
Measuring Beta Capm In 2 Economic Stages Of Commercial Banks In Vietnam Economy – Case Of Vietcombank And Vietinbank

NGUYEN DINH TRUNG^{1*}, DINH TRAN NGOC HUY^{2*}, NGUYEN THU THUY³,
LE NGOC NUONG⁴, LE DINH HAC^{5*}

¹PhD, National Economics University (NEU), Vietnam

²MBA, PhD candidate, Banking University HCMC, Ho Chi Minh city Vietnam – International University of Japan, Japan

³PhD, Thai Nguyen University of Economics and Business Administration (TUEBA), Vietnam

⁴PhD, Thai Nguyen University of Economics and Business Administration (TUEBA), Vietnam

⁵PhD Banking University HCMC, Ho Chi Minh city Vietnam

*corresponding author

Email: trungnd@neu.edu.vn¹, dtnhuy2010@gmail.com², thuthuytn1211@gmail.com³, ngocnuong85@gmail.com⁴, haclld@buh.edu.vn⁵

Abstract: Vietcombank (VCB) and Vietinbank (CTG) are two big listed commercial banks in Vietnam banking industry. They are previous state-owned enterprises with big market share in local market.

This paper will use statistic, combined with synthesis, inductive and qualitative analysis to measure and evaluate beta CAPM of these 2 banks in 2 special stages of domestic economy: pre-L and post-low (L) inflation time.

Research results show that during 2011-2020 period, most of time, beta CAPM of VCB is higher than those of CTG bank. Statistic chart give us warning that market risk of 2 banks is higher than 1.

Then these analysis can be used for policy implications. Business and banking is still growing so risk management is becoming meaningful for the financial industry.

Keywords: beta CAPM, risk, Vietcombank, Vietinbank, Vietnam, banking sustainability

JEL: M21, G30

INTRODUCTION

Both Vietcombank (VCB) and Vietinbank (CTG) has recognized the need of enhancing risk management activities in their bank operation.

Over years, these banks has used indicators to measure the effectiveness of the model fully meet international standards and practices. In the context of data quality assurance and management for quantitative analysis activities facing many challenges at Vietcombank in particular and in the banking system in general, this is a remarkable result for with models with complex data structures such as LGD and EAD.

We organize this study with market risk Beta CAPM model follows: introduction, literature review, methodology, main findings, discussion and conclusion.

LITERATURE REVIEW

Gunarathna (2016) revealed that whereas firm size negatively impacts on the financial risk, financial leverage and financial risk has positive relationship.

Then, Hami (2017) showed that financial depth has been affected negatively by inflation in Iran during the observation period.

Beside, Kantos and Batolomeo (2020) demonstrate how including the potential for such large events changes traditional views of equity returns and the known factors that contribute to those returns. On the basis of empirical examination of a dataset stretching over 30 years without survivorship bias, we conclude that when the probabilities of rare extreme events are considered, strategies that focus on “alpha” (risk adjusted return) as defined in Jensen (J Finance 23(2):389–416, 1967) are structurally superior to “smart beta” strategies that seek to outperform a market index benchmark.

Next, Chinh and Phuoc (2020) show 1) daily data is more reliable and efficient, has higher forecasting power, and fits better with the assumption of market efficiency compared with monthly data. 2) Medium-horizon data is more reliable and efficient, has more explanatory power, and fits better with the assumption of market efficiency compared with monthly data. Therefore, these findings challenge the common

practices of using monthly (quarterly/annually) and short-horizon data among the practitioners and researchers in asset pricing work.

Last but not least, Suarez et al (2020) proposed a time-varying beta CAPM in order to control for the variable nature of beta risk to changes in the market liquidity, using the variation of the Amihud illiquidity measure to account for the degree of trading activity. Their results show that the pricing errors of the CAPM have significantly decreased with respect to those of previous literature. Furthermore, the time-varying beta model performs similarly to the Fama–French models in most cases. These results are consistent with increased trading activity that reduces arbitrage opportunities and, therefore, enhances market efficiency.

METHOD AND DATA

Data stock price from Vietnam stock exchange (HOSE) with weekly data stock price.

We use both qualitative analysis: synthesis, inductive and explanatory methods.

And quantitative method with statistic tables.

MAIN RESULTS

Overall results

During specific time: Dec 2012, June 2017 market risk of Vietinbank CTG is higher than 1. During June 2012-2014, Dec 2016, 2018 market risk of VCB is higher than 1. There is risk warning at these points of time.

Statistic results

We can see:

From the below chart 1, beta Vietinbank is varying with highest point of 2.53 as in June 2017, 2 years after low-inflation year of 2015.

From below chart 2, we find out beta Vietcombank has reached top level of 2.09 as in Dec 2016, 1 year after low inflation time of 2015.

Looking at tables 1 and 2, we see that during post -L inflation period 2015-2020, market risk tends to increase higher in both banks.

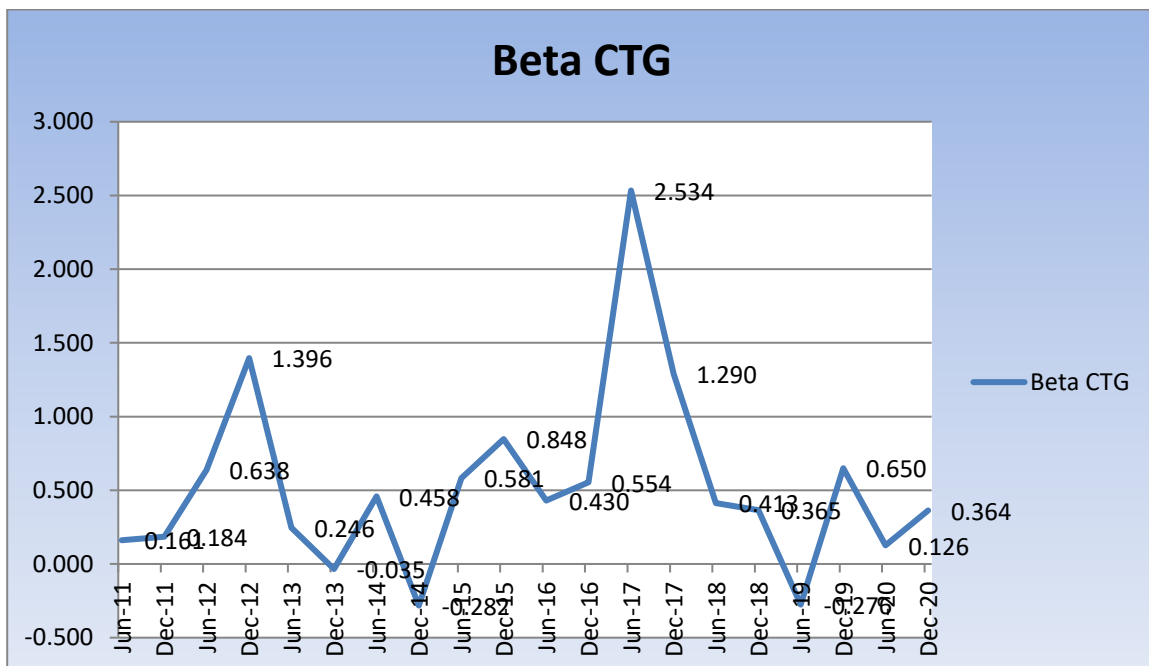


Chart 1 - Market risk CTG 2011-2020

Table 1- Beta CAPM Vietinbank in 2 economic stages

Post-L inflation	Beta CTG	Pre-L inflation	Beta CTG
Thg6-15	0.5814	Thg6-11	0.16143
Thg12-15	0.8481	Thg12-11	0.18443
Thg6-16	0.4297	Thg6-12	0.63829

Thg12-16	0.5537	Thg12-12	1.39601
Thg6-17	2.5337	Thg6-13	0.24572
Thg12-17	1.2903	Thg12-13	-0.03492
Thg6-18	0.4133	Thg6-14	0.45804
Thg12-18	0.3652	Thg12-14	-0.28201
Thg6-19	-0.2758	Thg6-15	0.58137
Thg12-19	0.6502	Thg12-15	0.84813
Thg6-20	0.1264		
Thg12-20	0.3639		

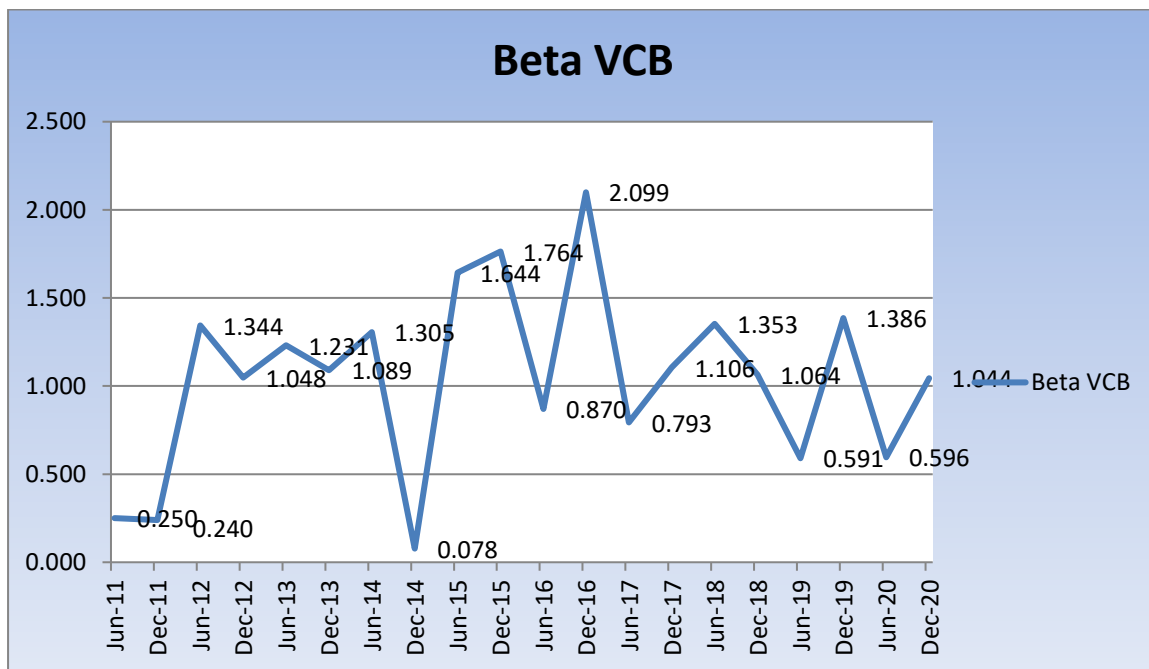


Chart 2 - Market risk VCB 2011-2020

Table 2 - Beta CAPM Vietcombank in 2 economic stages

Post inflation	Beta VCB	Pre-L inflation	Beta VCB
Thg6-15	1.6444	Thg6-11	0.25014
Thg12-15	1.7640	Thg12-11	0.23955
Thg6-16	0.8700	Thg6-12	1.34375
Thg12-16	2.0994	Thg12-12	1.04756
Thg6-17	0.7932	Thg6-13	1.23060
Thg12-17	1.1059	Thg12-13	1.08949
Thg6-18	1.3529	Thg6-14	1.30519
Thg12-18	1.0637	Thg12-14	0.07753
Thg6-19	0.5906	Thg6-15	1.64435
Thg12-19	1.3864	Thg12-15	1.76402
Thg6-20	0.5957		
Thg12-20	1.0441		

Combination chart results

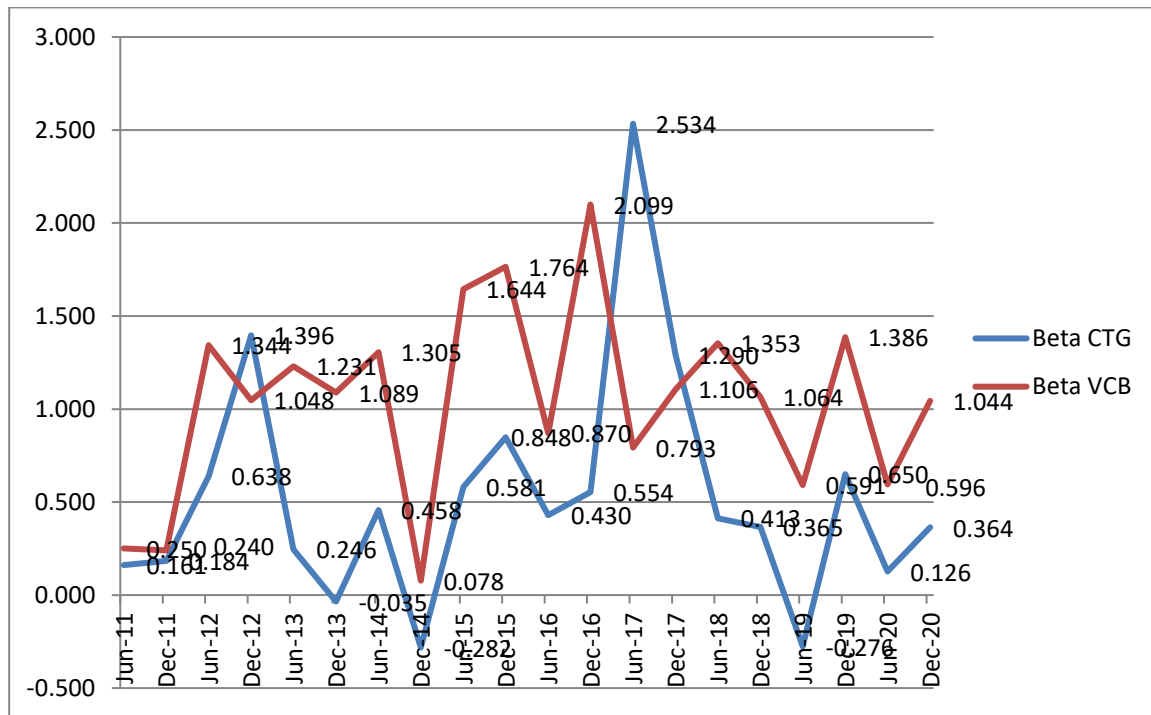


Chart 3 – Both VCB and CTG market risk 2011-2020

DISCUSSION

We can see from above chart 3 that most of time, beta CAPM of VCB is higher than those of CTG bank. Only in June 2017 market risk of this CTG bank higher than that of VCB bank.

CONCLUSION

We need to build and enhance risk model and risk evaluation methods at commercial banks, esp. Vietcombank and Vietinbank as our study showed that there is certain points of time market risk of 2 banks higher than 1 and there is risk warning.

During pre-L inflation time: market risk of Vietinbank lower than 1.

During post - L inflation stage: market risk of Vietcombank tends to increase higher than 1. Business also growing.

Therefore, State bank of Vietnam (SBV) need to pay attention to risk reports during these time points.

ACKNOWLEDGEMENT

Authors want to send special thanks to editors, friends, brothers and co-workers to support this publication.

REFERENCES

1. Chinh, P.D., & Phuoc, L.T. (2020). Is estimating the Capital Asset Pricing Model using monthly and short-horizon data a good choice?, *Heliyon*, 6(7). Doi: 10.1016/j.heliyon.2020.e04339
2. Eugene FF, French KR. (2004). The Capital Asset Pricing Model: Theory and Evidence, *Journal of Economic Perspectives*.
3. Gunarathna, V. (2016). How does Financial Leverage Affect Financial Risk? An Empirical Study in Sri Lanka, *Amity Journal of Finance*, 1(1), 57-66.
4. Gunarathna V. (2013). The Degree of Financial Leverage as a Determinant of Financial Risk: An Empirical Study of Colombo Stock Exchange in Sri Lanka, *2nd International Conference on Management and Economics Paper*.
5. 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
6. 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\(10\)](https://doi.org/10.9770/jesi.2020.7.4(10))

7. 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\(7\)](https://doi.org/10.9770/jssi.2020.9.M(7))
8. 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
9. Kantos, C., & Bartolomeo, D.D. (2020). How the pandemic taught us to turn smart beta into real alpha, *Journal of Asset Management* , **21**: 581–590
10. Khwaja, Asim Ijaz., and Mian, Atif. (2005). Unchecked intermediaries: Price manipulation in an emerging stock market, *Journal of Financial Economics* 78, 243 – 241
11. Krishna, R.C. (2015). 'Macroeconomic Variables impact on Stock Prices in a BRIC Stock Markets: An Empirical Analysis', *Journal of Stock & Forex Trading*, vol.4, no.2. <https://doi.org/10.4172/2168-9458.1000153>
12. Kulathunga, K. (2015). Macroeconomic Factors and Stock Market Development: With Special Reference to Colombo Stock Exchange, *International Journal of Scientific and Research Publications*, vol.5, no.8, pp. 1-7.
13. Kumaresan, R. (2019). 'The Effects of Macroeconomics Factors towards the Starbucks Corporation', MPRA Paper No. 97243. Retrieved from: https://mpra.ub.uni-muenchen.de/97243/1/MPRA_paper_97243.pdf
14. Suarez, J.R., Conde, A.B.A., & Pozo, R.F. (2020). Liquidity, time-varying betas and anomalies: Is the high trading activity enhancing the validity of the CAPM in the UK equity market?, *Journal of Finance & Economics*, 2. <https://doi.org/10.1002/ijfe.2136>