Impacts of Internal Control and Risk Management on Real Estate and Construction Sector in Vietnam

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Abstract: Transparency and disclosure of accounting information in Vietnamese enterprises have been becoming one of hot issues in recent years, as it will affect risk and investment , for instance in a specific industry such as real estate sector in Vietnam.

The reliability and availability of these data will facilitate better internal control and risk management procedures and activities for quality control of real estate projects in such emerging markets as Vietnam.

We will mainly use statistic and qualitative analysis methods including synthesis and inductive methods to evaluate effects of internal control and risk management on real estate sector, both positive and negative sides.

The results show us that

This research finding and recommended policy also can be used as reference in policy for internal control and risk management in many developing countries.

Keywords: real estate sector; internal control; risk management; accounting data transparency; Vietnam.

JEL: M21, N1.

1. INTRODUCTION

DIC Investment & Trading Company (DIC - INTRACO) is an enterprise managed by the MINISTRY OF CONSTRUCTION, located within the DIC Group system. According to Decision No. 1981/QD - BXD dated December 9, 2004 on equitizing enterprises, DIC Investment & Trading Joint Stock Company was officially established on January 14, 2005.

More than 20 years of experience in the fields of investment, production and import-export business have built the name of the DIC - INTRACO brand for sustainable development as it is today. DIC - INTRACO is currently in the top 500 largest enterprises in Vietnam for many consecutive years and is a prestigious brand operating in both the Vietnamese market as well as international integration. When mentioning Clinker, Plaster, Iron and Steel, Round Wood, High Quality Japanese Colored Tiles, customers immediately think of a reputable and trustworthy brand DIC - INTRACO.

The process of more than 20 years of experience in the field of investment, production and import-export business has made a name of the DIC brand - INTRACO with sustainable development today. DIC - INTRACO is currently in the top 500 largest enterprises in Vietnam for many years as a prestigious brand operating in both Vietnam market

and international integration. When mentioning Clinker, Gypsum, Iron, Wood, High-class Japanese Tile, customers immediately think of a reputable and reliable brand DIC - INTRACO.

Trading company 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 six (6) internal and external macro economic factors on firm performance, esp. DIC stock price. From these analytical results, we could suggest firm, bank and government policies to encourage and stabilize the growth of trading system and stock market in developing countries such as Vietnam.

This study will calculate and figure out the impacts of 6 macro economic factors such as inflation, GDP growth, market interest rate, risk free rate, VNIndex, S&P500 and exchange rate on firm stock price (DIC).

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: DIC stock price, interest rate, exchange rate, inflation, VNIndex, S&P 500 and GDP growth?

This paper also tests two (2) below hypotheses:

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

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

2.2 Literature Review

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. Next, 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.

And 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 (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.

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.

Within the scope of this paper, we measure impacts of both internal and external macro factors on DIC 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. METHODOLOGY AND DATA

This research paper establishes correlation among macro economic factors by using an econometric model to analyze impacts of 6 macro economic factors in Vietnam such as: GDP growth, inflation, interest rate, exchange rate,… on DIC stock price.

Y (DIC stock price) = f (x1, x2, x3, x4, x5, x6) = ax1 + bx2 + cx3+dx4+ ex5 + fx6 + k

With: x1 : GDP growth rate (g), x2 : inflation, x3: VNIndex, x4: lending rate, x5: risk free rate (Rf), x6: USD/VND rate

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 negative correlation with GDP growth:

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

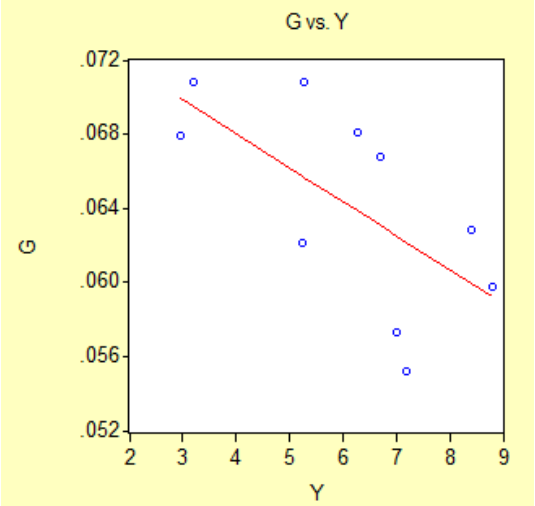
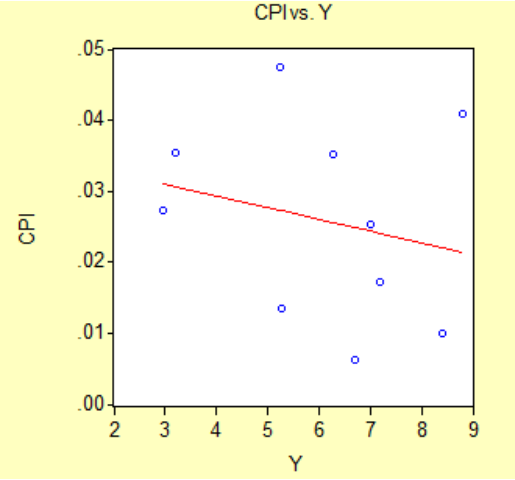


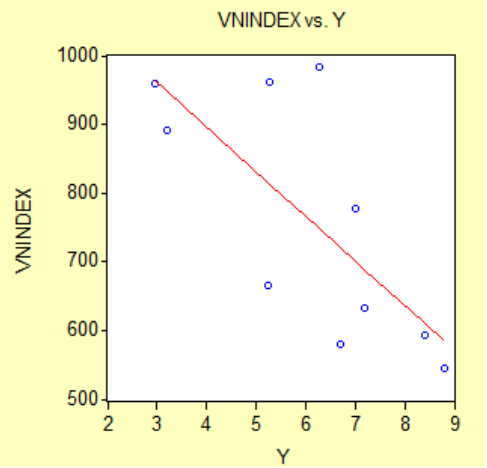
Chart 2 – DIC stock price (Y) vs. Inflation (CPI)

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



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

Chart 3 – Y vs. VNIndex



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

Table 1 – Statistics for macro economic factors

Unit: %

	DIC stock price	GDP growth	Inflation (CPI)	VN Index	Lending rate	Risk free rate	USD/VND rate
Mean	6.1	0.06416	0.02588	758.875	0.09856	0.050485	22611.7
Median	6.48	0.0648	0.0264	720.67	0.1	0.05435	22757.5
Maximum	8.8	0.0708	0.0474	984.24	0.1115	0.06535	23350
Minimum	2.95	0.0552	0.0063	545.63	0.0886	0.0297	21405
Standard dev.	1.967	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.

Hence, an increase in CPI may lead to an increase in DIC stock price.

Table 2 – Covariance matrix for 7 macro economic variables

Covariance Matrix								
	Y	G	CPI	VNINDEX	R	RF	EX_RATE	SP500
Y	3.480796	-0.006352	-0.005682	-225.9063	0.000753	0.015305	-1001.743	-374.8686
G	-0.006352	2.77E-05	-3.50E-06	0.575578	-1.49E-05	-3.33E-05	1.720538	0.934488
CPI	-0.005682	-3.50E-06	0.000173	0.322068	-2.10E-05	-2.79E-05	0.627614	0.676458
VNINDEX	-225.9063	0.575578	0.322068	28031.78	-0.534085	-1.418033	75361.46	46087.69
R	0.000753	-1.49E-05	-2.10E-05	-0.534085	5.25E-05	2.93E-05	-0.648952	-0.758612
RF	0.015305	-3.33E-05	-2.79E-05	-1.418033	2.93E-05	0.000178	-4.028085	-2.529699
EX_RATE	-1001.743	1.720538	0.627614	75361.46	-0.648952	-4.028085	335144.0	122334.5
SP500	-374.8686	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 public debt.

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

Note: C: constant

Using Eview gives us the below results:

Dependent Variable: Y
Method: Least Squares
Date: 02/16/20 Time: 12:15
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-229.2251	95.57012	-2.398502	0.0433
C	20.80908	6.152382	3.382281	0.0096

R-squared	0.418301	Mean dependent var	6.102000
Adjusted R-squared	0.345588	S.D. dependent var	1.966609
S.E. of regression	1.590902	Akaike info criterion	3.943336
Sum squared resid	20.24776	Schwarz criterion	4.003853
Log likelihood	-17.71668	F-statistic	5.752812
Durbin-Watson stat	0.704925	Prob(F-statistic)	0.043278

Hence, Y = -229 * g + 20.8, R^2 = 0.41, SER = 1.5

(95.5) (6.1)

Within the range of 10 observations (2014-2019) as described in the above scatter chart 1, coefficient -229, when GDP growth increases too much, DIC stock price will decrease.

4.2.2 Scenario 2 – 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: 02/16/20 Time: 12:15
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-281.0630	103.7863	-2.708094	0.0352
CPI	-48.73921	39.14950	-1.244951	0.2596
R	-84.98119	77.22739	-1.100402	0.3133
C	33.77212	12.30613	2.744333	0.0335

R-squared	0.574084	Mean dependent var	6.102000
Adjusted R-squared	0.361126	S.D. dependent var	1.966609
S.E. of regression	1.571903	Akaike info criterion	4.031625
Sum squared resid	14.82527	Schwarz criterion	4.152659
Log likelihood	-16.15813	F-statistic	2.695760
Durbin-Watson stat	1.044656	Prob(F-statistic)	0.139184

Hence, Y = -281 * G - 48.7 * CPI -84.9*R + 33.7, R^2 = 0.57, SER = 1.57

(103.7) (39.1) (77.2)

The above regression equation shows us that DIC 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 together with GDP growth increases will increase costs and lead to a decrease in DIC stock price.

4.2.3. Scenario 4 - regression model with 6 macro variables:

Running Eviews gives us results:

Dependent Variable: Y
Method: Least Squares
Date: 02/16/20 Time: 12:17
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
G	-109.2281	44.03159	-2.480676	0.0892
CPI	-31.77516	13.29607	-2.389816	0.0968
R	-60.26534	28.13484	-2.142018	0.1216
VNINDEX	0.001360	0.002012	0.675803	0.5476
RF	24.90342	16.19452	1.537768	0.2217
EX_RATE	-0.002492	0.000490	-5.087636	0.0147
C	73.92844	9.680965	7.636475	0.0047

R-squared	0.976556	Mean dependent var	6.102000
Adjusted R-squared	0.929668	S.D. dependent var	1.966609
S.E. of regression	0.521547	Akaike info criterion	1.731993
Sum squared resid	0.816034	Schwarz criterion	1.943803
Log likelihood	-1.659966	F-statistic	20.82751
Durbin-Watson stat	2.692928	Prob(F-statistic)	0.015266

Y = -109.2*G – 31.7*CPI - 60.2*R + 0.001* VNINDEX + 24.9* Rf - 0.002*EX_RATE +73.9,

$R^2 = 0.97$, SER = 0.52

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

5. DISCUSSION AND FURTHER RESEARCHES

Through the regression equation with above 6 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 has a significant impact on decreasing DIC stock price (Y) with the highest coefficient of impact, followed by an increase in lending rate and decrease in risk free rate, then an increase in VNINDEX, an increase in inflation and decrease in VNINDEX, as well as a little increase 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.

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

Enhancing transparency of accounting information to reduce risk:

The lack of transparency in financial information was one of the main causes of the financial crisis in late 2008. The serious impact of crisis created the demand for transparency of accounting information in many companies in many sectors. If crisis happened again, stock market will be affected significantly, hence, we need to propose solutions to enhance transparency in big firms such as DIC-INTRACO, etc.

6. CONCLUSION AND POLICY SUGGESTION

Based on the above data analysis from our regression model, although low inflation during 2015-2016 is a good signal for DIC 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 reducing lending rate too much, together with credit, operational and market risk management, corporate governance and controlling bad debt.

Next, Lending policy of bank system need to be selective and increase interest rates for acceptable high risk high return projects.

Generally speaking, managing DIC 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 trading firm stock price.

Improving disclosure of accounting information to reduce business risk and get better performance:

Financial accounting provides economic and financial information mainly for people outside the enterprise, so it needs a high legal value and a certain pattern according to the provisions of the law (presentation method, form of expression, time). Meanwhile, management accounting mainly provides information for business owners in making business decisions, which are not mandatory, so they have the form of expression and immediate reporting upon request.

In addition, Risk management in construction is a necessary activity for any construction company, including investors and contractors. An effective construction risk management plan must clearly define the tasks - roles - processes and responsibilities of individuals involved in the project. The risk management plan also needs to be easy to implement for effective risk control, helping business managers develop quick responses to the situation and come up with appropriate handling policies, promoting performance. out according to plan.

Risk is the possibility of an adverse event occurring that could negatively affect the goals, projects, or activities of an organization or individual. Risks can stem from many different factors, including:

Internal factors: For example, process errors, resource shortages, or poor management.

External factors: For example, natural disasters, epidemics, economic fluctuations, or policy changes.

Risks can be classified in many different ways:

By origin: Internal risks (due to factors inside the business) and external risks (due to factors outside the business).

According to the level of impact: Low risk, medium risk and high risk.

By field: Financial risk, market risk, operational risk, strategic risk, etc.

What is risk management?

Risk Management is the process of identifying, evaluating and controlling financial, legal, strategic and security issues, ensuring the safety of a business's capital and profits. These risks can come from many sides, such as market fluctuations, litigation, mistakes in strategy, accidents or natural disasters (according to IBM).

Effective risk management means trying to control as much as possible of future outcomes by acting proactively rather than reactively..

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Exhibit

Exhibit 1 – Inflation, CPI over past 10 years (2007-2017) in Vietnam

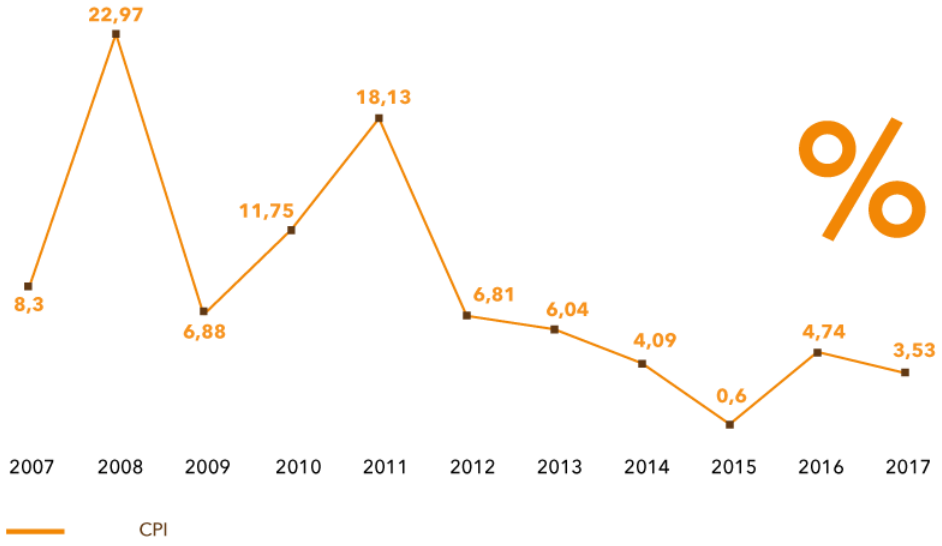
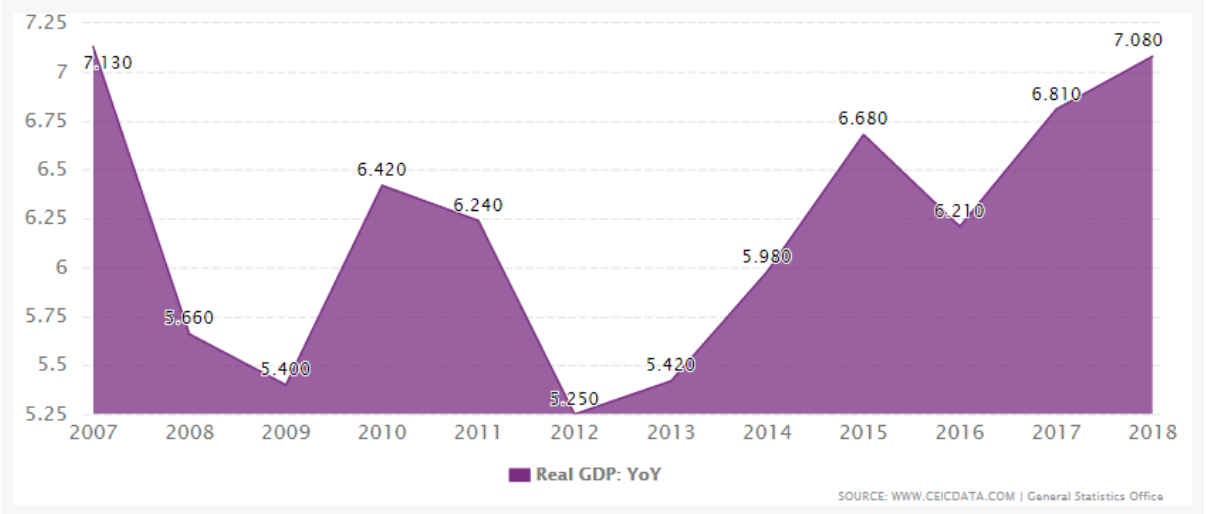


Exhibit 2 – GDP growth rate past 10 years (2007-2018) in Vietnam



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