Solutions for Better Business Management – A Case in Brick and Ceramic Industry in Vietnam

NGUYEN THANH HAI[1], NGUYEN THUY DUONG[2]

[1]Thuongmai University Hanoi Vietnam.
[2]Master, Thuongmai University Hanoi Vietnam.
Email ID: [1]nguyenthanhhai@tmu.edu.vn, [2]duong.nt@tmu.edu.vn

Abstract: For better business performance we need to improve management.
Business performance measurements can be done via many indicators such as stock price, profits. With the support of OLS linear regression, the paper aims to estimate effects from macro indicators on stock price in brick and granite ceramic sector, esp. in Taicera (TCR) in Vietnam?
Our research found that between stock price of TCR and many macro factors there is negative correlation. Between stock price and Risk free rate (Rf) there is positive correlation.
So, board need to enhance or forecast effects from macro policies on their stock price to manage the firm better.
On the other hand, investors and institutions can refer to the model for prediction of stock price.

Keywords: Better management, Taicera stock price, GDP growth, Inflationary, Risk free rate, Market interest rate.
JEL: M21, N1.

INTRODUCTION

Taicera (TCR) a big granite ceramic company which has been performing well in Vietnam over past years.
Taicera has paid attention to 5S activities:

To create factory operations and management status to reach the level of no danger, no failure, high efficiency, so perform 5S operation (Sàng lọc, Sắp xếp, Sạch sẽ, Săn sóc, Sẵn sàng), to train all employees to build good, daily habits in their own workplace, for the environment and unreasonable phenomena such as indiscriminate disorder, obstructive congestion, pollution..., through the development, there is a willingness to improve, everywhere, clean and make the working environment of the factory more and more reasonable, convenient, and clean to form a clean, well-regulated factory. The firm aims to reach low price discounts, Advanced performance, Advanced quality, Reduce the ventricles lose, Advanced and motivation, Advanced safety labor.
We see TCR stock price movement in below charts and this study will use OLS regression to estimate /measure macro effects on stock price then we proposed proper policies.
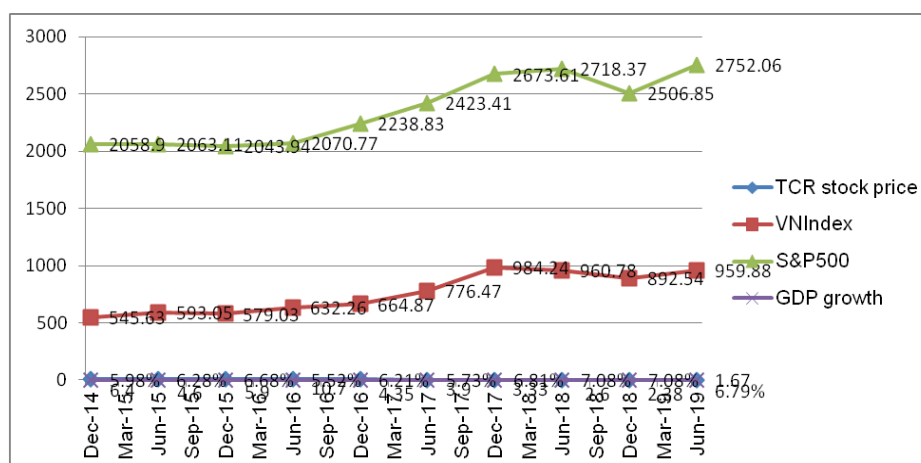
The paper organized with introduction, literature review and methodology, main research findings/results, discussion and conclusion.

BODY OF MANUSCRIPT
Research Question
What are relationship among elements such as TCR stock price, R, Ex_rate, CPI, VNIndex, S&P 500 and G?

Literature Review
We see below table of summary of previous studies:

1. Fama-French 3-Factor Model: HCM city stock market.	Trương Đông Lộc and Dương Thị Hoàng Trang (2014)	The research results show that between market risk, firm size BE/ME ratio and earnings of stocks there is positive relationship. In other words, the Fama - French 3-factor model is suitable in explaining the change in profits of stocks listed on HOSE.
2. The econometric model for stock prices in the period 2008-2011 - Case of stock prices ACB, other factors	Đinh Trần Ngọc Huy (2015)	Analyze the impact of VNIndex and internal and external macro variables on the stock price of ACB.
3. Macroeconomic Factors and Colombo stock market	Kulathunga (2015)	Rates of deposit goes up curtail stock market
4. Stock Market and macro	Ahmad and Ramzan (2016)	Investment portfolio of investors will be affected by macro impacts
5. Financial Leverage, financial risk	Gunaratha (2016)	Leverage and risk (financial) has positive correlation
6. The theory of average return of K. Marx and model of capital asset pricing	Nguyễn Thị Hường (2017)	The limitation of Vietnam's stock market is the lack of beta in stock analysis. However, as the market portfolio matures, beta will keep pace with the development of the market.

METHODOLOGY AND DATA
We use both quantitative and qualitative analytical methods, with OLS regression supported by Eviews.
Most data, from 2014-2019, from stock exchange, bank system, Bureau statistics and reliable.

MAIN RESULTS
General Data Analysis
We analyze from below charts as: between Y and GDP growth, CPI, VNIndex, Exchange rate, there is negative correlation. And between Y and Lending rate, Rf there is positive correlation.
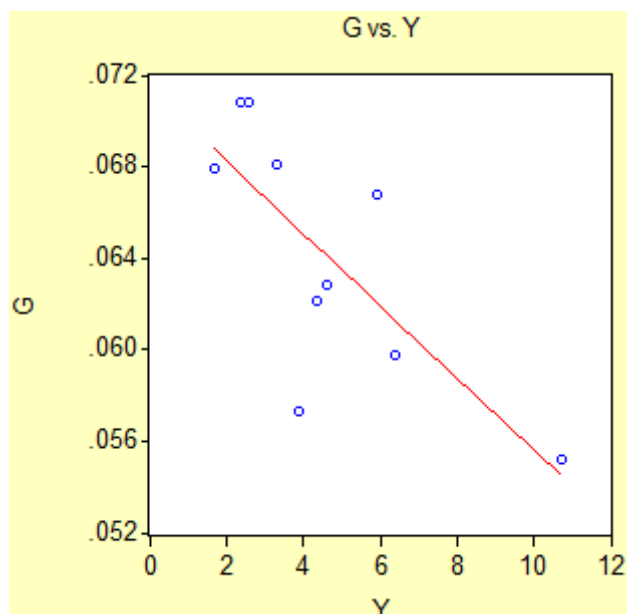

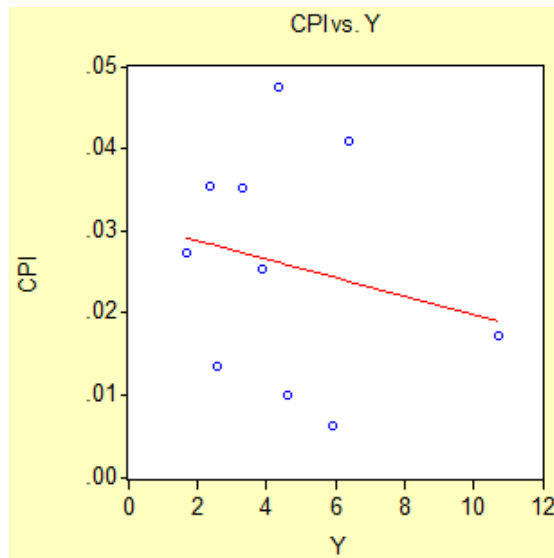**Chart 1: Scatter Chart between TCR stock price (Y) and GDP growth (G)**

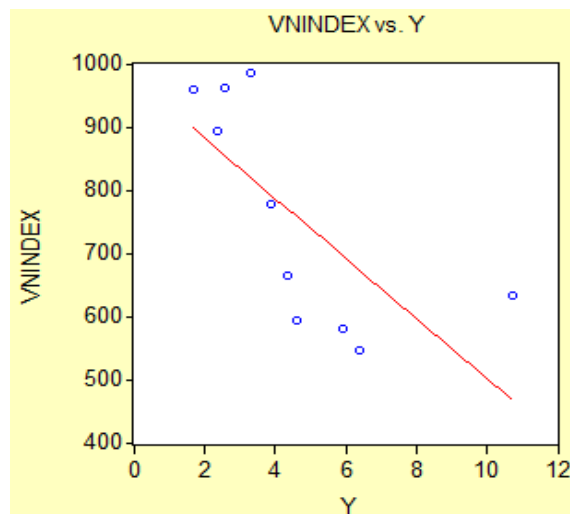**Chart 2: Scatter Chart between TCR stock price (Y) and CPI**
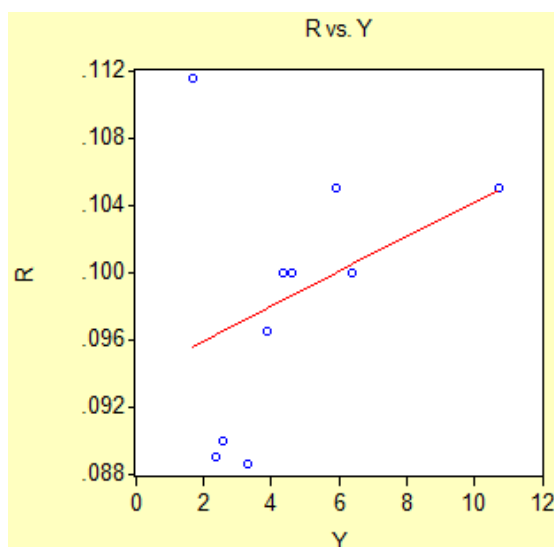

Chart 3: Y and VNIndex

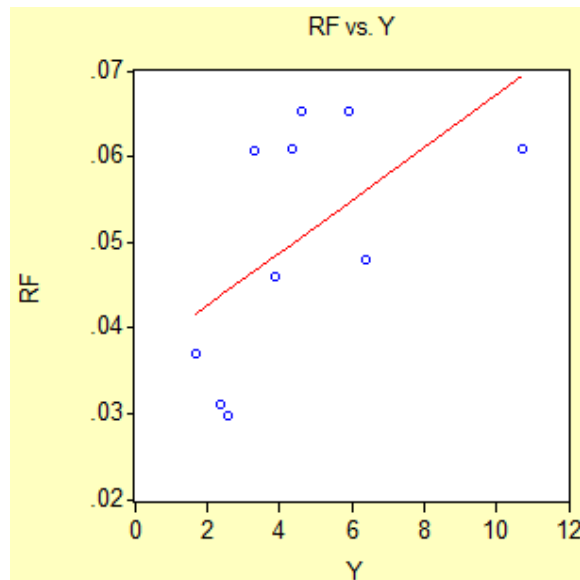

Chart 4: Y and Lending rate (r)
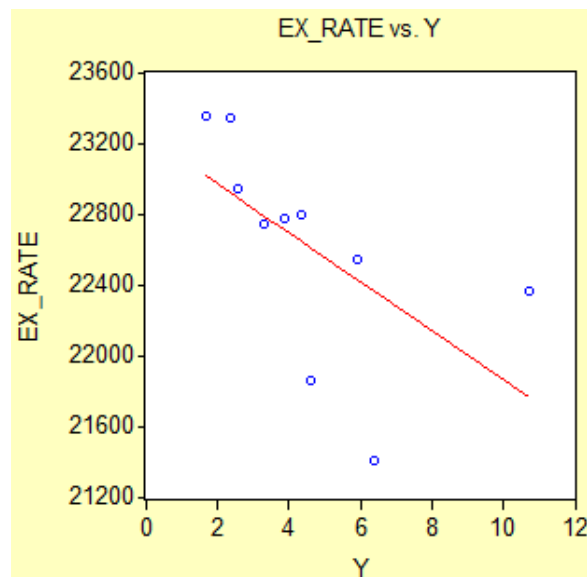
Chart 5: Y and Rf

Chart 6: Y and Exchange rate

The below table 1 show us that: highest values belong to standard deviation of exchange rate and VNIndex. Then lowest values belong to std.dev of GDP growth and lending rate. Also table 2 shows that correlation between risk free rate and stock price (0.57) is higher than that of lending rate and stock price (0.35).

Table 1: Statistics Descriptive (Macro)

Unit: %

	TCR stock price	GDP growth	Inflation (CPI)	VN Index	Lending rate	Risk free rate	USD/VND rate
Mean	4.58	0.06416	0.02588	758.875	0.09856	0.050485	22611.7
Median	4.12	0.0648	0.0264	720.67	0.1	0.05435	22757.5
Maximum	10.7	0.0708	0.0474	984.24	0.1115	0.06535	23350
Minimum	1.67	0.0552	0.0063	545.63	0.0886	0.0297	21405
Standard dev.	2.621	0.005549	0.013884	176.4835	0.007636	0.014066	610.2313

Table 2: Macro-economic variables correlation

	Y	G	CPI	VNINDEX	R	RF	EX_RATE	SP500
				Correlation Matrix				
Y	1.000000	-0.746778	-0.211321	-0.709758	0.357623	0.574780	-0.592870	-0.765020
G	-0.746778	1.000000	-0.050535	0.653067	-0.390583	-0.474076	0.564582	0.634468
CPI	-0.211321	-0.050535	1.000000	0.146050	-0.220576	-0.158705	0.082310	0.183559
VNINDEX	-0.709758	0.653067	0.146050	1.000000	-0.440372	-0.634696	0.777514	0.983824
R	0.357623	-0.390583	-0.220576	-0.440372	1.000000	0.302601	-0.154750	-0.374293
RF	0.574780	-0.474076	-0.158705	-0.634696	0.302601	1.000000	-0.521420	-0.677534
EX_RATE	-0.592870	0.564582	0.082310	0.777514	-0.154750	-0.521420	1.000000	0.755250
SP500	-0.765020	0.634468	0.183559	0.983824	-0.374293	-0.677534	0.755250	1.000000

Table 3: Macro economic variables covariance

	Y	G	CPI	VNINDEX	R	RF	EX_RATE	SP500
				Covariance Matrix				
Y	6.181581	-0.009774	-0.006920	-295.4511	0.006441	0.019070	-853.3461	-532.1876
G	-0.009774	2.77E-05	-3.50E-06	0.575578	-1.49E-05	-3.33E-05	1.720538	0.934488
CPI	-0.006920	-3.50E-06	0.000173	0.322068	-2.10E-05	-2.79E-05	0.627614	0.676458
VNINDEX	-295.4511	0.575578	0.322068	28031.78	-0.534085	-1.418033	75361.46	46087.69
R	0.006441	-1.49E-05	-2.10E-05	-0.534085	5.25E-05	2.93E-05	-0.648952	-0.758612
RF	0.019070	-3.33E-05	-2.79E-05	-1.418033	2.93E-05	0.000178	-4.028085	-2.529699
EX_RATE	-853.3461	1.720538	0.627614	75361.46	-0.648952	-4.028085	335144.0	122334.5
SP500	-532.1876	0.934488	0.676458	46087.69	-0.758612	-2.529699	122334.5	78286.05

Table 3 also shows that increase in R might cause decline in TCR stock price.

Regression Model and Main Findings
Case 1: OLS model with 1 variable: Impact (G) on TCR stock price (Y).
OLS results:

Dependent Variable: Y
Method: Least Squares
Date: 02/12/20   Time: 10:09
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-352.7116	111.0588	-3.175899	0.0131
C	27.21298	7.149478	3.806289	0.0052

R-squared	0.557677	Mean dependent var	4.583000
Adjusted R-squared	0.502387	S.D. dependent var	2.620768
S.E. of regression	1.848734	Akaike info criterion	4.243736
Sum squared resid	27.34255	Schwarz criterion	4.304253
Log likelihood	-19.21868	F-statistic	10.08633
Durbin-Watson stat	1.533308	Prob(F-statistic)	0.013078

So, $Y = -352 * g + 27.2$, $R^2 = 0.55$, SER $= 1.8$
      (111)   (7.1)
Shown by OLS result, coefficient -352, if GDP growth goes up, TCR stock price will go down

Case 2 - Regression model with 2-6variables: other factors impacts on TCR stock price (Y):
OLS generates below results:

	Co-efficient				
	2 variables	3 variables	4 variables	5 variables	6 variables
G	-358	-357	-262	-253	-253
CPI	-47.1	-46.7	-38	-35.7	-35.7
R (lending)		2.5	-18.5	-18.3	-17.6
Rf				25.2	25.2
VnIndex			-0.005	-0.003	-0.003
Ex_rate					-3.29E

We can perform analysis: there is negative correlation between TCR stock price (Y) and inflation, G and R, while positive correlation with Risk free rate. Between GDP growth and lending rate, then Rf and TCR stock price, there is highest effect, on the other hand, between stock price and exchange rate there is just tiny impact.

CONCLUSION AND POLICY SUGGESTION

The above regression results (OLS) show us that: between stock price and risk free rate there is positive correlation so we would suggest governmental agencies consider to keep inflation more properly, together with not decreasing too much rates of medium and long term Treasury bonds.

For better management of Taicera via its stock price performance, which depends on many factors, it is better to have a good control on CPI and GDP growth and lending rate (not increasing too much).

LIMITATION OF RESEARCH

Research can be expanded for other factors and industries, to estimate effects of them on measures of business operation and performance.

ACKNOWLEDGEMENTS

REFERENCES

1. Ahmad, N., & Ramzan, M. (2016). Stock Market Volatility and Macroeconomic Factor Volatility. *International Journal of Research in Business Studies and Management, 3*(7), 37-44.
2. Arshad, Z., Ali, R.A., Yousaf, S., & Jamil, S. (2015). Determinants of Share Prices of listed Commercial Banks in Pakistan. *IOSR Journal of Economics and Finance, 6*(2), 56-64.
3. Ayub, A., & Masih, M. (2013). *Interest Rate, Exchange Rate, and Stock Prices of Islamic Banks: A Panel Data Analysis,* MPRA Paper No. 58871.
4. Cherif, R., & Hasanov, F. (2012). *Public Debt Dynamics: The Effects of Austerity, Inflation, and Growth Shocks,* IMF Working paper WP/12/230.
5. Dat, P.M., Mau, N.D., Loan, B.T.T., Huy, D.T.N. (2020). Comparative China Corporate Governance standards After Financial Crisis, Corporate Scandals and Manipulation. *Journal of Security and Sustainability Issues, 9*(3).
6. Hac, L.D., Huy, D.T.N., Thach, N.N., Chuyen, B.M., Nhung, P.T.H., Thang, T.D., Anh, T.T. (2021). Enhancing risk management culture for sustainable growth of Asia commercial bank -ACB in Vietnam under mixed effects of macro factors, *Entrepreneurship and Sustainability Issues, 8*(3).
7. Hang, T.T.B., Nhung, D.T.H., Hung, N.M., Huy, D.T.N., Dat, P.M. (2020). Where Beta is going–case of Viet Nam hotel, airlines and tourism company groups after the low inflation period, *Entrepreneurship and Sustainability Issues, 7*(3).
8. Huy, D.T.N. (2015). The Critical Analysis of Limited South Asian Corporate Governance Standards After Financial Crisis, *International Journal for Quality Research, 9*(4): 741-764.
9. Huy, D.T.N. (2012). Estimating Beta of Viet Nam listed construction companies groups during the crisis, *Journal of Integration and Development, 15* (1), 57-71
10. Huy, D.T.N., Loan, B.T., and Anh, P.T. (2020). 'Impact of selected factors on stock price: a case study of Vietcombank in Vietnam'. *Entrepreneurship and Sustainability Issues, vol. 7, no.4,* pp. 2715-2730. https://doi.org/10.9770/jesi.2020.7.4(10)
11. Huy, D.T.N., Dat, P.M., và Anh, P.T. (2020). 'Building and econometric model of selected factors' impact on stock price: a case study'. *Journal of Security and Sustainability Issues, vol. 9*(M), pp. 77-93. https://doi.org/10.9770/jssi.2020.9.M(7)
12. Huy D.T.N., Nhan V.K., Bich N.T.N., Hong N.T.P., Chung N.T., Huy P.Q. (2021). 'Impacts of Internal and External Macroeconomic Factors on Firm Stock Price in an Expansion Econometric model—A Case in Vietnam Real Estate Industry'. *Data Science for Financial Econometrics-Studies in Computational Intelligence*, vol.898, Springer. http://doi-org-443.webvpn.fjmu.edu.cn/10.1007/978-3-030-48853-6_14
13. Krishna, R.C. (2015). Macroeconomic Variables impact on Stock Prices in a BRIC Stock Markets: An Empirical Analysis. *Journal of Stock & Forex Trading, 4*(2).
14. Kulathunga, K. (2015). Macroeconomic Factors and Stock Market Development: With Special Reference to Colombo Stock Exchange. *International Journal of Scientific and Research Publications, 5*(8), 1-7.
15. Ihsan, H., Ahmad, E., Muhamad, I.H., & Sadia, H. (2015). *International Journal of Scientific and Research Publications, 5*(8)
16. Jarrah, M., & Salim, N. (2016). The Impact of Macroeconomic Factors on Saudi Stock Market (Tadawul) Prices, *Int'l Conf. on Advances in Big Data Analytics.*

17. Luthra, M., & Mahajan, S. (2014). Impact of Macro factors on BSE Bankex, *International Journal of Current Research and Academic Review, 2*(2), 179-186.
18. Ndlovu, M., Faisal, F., Nil, G.R., & Tursoy, T. (2018). The Impact of Macroeconomic Variables on Stock Returns: A Case of the Johannesburg Stock Exchange. *Romanian Statistical Review, 2,* 88-104.
19. Pan, Q., & Pan, M. (2014). The Impact of Macro Factors on the Profitability of China's Commercial Banks in the Decade after WTO Accession, *Open Journal of Social Sciences, 2,* 64-69.
20. Quy, V.T., & Loi, D.T.N. (2016). Macroeconomic factors and Stock Price – A Case of Real Estate Stocks on Ho Chi Minh Stock Exchange. *Journal of Science Ho Chi Minh City Open University, 2*(18), 63-75.
21. Saeed, S., & Akhter, N. (2012). Impact of Macroeconomic Factors on Banking Index in Pakistan, *Interdisciplinary Journal of Contemporary Research in Business, 4*(6), 1200-1218.
22. https://www.sbv.gov.vn
23. https://nif.mof.gov.vn