock price moves in the same trend with VN Index and GDP growth, although it fluctuates in a smaller range.

Why we choose Sacombank (STB)? STB is one of strong commercial banks in Vietnam, though it has some scandals but it still has strong historical business operating and respond well to economic growth and crisis. In Vietnam, Sacombank, ACB, MB, Eximbank are among good brands in banking industry, under the form of joint-stock commercial bank with strong support from private sector as well as foreign funds.

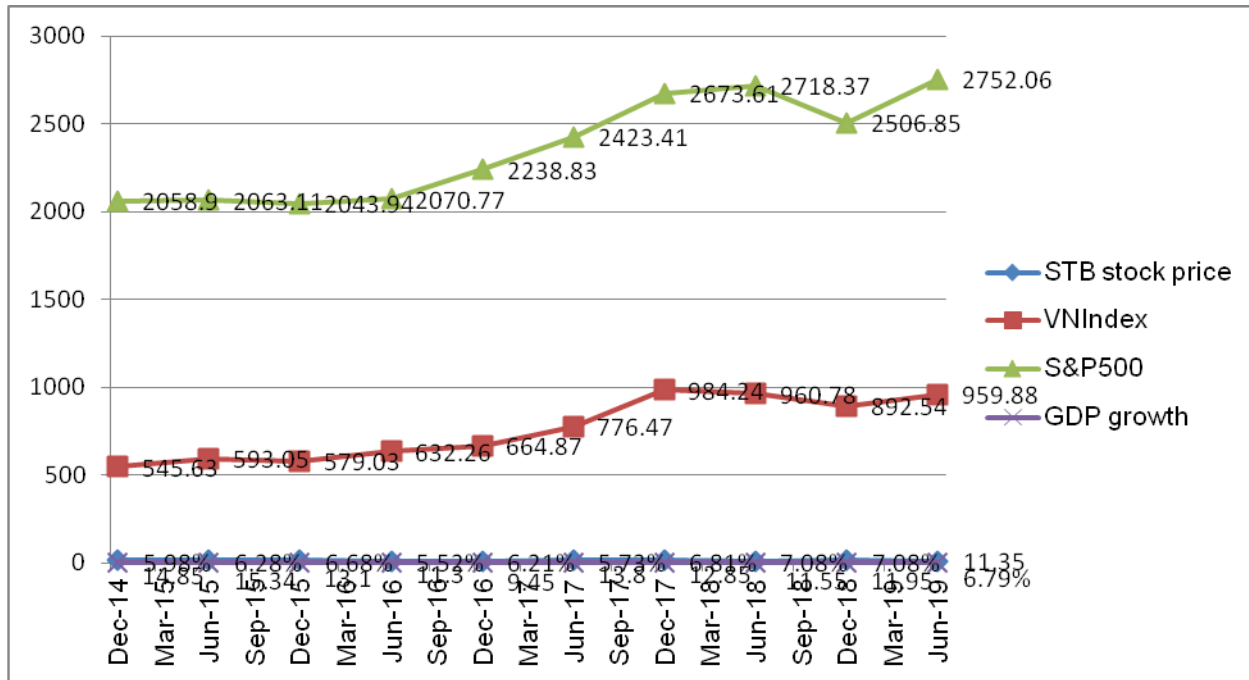


Figure 1. Movement of STB stock price, VNIndex, SP500 and GDP growth

This study will calculate and figure out the impacts of the following selected seven macroeconomic factors, such as: as inflation, GDP growth, market interest rate, risk free rate, VNIndex, S&P500 and exchange rate on Vietcombank stock price (VCB).

This selection has to be theoretically modeled in the figure 2 presented below.

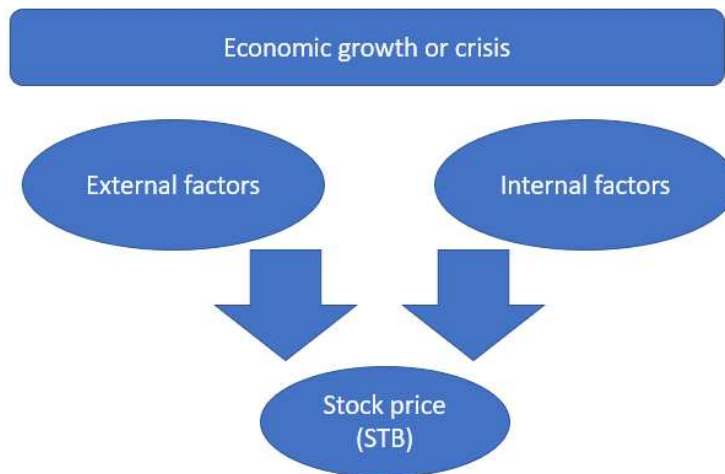


Figure 2. Model of macrofactors' impact on bank (STB) stock price

The paper is organized as follows: after the introduction it is the research issues, literature review and methodology. Next, section 3 will cover methodology and data and section 4 presents main research findings/results. Section 5 gives us some discussion and conclusion and policy suggestion.

2. Research literature review

2.1 Research issues

The scope of this study will cover:

Issue 1: What are the correlation and relationship among many economic factors: STB stock price, interest rate, exchange rate, inflation, VNIndex, S&P 500 and GDP growth?

Issue 2: What are the impacts of above 7 macro economic factors on Sacombank stock price?

Issue 3: Based on above discussion, we recommend some solutions regarding to commercial bank management in incoming period.

This paper also tests two (2) below hypotheses:

Hypothesis 1: An increase in lending rate will make STB stock price declines.

Hypothesis 2: An increase in inflation can increase pressure in STB stock price.

2.2 Literature review

There is a lot of literature devoted to factors impacting stock prices. Some authors put emphasis on major macroeconomic indicators (e.g. Kaluge, 2019; Vigliarolo, 2020). Other authors point to external shocks, such as terrorism activities (Masood et al., 2020), change of oil prices (Masood et al., 2019). Some authors point to impact of performance of industries and companies (Ahmed et al., 2018; Hilkevics, Hilkevica, 2017; Hilkevics, Semakina; 2019), other stress dividend policy (Kumaraswamy et al., 2019).

Then, Sadia and Noreen (2012) found out exchange rate, and Short term Interest Rate have significant impact on Banking index. Macroeconomic variables like Money Supply, Exchange Rate, Industrial Production, and Short Term Interest Rate affects the banking index negatively where as Oil prices has a positive impact on Banking index.

Ozlen and Ergun (2012) indicated that exchange rate and interest rate are the most significant factors in the stock price fluctuations of the companies. Stock returns of the companies in any industry are very sensitive to the changes in exchange rate and interest rate. Krishna (2015) investigated the nature of the causal relationships between stock prices and the key macro economic variables in BRIC countries. The empirical evidence shows that long-run and short-run relationship exists between macro economic variables and stock prices, but this relationship was not consistent for all of the BRIC countries. Kulathunga (2015) suggested that all macroeconomic factors influence the stock market development. More precisely, volatile inflation rate and exchange rate together with higher deposit rate have curtailed the stock market development in Sri Lanka. Moreover, positive optimism created by the economic growth and the stock market performance during the previous periods tend to enhance stock market performance. Moreover, Duy (2016) mentioned through the evolution of interest rates and the VNI could see that the relationship between these two variables in the period 2005-2014 is the opposite. This relationship is shown in specific periods of the year the stock market proved quite sensitive to interest rates. When interest rates are low or high but the bearish stock market rally, and vice versa when the high interest rates the stock market decline.

Last but not least, Quy and Loi (2016) found that 3 economic factors (inflation rate, GDP growth rate, and exchange rate) impact significantly on real estate stock prices; but the relationship between 10-year Government bond yield and trading volume, and real estate stock prices was not found. Ahmad and Ramzan (2016) stated the macroeconomic factors have important concerns with stocks traded in the stock market and these factors make investors to choose the stock because investors are interested to know about the factors affecting the working of stock to manage their portfolios. Abrupt variations and unusual movements of macroeconomic variables cause the stock returns to fluctuate due to uncertainty of future gains. Simbolon and Purwanto (2018) finds that interest rate, inflation rate, exchange rate, and GDP growth rate, as composite variables, have a significant influence on stock price. A partial test revealed that interest rate, inflation rate, and exchange rate have significance on stock price, while GDP growth rate is found to be nonsignificant.

Within the scope of this paper, we measure impacts of both internal and external macro factors on Sacombank stock price and suggest policies for bank system, Vietnam government, Ministry of Finance, State Bank and relevant government bodies. We also analyze data through out time series from 2014-2019.

3. Research methodology

This research paper establishes correlation among macro economic factors by using an econometric model to analyze impacts of seven (7) macro economic factors in Vietnam such as: GDP growth, inflation, interest rate, exchange rate, VNIndex, risk free rate, SP500 on Sacombank (STB) stock price.

In this research, analytical method is used with data from the economy such as inflation in Vietnam and market interest rate, GDP growth rate, exchange rate (USD/VND). Data are included from 2014 -2019 with semi-annual data (10 observations in total). Data is estimated based on exchange rate and lending interest rates of commercial banks such as: Vietcombank, BIDV, Agribank, Vietinbank... (average calculation). S&P 500 index data is from USA Stock exchange, data source (inflation, GDP) is from Bureau of Statistics. Beside, econometric method is used with the software Eview. It will give us results to suggest policies for businesses and authorities.

We build a regression model with Eview software to measure impacts of factors. Sacombank stock price is a function with 5 variables as follows:

$$Y \text{ (STB stock price)} = f(x_1, x_2, x_3, x_4, x_5, x_6, x_7) = ax_1 + bx_2 + cx_3 + dx_4 + ex_5 + fx_6 + gx_7 + k$$

With: x_1 : GDP growth rate (g), x_2 : inflation, x_3 : VNIndex, x_4 : lending rate, x_5 : risk free rate (R_f), x_6 : USD/VND rate; x_7 : SP500

Besides, this paper also uses analytical and general data analysis method to measure and generate comments on the results, then suggest policies based on these analyses.

4. Main Findings

4.1. General data analysis

First of all, The chart 1 below shows us that Y has a negative correlation with GDP growth:

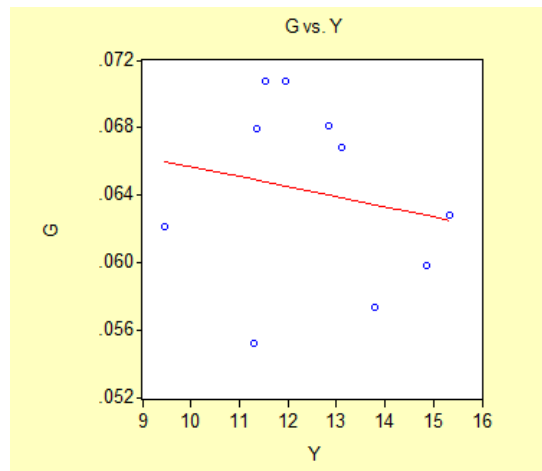


Chart 1. Sacombank stock price (Y) vs. GDP growth in Vietnam (G)

Next we found out that, based on the below scatter chart, Y (STB stock price) has slightly negative correlation with inflation (CPI).

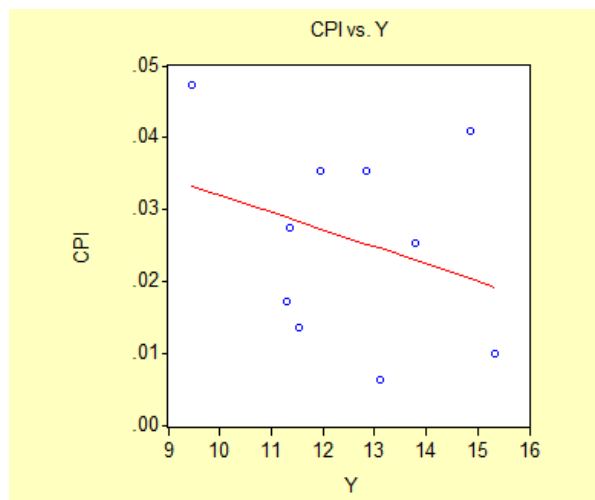


Chart 2. Sacombank stock price (Y) vs. Inflation (CPI)

Looking at the chart 3 below, we also recognize that STB stock price (Y) and VNIndex have negative correlationship.

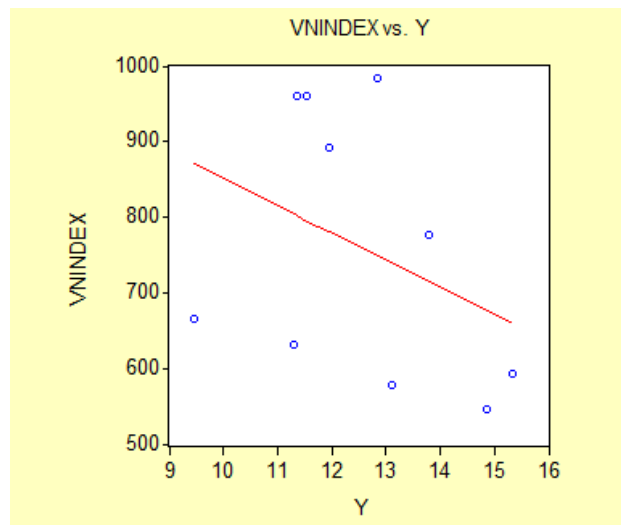


Chart 3. Y vs. VNIndex

We see that, STB stock price (Y) and lending rate have negative correlation (see Chart below):

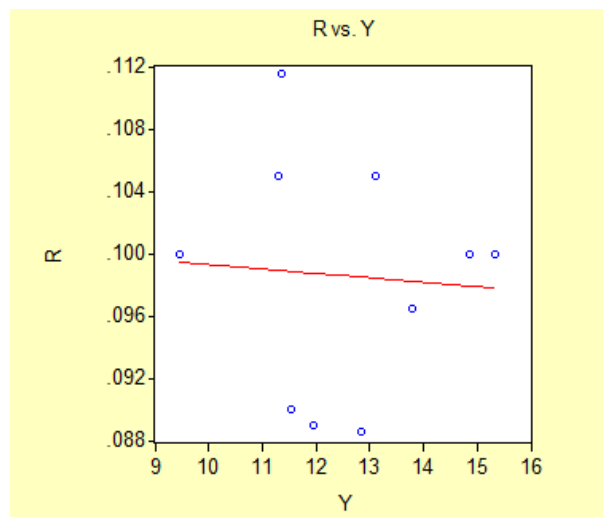


Chart 4. Y vs. Lending rate (r)

In addition to, the below scatter graph shows us that BIDV stock price (Y) and risk free rate (Rf) also have positive correlation (see Chart).

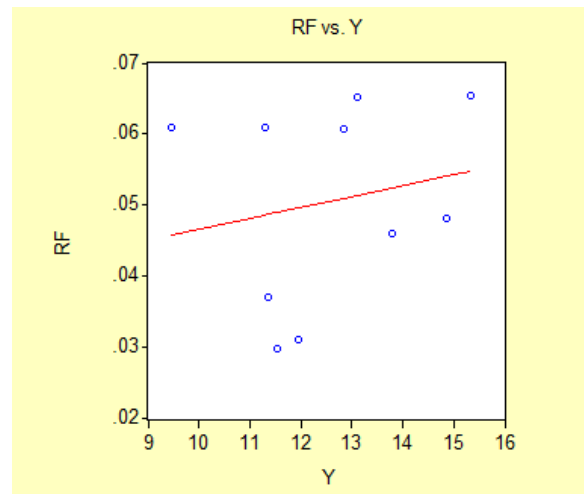


Chart 5. Y vs. Risk free rate (Rf)

The Chart 6 below shows us that Y and USD/VND rate have a negative correlation.

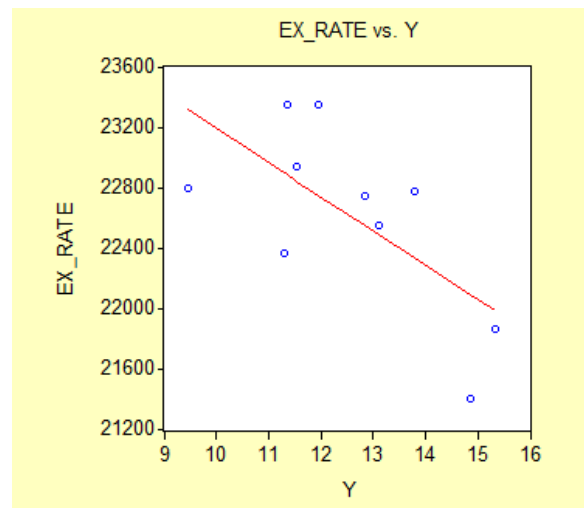


Chart 6. Y vs. Exchange rate (Ex_rate)

On the other hand, we could see statistical results with Eview in the Table 1 below with 6 variables:

Table 1. Statistics for macro economic factors

Unit: %

	Sacombank stock price	GDP growth	Inflation (CPI)	VN Index	Lending rate	Risk free rate	USD/VND rate
Mean	12.55	0.06416	0.02588	758.875	0.09856	0.050485	22611.7
Median	12.4	0.0648	0.0264	720.67	0.1	0.05435	22757.5
Maximum	15.34	0.0708	0.0474	984.24	0.1115	0.06535	23350
Minimum	9.45	0.0552	0.0063	545.63	0.0886	0.0297	21405
Standard dev.	1.795	0.005549	0.013884	176.4835	0.007636	0.014066	610.2313

Looking at the above table, we recognize that standard deviation of exchange rate and VNIndex are the highest values. Whereas standard deviation of GDP growth and lending rate are the lowest values.

If we want to see correlation matrix of these 8 macro variables, Eview generate the below result in Table 2.

Table 2. Correlation matrix for seven (7) macro-economic variables (GDP growth, inflation in VN, market interest rate, Risk free rate, exchange rate and STB stock price)

Correlation Matrix								
	Y	G	CPI	VNINDEX	R	RF	EX RATE	SP500
Y	1.000000	-0.192863	-0.309050	-0.363368	-0.068396	0.195982	-0.666303	-0.356972
G	-0.192863	1.000000	-0.050535	0.653067	-0.390583	-0.474076	0.564582	0.634468
CPI	-0.309050	-0.050535	1.000000	0.146050	-0.220576	-0.158705	0.082310	0.183559
VNINDEX	-0.363368	0.653067	0.146050	1.000000	-0.440372	-0.634696	0.777514	0.983824
R	-0.068396	-0.390583	-0.220576	-0.440372	1.000000	0.302601	-0.154750	-0.374293
RF	0.195982	-0.474076	-0.158705	-0.634696	0.302601	1.000000	-0.521420	-0.677534
EX RATE	-0.666303	0.564582	0.082310	0.777514	-0.154750	-0.521420	1.000000	0.755250
SP500	-0.356972	0.634468	0.183559	0.983824	-0.374293	-0.677534	0.755250	1.000000

The above Table 2 shows us that correlation among 8 macro variables. An increase in exchange rate and increase in lending rate might lead to a decrease in STB stock price. It also indicates that correlation between STB stock price (Y) in Viet Nam and VNIndex in Viet Nam and S&P 500 in the US (-0.36 and -0.35) is higher than that between Y and lending rate (-0.06) or between Y and CPI (-0.3).

The below Table 3 shows us that covariance matrix among eight (8) macro economic variables. STB stock price (Y) has a negative correlation with exchange rate and lending rate but has a positive correlation with risk free rate (Rf).

Hence, an increase in Rf may lead to an increase in STB stock price.

Table 3. Covariance matrix for 7 macro economic variables

Covariance Matrix								
	Y	G	CPI	VNINDEX	R	RF	EX RATE	SP500
Y	2.900144	-0.001729	-0.006932	-103.6053	-0.000844	0.004454	-656.8968	-170.0927
G	-0.001729	2.77E-05	-3.50E-06	0.575578	-1.49E-05	-3.33E-05	1.720538	0.934488
CPI	-0.006932	-3.50E-06	0.000173	0.322068	-2.10E-05	-2.79E-05	0.627614	0.676458
VNINDEX	-103.6053	0.575578	0.322068	28031.78	-0.534085	-1.418033	75361.46	46087.69
R	-0.000844	-1.49E-05	-2.10E-05	-0.534085	5.25E-05	2.93E-05	-0.648952	-0.758612
RF	0.004454	-3.33E-05	-2.79E-05	-1.418033	2.93E-05	0.000178	-4.028085	-2.529699
EX RATE	-656.8968	1.720538	0.627614	75361.46	-0.648952	-4.028085	335144.0	122334.5
SP500	-170.0927	0.934488	0.676458	46087.69	-0.758612	-2.529699	122334.5	78286.05

4.2. Regression model and main findings

In this section, we will find out the relationship between eight macro economic factors and STB stock price.

4.2.1 Scenario 1: Regression model with single variable: analyzing impact of GDP growth (G) on STB stock price (Y)

Note: C: constant

Using Eview gives us the below results:

Dependent Variable: Y

Method: Least Squares

Date: 01/31/20 Time: 13:31

Sample: 1 10

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-62.39318	112.2309	-0.555936	0.5935
C	16.55715	7.224928	2.291670	0.0511
R-squared	0.037196	Mean dependent var	12.55400	
Adjusted R-squared	-0.083154	S.D. dependent var	1.795100	
S.E. of regression	1.868244	Akaike info criterion	4.264732	
Sum squared resid	27.92270	Schwarz criterion	4.325249	
Log likelihood	-19.32366	F-statistic	0.309065	
Durbin-Watson stat	1.122307	Prob(F-statistic)	0.593458	

Hence, $Y = -62.3 * g + 16.5$, $R^2 = 0.04$, $SER = 1.86$

Within the range of 10 observations (2014-2018) as described in the above scatter chart 1, coefficient -62.3, when GDP growth increases, STB stock price will decrease.

4.2.2 Scenario 2 - Regression model with 2 variables: analyzing impact of GDP growth (G) and Inflation (CPI) on STB stock price (Y)

Running Eview gives us below results:

Dependent Variable: Y
 Method: Least Squares
 Date: 01/31/20 Time: 13:31
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-67.61844	113.5989	-0.595238	0.5704
CPI	-41.32488	45.40189	-0.910202	0.3930
C	17.96189	7.464932	2.406169	0.0470
R-squared	0.139087	Mean dependent var	12.55400	
Adjusted R-squared	-0.106888	S.D. dependent var	1.795100	
S.E. of regression	1.888601	Akaike info criterion	4.352875	
Sum squared resid	24.96771	Schwarz criterion	4.443651	
Log likelihood	-18.76438	F-statistic	0.565453	
Durbin-Watson stat	1.049798	Prob(F-statistic)	0.592048	

Therefore, $Y = -67.6 * G - 41.3 * CPI + 17.9$, $R^2 = 0.14$, $SER = 1.88$

Hence, this equation shows us STB stock price has a negative correlation with GDP growth and inflation in Vietnam. Esp., it is highly negatively affected by GDP growth rate.

4.2.3. Scenario 3 - Regression model with 3 variables: adding lending rate (r) into the above model

Eviews generates below statistical results:

Dependent Variable: Y
 Method: Least Squares
 Date: 01/31/20 Time: 13:32
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-104.0123	129.7799	-0.801451	0.4534
CPI	-50.02595	48.95460	-1.021885	0.3463
R	-65.66582	96.56921	-0.679987	0.5219
C	26.99412	15.38824	1.754205	0.1299
R-squared	0.200685	Mean dependent var	12.55400	
Adjusted R-squared	-0.198972	S.D. dependent var	1.795100	
S.E. of regression	1.965590	Akaike info criterion	4.478637	
Sum squared resid	23.18127	Schwarz criterion	4.599671	
Log likelihood	-18.39318	F-statistic	0.502144	
Durbin-Watson stat	0.947310	Prob(F-statistic)	0.694607	

Hence, $Y = -104 * G - 50 * CPI - 65.6 * R + 26.9$, $R^2 = 0.2$, $SER = 1.96$

The above regression equation shows us that STB stock price (Y) has a negative correlation with GDP growth (G) and inflation (I) and lending rate (R). And the coefficient (with GDP) is the highest, the 2nd highest is with lending rate. Lending interest rate increases will reduce investments and lead to a decrease in STB stock price.

4.2.4. Scenario 4 - regression model with 4 macro variables

EvIEWS presents the below results:

Dependent Variable: Y

Method: Least Squares

Date: 01/31/20 Time: 13:33

Sample: 1 10

Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-22.68739	166.7204	-0.136080	0.8971
CPI	-42.52165	51.21836	-0.830203	0.4442
R	-83.71237	101.8253	-0.822118	0.4484
VNINDEX	-0.004337	0.005320	-0.815089	0.4521
C	26.65168	15.84315	1.682222	0.1534
R-squared	0.294436	Mean dependent var	12.55400	
Adjusted R-squared	-0.270014	S.D. dependent var	1.795100	
S.E. of regression	2.022986	Akaike info criterion	4.553879	
Sum squared resid	20.46236	Schwarz criterion	4.705172	
Log likelihood	-17.76940	F-statistic	0.521633	
Durbin-Watson stat	1.249648	Prob(F-statistic)	0.725960	

Therefore, $Y = -22.7 \cdot G - 42.5 \cdot \text{CPI} - 83.7 \cdot R - 0.004 \cdot \text{VNINDEX} + 26.6$, $R^2 = 0.29$, $\text{SER} = 2.02$

We find out impacts of 4 macro variables, with the new factor: VNINDEX, shown in the above equation, STB stock price (Y) has negative correlation with GDP growth, inflation, lending rate and VNIndex. When inflation goes down, VNINDEX and interest rate decline, this will increase public savings and investment in stock market, as a result, STB stock price will increase.

4.2.5. Scenario 5 - regression model with 5 macro variables

Running EvIEWS gives us results:

Dependent Variable: Y
 Method: Least Squares
 Date: 01/31/20 Time: 13:33
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-26.36262	187.1338	-0.140876	0.8948
CPI	-43.52996	57.40555	-0.758288	0.4905
R	-83.80557	113.4669	-0.738590	0.5011
VNINDEX	-0.004830	0.006651	-0.726129	0.5080
RF	-11.43112	69.90593	-0.163521	0.8780
C	27.87398	19.17151	1.453928	0.2196
R-squared	0.299122	Mean dependent var	12.55400	
Adjusted R-squared	-0.576976	S.D. dependent var	1.795100	
S.E. of regression	2.254245	Akaike info criterion	4.747216	
Sum squared resid	20.32648	Schwarz criterion	4.928768	
Log likelihood	-17.73608	F-statistic	0.341425	
Durbin-Watson stat	1.300137	Prob(F-statistic)	0.865321	

Hence, $Y = -26.3 \cdot G - 43.5 \cdot \text{CPI} - 83.8 \cdot R - 0.004 \cdot \text{VNINDEX} - 11.4 \cdot R_f + 27.8$, $R^2 = 0.29$, $\text{SER} = 2.25$

Here we see impacts of 5 macro factors, with the new variable: risk free rate (Rf), the above equation shows that STB stock price (Y) has negative correlation with GDP growth, inflation, lending rate, VNIndex and risk free rate. We also recognize that GDP growth, CPI and lending rate have the highest impact on STB stock price. When risk free rate declines, it will increase investment in stock market, then it will lead to an increase in STB stock price.

4.2.6. Scenario 6 - regression model with 6 macro variables:

Running Eviews gives us results:

Dependent Variable: Y
 Method: Least Squares
 Date: 01/31/20 Time: 13:34
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	19.92739	163.5369	0.121853	0.9107
CPI	-39.93395	49.38268	-0.808663	0.4779
R	-25.37209	104.4951	-0.242807	0.8238
VNINDEX	0.002655	0.007473	0.355304	0.7459
RF	-16.18363	60.14776	-0.269065	0.8053
EX_RATE	-0.002828	0.001819	-1.554724	0.2179
C	77.56273	35.95589	2.157164	0.1199
R-squared	0.611857	Mean dependent var	12.55400	
Adjusted R-squared	-0.164429	S.D. dependent var	1.795100	
S.E. of regression	1.937068	Akaike info criterion	4.356256	
Sum squared resid	11.25670	Schwarz criterion	4.568065	
Log likelihood	-14.78128	F-statistic	0.788185	
Durbin-Watson stat	2.253848	Prob(F-statistic)	0.633496	

$$Y = 19.9 \cdot G - 39.9 \cdot \text{CPI} - 25.3 \cdot R + 0.002 \cdot \text{VNINDEX} - 16.2 \cdot R_f - 0.003 \cdot \text{EX_RATE} + 77.5,$$

$$R^2 = 0.61, \text{SER} = 1.93$$

Therefore, we see impacts of 6 macro factors, with the new variable: exchange rate USD/VND (EX_RATE), the above equation shows that STB stock price (Y) has negative correlation with and VNINDEX. We also recognize that GDP growth, CPI and lending rate, then risk free rate have the highest impact on STB stock price, while exchange rate just has a slightly impact on stock price.

4.2.7. Scenario 7 - regression model with 7 macro variables

Running Eviews gives us results:

Dependent Variable: Y
 Method: Least Squares
 Date: 01/31/20 Time: 13:35
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	18.84647	200.8858	0.093817	0.9338
CPI	-41.25871	64.20086	-0.642650	0.5863
R	-30.33237	151.4790	-0.200241	0.8598
VNINDEX	0.000603	0.034820	0.017325	0.9877
RF	-13.92195	82.39016	-0.168976	0.8814
EX_RATE	-0.002782	0.002352	-1.182603	0.3585
SP500	0.001207	0.019762	0.061068	0.9569
C	75.70569	53.48226	1.415529	0.2926
R-squared	0.612580	Mean dependent var	12.55400	
Adjusted R-squared	-0.743392	S.D. dependent var	1.795100	
S.E. of regression	2.370206	Akaike info criterion	4.554393	
Sum squared resid	11.23575	Schwarz criterion	4.796461	
Log likelihood	-14.77196	F-statistic	0.451764	
Durbin-Watson stat	2.283321	Prob(F-statistic)	0.820084	

$$Y = 18.8 * G - 41.2 * CPI - 30.3 * R + 0.0006 * VNINDEX - 13.9 * Rf - 0.003 * EX_RATE + 0.001 * SP500 + 75.7,$$

$$R^2 = 0.61, SER = 2.37$$

Therefore, we see impacts of 7 macro factors, with the new variable: SP500, the above equation shows that STB stock price (Y) has negative correlation with inflation, lending rate and risk free rate and exchange rate, whereas it has positive correlation with GDP growth, SP500, VNINDEX. We also recognize that GDP growth and inflation, then lending rate have the highest impact on STB stock price, while exchange rate just has a slightly impact on stock price.

5. Discussion and further researches

Through the regression equation with above 7 macroeconomic variables, this research paper used updated data from 2014-2019 to analyze the regression equation via Eview in order to show that an increase in GDP growth and decrease in CPI have a significant impact on increasing STB stock price (Y) with the highest coefficient of impact, followed by a decrease in lending rate and decrease in risk free rate, then an increase in VNINDEX, as well as a little reduction in exchange rate.

Data are from observations in the past 10 years, it is partly based on the market economic rules, and the research results are also affected by socio-economic characteristics in Vietnam such as: efficiency of public investment, waste of public investment, enterprise bankruptcy, and investment in areas that increase GDP such as production, electricity, etc. or investing in healthcare, environment and education sectors. We have not yet considered the impact of these factors.

Besides, we can analyze impact of another macro factor, for example, deposit rate when we add this variable into our regression model of public debt. Furthermore, we can add unemployment rate or public debt increase into our econometric model to measure the impact of these extra factors on STB stock price.

5. Conclusions

Based on the above data analysis from our regression model, although low inflation during 2015-2016 is a good signal for STB stock price, we would suggest the government, Ministry of Finance and State Bank of Vietnam consider to control inflation more rationally, i.e not increasing much and suitable with each economic development stage. Governmental bodies and bank system also need to apply macro policies to stimulate economic growth, however not increasing lending rate too much, together with credit, operational and market risk management, corporate governance and controlling bad debt.

Next, it is necessary to coordinate synchronously between the management and administration of commercial bank policies with fiscal policies, monetary policies (used as effective tools to stimulate bank stock price) and other economic development policies to limit the negative effects of lending rate, risk free rate and CPI, i.e not increasing much. Lending policy of bank system need to be selective and increase interest rates for acceptable high risk high return projects.

Generally speaking, managing STB stock price depends on many factors, so the government need to use fiscal policy combined with monetary policies and socio-economic policies to reduce unemployment and stimulate economic growth, toward a good stock price management.

Finally, this research paper also helps to direct further future researches, for instance, we could add deposit rate and unemployment rate into our above econometric model to measure impacts of them on commercial bank stock price.

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