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Better Risk Management of Banks and Sustainability - A Case Study in Vietnam

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Abstract
Modern advanced bank risk management is a current and hot issue for all Vietnam banks, during the context of industry 4.0.
Because of rapid economic growth under impacts of China-US commerce war and effects from Covid 19, as welll as industry 4.0, enhancing roles of banks in Vietnam economic development is becoming necessary.
This paper also refers to new perspectives on corporate governance issues that can be applied into bank management.
This study mainly use combination of quantitative methods and qualitative methods including synthesis, inductive and explanatory methods for a special case of big listed bank in Vietnam, Eximbank.
The results show us that better management of bank need to forecast effects from GDP growth, Industrial manufacturing (IM) and Risk free rate (Rf) on both beta and stock price of Eximbank (EIB), in this case we found out there is positive relationship.
Then, we can suggest suitable plans for risk management to enhance the bank roles and sustainable management strategies.

Key-words: Sustainable Bank Management, Bank Roles, Economic Development, Stock Price, Beta CAPM, Macro Factors, Vietnam.

JEL: M21, G30, G32, G38.

1. Introduction

In this paper we mainly focus on evaluating market risk in the big listed bank, Eximbank (EIB) and macro factors effects on Beta CAPM of EIB.

Eximbank is one of good banks in Vietnam with good board of management and processes in past years.

The point here is we also conduct evaluation of macro effects on EIB stock price in the same period and then we can make comparison.

The period is pre-Low (L) inflation time 2011-2015.

The study organized with introduction, literature review, methodology, main results, discussion and conclusion.

Maheu et al (2007) mentioned a model in which they use market risk and dynamic of retuns in order to give prediction on market equity premium (time vary).

Kassi et al (2019) specified that between financial results and variables such as size, dept to asset, cash holding ratios, there is positive relationship. And then, policy maker can reduce market risk by using a combination of techniques such as derivatives and insurance.

From the below charts we can see that:

Stock price and beta CAPM have positive correlation with trade balance and negative relationship with exchange rate, while they both have positive correlation with internal factors such as Rf and IM (industrial manufacturing).

Chart 1 - Scatter Chart between Stock Price and External Factors

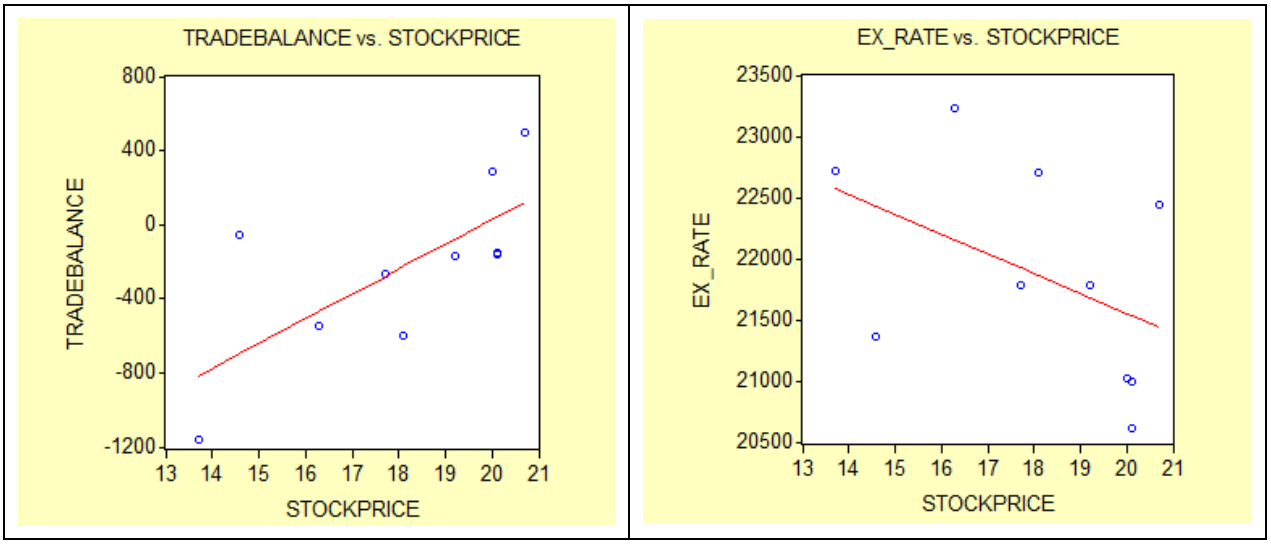

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Chart 2 - Scatter Chart between Stock Price and Internal Factors

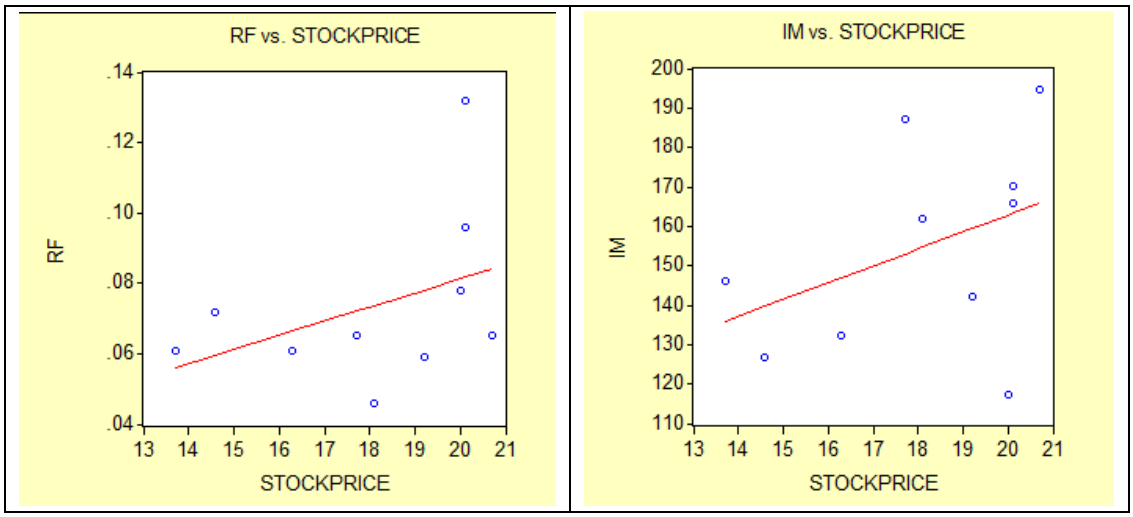


Chart 3 - Scatter Chart between Market Risk and External Factors

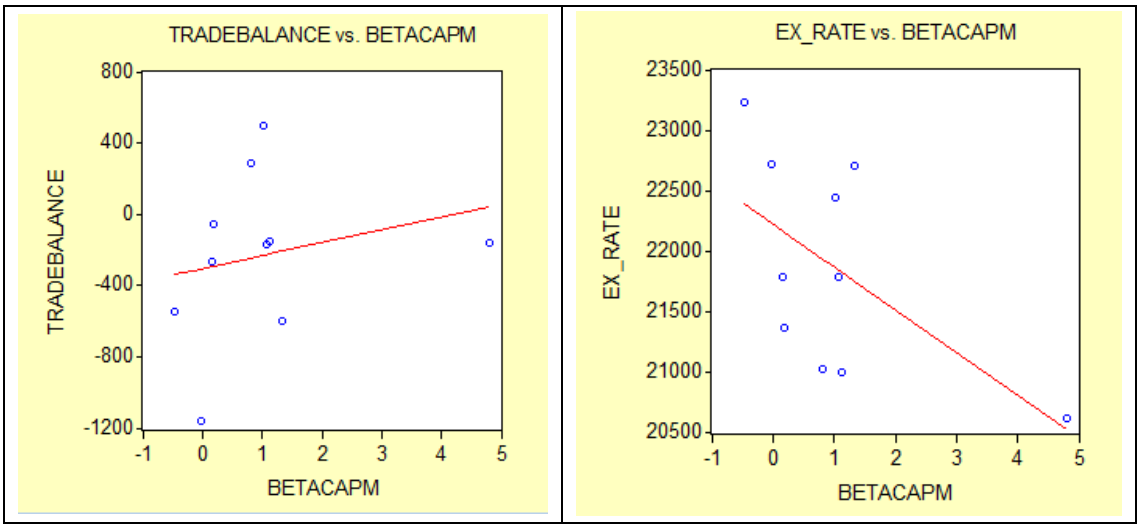
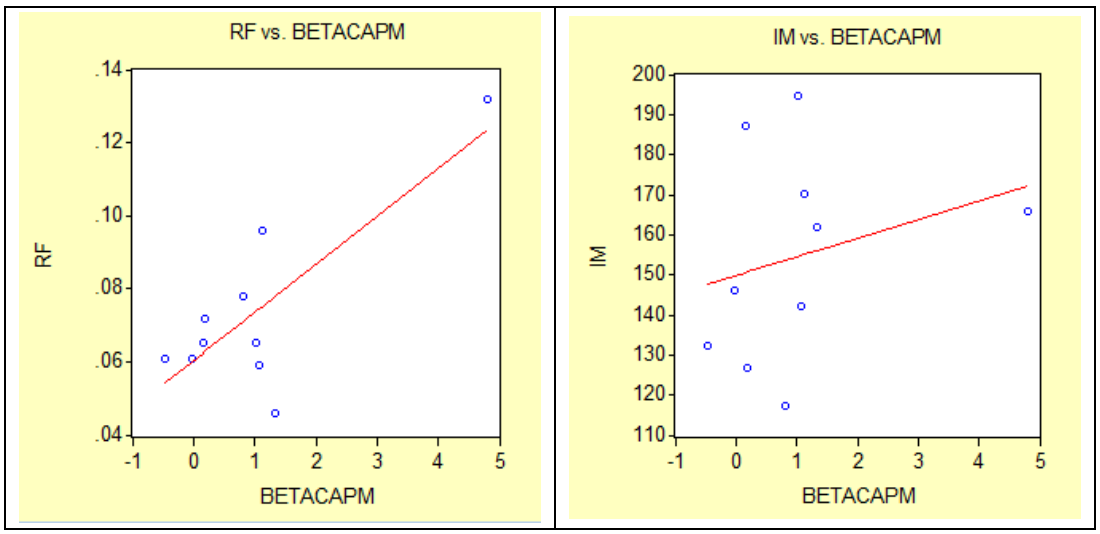


Chart 4 - Scatter Chart between Stock Price and Internal Factors



2. Literature Review

We summarize previous studies in the below table:

Table 1- Summary of Relating Studies

Authors	Year	Results, contents
Sadia and Noreen	2012	Banking index much affected by exchange rate and interest rate (short term)
Winhua and Meiling	2014	Bank income much affected by macro effects
Krishna	2015	Between stock price and macro factors there are causal relation.
Kulathunga	2015	In Sri Lanka, stock market curtailed bu increasing deposit rates
Ahmad and Ramzan	2016	Investors might consider macro effects in portfolio of stock investment

3. Main Results

3.1. Overall Results

From below figures: when Rf and R increase, stock price will increase, the same phenomenon happen for beta but negative correlation with R.

Figure 1 – Relation between Stock Price of EIB and Macro Indicators

STOCKPRI...	CPI	EX_RATE	G	IM	R	RF	SP500	TRADEBA...	VNINDEX
20.10000	0.162500	20618.00	0.055700	165.9000	0.110000	0.132000	1292.280	-160.0000	432.5000
17.70000	0.181300	21780.00	0.062800	187.2000	0.180000	0.065350	1312.410	-269.0000	351.5500
20.10000	0.069000	21000.00	0.043800	170.2000	0.150000	0.096000	1379.320	-150.0000	422.3700
20.70000	0.068100	22440.00	0.066800	194.8000	0.190000	0.065200	1426.190	498.0000	413.7300
20.00000	0.067300	21020.00	0.049000	117.4000	0.120000	0.077800	1685.730	286.0000	481.1300
16.30000	0.060400	23230.00	0.055200	132.5000	0.130000	0.061000	1782.590	-548.0000	504.6300
14.60000	0.013800	21360.00	0.051800	126.9000	0.130000	0.071800	1930.670	-52.00000	578.1300
13.70000	0.040900	22720.00	0.062100	146.0000	0.100000	0.060900	2058.900	-1162.000	545.6300
19.20000	0.013100	21780.00	0.062800	142.0000	0.110000	0.059000	2103.840	-165.0000	593.0500
18.10000	0.006300	22700.00	0.057300	161.9000	0.105000	0.046000	2043.940	-600.0000	579.0300

We can see: stock price has negative correlation with trade balance and positive correlation with VNIndex and SP500, but Beta CPAM has opposite relation.

Figure 2 – Relation between Beta CAPM of EIB and Macro Indicators

Correlation Matrix

	BETACAPM	CPI	EX_RATE	G	IM	R	RF	SP500	TRADEBA...	VNINDEX
BETACAPM	1.000000	0.406771	-0.588987	-0.080182	0.265854	-0.223352	0.788492	-0.415849	0.227076	-0.201024
CPI	0.406771	1.000000	-0.382440	0.090566	0.500206	0.428665	0.580486	-0.844053	0.156409	-0.861426
EX_RATE	-0.588987	-0.382440	1.000000	0.519076	0.038528	0.006143	-0.772931	0.476195	-0.491811	0.295409
G	-0.080182	0.090566	0.519076	1.000000	0.440105	0.223263	-0.421402	0.136776	-0.107369	-0.016434
IM	0.265854	0.500206	0.038528	0.440105	1.000000	0.663798	0.117679	-0.613771	0.161388	-0.664368
R	-0.223352	0.428665	0.006143	0.223263	0.663798	1.000000	-0.045403	-0.664122	0.553061	-0.746263
RF	0.788492	0.580486	-0.772931	-0.421402	0.117679	-0.045403	1.000000	-0.652624	0.264192	-0.444136
SP500	-0.415849	-0.844053	0.476195	0.136776	-0.613771	-0.664122	-0.652624	1.000000	-0.485719	0.950618
TRADEBA...	0.227076	0.156409	-0.491811	-0.107369	0.161388	0.553061	0.264192	-0.485719	1.000000	-0.375438
VNINDEX	-0.201024	-0.861426	0.295409	-0.016434	-0.664368	-0.746263	-0.444136	0.950618	-0.375438	1.000000

Chart 2 – Comparison of Market Risk and Stock Price of Exim Bank during 2011-2015

The above chart show us that stock price and beta have same trend, though beta CAPM has smaller fluctuation.

Esp. During time 2013-2015, beta has smooth movement while stock price goes down and up.

3.2. OLS Regression Results

Run OLS regression with Eviews gives below results:

Figure 3- Regression Results for Internal Effects on EIB Stock Price during Pre-L Inflation Time

Dependent Variable: STOCKPRICE
Method: Least Squares
Date: 03/06/21 Time: 12:53
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	-40.95387	58.43008	-0.700904	0.5338
G	58.77124	259.7981	0.226219	0.8356
IM	0.014136	0.075748	0.186612	0.8639
R	-20.31641	82.30199	-0.246852	0.8210
RF	49.55764	74.61078	0.664216	0.5540
VNINDEX	-0.035634	0.058507	-0.609059	0.5855
C	31.84442	40.21540	0.791847	0.4863

R-squared	0.425295	Mean dependent var	18.05000
Adjusted R-squared	-0.724116	S.D. dependent var	2.462271
S.E. of regression	3.233099	Akaike info criterion	5.380787
Sum squared resid	31.35880	Schwarz criterion	5.592596
Log likelihood	-19.90393	F-statistic	0.370011
Durbin-Watson stat	1.878091	Prob(F-statistic)	0.861376

Figure 4- External Effects on EIB Stock Price during Pre-L Inflation Time

Dependent Variable: STOCKPRICE
Method: Least Squares
Date: 03/06/21 Time: 12:56
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX_RATE	-0.000153	0.000909	-0.168169	0.8720
SP500	-0.002091	0.002424	-0.862709	0.4214
TRADEBALANCE	0.002890	0.001721	1.679313	0.1441
C	25.62190	18.84527	1.359593	0.2228

R-squared	0.570203	Mean dependent var	18.05000
Adjusted R-squared	0.355304	S.D. dependent var	2.462271
S.E. of regression	1.977030	Akaike info criterion	4.490243
Sum squared resid	23.45189	Schwarz criterion	4.611277
Log likelihood	-18.45121	F-statistic	2.653357
Durbin-Watson stat	1.422951	Prob(F-statistic)	0.142710

We can infer from the below figure 5 that Rf and GDP growth has more impacts on market risk of EIB, while above figure 3 shows us that Rf and GDP growth also has more impacts on stock price, and positive correlation.

Figure 5 – Internal Impacts on EIB Beta CAPM

Dependent Variable: BETACAPM
Method: Least Squares
Date: 03/06/21 Time: 13:10
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CPI	1.340727	17.29072	0.077540	0.9431
G	29.42120	76.87985	0.382691	0.7275
IM	0.029002	0.022415	1.293852	0.2863
R	-14.52357	24.35493	-0.596330	0.5930
RF	53.71000	22.07893	2.432635	0.0931
VNINDEX	0.006224	0.017314	0.359459	0.7431
C	-10.31015	11.90060	-0.866356	0.4500

R-squared	0.856020	Mean dependent var	1.004900
Adjusted R-squared	0.568059	S.D. dependent var	1.455739
S.E. of regression	0.956744	Akaike info criterion	2.945464
Sum squared resid	2.746075	Schwarz criterion	3.157274
Log likelihood	-7.727322	F-statistic	2.972699
Durbin-Watson stat	1.603371	Prob(F-statistic)	0.199846

Figure 7 – External Impacts on EIB Beta CAPM

Dependent Variable: BETACAPM
Method: Least Squares
Date: 03/06/21 Time: 13:08
Sample: 1 10
Included observations: 10

Variable	Coefficient	Std. Error	t-Statistic	Prob.
EX_RATE	-0.000928	0.000642	-1.446638	0.1981
SP500	-0.001007	0.001711	-0.588382	0.5777
TRADEBALANCE	-0.000493	0.001215	-0.405790	0.6990
C	22.90116	13.30148	1.721700	0.1359

R-squared	0.387419	Mean dependent var	1.004900
Adjusted R-squared	0.081128	S.D. dependent var	1.455739
S.E. of regression	1.395439	Akaike info criterion	3.793470
Sum squared resid	11.68350	Schwarz criterion	3.914504
Log likelihood	-14.96735	F-statistic	1.264874
Durbin-Watson stat	1.706526	Prob(F-statistic)	0.367613

We can infer from the above figure 7 that SP500 has little more negative impacts on beta CAPM. While trade balance has little more impacts on stock price of EIB (see figure 5).

4. Discussion

During pre – L Inflation

In case of Eximbank (EIB) we find out: CPI and lending rate has negative relationship with stock price, and the same for beta CAPM, (but beta has positive relationship with CPI). While for external factors, Exchange rate and trade balance has little positive impacts on stock price, whereas between beta and these 2 factors there is negative relationship.

5. Conclusion

Because above analysis between exchange rate and trade balance on stock price/beta CAPM, we can note that increase in exchange rate and trade balance can help to increase stock price of the bank and reduce market risk or beta.

It gives us notes for macro policies in exchange rate and trading.

Beside, for better management and corporate governance at banks, we refer to below table:

Table 2 - Corporate Governance Standards

The America Limited Comparative Corporate Governance Standards

Subjects or parties	Main quality factors	Sub quality factors
Audit committee	Formed by independent members of Board; At least one with auditing knowledge;	Overseeing financial report processes and audits;
Nominating committee	Formed by independent members of Board;	Own Internal Rules;
Numeration or Compensation Committee	Formed by independent members of Board;	Own Internal Rules; Use experts to compare co.'s compensation with others;
CEO and The Chair	CEO ensure stakeholders with information of their interests; Chair may served as BD member; assessment of BD's performance; Propose annual calendar of meeting;	CEO connects b.t BD and the co.;
CFO	Each periodic report containing financial statements accompanied by a written statement by the CFO	N/A (for further research and implementation)
Corporate Secretary	Assist Chairman in BD's agenda; Record files and publish minute of meeting;	Not a director;
Compliance officer	N/A (for further research and implementation)	N/A (for further research and implementation)
Board of Directors or Management Board	MGT with respect to business, risks and people;	Ensure co.'s sustainability;
Independent director	Not a controlling shareholder; Not a partner of an audit firm at least 3 yrs; Can attend BD's meeting;	N/A (for further research and implementation)
Supervisory board to the Management	CEO and BD;	N/A (for further research and implementation)
Supervisory to the Board of Directors	Independent members; BD' Committees advise on Business and Development Plan;	N/A (for further research and implementation)
Internal control	Policies and limits of authority by Board; Developed by MGT;	Compliance with operating and financial processes;
Internal audit	proactively act on improved controls, standards;	Examined by AC;
External audit	Selected and evaluated by Board; review and assess MGT and IA practices; Assessed by BD and AC;	May report directly to shareholders
Disclosure and transparency	Have a disclosure policy which is Complete, Objective and timely.	Manual for Handling Information of the Co. reviewed by AC; Non-audit service disclosed to investors in periodic reports
Shareholders	BD and Chairman connect b.t shareholders and the co.; Understand business and deals with social and environmental principles;	Ensure co.'s sustainability;
Stakeholders	Set formal reporting channel to gather opinions, complaints from stakeholders;	Board ensure a balance b.t shareholders and other stakeholders; Each situation resolved at the pertinent level;
Accountability	Formal reporting channel to gather opinions, complaints from stakeholders	N/A (for further research and implementation)
Leadership	Strategic guidelines by Board Chairman and CEO;	Performed by Chairman;
Employee	Former employee can be external or internal directors;	N/A (for further research and implementation)
The corporation as a whole entity	Recognize international standards such as accounting practice and guidelines of economic, social, financial, environmental and CG;	Establish Code of Conduct, Ethics with subjects, but not limited to, of social, environmental, conflicts of interest, insider information, related parties, work safety and use of co.'s assets.
The Code	Increase values for shareholders and other stakeholders	Create a stronger, more transparent and accountable institutional environment

(Source: Dinh Tran Ngoc Huy, Article "The Summarized Evaluation of The US and Latin America Corporate Governance Standards After Financial Crisis, Corporate Scandals and Manipulation" published in Economia Seria Management, Vol 15(2), 2012)

Hence, we can see Board and Audit committee will has suitable functions to support for management of banks.

Limitation of Research

We can expand our research model for other industries and other markets.

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