THE IMPACTS OF FINANCIAL RATIOS ON STOCK PRICES IN MALAYSIA: EVIDENCE FROM BANKING INDUSTRY

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Abstract

The objective of this study is to identify whether the financial ratios have an impact towards the stock price in the banking industry of Malaysia. The financial ratios used in this study are the net profit margin, price to earnings ratio and dividend payout ratio. The sample collected for this empirical study covered 10-years period from 2013-2022. The study found that the net profit margin and price to earnings ratio boost stock price, however the dividend payout ratio decreases stock price. The influence of net profit margin and dividend payment ratio on stock price is negligible, in contrast to price to earnings ratio, which has a large effect on stock price. The findings have major implications to investors, industry and policy makers.

Keywords: Financial Ratio, Stock Price, Banking Industry, EMH Theory, Signaling Theory

INTRODUCTION

The Malaysian stock market, commonly known as Bursa Malaysia, is a thriving and active market that offers plenty of chances for stock pickers for alpha generation. Almost 900 firms are listed on Bursa Malaysia, providing a broad range of investment options across numerous sectors like consumer products, healthcare, and technology. Investors can build well-diversified portfolios thanks to this diversification, which also lowers the overall risk of a single stock investment (IFAST Research Team, 2023). The stock market, a crucial economic pillar, has a tremendous impact on the expansion of business and industry, which in turn has a substantial effect on the economic climate as a whole. This is the explanation behind the active stock market activity monitoring by the nation's central bank, government advisors, and business organizations (Goel, 2023).

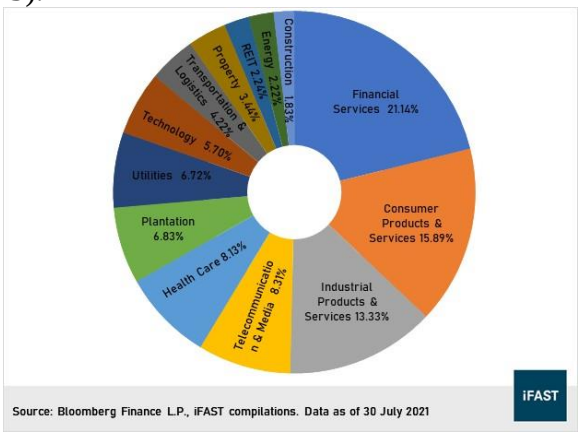

Figure 1: Breakdown of the market capitalization by sectors

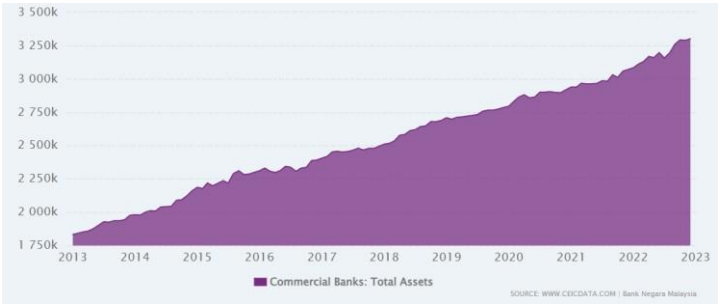

Figure 2: Malaysia Commercial Bank: Total Assets

According to iFAST (2021), the financial services sector, as represented by the Bursa Financials Services Index, is the largest sector with a market capitalization of RM352.61 billion (21.14% of Main Market). The sector comprises banking, insurance, and other financial companies. In addition, the total assets for commercial banks were reported to be RM3,340,246.38 million in March 2023 (CEIC, n.d.). Managers, owners, and potential investors can use financial ratios to evaluate and compare the financial condition of their companies. They are a tool that enables financial analysis across an organization's background, industry, or business sector (Carlson, 2022).

Financial statements are the end result of the accounting procedure used to present financial data about a company. Investors typically evaluate a company's performance based on its financial performance as indicated by various metrics (Harinurdin, 2023). Islamoglu (2015) looked into whether changes in financial parameters relating to the Turkish Banking Industry might help explain stock market index fluctuations. He found that while the ratio of shareholders' equity to total assets has a favorable impact on the growth of the BIST XBANK Index, the ratio of debt to equity has a negative impact. Analyzing financial measures on the Amman Stock Exchange, Alswalmeh & Dali (2019) forecasted the banking sector index. They found that while the relationships between equity ratio and quick ratio and the banking sector index in ASE were not significant, those between debt ratio, stock turnover, return on assets, price to book value, and return on equity were significantly correlated. Additionally, Mousa's (2015) study on the Bahrain Stock Exchange's banking sector's efficiency using data envelopment analysis and financial ratio analysis (FRA) demonstrates that FRA does not provide adequate and comprehensive information on the efficiency of banks.

Thus, the objectives of the study are (1) to investigate the relationship between net profit margin and stock prices, (2) to investigate the relationship between price to earnings ratio and price of stocks and (3) to investigate the relationship between dividend payout ratio and stock prices. Nine banks from the Malaysian banking industry were chosen in order to carry out this research. The nine banks include Malayan Banking Berhad (Maybank), Public Bank Berhad, CIMB Group Holdings Berhad, RHB Bank Berhad, Hong Leong Bank Berhad, Alliance Bank Malaysia Berhad, Affin Bank Berhad, AMMB Holdings Berhad, and BIMB Holdings Berhad. The findings of the study may have implications for investors, industry and policy makers.

LITERATURE REVIEW

Basu (1977) examines the relationship between the price-to-earnings ratio (PE) and the investment performance of common stocks. The study challenges the EMH theory by finding evidence of a positive correlation between low PE stocks and subsequent higher returns, suggesting the market may not be fully efficient. Rozeff (1984) explores the dividendpayout ratio and its implications for equity risk. The study suggests that dividend yields can serve as a measure of risk in an efficient market. If dividends are appropriately discounted by investors based on their perceived risk, the EMH theory suggests that stock prices will adjust

accordingly. Fama and French (1992) examines the cross-section of expected stock returns and identifies several factors, including firm profitability (proxied by net profit margin), as determinants of stock returns. This research highlights the relevance of financial variables within the framework of the EMH theory.

According to Bustani et al. (2021), it is claimed that signaling theory provides investors with financial ratio material signals, such as net profit margin and dividend payout ratio, that can convey important details when making investment decisions. The decision of an investor make an investment will be influenced by information released as an announcement. If the announcement has a positive value, the market is expected to respond as soon as it is received (Novalia & Nindito, 2016). The relationship between net profit minus tax expense and regulated costs is referred to as net profit margin (NPM), and it demonstrates the efficiency with which the business is managed (Kasmir, 2012). In order to influence the market price, investors will be persuaded to purchase shares of a company that can generate a net profit (Indahsaftri et al., 2015).

On the basis of past research into whether NPM has an effect on stock price, it was determined that majority of studies indicated that net profit margin brings an impact to stock price. Lindriani's (2018) research on the impact of net profit margin, return on assets, price to book value, and debt-to-equity ratio on the stock price of commercial products manufacturing corporations listed on IDX reveals that NPM affects the stock price. According to Kartiko (2021), Wulandari (2019), Bustani (2020), and Bayrakdaroglu et al. (2017), the NPM influences the stock price positively. In contrast, the results of Sunaryo (2020), Alaagam (2019), and Ginting (2023) indicate that NPM has no significant effect on stock prices.

From the empirical evidence of past research on whether the PE influences the price of stock, we find that three studies indicate that the PE has no impact on the price of stock, two studies indicate that the PE only influences the stock price over the long term, one study indicates that the PE has a weak but negative relationship with the stock price, and two studies indicate that the PE has no significant relationship with the price of stock.

Muthiarani et al. (2019) examine the impact of price to book value, PE, and inflationon the IDX30-indexed stocks prices. Amaliyah et al. (2017) investigates the effect of debt-to-equity ratio, price-to-book value ratio, earnings per share, and earnings ratio on the stock price of Indonesia Sharia Stock Index (ISSI) companies from 2012 to 2016. From 2013 to 2016, Arshad et al. (2015) examine the effect of market ratio, earnings per share, interest rate, gross domestic product, price earnings ratio, dividend share, and leverage on commercial banks listed on the Karachi Stock Exchange, Pakistan. These three studies demonstrate that PE does not impact stock prices. Fisher and Statman (2000) investigated the relationship between PE and future returns in the stock market and discovered that PE are not reliable predictors of potential stock returns for the short duration of period, approximately 1 to 2 years, but PE have better predictive ability when used to calculate stock returns over the extended duration.

Using data from 1872 to 1997, Rapach and Wohar (2005) discovered a weak correlation between PE and prospective stock price changes over the short term, but a strong correlation over the long term. Then, a study by Adekunle and Ejechi on the effects of company-specific variables such as the PE and macroeconomic factors on stock price discovered that the PE has a negative but not statistically significant relationship with the shareprice. Kittisak et al. (2019) and Almumani (2014) discovered a significant positive correlationbetween the PE and the market price of listed banks on the Amman Stock Exchange.

The empirical evidence from prior studies on whether the dividend payout ratio (DPR) influences the price of stock reveals a variety of outcomes. Iftikhar et al. (2017), Bulutoding (2018), Chowdhury et al. (2019), and Nur Athirah et al. (2022) found that the DPR has a significant and positive relationship with stock prices. In contrast, Nguyen et al. (2020) find a negative correlation between DPR and share price volatility. Next, Debri et al. (2022) examine

the effect of return on equity, adequacy ratio, and DPR on stock prices, with interest rates of Bank Indonesia serving as moderating variables for Indonesia Stock Exchange (IDX)-listed banking companies. The study found that a stock's price is unaffected by the DPR. The same results are obtained by Girsang et al (2019), who examine the effect of the DPR on the stock price of companies in the trade, services, and investment sectors.

DATA AND METHODOLOGY

The aim of this study is to investigate the relationship between financial ratios and nine banks from the Malaysian banking industry. This study collected 10-years annual data which are from 2013-2022 from Orbis Database. A panel data analysis is carried out, which covered 89 observations. The dependent variable is the 9 banking industry companies, and the independent variables are the financial ratios as follows:

Net Profit Margin (NPM)

The amount of net income or profit as a percentage of revenue is known as the net profit margin, or simply net margin. It is the proportion of a company's net earnings to its revenues (Murphy, 2022).

Price to Earnings Ratio (PE)

A ratio called the price-to-earnings ratio is used to estimate a company's value by contrasting its current share price with its earnings per share (EPS). The P/E ratio is calculatedby dividing the current stock price of a firm by its current earnings per share.

Dividend Payout Ratio (DPR)

The dividend payout ratio measures how much of the company's net income is distributed to shareholders in dividends. It is the portion of earnings that are distributed as dividends to shareholders (Hayes, 2023). By summing up all of the dividends per share paid during the previous four quarters and dividing by the corresponding earnings per share, the ratio is calculated (Lavie, 2022).

The estimation model used in this study is as follow:

$$Y_{it} = NPM_{it} + PE_{it} + DPR_{it}$$

Where,

Y = stock prices of banks

it = number of companies from 2013 until 2022

In this study, the most appropriate regression model shall be selected among the pooled ordinary least square (POLS), fixed effectmodel (FEM), and random effect model (REM). Three tests will be conducted to determine themost suitable model to suit the econometrics model which are Chow Test, Lagrange MultiplierTest and Hausman Test. Lastly, the diagnostic tests (Normality Test, Heteroskedasticity Test, and Multicollinearity Test) and inferential test (T-test and F-test) will be conducted before employing a regression analysis to test the assumptions.

Descriptive analysis

Descriptive analysis is the analysis of the central tendency and the dispersion of the data. It will provide a picture of the data based on the mean, minimum and maximum value, standard deviation, skewness of distribution, kurtosis, variance, and standard deviation of each variable in this research. The variables in this study are stock price of 9 Malaysia banks (dependent variable) and net profit margin, price to earnings ratio, and dividend payout ratio (independent variables).

Pooled Ordinary Least Square (POLS)

POLS is a regression that enables examination of n units of observations over a period of t times. It pooled all the observations into one regression. It will examine panel data, which is the combination of time series and cross-sectional data. However, POLS will not take into account time or specific dimensions, therefore it will be presumed that the business data behaves consistently across time.

Fixed Effect Model (FEM)

Fixed effect model is a least square dummy variables model and within estimator model. It will assume that the differences between individuals can be accommodated from different intercepts. Besides, FEM cannot be used when want to estimate the effects of the invariant variables.

Random Effect Model (REM)

REM was known as the error component model. A panel data model known as a random effect model is used to estimate data in which the interference variable may be associated over both time and individuals. Besides that, the unobserved heterogeneity variables and the independent variables are assumed to have no correlation relationship between both variables in this model.

Chow Test

Chow Test or Likelihood Ratio Test is a test of fixed effect signification (F test). It is a test for differences in the two regressions which used to determine whether or not to include a dummy variable to determine whether or not the intercepts differ between firms with Fixed Effect.

H0: Model follows common effect.

H1: Model follow fixed effect.

Lagrange Multiplier Test

Lagrange Multiplier Test was carried out to determine the appropriate model between Pooled Least Square or common effect and Random effect model.

H0: Use common effect.
H1: Use random effect.

At 5% of significance level, the null hypothesis will be rejected (use common effect) if the p-value less than 0.05 and accept the alternative hypothesis (use random effect).

Hausman Test

Hausman Test will be conducted to determine whether the fixed effect model or random effect model is better if the result shows that random effect model is better than using pooled ordinary least squared.

H0: Use random effect.
H1: Use fixed effect.

At 5% of significance level, reject the null hypothesis (use random effect) if the p-value less than 0.05 and accept the alternative hypothesis (use fixed effect).

Normality test

Normality test which will be conducted is Jarque-Bera Normality Test. The purpose of doing this test is to identify whether the residuals are normally distributed or not. If the normality assumption is invalid, the results of the normality test will not be accurate. In this test, hypothesis will be developed as depicted below:

H0: Residuals are normally distributed.
H1: Residuals are not normally distributed.

At 5% of significance level, if the p-value of the normality test is more than 0.05, it means that there is not enough evidence to reject the null hypothesis and will be assumed that the residuals are normally distributed.

Heteroskedasticity Test

The heteroskedasticity test will be applied is the Breusch-Godfrey heteroskedasticity test. It is done to figure out whether the error terms are heteroskedastic or homoscedastic. In this test, hypothesis will be developed as illustrated as below:

H0: Heteroskedasticity problem does not exist.

H1: Heteroskedasticity problem exist.

At 5% of significance level, if the probability for the heteroskedasticity test exceeds 0.05, it can be concluded that null hypothesis will not be rejected and there is no heteroskedasticity problem.

EMPIRICAL FINDINGS AND RESULTS ANALYSIS

Firstly, descriptive analysis is discussed used in this study. Then, a suitable regression model is chosen from pooled ordinary least square (POLS), fixed effect model (FEM), and random effect model (REM) by running the Chow Test, Lagrange Multiplier Test, and Hausman Test. Before using a regression analysis to assess the assumptions, the diagnostic tests (Normality assess, Heteroskedasticity Test, and Multicollinearity Test) and inferential tests (T-test and F-test) will also be carried out.

Descriptive Analysis

	Y	NPM	PE	DPR
Mean	7.631461	0.263990	12.75034	0.451038
Median	5.290000	0.225100	11.85000	0.424700
Maximum	24.76000	0.587600	82.08000	0.901900
Minimum	1.730000	0.066700	3.380000	0.075300
Std. Dev.	5.699701	0.116250	8.222297	0.170772
Skewness	1.326872	1.157987	7.057360	0.705577
Kurtosis	3.582369	3.590562	58.83522	3.591652
Jarque-Bera	27.37311	21.18384	12299.79	8.682725
Probability	0.000001	0.000025	0.000000	0.013019
Sum	679.2000	23.49510	1134.780	40.14240
Sum Sq. Dev.	2858.820	1.189243	5949.342	2.566362
Observations	89	89	89	89

Table 1: Descriptive Analysis Results

The findings of the descriptive analysis will characterize the study's data, including the mean, standard deviation, minimum, and maximum. In this investigation, 89 observations were made. The dependent variable stock price and the independent variables net profit margin (NPM), price to earnings ratio (PE), and dividend payout ratio (DPR) have respective average values or means of 7.631461, 0.2639990, 12.75034, and 0.451038. The maximum value of stock price is 24.76, while the maximum value for the independent variables is 0.5876 (NPM), 82.08 (PE), and 0.9019 for DPR. In the meanwhile, the minimum value of stock price is 1.73, while for NPM (0.0667), PE (3.38) and DPR (0.0753). Besides, the value standard deviation for stock price, NPM, PE, and DPR are 5.699701, 0.116250, 8.222297, and 0.170772 respectively.

Chow Test

Effects Test	Statistic	Degree of freedom (d.f.)	Probability (Prob.)
Cross-Section Chi-Square	112.733142	8	0.0000

Table 2: Chow Test Results

The Chow Test result indicates that the probability value is 0.0000. Therefore, the null hypothesis (model will follow common effect) will be rejected, as the probability value (0.0000) is less than the significance level of 5%, or 0.05, which suggests the model will adhere to the fixed effect.

Lagrange Multiplier Test

Method	Cross-section	Test Hypothesis Time	Both
Breusch-Pagan	122.5091 (0.0000)	1.878083 (0.1706)	124.3871 (0.0000)

Table 3: Lagrange Multiplier Test Results

Breusch-Pagan Lagrange multiplier test is used to distinguish between the common effect model and the random effect model. According to the results in the preceding table, the probability value is less than 0.05 (0.0000<0.05). The null hypothesis will then be refuted, and the random effect model will be applied.

Hausman Test

Test Summary	Chi-Square Statistic	Chi-Square d.f.	Probability
Cross-Section random	9.808573	3	0.0203

Table 4: Hausman Test Results

Chow Test results support the use of the fixed effect model (FEM), whereas Breusch-Pagan Lagrange Multiplier Test results support the use of the random effect model (REM). Therefore, the Hausman Test must be conducted to determine which of FEM and REM is the most applicable model. According to the above table's Hausman Test result, the probability value (0.0203) is less than the significance level of 5%, or 0.05. Therefore, the null hypothesis is rejected. Then, overall testing indicates that the FEM will be the ideal model for this research.

Normality test

Normality Test	
Jarque-Bera	34.49264
Probability	0.000000

Table 5: Normality test Results

Based on the Normality Test results in the table above, the p-value of the normality test is less than 0.05 (0.0000). The null hypothesis will not be rejected. Thus, the residuals do not follow a normal distribution.

Variance Inflation Factor (VIF)

	PE	**NPM**	**DPR**
VIF	1.040322	1.010901	1.040322

Table 6: Variance Inflation Factor (VIF) Results

In the above table, the variance inflation factor (VIF) value for the independent variables (PE, NPM, DPR) is displayed. Multicollinearity issues arise when VIF is greater than 10 (severe multicollinearity issue), while there is no relationship between the independent variables if VIF equals one. Given the outcomes from the above table, all the values of variance inflation factor (VIF) for independent variables are not more than ten and closer to one. As a result, it may be inferred that there is no significant multicollinearity issue and that all of the independent variables have low correlations with one another.

Panel Cross-section Heteroskedasticity LR Test

Null hypothesis: Residuals are homoskedastic

	Value	df	Probability
Likelihood ratio	114.0257	9	0.0000

LR test summary:

	Value	df
Restricted LogL	-261.0896	85
Unrestricted LogL	-204.0767	85

Table 7: Panel Cross-section Results

According to the outcome of the Panel Cross-section Heteroskedasticity LR Test, the likelihood ratio is 114.0257, with a probability value of 0.0000 less than the significance level of 0.05 or 5%. Therefore, the null hypothesis will be refuted, indicating the existence of the heteroskedasticity problem.

Panel Period Heteroskedasticity LR Test

Null hypothesis: Residuals are homoskedastic

	Value	df	Probability
Likelihood ratio	16.41391	9	0.0587

LR test summary:

	Value	df
Restricted LogL	-261.0896	85
Unrestricted LogL	-252.8826	85

Table 8: Panel Period Results

The result of Panel period Heteroskedasticity LR Test from the figure above shows that the value of likelihood ratio is 16.41391 and with a probability value which greater than 5% significance level (0.0587 > 0.05). It indicates that the null hypothesis will not be rejected and the heteroskedasticity problem does not exist.

Fixed Effect Model

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	5.070538	1.951450	2.598344	0.0112
NPM	9.602596	5.758570	1.667531	0.0995
PE	0.080116	0.038503	2.080790	0.0408
DPR	-2.207298	2.661425	-0.829367	0.4095

Effects Specification

Cross-section fixed (dummy variables)

Root MSE	2.414084	R-squared	0.818570
Mean dependent var	7.631461	Adjusted R-squared	0.792652
S.D. dependent var	5.699701	S.E. of regression	2.595387
Akaike info criterion	4.870180	Sum squared resid	518.6744
Schwarz criterion	5.205727	Log likelihood	-204.7230
Hannan-Quinn criter.	5.005429	F-statistic	31.58246
Durbin-Watson stat	0.607810	Prob(F-statistic)	0.000000

Table 9: Fixed Effect Model Results

Based on the figure above, the regression equation of the fixed effect model is:

$$Y = 5.070538 + 9.602596NPM_{it} + 0.080116PE_{it} - 2.207298DPR_{it}$$

Based on the above regression, the constant value coefficient is 5.070538. This indicates that the stock price would be $5.070538 if all independent variables (NPM, PE, and DPR) were held constant. The coefficient value of NPM is 9.602596, indicating that NPM andstock price are positively correlated. The stock price will increase by 9.602596 units when thenet profit margin increases by one unit. In accordance with the findings of Kartiko (2021), Wulandari (2019), Bustani (2020), and Bayrakdaroglu et al. (2017), NPM positively impacts the stock price. None of the studies, however, pertain specifically to the banking industry.

Moreover, PE has a positive coefficient value of 0.080116. This is in line with the findings of Kittisak et al. (2019) and Almumani (2014), who discovered a considerable positive correlationbetween PE and stock price. The focus of Almumani's (2014) research is the banking sector, specifically the Amman Stock Exchange-listed banks. The coefficient for the DPR is -2.207298. This negative regression coefficient indicates that an increase of 1 unit in DPR will result in a decrease of $2.207298 per share. This is compatible with Nguyen et al. (2020), whose study sample is made up by Vietnamese corporations listed on the Ho Chi Minh Stock Exchange (HOSE). The result of insignificant relationship is in line with result of research by Sunaryo (2020), Alaagam (2019) Ginting (2023) that shows there isno significant impact of NPM on stock prices. It is also noted that Alaagam (2019) & Ginting(2023)'s studies are related to the banking sector which are the Saudi Arabia banking sector and banking sector of Indonesia Stock exchange respectively.

Next, the findings of the test indicate that the t-count value for the price-to-earnings ratio (PE) is greater than the t-table value (2.080790 > -1.662577). Besides, its probability value (0.0408) is also below 0.05. This indicates that the PE is significantly related to the share price. The results of hypothesis testing show that PE and stock price have a positive and significant relationship. This is accordant with the result of the study by Kittisak et al. (2019) and Almumani (2014) which found a significant positive correlation between PE and stock price. Finally, the outcome of the test indicates that the value of t-count for the independent variableDPR exceeds the value of t-table (-0.829367 > -1.662577), while its probability value (0.4095).

CONCLUSION

This study investigates the impact of the net profit margin, price to earnings ratio anddividend payout ratio on the stock price in the banking industry of Malaysia. Using a novel hand-collected data of listed Malaysian banks over the period 2013–2022, this study documentsthat the NPM and PE increases stock price, while the stock price declines as a result of the DPR. The impact of NPM and DPR is insignificant towards stock price, unlike PE which has a significant effect on stock price. Research on the effects of financial ratios on stock prices inMalaysia contributes to the body of knowledge by shedding light on valuation metrics,financial performance evaluation, investor decision-making, capital market efficiency, industryperformance evaluation, and policy implications. This research aids industry stakeholders, analysts, investors, and policymakers in making informed decisions and fostering a robust andsustainable financial market in Malaysia by enhancing their understanding and providing them with pertinent information.

There are several limitations to our study. Firstly, the relationship between financial ratios and stock prices may not have taken into account all relevant variables. Excluded variables, such as market conditions, interest rates, or particular bank characteristics, could introduce

bias and confound the results. Secondly, the period of the research may make it difficult to identify long-term trends or changes in financial measures and stock prices.Furthermore, the study's conclusions may not be easily generalised to banks in other areas or countries due to discoveries that are peculiar to the Malaysian banking industry.

There is less research on the banking industry stock price performance from past research. Most research that are relevant with the banking industry are carried out for non-Asia countries. Therefore, it is recommended to future researchers to include Asia countries such as Malaysia, China, Japan, South Korea and more in their study. As there is relationship between financial ratios and stock price, future researchers can include more relevant ratios in their study to get to know more on how the other ratios may affect the stock price.

References

Alaagam, A. (2019). The relationship between profitability and stock prices: Evidence from the Saudi Banking Sector. *Research Journal of Finance and Accounting, 10*(14).

Almumani, M. A. (2014). Determinants of equity share prices of the listed banks in Amman Stock Exchange: Quantitative approach. *International Journal of Business and Social Science, 5*(1), 91-104.

Alswameh, A. A. A., & Dali, N. R. S. M. (2019, April). Prediction Of The Banking Sector Index Using Financial Ratios: An Empirical Study On Amman Stock Exchange. *International Journal of Advanced Research in Economics and Finance, 1*(1), 1-9. https://oarep.usim.edu.my/jspui/handle/123456789/11236

Amaliyah, N.F., Priantono, S., & Perwitasari, D. (2017). Pengaruh Earning per Share (EPS), Price Earning Ratio (PER), Price to Book Value (PBV), Dan Debt To Equity Ratio (DER) Terhadap Harga Saham Pada Perusahaan Indeks Saham Syariah Indonesia (ISSI). *Jurnal ECOBUSS, 5(2).*

Arshad, Z., Arshaad, A. R., Yousaf, S., & Jamil, S. (2015). Determinants of share prices of listed commercial banks in Pakistan. *IOSR Journal of Economics and Finance, 6*(2), 56-64.

Basu, S. (1977). Investment performance of common stocks in relation to their price-earnings ratios: A test of the efficient market hypothesis. The Journal of Finance, 32(3), 663-682.

Bayrakdaroglu, A., Mirgen, C., & Ezgi, K. U. Y. U. (2017). Relationship between profitability ratios and stock prices: An empirical analysis on BIST-100. *PressAcademia Procedia, 6*(1), 1-10.

Bulutoding, L., Parmitasari, R.D.A., & Dahlan, M.A. (2018). Pengaruh Return On Asset (ROA) dan Debt To Equity Ratio (DER) Terhadap Harga Saham Dengan Kebijakan Dividen Sebagai Variabel Intervening. *Journal of Chemical Information and Modeling, 53(9), 1689-1699.*

Bustani, B. (2020). The Effect Of Return On Assets (ROA), Net Profit Margin (NPM), Dividend Payout Ratio (DPR) and Dividend Yield (DY) On Stock Prices In The Subsectors Insurance Company Listed In Indonesia Stock Exchange Period 2015-2018. *Ilomata International Journal of Tax and Accounting, 1(3), 170-178*.

Carlson, R. (2022, September 3). What Is Financial Ratio Analysis? *The Balance.* https://www.thebalancemoney.com/what-is-financial-ratio-analysis-393186#toc-what-is-financial-ratio-analysis.

Chowdhury, T., Dovash, R. H., & Islam, S. (2019). Determinants of stock price of financial sector-a study on banks and non-bank financial institutions in Bangladesh. International Journal of Business and Technopreneurship, 9(1), 49-56.

CEIC Data. (n.d.). *Malaysia Commercial Banks: Total Assets*. https://www.ceicdata.com/en/malaysia/balance-sheet-commercial-banks-incl-islamic-

banks/commercial-banks-total-assets

Debri T.M.H., Nagian T., Yeni A. (2022). Effect of Loan to Deposit Ratio, Capital Adequacy Ratio, Return on Equity, and Dividend Payout Ratio on stock prices with Bank Indonesia Interest Rates as Moderating Variables in Banking Companies on the Indonesia Stock Exchange. *International Journal of Social and Management Studies (IJOSMAS), 3(3).*

Fisher, K. and Statman, M. Investor sentiment and stock returns, Financial Analysts Journal, 56(2), 2000, 16-23.

Ginting, C., Putri, N. M., Wardani, H. F., Nopian, R., & Nasution, M. I. (2023, February). The Influence of Inflation and Net Profit Margins on Banking Sector Stock Prices in Mediation of Profitability on the Indonesian Stock Exchange for the 2017-2021 Period. In *Proceeding Medan International Conference on Economic and Business* (Vol. 1, pp. 272-282).

Girsang, A.N., Tambun, H.D., Putri, A., Rarasati, D., Nainggolan, D.S.S., & Desi, P. (2019). Analisis Pengaruh EPS, DPR, dan DER terhadap Harga Saham Sektor Trade, Services, & Investment di BEI. *Jesya (Jurnal Ekonomi & Ekonomi Syariab), 2(2), 351-362*.

Goel, A. (2023, January 10). The relationship between economy & stock market. *The Economic Times.* https://economictimes.indiatimes.com/markets/stocks/news/the-relationship-between-economy-stock-market/articleshow/96878611.cms?from=mdr

Harinurdin, E. (2023). The Influence of Financial Ratio and Company Reputation on Company Stock Prices Financial Sector. *Proceedings 2022, 83*, 47.

Hayes, A. (2023, February 6). Dividend Payout Ratio Definition, Formula, and Calculation. *Investopedia.* https://www.investopedia.com/terms/d/dividendpayoutratio.asp

IFAST Research Team. (2021, August 17). The 5 key sectors in Bursa Main Market you should know. *FSMOne. https://www.fsmone.com.my/stocks/research/article-details/235502/the-5-key-sectors-in-bursa-main-market-you-should-know*

IFAST Research Team. (2023, February 28). Malaysian stock market: A good destination for stock pickers. *The Malaysian Reserve.* https://themalaysianreserve.com/2023/02/28/malaysian-stock-market-a-good-destination-for-stock-pickers/

Iftikhar, A. B., Raja, N. U. D. J., & Sehran, K. N. (2017). Impact of dividend policy on stock prices of firm. *Theoretical & Applied Science*, (3), 32-37.

Indahsafitri, P. N., Wahono, B., & Khoirul ABS., M. (2015). Pengaruh Return on Equity (ROE), Net Profit Margin (NPM), Gross Profit Margin (GPM) dan Earning per Share (EPS) terhadap Harga Saham (Studi Empiris pada Perusahaan yang Terdaftar dalam LQ45 BEI Periode 2013-2016). *Jurnal Riset Manajemen, 1*(1), 77–97. https://doi.org/10.1123/ijsb.8.1.1

Islamoglu, M. (2015). Predictive Power of Financial Ratios With Regard To the Turkish Banking Industry: An Empirical Study on the Stock Market Index. *Asian Economic and Financial Review*, *5*(2), 249-263. https://doi.org/10.18488/journal.aefr/2015.5.2/102.2.249.263

Kasmir, K. (2012). *Analisis Laporan Keuangan.* Jakarta: PT Raja Grafindo Persada.

Kartiko, N.D., & Rachmi, I.F. (202). Pengaruh Net Profit Margin, Return On Asset, Return On Equity, dan Earning Per Share Terhadap Harga Saham di Masa Pandemi Covid-19 (Studi Empiris Pada Perusahaan Publik Sektor Pertambangan di Bursa Efek Indonesia). *Jurnal Riset Bisnis Dan Investasi, 7(2), 58-68.*

Lavie, D. (2022, March 22). Dividend Payout Ratio: What It Is & How to Calculate It. *Seeking Alpha.* https://seekingalpha.com/article/4484920-dividend-payout-ratio

Lindriani R. (2018). Pengaruh Return On Asset (ROA), Debt To Equity Ratio (DER), Net Profit Margin (NPM), Dan Price To Book Value (PBV) Terhadap Saham Pada 44 Perusahaan Manufaktur Sektor Industri Barang Konsumsi Yang Terdaftar Di Bursa Efek Indonesia Periode 2015-2017. *Universitas Nusantara PGRI Kediri, 01(11), 1-16.*

Mousa, G. A. (2015, July). Financial Ratios versus Data Envelopment Analysis: The Efficiency Assessment of Banking Sector in Bahrain Bourse. *International Journal of Business and Statistical Analysis, 2*(2), 75-85. http://dx.doi.org/10.12785/IJBSA/020202

Murphy, C. B. (2023, March 6). What is Net Profit Margin? Formula for Calculation and Examples. *Investopedia.* https://www.investopedia.com/terms/n/net_margin.asp\

Mutiarani N.N., Riani R.D. & Suhendro. Pengaruh Price Earning Ratio, Price to Book Value, Dan Inflasi Terhadap Harga Saham Yang Terindeks IDX 30. *Edunomika, 3(2)(Agustus 2019).*

Nguyen, T. Nguyen, H., Tran, Q., Le, Q. (2020). Dividend policy and share price volatility: empirical evidence from Vietnam. *Accounting, 6(2), 67-78.*

Novalia, F., & Nindito, M. (2016). Pengaruh Konservatisme Akuntansi dan Economic Value Added terhadap Penilaian Ekuitas Perusahaan. *Jurnal Ilmiah Wahana Akuntansi, 11*(2), 1–16. https://doi.org/10.21009/10.21.009/wahana.011/2.1.

Nur Arthirah G., Nadisah Z., Foo S.M. (2022). Share Price Volatility and Dividend Policy During the Pandemic of Covid-19. *9th International Conference on Management and Muamalah 2022 (IcoMM 2022).*

Rapach, D. and Wohar, M. Valuation ratios and long-horizon stock price predictability, Journal of Applied Econometrics, 20(3), 2005, 327-344

Sunaryo, D. (2020). The effect of net profit margin, return on asset, return on equity on share prices in The Southeast Asian metal industry. *International Journal of Science, Technology & Management*, *1*(3), 198-208.

Watung, R., & Ilat, V. (2016). Pengaruh Return on Asset (ROA), Net Profit Margin (NPM), dan Earning per Share (EPS) terhadap Harga Saham pada Perusahaan Perbankan di Bursa Efek Indonesia Periode 2011-2015. *Jurnal Riset Ekonomi, Manajemen, Bisnis dan Akuntansi*, *4*(2), 518–529.

Wulandari, A.I., Badjra, I.B. (2019). Pengaruh Profitabilitas Terhadap Harga Saham Pada Perusahaan LQ-45 Di Bursa Efek Indonesia (BEI). *E-Jurnal Manajemen, 8(9).*