



THE EVALUATION OF IMPACTS OF MULTI FACTOR MODEL ON TTC STOCK PRICE: A CASE IN REAL ESTATE INDUSTRY IN VIETNAM

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ABSTRACT

Objectives: The objective of this study is to analyze the impact of macroeconomic factors on the stock price of a real estate firm, specifically Thanh Cong TCC, in Vietnam from 2014 to 2020. The study aims to assess both positive and negative influences of five macroeconomic variables on stock prices and to understand the overall business health reflected by stock fluctuations.

Methods: This study utilizes a data collection method involving statistics, analysis, synthesis, comparison, and quantitative analysis to generate qualitative comments and discussion. Econometric methods, particularly regression analysis, are employed to evaluate the quantitative results and assess the impact of macroeconomic factors on stock prices.

Results: The quantitative research reveals several key findings. Firstly, the stock price of Thanh Cong TCC (Y) exhibits a negative correlation with the lending rate (R) and GDP growth, indicating that higher lending rates and lower GDP growth negatively impact stock prices. Conversely, there is a positive correlation between stock prices and the risk-free rate (Rf), consumer price index (CPI), and VNINDEX, suggesting that these factors positively influence stock prices. Furthermore, the study identifies GDP growth and lending rates as having the highest impact on firm stock prices.

Conclusion: In conclusion, this study highlights the importance of considering macroeconomic factors in understanding stock price fluctuations in real estate firms in developing countries like Vietnam. The findings emphasize the significant impact of lending rates and GDP growth on stock prices, indicating their pivotal role in shaping the business health and overall economic conditions. By recognizing these influences, firms like Thanh Cong TCC can better navigate market dynamics and make informed strategic decisions to enhance their performance and resilience in the face of macroeconomic challenges.

Keywords: Firm Stock Price, GDP Growth, Inflationary, Risk Free Rate, Market Interest Rate.

A AVALIAÇÃO DOS IMPACTOS DO MODELO MULTIFATOR NO PREÇO DAS AÇÕES DA TTC: UM CASO NA INDÚSTRIA IMOBILIÁRIA NO VIETNÃ

RESUMO

Objetivos: O objetivo deste estudo é analisar o impacto dos fatores macroeconômicos no preço das ações de uma empresa imobiliária, especificamente a Thanh Cong TCC, no Vietnã, de 2014 a 2020. O estudo pretende avaliar as influências positivas e negativas de cinco variáveis macroeconômicas sobre os preços das ações e compreender a saúde geral das empresas refletida pelas flutuações das ações.

Métodos: Este estudo utiliza um método de coleta de dados envolvendo estatística, análise, síntese, comparação e análise quantitativa para gerar comentários qualitativos e discussão. Utilizam - se métodos econométricos, em

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particular a análise de regressão, para avaliar os resultados quantitativos e o impacto dos fatores macroeconômicos nos preços das ações.

Resultados: A pesquisa quantitativa revela vários achados-chave. Em primeiro lugar, o preço das ações da Thanh Cong TCC (Y) apresenta uma correlação negativa com a taxa de empréstimo (R) e o crescimento do PIB, indicando que taxas de empréstimo mais elevadas e um menor crescimento do PIB têm um impacto negativo nos preços das ações. Inversamente, existe uma correlação positiva entre os preços das ações e a taxa sem risco (Rf), o índice de preços no consumidor (IPC) e o VNINDEX, sugerindo que estes fatores influenciam positivamente os preços das ações. Além disso, o estudo identifica o crescimento do PIB e as taxas dos empréstimos como tendo o impacto mais elevado nos preços firmes das ações.

Conclusão: Em conclusão, este estudo destaca a importância de considerar fatores macroeconômicos na compreensão das flutuações dos preços das ações em empresas imobiliárias em países em desenvolvimento como o Vietnã. As conclusões sublinham o impacto significativo das taxas de juro ativas e do crescimento do PIB nos preços das ações, indicando o seu papel crucial na formação da saúde das empresas e das condições económicas globais. Ao reconhecer estas influências, empresas como a Thanh Cong TCC podem navegar melhor na dinâmica do mercado e tomar decisões estratégicas bem fundamentadas para melhorar o seu desempenho e resiliência face aos desafios macroeconómicos.

Keywords: Preço Firme de Ações, Crescimento do PIB, Inflacionário, Taxa Livre de Risco, Taxa de Juros de Mercado.

LA EVALUACIÓN DE LOS IMPACTOS DEL MODELO MULTIFACTORIAL EN EL PRECIO DE LAS ACCIONES DE TTC: UN CASO EN LA INDUSTRIA INMOBILIARIA EN VIETNAM

RESUMEN

Objetivos: El objetivo de este estudio es analizar el impacto de los factores macroeconómicos en el precio de las acciones de una empresa inmobiliaria, específicamente Thanh Cong TCC, en Vietnam de 2014 a 2020. El estudio tiene como objetivo evaluar las influencias positivas y negativas de cinco variables macroeconómicas en los precios de las acciones y comprender la salud general del negocio reflejada por las fluctuaciones de las acciones.

Métodos: Este estudio utiliza un método de recolección de datos que incluye estadísticas, análisis, síntesis, comparación y análisis cuantitativo para generar comentarios cualitativos y discusión. Los métodos econométricos, particularmente el análisis de regresión, se emplean para evaluar los resultados cuantitativos y evaluar el impacto de los factores macroeconómicos en los precios de las acciones.

Resultados: La investigación cuantitativa revela varios hallazgos clave. En primer lugar, el precio de las acciones de Thanh Cong TCC (Y) exhibe una correlación negativa con la tasa de préstamo (R) y el crecimiento del PIB, lo que indica que las tasas de préstamo más altas y el menor crecimiento del PIB afectan negativamente a los precios de las acciones. Por el contrario, existe una correlación positiva entre los precios de las acciones y la tasa libre de riesgo (Rf), el índice de precios al consumidor (IPC) y el VNINDEX, lo que sugiere que estos factores influyen positivamente en los precios de las acciones. Además, el estudio señala que el crecimiento del PIB y las tasas de préstamo tienen el mayor impacto en las cotizaciones bursátiles de las empresas.

Conclusión: En conclusión, este estudio destaca la importancia de considerar los factores macroeconómicos para entender las fluctuaciones de los precios de las acciones en las empresas inmobiliarias en países en desarrollo como Vietnam. Los resultados ponen de relieve el impacto significativo de las tasas de préstamo y el crecimiento del PIB en los precios de las acciones, lo que indica su papel fundamental en la configuración de la salud de las empresas y las condiciones económicas generales. Al reconocer estas influencias, empresas como Thanh Cong TCC pueden navegar mejor por la dinámica del mercado y tomar decisiones estratégicas informadas para mejorar su desempeño y resiliencia frente a los desafíos macroeconómicos.

Palabras clave: Precio de las Acciones en Firme, Crecimiento del PIB, Tasa Inflacionaria, Tasa Libre de Riesgo, Tasa de Interés de Mercado.

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1 INTRODUCTION

Real estate 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 CPI 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 firm performance, esp. firm stock price.

Next, TCC (Thanh cong real estate) company has lots of projects such as:

As one of the pioneering companies in the field of real estate investment, business and consulting in Vietnam since 1996. With business experience in the Real Estate market, a deep understanding of the Real Estate industry and Vietnam's economy.

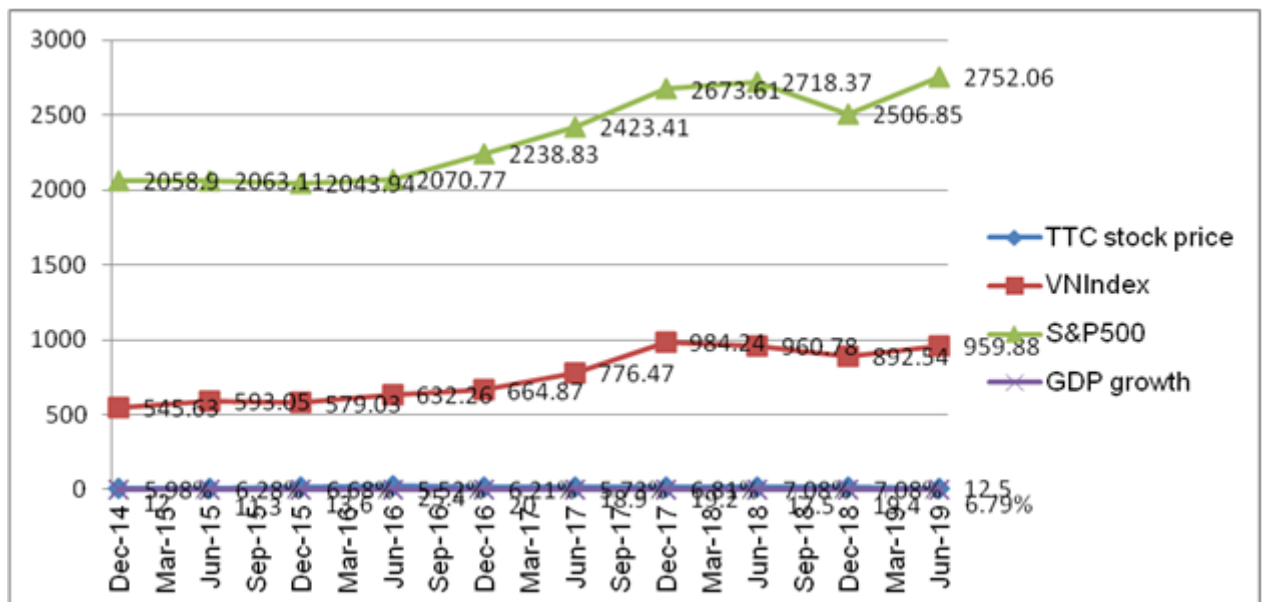
Providing comprehensive, high quality and perfect real estate solutions for customers. Create more added value for customers. Enhance sustainable investment returns for shareholders. Proud to contribute to the prestigious and successful Vietnamese real estate market.

Real estate solutions TCC provide: Logistics, infrastructure, agriculture, forestry, fishery, urban areas, entertainment, energy, resorts, industrial parks.

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

Figure 1

TCC Stock price



Source: Prepared by Authors (2024)



This study will calculate and figure out the impacts of macro economic factors such as inflation, GDP growth, market interest rate, risk free rate, VNIndex, S&P500 and exchange rate on stock price (TCC).

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 will be in the section 6.

2 BODY OF MANUSCRIPT

2.1 RESEARCH ISSUES

The scope of this study will cover:

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

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

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

2.2 LITERATURE REVIEW

Then, We summarize previous studies as follows:



Table 1

Summary of previous studies

Authors	Year	Contents, results
Lina	2012	indicated that both the change of inflation rate and the growth rate of money supply (M2) are positive but insignificant to the banking industry stock return, the exchange rate is positive and significant to banking industry stock return and interest rate is negative and significant to banking industry stock return.
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.
Gomes		Economics is a fascinating field of knowledge, essentially because it is capable of applying rigorous notions and tools from the exact sciences to the understanding of human behavior and of social relations, realities that clearly involve relevant traces of unpredictability.
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.
Duy	2015	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.

Source: Prepared by Authors (2024)

Until now, many researches have been done in this public debt field, however, they just stop at analyzing internal macroeconomic factors on stock price.



3 METHODOLOGY AND DATA

This research paper establishes correlation among macro economic factors by using an econometric model to analyze impacts of multi macro economic factors in Vietnam such as: GDP growth, inflation, interest rate, exchange rate,... on TCC stock price.

This study mainly use combination of quantitative methods (OLS econometric model) and qualitative methods including synthesis, inductive and explanatory methods. And it emphasizes again important roles of risk management in sustainable modern management

For quantitative analysis, the study is supported with OLS regression.

We build a regression model with Eview software to measure impacts of factors.

Beside, 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 RESULTS

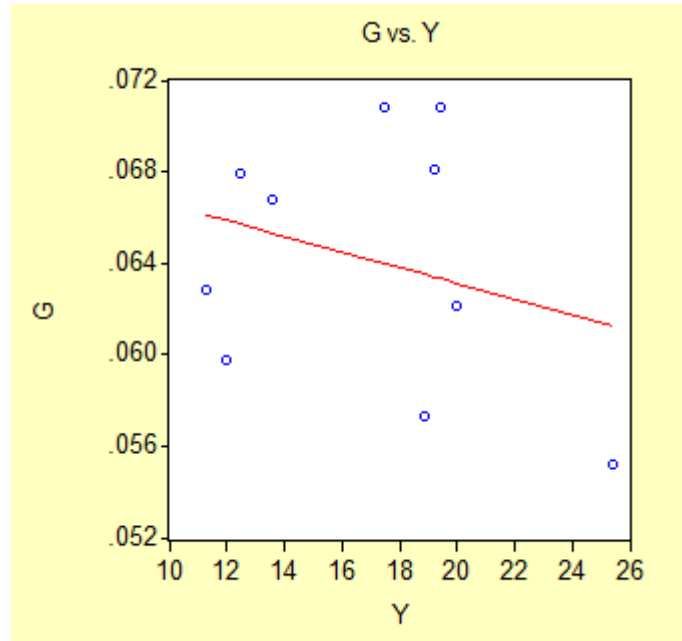
4.1 GENERAL DATA ANALYSIS

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



Figure 2

TTC stock price (Y) vs. GDP growth in Vietnam (G)

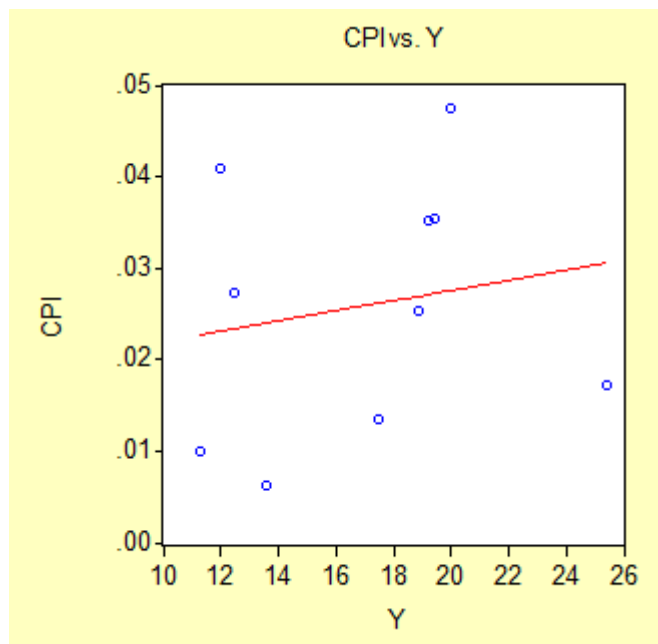


Source: Prepared by Authors (2024)

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

Figure 3

TCC stock price (Y) vs. Inflation (CPI)



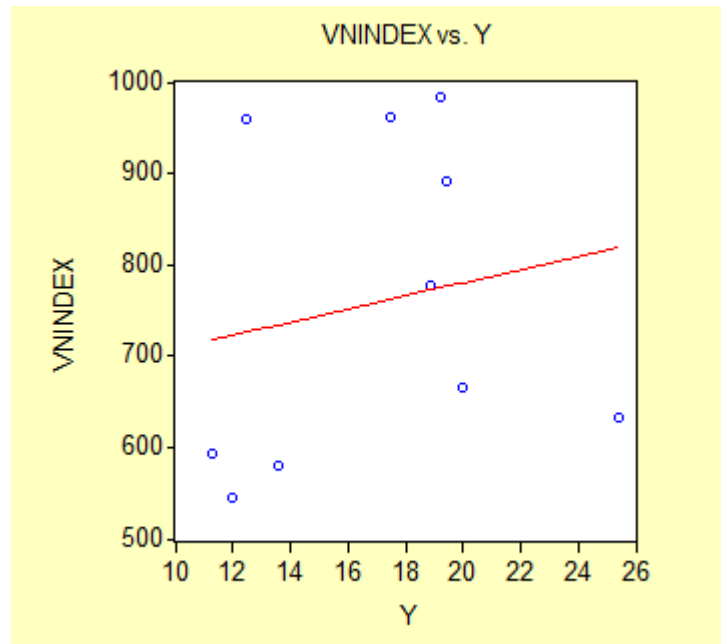
Source: Prepared by Authors (2024)



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

Figure 4

Y vs. VNIndex



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

Table 2

Statistics for macro economic factors

Unit: %

	TTC stock price	GDP growth	Inflation (CPI)	VN Index	Lending rate	Risk free rate	USD/VND rate
Mean	16.98	0.06416	0.02588	758.875	0.09856	0.050485	22611.7
Median	18.2	0.0648	0.0264	720.67	0.1	0.05435	22757.5
Maximum	25.4	0.0708	0.0474	984.24	0.1115	0.06535	23350
Minimum	11.3	0.0552	0.0063	545.63	0.0886	0.0297	21405
Standard dev.	4.513	0.005549	0.013884	176.4835	0.007636	0.014066	610.2313

Source: Prepared by Authors (2024)

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.



4.2 REGRESSION MODEL AND MAIN FINDINGS

In this section, we will find out the relationship between macro economic factors and public debt.

4.2.1 Scenario 1

Regression model with single variable: analyzing impact of GDP growth (G) on TTC stock price (Y)

Note: C: constant

Using Eview gives us the below results: if GDP growth increases, TTC stock price decreases.

Figure 5

Eview

Dependent Variable: Y
 Method: Least Squares
 Date: 02/12/20 Time: 09:32
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-226.6586	276.1721	-0.820715	0.4356
C	31.52241	17.77874	1.773040	0.1142

R-squared	0.077658	Mean dependent var	16.98000
Adjusted R-squared	-0.037635	S.D. dependent var	4.513141
S.E. of regression	4.597282	Akaike info criterion	6.065664
Sum squared resid	169.0800	Schwarz criterion	6.126181
Log likelihood	-28.32832	F-statistic	0.673573
Durbin-Watson stat	1.084374	Prob(F-statistic)	0.435580

Source: author analysis with Eview

4.2.2 Scenario 2

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

Running Eview gives us below results: CPI and stock price has positive corr while GDP growth and stock price has negative corr.



Figure 6

Eview

Dependent Variable: Y
 Method: Least Squares
 Date: 02/12/20 Time: 09:32
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-219.6928	290.9911	-0.754981	0.4749
CPI	55.08977	116.2999	0.473687	0.6501
C	29.64977	19.12192	1.550565	0.1649
R-squared	0.106305	Mean dependent var	16.98000	
Adjusted R-squared	-0.149037	S.D. dependent var	4.513141	
S.E. of regression	4.837777	Akaike info criterion	6.234113	
Sum squared resid	163.8286	Schwarz criterion	6.324888	
Log likelihood	-28.17056	F-statistic	0.416324	
Durbin-Watson stat	1.074807	Prob(F-statistic)	0.674781	

Source: author analysis with Eview

4.2.3 Scenario 5 regression model with 5 macro variables

Figure 7

Running Eviews gives us results

Dependent Variable: Y
 Method: Least Squares
 Date: 02/12/20 Time: 09:34
 Sample: 1 10
 Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-602.6697	423.7619	-1.422190	0.2280
CPI	1.269868	129.9941	0.009769	0.9927
R	-212.1047	256.9443	-0.825489	0.4555
VNINDEX	0.015959	0.015061	1.059624	0.3491
RF	57.68363	158.3010	0.364392	0.7340
C	61.49619	43.41361	1.416519	0.2296
R-squared	0.431408	Mean dependent var	16.98000	
Adjusted R-squared	-0.279333	S.D. dependent var	4.513141	
S.E. of regression	5.104706	Akaike info criterion	6.381912	
Sum squared resid	104.2321	Schwarz criterion	6.563463	
Log likelihood	-25.90956	F-statistic	0.606983	
Durbin-Watson stat	1.301755	Prob(F-statistic)	0.703994	

Source: author analysis with Eview



Here we see impacts of 5 macro factors, with the new variable: risk free rate (R_f), the above equation shows that TCC stock price (Y) has negative correlation with lending rate R and GDP growth, whereas it has positive correlation with R_f , CPI and VNINDEX. We also recognize that GDP growth and lending rate have the highest impact on firm stock price.

5 DISCUSSION AND FURTHER RESEARCHES

Through the regression equation with above macroeconomic variables, this research paper used updated data from 2014-2020 to analyze the regression equation via Eview in order to show that an increase in lending rate has a significant impact on decreasing firm stock price (Y).

Data are from observations in the past 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.

Beside, 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 stock price.

6 CONCLUSION AND POLICY SUGGESTION

Based on the above data analysis from our regression model, 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.

Generally speaking, managing TCC 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 firm stock price.

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ANNEX

Attachment 1

GDP growth rate past 10 years (2007-2018) in Vietnam

