Enhancing Roles of Banks and the Comparison of Market Risk and Risk Policy Implications in Group of Listed Vietnam Banks During 2 Stages: Pre and Post-Low Inflation Period

Phung Tran My Hanh¹; Nguyen Thi Hang²; Dinh Tran Ngoc Huy³; Le Ngoc Nuong⁴*
¹Thai Nguyen University of Economics and Business Administration (TUEBA), Vietnam.
²phungtranmyhanh.tueba@tueba.edu.vn
³Thai Nguyen University of Information and Communication Technology, Vietnam.
²nthang@ictu.edu.vn
³Banking University HCMC, Ho Chi Minh City, Vietnam.
³dtnhuy2010@gmail.com
⁴*Thai Nguyen University of Economics and Business Administration (TUEBA), Vietnam.
⁴*Ngocnuong85@gmail.com

Abstract
By classifying period 2011-2020 into 2 stages: pre-low (L) inflation stage (2011-2015) and post-low inflation stage (2015-2020), we can compare market risk in total 7 listed big banks in Vietnam including: Previous SOEs banks (including VCB and CTG) and Previous Private banks (including STB, SHB, NVB, EIB and ACB).
Authors then use combination of quantitative methods (statistics, calculation formulas) and qualitative methods including synthesis, inductive and explanatory methods, esp. Authors use comparison methods for analyzing and evaluating beta CAPM (Stand for market risk) of banks in 2 special stages.
The research findings tell us that In groups of banks (SOEs previously) VCB and CTG we find out: beta mean GAP of CTG higher than beta mean GAP of VCB case (0.24 > 0.19), and GAP of beta mean is positive in this case for both periods. In groups of joint stock banks (private banks) SHB, STB, NVB, ACB and EIB we figure out: beta mean GAP of STB is the highest (0.68) while only 1 case SHB, in which beta mean GAP is negative (-0.26).
Besides, this study also give out recommendations for risk policy implications for bank system and for the country.

Key-words: Risk Policies, Vietnam Banks, Beta CAPM, Comparison, Inflation, Economic Development, Vietnam.

JEL: M21, G30, G32, G38.
1. Introduction

First, we emphasize again roles of commercial banks in our economy: Improving economic efficiency, shortening the speed of goods and currency circulation, contributing to the continuous uninterrupted production of business, providing investment capital and credit circulation tools in the import and export tariff 2020, taking part in controlling economic activities, participating in the stability of the financial market and stock market. Facilitating the development of these markets through discounting deals with the ability of fast circulation of securities, and providing investment information, consulting and services.

Then, we recognize the importance of building better risk management information system (RMIS) in banking also increase to a new level in recent years.

In this paper we mainly focus on using reliable internet data in comparing and evaluating the key factor: beta CAPM under macro factors effects, for 7 big listed banks in Vietnam: a) group 1: Vietcombank - VCB and Vietinbank - CTG (previously, SOE) and b) group 2: Asia Commercial Bank - ACB, Eximbank -EIB, Saigon Hanoi Bank -SHB (previously, private bank), Navibank (later National Citizen Bank) - NVB, Sacombank _STB.

All internet data we take from reliable internet data sources, esp. from Vietnam stock exchange.

Research Questions

We address the question: What are analysis of market risk comparing during 2 special stages: pre and post-L inflation time in Vietnam?

2. Literature Review

First, Karim (2011) pointed Management Information Systems (MIS) is the key factor to facilitate and attain efficient decision making in an organization.
Then, we summarize previous studies as follows:

### Domestic researches

| Authors name                        | Results, contents                                                                                                                                                                                                 |
|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. Fama-French 3-Factor Model: The empirical evidence from the Ho Chi Minh City Stock Exchange | The research results show that earnings of stocks are positively correlated with market risk, firm size and the book value to market value (BE / ME) ratio. 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, VNIndex, risk free rate and S&P 500 | Analyze the impact of VNIndex and internal and external macro variables on the stock price of ACB.                                                                                                                  |
| 3. The theory of average return of K.Marx and model of capital asset pricing | 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.                                |
| 4. Book chapter by Dinh Tran Ngoc Huy (2021, Springer Verlag book chapter) “Impacts of Internal and External Macro Factors on Firm Stock Price in An Econometric Model – A Case In Viet Nam Real Estate Industry” | Presenting a regression model analyzing the impact of internal macro variables (inflation in Vietnam, lending rate, risk-free rate) and external (US inflation, exchange rate, S&P 500) on stock prices Vingroup is as follows: Stock price_VIC = -245.13 * Inflation_CPI + Lendingrate - 815.06*Rf_rate USD_VND_rate +0.07*SP500 - 372.08*Inflation_US, R2 = 0.84, SER = 19.7 |
| 5. Systemic risks in banking business - periods of crisis | Presented in Vietnam, the risk management system at commercial banks has been paid attention to a certain extent in the past few years, but due to its structural and technical limitations, this system has not can meet the complex requirements of a modern commercial bank operating in the current risky environment. |
| 6. Factors affecting the return rate of listed stocks from the Fama French 5-factor model | Referring to factors of market change will strongly affect the share prices of large companies.                                                                                                                  |

### International researches

| Authors name                        | Results                                                                                                                                                                                                 |
|-------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1. The Impact of Macroeconomic and Financial Variables on Market Risk: Evidence from International Equity Returns | They found that a number of variables including imports, exports, inflation, market capitalization, dividend yield, and a book-to-book price ratio significantly influence a person’s world market risk at national level. |
| 2. Do economic factors influence stock returns? A firm and industry level analysis | The results revealed that market returns are primarily changes in stock returns, but macroeconomic variables and industry-related variables add explanatory power in describing volatility, stock returns. |
| 3. Macroeconomic factors and micro-level bank risk | The risk of about a third of US banks increases in response to monetary easing.                                                                                                                             |
| 4. Impact of Macroeconomic Factors on Banking Index in Pakistan | In Karachi stock market, Regression results show that exchange rate and short-term interest rate have a significant impact on the Banking index. Macroeconomic variables such as money supply, exchange rate, industrial production and Short-term interest rate and exchange rate have a negative effect on banking index while oil price has a positive effect on the bank index. Banking index. |

---

**Table 1 – Summary of Previous Studies**
5. Impact of Macroeconomic Indicators on Stock Market Performance: The Case of The Istanbul Stock Exchange  
Arnes (2014)  
Their analysis has shown that for investors interested in Turkey, first of all, be careful not to assume that relationships that existed in the past will continue into the future. We also find that depending on the sector, the effects of changes in macroeconomic variables will also differ. For policymakers and lawmakers, however, our findings indicate that keeping interest rates low has been a good policy for the past 20 years.

6. Bank Leverage Ratios and Financial Stability: A Micro- and Macroprudential Perspective  
Emilios (2015)  
The leverage cycle can cause financial instability and the impact of limited leverage on bank governance performance.

7. Effect Of Macroeconomic Variables On Stock Market Returns For Four Emerging Economies: Brazil, Russia, India, And China  
Gay (2016)  
According to the hypothesis, the relationship between the exchange rate and the security's price should be in the same direction.

8. The Impact of Macroeconomic Factors on the German Stock Market: Evidence for the Crisis, Pre- and Post-Crisis Periods  
Celebi and Honig (2019)  
In Germany, the aggregate index (OECD), the Economic Research Institute's Export Expectations index, the climate index, exports, CPI, as well as the 3-year German government bond yield has a delayed effect on stock returns.

9. Impacts of macro variables on Starbucks Corp.  
Kumaresan (2019)  
Indicates that compared to internal corporate factors, macroeconomic factors (exchange rate) have a greater effect on firm performance.

3. Methodology

Method and Data

This study mainly use combination of quantitative methods and qualitative methods including synthesis, inductive and explanatory methods. And it emphasizes again important roles of internet data in sustainable bank risk management.

We use both quantitative and qualitative analytical methods, with beta CAPm traditional formula. Data is collected from reliable internet sources and websites as below:

Most data from stock exchange and reliable. Stock price from HOSE or HNX stock exchange, rates from bank system.

We therefore can estimate and compare risk effects on bank.

4. Main Results

4.1 Overall Results

First we analyze from below chart 1:
We see that

- In group of previous SOE banks (CTG and VCB): highest max beta value reached 1.14 in case CTG bank.
- In group of previous private banks (EIB, SHB, NVB, STB and ACB): highest max beta value reached 2.85 in case NVB bank.

4.2 Findings

We found out from the below table 1 that only 2 banks ACB and VCB there is no negative value of beta CAPM. Whereas in EIB case, there are 2 negative beta values.

Table 1 - Beta CAPM of 7 Listed Big Banks During pre-L Inflation Stage (2011-15)

|       | Beta CTG | Beta EIB | Beta SHB | Beta NVB | Beta ACB | Beta STB | Beta VCB |
|-------|----------|----------|----------|----------|----------|----------|----------|
| Jun-11| 0.16     | 4.79     | 0.90     | 0.33     | 0.28     | 0.17     | 0.25     |
| Dec-11| 0.18     | 0.15     | 1.25     | 0.53     | 0.29     | 0.16     | 0.24     |
| Jun-12| 0.64     | 1.12     | 1.46     | 0.39     | 0.76     | 0.69     | 1.34     |
| Dec-12| 1.40     | 1.03     | 1.65     | 0.17     | 1.42     | 0.73     | 1.05     |
| Jun-13| 0.25     | 0.82     | 0.83     | 0.16     | 0.61     | 0.52     | 1.23     |
| Dec-13| -0.03    | -0.45    | 0.31     | -1.59    | 0.05     | -0.18    | 1.09     |
| Jun-14| 0.46     | 0.20     | 0.95     | 0.19     | 0.37     | 0.62     | 1.31     |
| Dec-14| -0.28    | -0.02    | -0.07    | 0.69     | 0.01     | 0.01     | 0.08     |
| Jun-15| 0.58     | 1.08     | 0.97     | 0.05     | 0.71     | 0.94     | 1.64     |
| Dec-15| 0.85     | 1.34     | 0.69     | 0.07     | 0.97     | 0.84     | 1.76     |

(source: author calculation and Vietnam stock exchange)
We found out from the below table 2 that only 2 banks ACB and VCB there is no negative min value of beta CAPM. And highest max beta value belongs to EIB (4.79) and 2\textsuperscript{nd} highest value belongs to VCB (1.76).

|               | Beta CTG | Beta EIB | Beta SHB | Beta NVB | Beta ACB | Beta STB | Beta VCB |
|---------------|----------|----------|----------|----------|----------|----------|----------|
| Mean          | 0.42     | 1.00     | 0.89     | 0.10     | 0.55     | 0.45     | 1.00     |
| Median        | 0.35     | 0.92     | 0.93     | 0.18     | 0.49     | 0.57     | 1.16     |
| Max           | 1.40     | 4.79     | 1.65     | 0.69     | 1.42     | 0.94     | 1.76     |
| Min           | -0.28    | -0.45    | -0.07    | -1.59    | 0.01     | -0.18    | 0.08     |
| Var           | 0.23     | 2.12     | 0.26     | 0.39     | 0.19     | 0.15     | 0.36     |
| Standard dev  | 0.48     | 1.46     | 0.51     | 0.63     | 0.44     | 0.38     | 0.60     |

(source: author calculation and Vietnam stock exchange)

We found out from the below table 3 that in 4 banks EIB, STB, ACB and VCB there is no negative value of beta CAPM. Whereas in CTG, SHB and NVB cases, there are negative beta values.

|               | Beta CTG | Beta EIB | Beta SHB | Beta NVB | Beta ACB | Beta STB | Beta VCB |
|---------------|----------|----------|----------|----------|----------|----------|----------|
| Jun-15        | 0.58     | 1.08     | 0.97     | 0.05     | 0.71     | 0.94     | 1.64     |
| Dec-15        | 0.85     | 1.34     | 0.69     | 0.07     | 0.97     | 0.84     | 1.76     |
| Jun-16        | 0.43     | 1.14     | 0.84     | 1.15     | 0.49     | 0.85     | 0.87     |
| Dec-16        | 0.55     | 0.58     | 1.13     | -0.36    | 0.40     | 0.56     | 2.10     |
| Jun-17        | 2.53     | 2.50     | -1.46    | 3.54     | 3.37     | 2.65     | 0.79     |
| Dec-17        | 1.29     | 2.00     | 0.66     | 0.63     | 0.75     | 1.11     | 1.11     |
| Jun-18        | 0.41     | 1.51     | 1.07     | 0.61     | 1.04     | 1.12     | 1.35     |
| Dec-18        | 0.37     | 1.59     | 1.01     | 0.81     | 1.09     | 1.43     | 1.06     |
| Jun-19        | -0.28    | 1.68     | 0.69     | 0.42     | 0.86     | 1.05     | 0.59     |
| Dec-19        | 0.65     | 1.38     | 0.96     | 0.61     | 0.60     | 0.89     | 1.39     |
| Jun-20        | 0.13     | 0.39     | 0.18     | -0.01    | 0.52     | 0.85     | 0.60     |
| Dec-20        | 0.36     | 1.47     | 0.89     | 0.26     | 1.08     | 1.21     | 1.04     |

(source: author calculation and Vietnam stock exchange)

We found out from the below table 4 that only 3 banks EIB, ACB and VCB there is no negative min value of beta CAPM. And highest max beta value belongs to NVB (3.54) and 2\textsuperscript{nd} highest value belongs to ACB (3.37).
Table 4 - Statistics Values of 7 Listed Banks during Post-L Inflation Stage

| Beta CTG | Beta EIB | Beta SHB | Beta NVB | Beta ACB | Beta STB | Beta VCB |
|----------|----------|----------|----------|----------|----------|----------|
| Mean     | 0.66     | 1.39     | 0.63     | 0.65     | 0.99     | 1.12     | 1.19     |
| Median   | 0.49     | 1.42     | 0.86     | 0.51     | 0.81     | 0.99     | 1.08     |
| Max      | 2.53     | 2.50     | 1.13     | 3.54     | 3.37     | 2.65     | 2.10     |
| Min      | -0.28    | 0.39     | -1.46    | -0.36    | 0.40     | 0.56     | 0.59     |
| Var      | 0.49     | 0.33     | 0.50     | 1.00     | 0.62     | 0.28     | 0.22     |
| Standard dev | 0.70 | 0.57 | 0.71 | 1.00 | 0.79 | 0.53 | 0.47 |

(source: author calculation and Vietnam stock exchange)

We found out from the below table 5 that only in 1 case - SHB bank: there is negative value of beta GAP, which means that beta mean in post-L stage lower than that in pre-L stage. Other banks cases, results show positive beta gap.

Table 5 - GAP (+/-) Period 2015-20 Compared to Period 2011-15

| Beta CTG | Beta EIB | Beta SHB | Beta NVB | Beta ACB | Beta STB | Beta VCB |
|----------|----------|----------|----------|----------|----------|----------|
| Mean     | 0.24     | 0.38     | -0.26    | 0.55     | 0.44     | 0.68     | 0.19     |
| Median   | 0.14     | 0.50     | -0.06    | 0.33     | 0.31     | 0.42     | -0.08    |
| Max      | 1.14     | -2.29    | -0.52    | 2.85     | 1.95     | 1.72     | 0.34     |
| Min      | 0.01     | 0.84     | -1.39    | 1.23     | 0.40     | 0.74     | 0.51     |
| Var      | 0.26     | -1.79    | 0.24     | 0.60     | 0.43     | 0.14     | -0.14    |
| Standard dev | 0.22 | -0.89 | 0.20 | 0.37 | 0.35 | 0.15 | -0.13 |

(source: author calculation and Vietnam stock exchange)

Chart 2 - Statistic Values of Beta of 7 Listed Banks Period 2011-15

(source: author calculation and Vietnam stock exchange)
5. Discussion

We found out from the above chart 2 and chart 3 that beta max highest in case of NVB (3.54), then ACB (3.37) and next is STB (2.65). This happens during post-L inflation period.

Also we figure out that beta max highest in case of EIB (4.79), then VCB (1.76) and next is ACB (1.42). This happens during pre-L inflation period.

For further analysis, we can add effects of factors that affect beta CAPM or market risk of listed banks.

6. Conclusion

Comparing 2 Special Stages

In groups of banks (SOEs previously) VCB and CTG we find out: beta mean GAP of CTG higher than beta mean GAP of VCB case (0.24 > 0.19), and GAP of beta mean is positive in this case for both periods.
In groups of joint stock banks (private banks) SHB, STB, NVB, ACB and EIB we figure out: beta mean GAP of STB is the highest (0.68) while only 1 case SHB, in which beta mean GAP is negative (-0.26).

Mukhamadeev et al (2019) stated that the role of information systems for entrepreneurship education in developing countries on the example of the Azerbaijan education system and Internet banking. The information systems role in entrepreneurship education was determined with the help of online questionnaire.

From the above analysis, Government and Ministry of Finance and bank system need to perform:

- Completed implementation of risk analysis models under the impact of monetary and financial policies.

Limitation of Research

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

References

Al-Qaisi., K.M. (2011). 'The Economic Determinants of Systematic Risk in the Jordanian Capital Market', *International Journal of Business and Social Science*, vol.2, no.20, pp. 85-95.

Anderssen, T.G., Bollerslev, T., Diebold, F.X., and Wu, J. (2005). 'A Framework for Exploring the Macroeconomic Determinants of Systematic Risk', *Financial Economics, Macroeconomics, and Econometrics*, vol.95. no.2, pp. 398-404.

Arnes, S.K. (2014). 'Impact of Macroeconomic Indicators on Stock Market Performance: The Case of The Istanbul Stock Exchange', *Master Thesis*, Copenhagen Business School.

Ahmad, N., and Ramzan, M. (2016). 'Stock Market Volatility and Macroeconomic Factor Volatility', *International Journal of Research in Business Studies and Management*, 3(7), 37-44.

Ahmed, A., Ejaz, A., Ali, R., Ishfaq Ahmad, I. 2018. Sectoral integration and investment diversification opportunities: evidence from Colombo Stock Exchange. Entrepreneurship and Sustainability Issues, vol.5, no.3, pp. 514-527. https://doi.org/10.9770/jesi.2018.5.3(8).

Basu, Devraj., and Streme, Alexander. (2007). CAPM and Time-Varying Beta: The Cross-Section of Expected Returns, *SSRN Working paper series*.

Bohachova, O. (2008). 'The Impact of Macroeconomic Factors on Risks in the Banking Sector: A Cross-Country Empirical Assessment', *IAW Discussion Papers 44*, Institut für Angewandte Wirtschaftsforschung (IAW).
Bowman, R.G. (1979). 'The Theoretical Relationship Between Systematic Risk and Financial (Accounting) Variables', *The Journal of Finance*, vol. 34, no.3, pp. 617-630.

Butt, B.Z., Rehman, K.U. (2010). 'Do economic factors influence stock returns? A firm and industry level analysis', *African Journal of Business Management*, vol.4, no.5, pp. 583-593.

Chatterjea, Arkadev., Jerian, Joseph A., and Jarrow, Robert A. (2001). Market Manipulation and Corporate Finance: A new Perspectives, *1994 Annual Meeting Review*, SouthWestern Finance Association, Texas, USA.

Chen RR, Chidambaran NK, Imerman MB, Sopranzetti BJ. (2013). Liquidity, Leverage, and Lehman: A Structural Analysis of Financial Institutions in Crisis, *Fordham School of Business Research Paper No.2279686*.

Cheng, L.Y., Wang, M.C., and Chen, K.C. (2014). Institutional Investment Horizons and the Stock Performance of Private Equity Placements: Evidence from the Taiwanese Listed Firms, *Review of Pacific Basin Financial Markets and Policies*, 17(2).

Celebi, K., and Honig, M. (2019). 'The Impact of Macroeconomic Factors on the German Stock Market: Evidence for the Crisis, Pre- and Post-Crisis Periods', *International Journal of Financial Studies*, vol.7, no.18. doi:10.3390/ijfs7020018.

Claudia, M.P., Sandra, E., and Esteban, P. (2010). 'Macroeconomic factors and micro-level bank risk', *Discussion Paper Series 1: Economic Studies No 20/2010*.

Curran, M., and Velic, A. (2018). 'The CAPM, National Stock Market Betas, and Macroeconomic Covariates: A Global Analysis', *Trinity Economics Papers 0618*, Trinity College Dublin, Department of Economics.

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).

DeGennaro, Ramon P., Kim, Sangphill. (2003). The CAPM and Beta in an Imperfect Market, *SSRN Working paper series*.

Dimitrov V, Jain PC. (2006). The Value Relevance of Changes in Financial Leverage, *SSRN Working Paper*.

Emilios, A. 2015, 'Bank Leverage Ratios and Financial Stability: A Micro- and Macroprudential Perspective', *Working Paper No.849*, Levy Economics Institute.

Eugene FF, French KR. (2004). The Capital Asset Pricing Model: Theory and Evidence, *Journal of Economic Perspectives*.

Galagedera, D.U.A. (2007). An alternative perspective on the relationship between downside beta and CAPM beta, *Emerging Markets Review*.

Galagedera, D.U.A. (2007). 'An alternative perspective on the relationship between downside beta and CAPM beta', *Emerging Markets Review*.

Gay, R.D. (2016). 'Effect Of Macroeconomic Variables On Stock Market Returns For Four Emerging Economies: Brazil, Russia, India, And China', *International Business & Economics Research Journal*, vol.15, no.3.
Gizycki, M. (2001). 'The Effect Of Macroeconomic Conditions on Bank Risks and Profitability', Research Discussion Paper 2001-06, System Stability Department Reserve Bank of Australia. https://www.rba.gov.au/publications/rdp/2001/pdf/rdp2001-06.pdf.

Gunaratna, V. (2016). How does Financial Leverage Affect Financial Risk? An Empirical Study in Sri Lanka, Amity Journal of Finance, 1(1), 57-66.

Gunaratna 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.

Hojat, S. (2015). 'The Impact of Monetary Policy On the Stock Market', Doctoral dissertation, Walden University.

https://scholarworks.waldenu.edu/cgi/viewcontent.cgi?article=2602&context=dissertations

Huey-Yeh, L., Nuraeni, H.F., and Meihua, K. (2016). 'The Impact of Macroeconomic Factors on Credit Risk in Conventional Banks and Islamic Banks: Evidence from Indonesia', International Journal of Financial Research, vol.7, no.4.

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).

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).

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.

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.

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)

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)

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

Khwaja, Asim Ijaz., and Mian, Atif. (2005). Unchecked intermediaries:Price manipulation in an emerging stock market, Journal of Financial Economics 78, 243 – 241.

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
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.

Kumaresan, R. (2019). 'The Effects of Macroeconomics Factors towards the Starbucks Corporation', *MPRA Paper No. 97243*. https://mpra.ub.uni-muenchen.de/97243/1/MPRA_paper_97243.pdf

Nawaz, R., Ahmed, W., Imran, Sabir, S., and Arshad, M. 2017, 'Financial Variables and Systematic Risk', *Chinese Business Review*, vol. 16, no. 1, pp. 36-46. doi: 10.17265/1537-1506/2017.01.004

Ozlen., S., and Ergun, U. (2012). 'Macroeconomic Factors and Stock Returns', *International Journal of Academic Research in Business and Social Sciences*, vol.2, no.9, pp. 315-343.

Li, L., and Pornchai, C. (2014). Income Structure, Competitiveness, Profitability, and Risk: Evidence from Asian Banks, *Review of Pacific Basin Financial Markets and Policies*, 17(3).

Loc, T.D., & Trang, D.T.H. (2014). Fama-French 3-factor model: Empirical evidence from Ho Chi Minh City Stock Exchange, *Can Tho scientific journal*, 32(4) : 61-68.

Martin, K., and Sweder, V.W. (2012). On Risk, leverage and banks: Do highly leveraged banks take on excessive risk?, *Discussion Paper TI 12-022/2/DSF31*, Tinbergen Institute.

Pamane, K., and Vikpossi, A.E. 2014, 'An Analysis of the Relationship between Risk and Expected Return in the BRVM Stock Exchange: Test of the CAPM', *Research in World Economy*, vol.5, no.1, pp. 13-28.

Patro, D.K., Wald, J., & Wu, Y. (2002). 'The Impact of Macroeconomic and Financial Variables on Market Risk: Evidence from International Equity Returns', *European Financial Management*, 8(4): 421 - 447. DOI: 10.1111/1468-036X.00198

Perkovic, A. (2011). 'Research of Beta As Adequate Risk Measure - Is Beta Still Alive?', *Croatian Operational Research Review (CRORR)*, vol. 2, pp. 102-111.

Puspitaningtyas, Z. (2017). 'Estimating systematic risk for the best investment decisions on manufacturing company in Indonesia', *Investment Management and Financial Innovations*, vol.14, no.1, pp. 46-54. doi:10.21511/imfi.14(1).2017.05

Park, J.C, Ali, F.D., & Mbanga, C. (2019). Investor sentiment and aggregate stock returns: the role of investor attention, *Review of Quantitative Finance and Accounting*, 53(2), 397 - 428.

Robicheck, A.A., and Cohn, R.A. (1974). 'The Economic Determinants of Systematic Risk', *The Journal of Finance*, Vol. 29, No. 2, pp. 439-447.

Sadeghazadeh, K. (2018). 'The effects of microeconomic factors on the stock market: A panel for the stock exchange in Istanbul ARDL analysis', *Theoretical and Applied Economics Volume XXV*, vol.3, no.616, pp. 113-134.

Sadia, S., and Noreen, A. 2012, 'Impact of Macroeconomic Factors on Banking Index in Pakistan', *Interdisciplinary Journal of Contemporary Research in Business*, vol.4, no.6, pp. 1200-1218.

Saeed, S., and Akhter, N. (2016). 'Impact of Macroeconomic Factors on Banking Index in Pakistan', *Interdisciplinary Journal of Contemporary Research in Business*, vol.4, no.6.

Singh, T., Mehta, S., and Versha, M.S. (2010). 'Macroeconomic factors and stock returns: Evidence from Taiwan', *Journal of Economics and International Finance*, vol.2, no.4, pp. 217-227.
Siregar, E.I., and Diana. (2019). 'The Impact of Political Risk and Macro Economics on Stock Return at Indonesia Stock Exchange-An Approach of Arbitrage Pricing Theory (APT)', *International Conference on Economics, Management, and Accounting (ICEMA)*, pp.744–772.

DOI: https://doi.org/10.18502/kss.v3i26.5412

Tahmidi, A. Westlund, S.A., & Sheludchenko, D. (2011). The Effect of Macroeconomic Variables on Market Risk Premium, Working paper, Mälardalen University.

https://www.diva-portal.org/smash/get/diva2:429080/FULLTEXT01.pdf

Tomuleasa, I.I. (2015). 'Macroprudential policy and systemic risk: An overview', *Procedia Economics and Finance*, 20, pp. 645-653.

Umar. (2011). Profits, Financial Leverage and Corporate Governance, SSRN Working Paper.