Signalling Indicator of Sustainability Financial Performance in the Travel, Leisure, and Hospitality Service Industry

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ABSTRACT

This study sought to determine the signal indicator of fundamental and macroeconomic factors on the stock price in Malaysia. The study used dynamic panel data analysis of the system Generalized Method of Moments for 23 listed companies in the Travel, Leisure, and Hospitality industry. The study covered the period from 2013 to 2019. Asymmetric information existed due to the law of supply and demand holding true, leading investors to have different perceptions of the fundamental and macroeconomic factors and stepping forward in decision-making. Inconclusive results regarding both factors limited the industry to determine the main signal indicator. The findings indicate that investors have a different awareness of the performance of the previous year's stock price, operating cash flow, and inflation rate. The yearly performance of operating cash flow could be emphasized to encourage existing or potential investors to remain with the invested companies. This is because the current stock price may positively affect the following year's performance. The inflation condition confirms

that listed companies anticipated inflation and that changes in the price level would not affect the industries' profitability. The findings may benefit listed companies in identifying the main focus factors and practising sustainable behaviours.

Keywords: *Stock price; Fundamental factors; Panel data analysis*

INTRODUCTION

Sustainable performance of an organisation is defined as its capacity to satisfy the needs and expectations of customers and other stakeholders over the long term while maintaining a balance between effective management, staff awareness, learning and implementation of the necessary improvements, and innovation (Stanciu et al., 2014). In a highly competitive climate, multinational organisations have discovered that a strategy of maximising short-term profits does not always ensure success. The corporate policy as a fundamental component of an organisation, must be accompanied by sustainable behaviour (Ashrafi, Acciaro, Walker, Magnan, & Adams, 2019). Transparently disclosing financial performance, corporate management, and sustainable development contributions are ways to practice the action (Albertini, 2019).

With the given information, investors could receive more insight into the performance of listed companies, as well as evaluate the sustainability performance in the future. A stock price represents the expected profitability of companies. The higher the expected return, the higher the quantity demanded of the share unit, leading to stock price increases. However, a higher value in the stock price is not equal to higher profitability for both parties of investors and listed companies. The general concept of buying low and selling high is possibly the most famous adage about making money in the stock market. But it is associated with a high-risk condition as prices reflect emotions and psychology and are difficult to predict (Potters & Kvilhaug, 2022). In fact, stock prices are influenced by a number of variables, but the price at any particular time is determined by supply and demand in the market (Harper, Brock, & Schmitt, 2022).

The law of supply and demand holds true in the stock market as explained by asymmetric information (Tarver et al., 2022). When a buyer or

seller has greater knowledge about the past, present, or future performance of an investment, there is an asymmetry of information in the stock market. One party can make an informed decision, but the other cannot. The stock may be under-priced, and either the buyer or the seller may be aware of this. In each scenario, there is a chance that one side will benefit from the deal at the expense of the other. Therefore, a sustainable movement of the stock price is preferred. People may choose investments through sustainable investing based on their principles and personal interests. Offering sustainable investing possibilities enables businesses to gain intrinsic benefits that cannot be duplicated elsewhere, in addition to financial returns for investors. These financial returns lead to deeper connections between the investors and their investing habits, creating a long-term investment (EY Global, 2020).

The study period from 2013 to 2019 was selected in order to understand the key driving force behind the industry before the Covid-19 pandemic. As displayed in Figure 1, the stock price movement experienced a downward trend from 2013 until 2019. In general, the stock price performance was moving away from the sustainability goals. This may be due to several factors such as fundamental factors (Nugroho & Pertiwi, 2021; Maani et al., 2021; Awan et al., 2018; Sukesti et al., 2021) and macroeconomic factors (Chandrashekar et al., 2018; Bhattarai, 2018; Nepal, 2018). However, the findings regarding the operating cash flow, return on equity and exchange rate remain inconclusive. This study sought to determine the signal indicator of fundamental factors and macroeconomic factors on the stock price of the Travel, Leisure, and Hospitality industry. For in-depth analysis, the listed companies could understand the main signal factors in maintaining sustainable stock price performance.

Figure 1
Average Stock Price Movement for Travel, Leisure, and Hospitality Industry
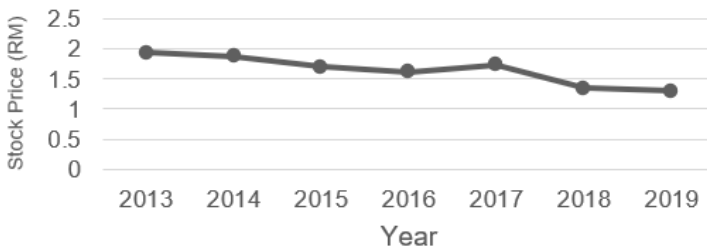
Sources: Bloomberg

LITERATURE REVIEW

Based on previous research, the result regarding fundamental and macroeconomic factors remains inconclusive. Nugroho & Pertiwi (2021) found a negative relationship between revenue and operating cash flow for stock price, while the result of operating cash flow contradicted the finding of Oroud et al. (2017), which indicated a positive relationship. A similar result of a negative relationship between return on equity and stock price was found by Maani et al. (2021), Puspitaningtyas (2017), and Bhattarai (2018). However, the result differed from that of Nugroho & Pertiwi (2021). Apart from that, earnings per share (Puspitaningtyas, 2017; Awan et al., 2018; Bhattarai, 2018; Nepal, 2018), debt to equity ratio (Sukesti et al., 2021), inflation rate (Chandrashekar et al., 2018; Rjoub et al., 2017; Nepal, 2018) found a positive relationship with the stock price. Moreover, Chandrashekar et al. (2018) and Bhattarai (2018) found a positive relationship between exchange rate and stock price, while Rjoub et al. (2017) discovered a negative relationship.

This study is conducted to determine the signal indicator of fundamental and macroeconomic factors on the stock price of the listed company in Malaysia's Travel, Leisure, and Hospitality industry. The basic idea of this study is to apply the Signalling Theory from 1973 and the Efficient Market Hypothesis from 1970 in the field of sustainability. This study expands the regression function of stock price by combining fundamental and macroeconomic factors. A dynamic panel analysis is a new method used in the sustainability field. Apart from this, this study may help to increase public understanding regarding the relationship between both factors and stock price. The findings may benefit listed companies, investors, and academicians. Listed companies could improve the main signal indicator that influences the stock price in order to move forward toward sustainable growth. Investors may select the right investment decision-making on stock purchase to participate in sustainable investing. Academics could use this study as their reference to conduct future research.

THEORY AND HYPOTHESES

The existence of information imbalance between the two parties is the foundation of the signalling hypothesis (Su et al., 2016). The efficient

market hypothesis proposed by Fama in 1970 asserts that a market is efficient if no investor experiences an anomalous return after accounting for risks (Gumanti, 2011). According to Fama (1965), when the stock price accurately represents all readily available information, any market is considered semi-strong.

As shown in Figure 2, the sender for the signal is the listed companies in Bursa Malaysia. Companies with excellent signals and reputations might increase their stock price (Yasar et al., 2020). The company's financial condition is a signal presented in the annual report and serves as a channel of communication between internal and external stakeholders (Rajandran, 2021; Sun et al., 2020). Furthermore, the signal environment of macroeconomic factors acts as the medium of signal transmission, which affects the receiver's reception and interpretation of the signal (Shou et al., 2020; Wei et al., 2017). Finally, stock price as receiver is influenced by the signal (fundamental factors) and signal environment (macroeconomic factors). Additionally, the stock price of a corporation reflects its current state of health in terms of value (Apolaagoa et al., 2020), which means that if the company's value changes, the market will adapt to reflect the change in value.

Figure 2
Theoretical Framework

Nine specific hypotheses could be generated based on Figure 2. The hypotheses are stated below:
H1: Does the lag of stock price have a significant impact on the stock price?
H2: Does revenue have a significant impact on stock price?
H3: Does net profit have a significant impact on stock price?
H4: Do earnings per share have a significant impact on stock price?
H5: Does operating cash flow have a significant impact on stock price?
H6: Does return on equity have a significant impact on stock price?
H7: Does the debt to equity ratio have a significant impact on stock price?
H8: Does the inflation rate have a significant impact on stock price?
H9: Does the exchange rate have a significant impact on stock price?

METHODOLOGY

The data firm-specific obtained from Bloomberg and World Bank Indicator was used to download the macroeconomics data. This study focused on 23 listed companies in the Travel, Leisure, and Hospitality industry in the main market of Bursa Malaysia. This study covered the period from 2013 to 2019 with 161 observations. A dynamic analysis instead of static analysis was applied since the nature of stock markets is non-linear and non-stationary with high heteroscedasticity (Waldi et al., 2018). Apart from this, the price movement is also dynamic, stochastic, and unreliable (Mubeena et al., 2022). Therefore, this study utilised the dynamic panel approach of the Generalised Method of Moments (GMM). GMM estimator is used when there is both an endogeneity and a heteroskedasticity problem. The GMM estimators were introduced by Arellano and Bond (1991) and Arellano and Bover (1995).

$$
\begin{aligned}
lnSP_{it} = \beta_0 &+ \delta lnSP_{i,t-1} + \beta_1 lnRVN_{it} + \beta_2 lnNP_{it} + \\
&\beta_3 lnEPS_{it} + \beta_4 lnOCF_{it} + \beta_5 lnROE_{it} + \beta_6 lnDTE_{it} + \\
&\beta_7 lnINF_{it} + \beta_8 lnER_{it} + \varepsilon_{it} \quad\quad\quad \dots(1)
\end{aligned}
$$

Equation (1) shows the function of the stock price in this study, which are stock price (SP), revenue (RVN), net profit (NP), earnings per share (EPS), operating cash flow (OCF), return on equity (ROE), debt to equity ratio (DTE), inflation rate (INF), and exchange rate (ER). The term ln refers to the natural logarithm, t refers to the time period, while i refers to the number of individuals. δ refers to the coefficient of lagged dependent variable. β_0 refers to constant, and β_1 to β_8 refers to the slope coefficient of independent variables. Meanwhile, εt refers to the error terms in the model.

According to Equations (1), the inclusion of lagged dependent variables will result in an endogeneity problem. Arellano and Bond (1991) explained that endogeneity could be addressed by altering the data using the differentiation approach. However, Blundell and Bond (1998) argued that the difference in GMM might result in significant sample bias. Thus, they presented system GMM estimators to increase efficiency by combining lagged levels and different information which are computable for all observations except the last for each individual. Therefore, data loss is minimised. To ensure the result's robustness, efficiency and reliability, a two-step system GMM was used (Roodman, 2009).

RESULT AND ANALYSIS

To recapitulate, this study aimed to determine the signal indicator of fundamental and macroeconomic factors in the Travel, Leisure, and Hospitality industry. A dynamic panel analysis of system GMM was applied, and a 5% significance level was the decision rule in this study. As shown in Table 1, the Modified Wald test and the Durbin-Wu-Hausman test have the same significance level. The Modified Wald test rejects the null hypothesis of variance homoskedasticity as the p-value is statistically significant at the 1% level. The Durbin-Wu-Hausman test rejects the null hypothesis of exogeneity as the p-value is statistically significant at a 1% level, which suggests that the model contains an endogenous regressor. Hence, the system GMM estimator is more suitable for explaining the explanatory variables.

Based on the result of the Arellano-Bond of autocorrelation test in the second order, the corresponding p-values fail to reject the null hypothesis as the significance level is at 10%. Thus, this confirms that there is no second-order autocorrelation in the residuals of the first difference equation. The corresponding p-values reject the null hypothesis in the first order. In addition, robust standard errors were used to overcome the bias of standard errors in the two-step system GMM. Hence, no result is estimated from the Sargan test. In an overview of explanatory variables, only lag one of stock price, operating cash flow, and inflation rate have a significant impact on the stock price. The coefficient value of lag one stock price is about 0.451 at a 5% significance level, which suggests that a 1% increase in the previous year of the stock price will increase 0.451% of the stock price in the current year. In other words, there is a positive relationship between lag one of stock price and current stock price.

Both operating cash flow and inflation rate have a positive impact on the stock price at 5% and 1% significance levels, respectively. Both factors contributed 0.063 and 0.177, which suggests that a 1% increase in these factors will increase stock price by 0.063% and 0.177%. Revenue, earnings per share, and return on equity have a positive relationship with the stock price, where their coefficient value is about 0.028, 0.063, and 0.010, respectively. It suggests that a 1% increase in revenue, earnings per share, and return on equity will increase stock price by 0.028%, 0.063%, and 0.010%. In contrast, net profit and debt to equity ratio have a negative

relationship with the stock price. The coefficient value suggests that a 1% increase in net profit and debt to equity ratio will decrease the stock price by 0.066% and 0.031%, respectively. However, the mentioned factors did not have a significant impact on the stock price. Even though earnings per share is significant at the 10% level, this study rejects the alternative hypothesis, as the decision rule is at a 5% significance level.

Table 1
Empirical Result

Dependent	Stock Price	
Variables	Coefficient	Probability
lnSP(-1)	0.451**	0.026
lnRVN	0.028	0.518
lnNP	-0.066	0.343
lnEPS	0.063*	0.052
lnOCF	0.063**	0.019
lnROE	0.010	0.937
lnDTE	-0.031	0.604
lnINF	0.177***	0.000
lnER	-0.329	0.500
Constant	0.145	0.763
Modified Wald Test	405.90***	0.000
Durbin-Wu-Hausman Test	5.226**	0.022
Arellano-Bond of Autocorrelation Test at 1st Order	-2.119**	0.034
Arellano-Bond of Autocorrelation Test at 2nd Order	1.833*	0.068
Sargan Test	No Result as Robust Standard Error be applied	

DISCUSSION

To summarise the final output from the result and analysis section, the lag of stock price, operating cash flow, and inflation rate are the main signal indicators influencing investors' decision-making. In other words, these factors lend support to the signalling theory. Listed companies may be aware that investors are receiving information that is not equally balanced, whether positive or bad, about stock price movement, financial reports, and

economic occurrences for the company's future profit estimates. Listed companies could promote relevant information to investors in order to maintain the stock price's sustainable movement. Further, listed companies may emphasise the performance of the operating cash flow to ensure sufficient funds are available to cover expenses, including operating, non-operating, and not limited to an emergency. Generally, the higher the extra income, the higher the return for investors, either in dividend base or share buyback. It could boost investor confidence and encourage them to invest more in the companies.

A surprising finding for inflation implies that the industry is under the anticipated inflation condition (Wong & Pinjaman, 2021; Perry, 1992). In other words, the changes in the price level would not have an effect on the company's stock price due to the ability to retain maximum profit with minimum cost. However, it is generally understood that inflation will only cause variations in company profitability by raising costs and lowering revenues. Hence, listed companies could provide clear information on inflation to help investors comprehend the status of the economy. In addition, listed companies could put less attention on the revenue, net profit, earnings per share, debt to equity ratio, and exchange rate. The result shows that these factors did not have a significant impact on the stock price. Meanwhile, the factor confirms the theory of efficient market hypothesis in which the information is fully reflected in the stock market.

The reason why profitability factors of revenue, net profit and earnings per share did not have a significant impact on the stock price is because investors did not focus on them as tourism is one of the largest industries in Malaysia, contributing 5.9 per cent to its gross domestic product (GDP), and employing close to a quarter of the total workforce in Malaysia (Hirschmann, 2021a). This is a good economic scene. When the number of tourists increases, the total income of related economic sectors will also increase. According to the Malaysia Tourism Statistics (2021), total tourist arrivals reached 26.10 million, bringing in RM86.10 billion in tourism receipts. In addition, Malaysia was planning to launch the Visit Malaysia 2020 tourism campaign, with an ambitious target of attracting 30 million visitors and RM100 billion in tourism receipts (Hirschmann, 2021b).

Investors appeared more confident in the profitability of their industry and did not focus too much on this aspect as well as the return on equity, debt to equity, and exchange rate. The exchange rate may have had an impact on the country's currency reservation, but it had little impact on individual companies because the value of the exchange rate was converted into Ringgit Malaysia. This was why the exchange rate was not significant to stock price. In order to practice stock price sustainability, listed companies could improve the yearly performance of operating cash flow. This could attract existing or potential investors to stay with the invested companies as the current stock price may positively affect the following year's performance.

CONCLUSION

This study examines the signal indicator that influences the stock price of the Travel, Leisure, and Hospitality industry in Malaysia to encourage sustainable behaviour. This study covers the period from 2013 to 2019 with sufficient data on companies. Both theories of signalling and the efficient market hypothesis were used for the study. The lag of stock price, operating cash flow, and inflation rate have a positive relationship with the stock price. The result of the operating cash flow supports the findings by Oroud et al. (2017) but contradicts those of Nugroho & Pertiwi (2021).

Studies were done by Chandrashekar et al. (2018), Rjoub et al. (2017) and Nepal (2018) also found a positive result for the inflation rate. Apart from this, other explanatory variables have an insignificant impact on the stock price. The result of revenue does not support the finding of Nugroho & Pertiwi (2021). Puspitaningtyas (2017), Awan et al. (2018), Bhattarai (2018) and Nepal (2018) also found a similar result for earnings per share.

A similar result of a positive relationship between return on equity matches the finding by Nugroho & Pertiwi (2021) but differs from that of Maani et al. (2021), Puspitaningtyas (2017) and Bhattarai (2018). In addition, the opposite finding has been determined for the debt-to-equity ratio (Sukesti et al., 2021). Last but not least, the finding of the exchange rate is supported by Rjoub et al. (2017), while Chandrashekar et al. (2018) and Bhattarai (2018) found a positive result. It can be summarised that the

performance of the stock price, operating cash flow, and the inflation rate is the main signal which influences investors' decision-making. At the same time, listed companies could improve the operating cash flow for stock price sustainability. Listed companies may also consider developing a new business line to expand their income sources.

Although the result is supported or contradicted by other researchers, the finding remains valid. It could be explained by the country context, timeframe context, and industry context. Each listed company will have a distinct signal indicator since the economic growth of various nations varies. Of course, the research findings from other historical periods will vary as well. As a result, it is impossible to use the same signal indicator consistently across all industries. This study shows that dynamic analysis is important in the interplay of stock prices because it may prompt listed companies to operate in a way that promotes sustainable behaviour. For future research, a similar research topic could be expanded to other industries or sectors with a longer period and more up-to-date for better understanding. Apart from this, a similar research topic also could be applied in a specific period, such as during Covid-19 and post Covid-19. Last but not least, user-generated content such as social media sentiment could also be included since the stock market is not only limited to being affected by firm-specific and macroeconomic factors.

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All the authors contributed equally to this paper.

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CONFLICT OF INTERESTS

All authors declare that they have no conflicts of interest.

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