ORIGINAL ARTICLE

THE EFFECT OF NORTH AMERICA MARKET INDICES AGAINST THE STOCK PRICES IN THE TECHNOLOGY SECTOR OF BURSA MALAYSIA

Yeoh Wee Win[1], Veera Pandiyan Kaliani Sundram[2],*

[1]Business and Management Faculty, European International University, Paris City Campus, 75018 Paris, France
[2]Faculty of Business and Management, Universiti Teknologi MARA, UiTM Kampus Puncak Alam, 42300 Puncak Alam, Selangor, Malaysia

ABSTRACT – This study aims to explore the impact of the North American market indices against the movement of the stock prices within the technology sector in Bursa Malaysia. The research was motivated by the problem statement where the research identifies the validity of the concept to verify the presence of the relationship between the technology stock prices in Bursa Malaysia against the market indices of North America. The study aims to provide the positive implication for the academic study in providing additional new knowledge and reference towards the academia, and at the same time delivering the understanding towards the business technology industry in Malaysia in predicting the future performance of the business in alignment with the movement of the market indices in North America. The literature showed a strong suggestion of a positive relationship in which the movement of the technology stock prices in Bursa Malaysia will be in a similar direction to the movement of the market indices of North America. The research adopted the quantitative method as the main data collection. The technology sector stock prices in Bursa Malaysia and market indices of North America data were collected from July 2012 to June 2021 using purposive sampling to ensure the significant market indices are being included in the research. The significance of the study could narrow down the gap in the literature, as well as contribute to the industry and investors to be optimistic or pessimistic towards the expectations of the stock prices movement in the technology sector in Bursa Malaysia. The outcome of the research will assist investors to make better investment decisions and corporate management to forecast the business opportunity.

INTRODUCTION

The research aims to explore the scope of research to deep dive to understand the potential significance of the relationship between stock performance in Malaysia against the market index from North America. Grønholdt et al. (2015) emphasize that the relationship of stock performance tends to be linked globally where the stock price movement tends to be in the positive direction between the stock price and market index from two different regions. Javanmard and Hasani (2017) emphasized the time during the financial crisis, the study on the stock performance had been observed in sync where the market index had been falling drastically sharing the same correlation between the different market indices. Sheta, Ahmed & Faris (2015) mentioned that stock performance often to be sharing the same correlation with the market index as the market index is derived from the movement of the stock performance within the stock market exchange. However, there is a lack of supporting evidence to identify that there is a related global market index which is a significant contributor towards the stock price in the local market. Moreover, it still provides influence on local stock prices. This formed the problem statement for the study with the intention to explore the relationship between the stock price in Malaysia against the movement of the market indices in North America. Luo and Qin (2017) highlighted that the previous study has yet to pose a strong suggestion that there is a linkage between the performance of the local stock prices in Malaysia that will come in relevance towards the foreign stock market.

The problem statement that arises in this research study is as the concept demonstrated which is the global market index is a significant contributor towards the stock price in the local market and still provides influence on the local stock prices (Sheta, Ahmed & Faris, 2015). This is mainly because there is a lack of strong evidence that suggest this concept is feasible to apply directly to every stock in the stock market (Aigbovo & Izekor, 2015). The questionable part on the influence from the foreign market index had not been proven academically but was suggested as a form of belief which create the potential forecast that the stock pricing in a country will be following the trend and pattern from the market index all around the world (Luo & Qin, 2017). For instance, investors and businesses in Malaysia which are often expecting the same up and down trend with the US stock market will expect similar changes to reflect in the stock price movement in Bursa Malaysia.

The research objective is to investigate the relationship between the market index in North America against the Malaysia stock price. This will help to address the gap in the academic knowledge which will trigger additional

understanding and identify the potential impact for the stock pricing movement within the same region of the business market.

The rationale for the study had been targeted with the purpose to explore the new knowledge within the scope of expertise for the academic study. The findings of this study are expected to bring additional contributions to the literature in which the outcome will provide an academic reference for the existing study, and opportunities for future researchers to explore further in this field. Besides, the outcome of the study also holds the aim to provide a significant reference to the existing business in the technology sector in Malaysia to reflect the forecast and the expectations of the future business and its relevance towards the performance of the market indices in North America.

LITERATURE REVIEW

Abdullahi (2020) mentioned that there is no definite sole reason that will influence the change in the stock price behaviour. Some of the previous research may be overseeing the influence of business growth and profitability but the research study conducted did provide the suggestion that macroeconomics serves as a relevant indicator for the contribution of the stock price movement. Adeyeye, Aluko, and Migiro (2018) have been in alignment with this concept on the stock price behaviour as they mentioned that there is a potential pattern arising from the movement of the stock price. For instance, the global financial crisis back in 2008 witnessed the crash of the stock market where the market index is experiencing a sharp drop all around the world (Adeyeye, Aluko & Migiro, 2018). This was claimed to be the driver for the business performance drop as the financial crisis is creating turbulence in the economy, bringing down the potential business demand from the market. This was in a similar direction as mentioned by Abdullahi (2020) where the previous findings agreed that profitability performance will not become the sole indicator for the stock price behaviour.

The reason for exploring the impact on the stock price for the technology sector in Malaysia was contributed by the rising of the companies in the tech industry. The tech industry has been increasing in demand and the development of the business sector was encouraging across the globe, creating the relevance of the study to understand the global stock market impact towards the tech stock in Malaysia. Mazur, Dang, and Vega (2021) emphasized that the current trend in the market was the emergence of technology companies where the potential business was spreading around the global level for the business within the technology industry to grow. The recent trend was seeing a majority of the investors being optimistic about the investment towards the technology sector companies with this emerging trend. This is because the rising of the important role for tech companies will be seeing the higher potential of return from the investment in tech stocks as the likeliness for tech stocks to grow has been very positive compared to other industries. Mazur et al. (2021) found that the contribution of events such as the Industrial 4.0 as well as the pandemic rise from Covid-19 is causing a higher adoption level of industry towards the use of technology, thus creating more demand for the tech industry. With the tech industry on the rise, it is almost difficult to put up into consideration the trend for the tech industry to experience its low point in the future especially with almost every business moving towards the world of digitalization.

The market index in North America has been no doubt referred to as the significant representation of the global market index as the US nation was identified as the largest stock exchange market potential with the presence of two major stock market exchanges which is the New York Stock Exchange (NYSE) and the NASQAD. Vintila, Gherghina, and Toader (2019) highlighted that the New York Stock exchange (NYSE) is referred to as a strong representation of the stock market performance globally. This is mainly because there are many major MNCs and powerhouses within the industries that came from publicly listed companies in the NYSE. Alsabban and Alarfaj (2020) mentioned that the recent pandemic for Covid-19 has also reflected the immediate reflection on the NYSE where the market index suffers a significant drop within just a few days after the Covid-19 outbreak. A similar representation of the stock price movement was observed from the other side of the world where the stock price declining situation shares the same correlation with the market index in NYSE. Vasileiou (2021) emphasized that the recovery of the market index including the NYSE is rising back to the market index signalling the stock price is recovering after the stabilization of the business industries. To put it into a simple picture, the NYSE market index has been sharing the same alignment and correlation with the stock prices not only within the US stock exchange but also against other stock prices across the border.

The US stock market was not only contributing to the stock market in the world but there are still some other stock markets that are relevant and significant within the global stock market. Ftiti, Guesmi, and Abid (2016) highlighted that the Canadian market index tends to be sharing a similar pattern with the US stock market. With the Canadian stock exchange market being smaller in comparison with the US stock market, Ftiti et al. (2016) emphasized that the influence and impact of the Canadian market index become indifferent to the market index movement against the current economic condition as well as the market index from other countries. In general research, the market index within the Canadian stock exchange market tends to follow closely the performance of the market index in the US which translates to the potential significance in the pattern with the stock prices in the US stock exchange. Choudhry, Papadimitriou, and Shabi (2016) mentioned that stock market volatility tends to affect the different stock prices and market indexes from other countries where the research conducted had seen the market index in the Canadian stock exchange to be significant in the linear regression testing. Choudhry et al. (2016) identified that the study found that the relationship between stock market volatility against the business cycle in four major economies, namely the US, Canada, Japan and the UK was significant, showing the potential similarity in the pattern based on the influence from the market index.

In relation to this situation, the previous findings on the market index for both US and Canada which is placed in the North American region found to be blending in relation with the stock prices and economy from other parts of the world. This suggestion provides the tendency to conclude that there is a potential significance in the influence of the market index from the North American stock exchange market to impact the movement of the stock price in another country,

which includes the potential of Malaysia's stock market. Thus, the hypothesis is suggesting that there is a significant positive relationship between the market index in North America against Malaysia's stock price.

H1: There is a significant positive relationship between New York Stock Exchange (NYSE) against the technology stock prices in Malaysia.

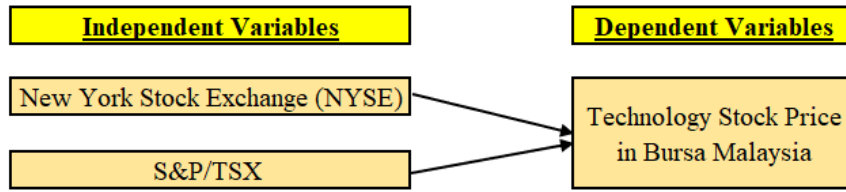H2: There is a significant positive relationship between S&P/TSX against the technology stock prices in Malaysia.

Figure 1. Conceptual Framework

METHODOLOGY

The methodology of the research focused on the adoption of the quantitative analysis in which historical data in numerical forms was used. The benefits of demonstrating the use of quantitative analysis are to provide wider coverage of data to be used for the study where the statistical output will provide a more objective outcome for the empirical evidence. The data were analyzed using SPSS software.

The North American Index will come in common where the US stock exchange market is the most popular stock market at the global level. Vintila et al. (2019) highlighted that the New York Stock Exchange (NYSE) is referred to as a strong representation of the stock market performance globally. With much significant, contribution to the US stock market, the New York Stock Exchange (NYSE) was included as one of the market indices for the study representation of the North American market index. Besides, Ftiti et al. (2016) highlighted that the Canadian market index tends to be sharing a similar pattern with the US stock market. With the Canadian stock exchange market being smaller in comparison with the US stock market, Ftiti et al. (2016) emphasized that the influence and impact of the Canadian market index become indifferent to the market index movement against the current economic condition as well as the market index from other countries. Therefore, the S&P/TSX was selected as a part of the representation of the North American market index for the study. With both market indices for NYSE and S&P/TSX, the market index was used as the independent variable for the data on the research framework.

Table 1. North America Market Index

Region	Country	Market Index
North America	United States	New York Stock Exchange (NYSE)
	Canada	S&P/TSX

This particular research aims to explore the impact of the foreign market index towards the stock prices within the technology sector in Bursa Malaysia. The data for this objective were historical data (Sekaran & Bougie, 2016). Referring to the terminology of the historical data, this will translate to the publicly available data within the online platform (Apuke, 2017). In relation to this, this study focused on adopting the secondary data collection method. This is mainly contributed by the exploitation of historical data which is based on the statistics and facts that remained available within the online platform like Yahoo Finance, which is an online platform. This research was not restricted by time and cost factors where the data extraction came in straightforward and convenient because the data are available on the public platform (Apuke, 2017).

The data analysis for the research focused on the use of quantitative analysis where the SPSS tool will become the fundamental tool to generate the necessary statistical output for the research (Sharela, 2016). The statistical output for the quantitative study will observe the application of the analysis on the correlation analysis and regression analysis to identify the positive and negative relationship between the study of the independent variables of market indices for North America against the dependent variable on the technology stock prices in Bursa Malaysia. This study observed the application for the analysis based on the record for the past 10 years of data from July 2012 to June 2021 where the statistical output will include descriptive analysis, factor analysis, reliability analysis, correlation analysis and regression analysis to achieve the objective of the study (Sekaran & Bougie, 2016). The hypothesis drawn in the literature review was tested to identify the presence of the significance in the relationship between the market index in Asia against the technology stock price in Bursa Malaysia. The tolerance level of 5% was the benchmark for the testing of significance in the relationship as derived from the hypothesis drawn in this research.

DATA ANALYSIS

Table 2. Summary of Correlation Analysis

Market Indices	Pearson Correlation	Correlation	Strength of Correlation	Sig. (2tailed)	Significant Correlation
NYSE	0.884	Positive	Very Strong	0.000	Yes
S&P TSX	0.835	Positive	Very Strong	0.000	Yes

Based on Table 2, the market indices for both NYSE and S&P/TSX were found to have a very strong positive correlation against the movement of the stock prices in the technology sector for Bursa Malaysia. This means that there is a positive pattern for the increasing or decreasing trend of the market indices in North America against the technology stock price movement in Malaysia for the companies listed in Bursa Malaysia.

Table 3. Multiple regression analysis – North America Market Indices

Modal	R	R Square	Adjusted R Square	Std. Error	Durbin-Watson	Mahal Distance	Cool's Distance
1	0.890	0.792	0.788	0.12402	1.56	16.971	0.103

a. Predictors: NYSE, S&P/TSX
b. Dependent variable: Tech Stock

Table 3 shows the model summary based on the regression model on the North Market Indices against Malaysia technology stock prices. Based on the statistical output, the Asia Market Indices are believed to be able to predict and explain 79.2% of the potential outcome in the movement of the technology stock prices in Bursa Malaysia. The results also showed that the maximum Mahalanobis Distance value is 16.971. Cook's Distance is in a good condition when the data is < 1.00. Coincidentally, the data is 0.103. Thus, the data is valid.

Table 4. ANOVA Analysis

	Sum of Square	df	Mean Square	F	Sig.
Regression	6.215	2	3.107	202.034	0.000
Residual	1.630	106	0.015		
Total	7.845	108			

a. Predictors: S&P/TSX, NYSE
b. Dependent variable: Tech Stock

The ANOVA analysis as presented in Table 4 was used to determine the potential significance of the regression model on the North America Market Indices against Malaysia technology stock prices. Based on the statistical output of the ANOVA analysis, the p-value recorded 0.000 which is below the 5% tolerance level indicating that the regression model as defined is significant and feasible to test the relationship between the North America Market Indices against Malaysia technology stock prices.

Table 4. Regression coefficient

Model	Unstandardized Coefficients		Standardized Coeffiencients	T	Sig.
	B	Std. Error	Beta		
Constant	-	1.508		-6.537	0.000
NYSE	5.054	0.724	1.294	6.978	0.000
S&P/TSX	-2.282	1.003	-0.422	-2.275	0.025

a. Dependent variable: Tech Stock
Assumption:
Linearity: Confirmed by the analysis of partial regression plots
Homoscedasticity: Confirmed by the analysis of partial regression plots
Independence of Residuals: Durbin-Watson test, score = 1.560
No Collinearity and Multicollinearity problems confirmed by correlation coefficients

Based on the statistical output in Table 5, the result shows the details of the multiple regression model on the North America Market Indices against Malaysia technology stock prices where the NYSE from the United States of America and S&P/TSX from Canada was included in the regression model. The result from the regression analysis shows that

S&P/TSX representing the North America Market Indices was significant with reference to the p-value recording at 0.025, which is lower than the tolerance level of 5% for the NYSE market index. The p-value was 0.000 which is lower than the tolerance level of 5% indicating that the NYSE market index representing the North America Market Indices was not significant against the Malaysia technology stock prices. With this, both market indices are in the same agreement as the North American market indices are showing a significant relationship against the Malaysia technology stock prices.

DISCUSSION

The research objective is to investigate the relationship between the market index in North America against the Malaysia stock price. Therefore, the empirical evidence was derived from the findings of the study where both correlation analysis and regression analysis were conducted. The outcome of the findings suggested that there is a presence of a significant positive relationship between the New York Stock exchange (NYSE) and S&P/TSX against the tech stock in Bursa Malaysia. This presents evidence that there is a detection of a significant positive impact from the market indices from the North American region towards the change and movement of the tech stock prices in Malaysia. The results suggest that the foreign market indices in North America can become the reference to predict the potential performance of the tech stock prices listed in Bursa Malaysia.

Vintila et al. (2019) highlighted that the New York Stock exchange (NYSE) is referred to as a strong representation of the stock market performance globally. In addition, Vasileiou (2021) emphasized that the recovery of the market index during the period of the Covid-19 pandemic was significant for the NYSE which is aligned with the global economy and business condition. It shows the positive relationship between the recovery and rising of the market index and stock prices. To put it into another comparison, the North American market index has been observing a similar pattern and movement with the stock prices in other countries (Ftiti et al., 2016). In reference to the result of the study, there is a significant positive relationship between the market index in North America against the technology stock prices in Malaysia. The quantitative analysis suggested the outcome with the evidence where both US and Canadian market indices have been in sync with the movement of the technology stock prices in Bursa Malaysia. The outcome strongly supported the stock market like NYSE and NASQAD which is from the US stock exchange market in playing a significant role in influencing the stock price at the global level, especially with Malaysia's business industry being operated with many MNCs from the US country (Vasileiou, 2021). This potentially suggests the relevance of the findings where North American companies tend to be more influential against the global business with the majority of the MNCs coming from the US.

CONCLUSION

The outcome of the study posed empirical evidence where the outcome of the study drew the conclusion from the testing of the hypothesis. The findings were aligned with the expected findings from the initial study on the literature review. The previous study suggested that there is a presence of a positive relationship between the market indices in North America against the tech stock prices within Bursa Malaysia. The current study proved the strong existence of this relationship. The findings of the study presented sufficient evidence to agree with the perspective of the previous study validating the significance of the theories and concepts drawn from the literature. Thus, the findings concluded the evidence for this research objective in identifying the presence of a positive relationship between the market index in North America against the technology stock prices in Malaysia.

THEORETICAL AND MANAGERIAL IMPLICATION

The outcome of the research was a clear contribution to the field of academia where the research outcome induced new knowledge findings that will become the future reference for future academic research. These will become useful findings that will help the area of expertise to further the research in a similar area. Besides, the findings provided a reference on the stock performance against the benchmark of foreign market indices like the North American region of the stock market. This will create expectations for the management among the local business in Malaysia to refer to the performance of the North American indices. North American indices will become the reference driver to identify the expected performance of the business organization in Malaysia. Last but not the least, the group of investors will gain benefits from the outcome of the research where the investors can refer to the North American market indices to make an investment decision in the technological stocks in Bursa Malaysia.

FUTURE RESEARCH DIRECTION AND LIMITATION OF THE STUDY

The study posed several limitations. The current study was focusing on the relationship between the technology stocks in Bursa Malaysia against the market indices of North America. Despite the study on the foreign market indices, there are still 12 different industries within Bursa Malaysia which can be included for the purpose of research. This is because the different industry and business natures of the technology sector may potentially observe the different patterns and trends of stock prices.

The future suggestion may be inducing the research of the technology stocks prices to be tested against the market indices of different regions like the South American and Asia market indices which will provide an understanding of the relationship of the technology stock market in Bursa Malaysia against the different region of the market indexes within the scope of a foreign market index.

REFERENCES

Abdullahi, I.B. (2020). 'Effect of Unstable Macroeconomic Indicators on Banking Sector Stock Price Behaviour in Nigerian Stock Market', International Journal of Economics and Financial Issues, 10(2), 1-5.

Adeyeye, P.O., Aluko, O.A. & Migiro, S.O. (2018). 'The global financial crisis and stock price behaviour: time evidence from Nigeria', Global Business and Economics Review, 20(3), 373-387.

Aigbovo, O. & Izekor, A.O. (2015). 'THE IMPACT OF MACROECONOMIC VARIABLES ON STOCK MARKET INDEX IN NIGERIA', African Journal of Management Sciences, 1(1), 18-40.

Alsabban, S. & Alarfaj, O. (2020). 'An Empirical Analysis of Behavioral Finance in the Saudi Stock Market: Evidence of Overconfidence Behavior', International Journal of Economics and Financial Issues, 10(1), pp. 73-86.

Apuke, O.D. (2017). 'Quantitative Research Methods A Synopsis Approach', Arabian Journal of Business and Management Review (Kuwait Chapter), 6(10), 40-47.

Choudhry, T., Papadimitriou, F.I. & Shabi, S. (2016). 'Stock market volatility and business cycle: Evidence from linear and nonlinear causality tests', Journal of Banking & Finance, 66, 89-101.

Ftiti, Z., Guesmi, K. & Abid, I. (2016). 'Oil price and stock market co-movement: What can we learn from time-scale approaches?', International Review of Financial Analysis, 46, 266-280.

Grønholdt, L., Martensen, A., Jørgensen, S. & Jensen, P. (2015). 'Customer experience management and business performance', International Journal of Quality and Service Sciences, 7(1), 90-106.

Javanmard, H. & Hasani, H. (2017). 'The Impact of Market Orientation Indices, Marketing Innovation, and Competitive Advantages on the Business Performance in Distributer Enterprises', The Journal of Industrial Distribution & Business, 8(1), 23-31.

Luo, X. & Qin, S. (2017). 'Oil price uncertainty and Chinese stock returns: New evidence from the oil volatility index', Finance Research Letters, 20, 29-34.

Sekaran, U & Bougie, R 2016, Research Methods for Business: A Skill-Building Approach, 7th edn, Wiley, New York.
Sharela, B.F. (2016). 'Qualitative and Quantitative Case Study Research Method on Social Science: Accounting Perspective', International Journal of Economics and Management Engineering, 10(12), 3849-3854.

Sheta, A.F., Ahmed, S.E.M. & Faris, H. (2015). 'A Comparison between Regression, Artificial Neural Networks and Support Vector Machines for Predicting Stock Market Index', International Journal of Advanced Research in Artificial Intelligence, 4(7), 55-63.

Vasileiou, E. (2021). 'Behavioral finance and market efficiency in the time of the COVID-19 pandemic: does fear drive the market?', International Review of Applied Economics, 35(2), 224-241.

Vintila, G., Gherghina, S.C. & Toader, D.A. (2019). 'Exploring the Determinants of Financial Structure in the Technology Industry: Panel Data Evidence from the New York Stock Exchange Listed Companies', Journal of Risk Financial Management, 12(4), 163-179.

CONFLICT OF INTEREST