EFFICIENCY MARKET HYPOTHESIS, RANDOM WALK THEORY, AND FINANCIAL RATIOS-STOCK RETURNS: A COMPARATIVE STUDY OF BANKS IN INDONESIA, INDIA, AND CHINA IN THE POST-COVID ERA

HIPOTESIS PASAR EFISIEN, TEORI JALAN ACAK, DAN RASIO KEUANGAN-RETURN SAHAM: STUDI PERBANDINGAN BANK DI INDONESIA, INDIA, DAN CHINA PADA ERA PASCA-COVID

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ABSTRACT

This research aims to analyze how financial ratios affect firm value, utilizing the Efficiency Market Hypothesis and Random Walk Theory for analysis. It focuses on banking sector companies listed on the Indonesia Stock Exchange (XIDX), India Stock Exchange (XBOM), and China Stock Exchange (XSHG) from 2022 to 2023. This quantitative study employs purposive sampling, resulting in 184 firm-year samples, with data gathered from annual reports. Regression analysis using SPSS version 26 is the chosen method. The findings suggest that India has the most efficient market, while Indonesia aligns with the random walk theory, indicating weaker market efficiency. Notably, variables like "Return on Average Equity" in Indonesia and India and "Impairment Loans to Equity" in India and China significantly impact stock returns. These varying influences underscore the importance of considering country-specific factors in stock return predictions. However, it's essential to acknowledge that
the models explain only a portion of the variance in the dependent variable.

1. Introduction

In the post-COVID era, the banking sectors of Indonesia, India, and China have undergone significant changes, presenting unique challenges and opportunities. As a result, it has become crucial to examine the relationship between financial ratios and stock returns in these markets and explore the implications of the Efficiency Market Hypothesis (EMH) and Random Walk Theory (RWT). This research aims to conduct a comparative study of banks and financial institutions in these three major economies in South East, South, and East Asia, respectively, to investigate the interplay between financial ratios and stock returns while considering the implications of EMH and RWT. By analyzing these relationships, this study seeks to contribute to a better understanding of market efficiency and the predictability of stock returns in the banking sectors of Indonesia, India, and China.

The dependent variables in this research are the stock returns for the first, second, and third months, denoted as SRFM, SRSM, and SRTM, respectively. These variables reflect the performance of banks and financial institutions in terms of stock market returns. On the other hand, the independent variables consist of impairment loans to equity (ILTE), unreserved
impairment loans to equity (UILTE), return on average equity (ROAE), recurring earning power (REP), current ratio (CR), and solvency ratio (SR). These financial ratios serve as indicators of the banks' financial health and performance.

To capture the post-COVID dynamics, the financial ratio data for the years 2021 and 2022 will be utilized, while the stock return data will cover the years 2022 and 2023. The study will focus on the banking sectors of Indonesia, India, and China, representing key economies in South East, South, and East Asia, respectively.

The research follows a quantitative approach, analyzing data obtained from the Osiris database. The data will be filtered to remove any values indicated as "n.a." or "n.s." to ensure accuracy and reliability in the calculations.

Regression analysis will be conducted to examine the relationship between the financial ratios and stock returns. Specifically, the regression models will utilize the average of the ending prices of the first, second, and third months of stock returns. This analysis will enable the identification of the most impactful month, which will be considered as the efficient market period for each country. Additionally, the adjusted R-squared value will be evaluated to determine the degree to which the financial ratios can explain the stock returns. A higher adjusted R-squared value suggests a stronger adherence to the non-random walk theory.

By conducting this comparative study, our aim is to shed light on the relationship between financial ratios and stock returns in the banking sectors of Indonesia, India, and China. Through quantitative research and regression analysis, we seek to examine the efficiency market hypothesis, random walk theory, and the potential influence of financial ratios on stock market dynamics in the post-COVID era. The findings will provide valuable insights for policymakers, investors, and financial analysts, helping them understand the factors driving stock returns and make informed decisions in the banking and financial sectors. This study will identify the efficient market periods for each country by analyzing the month with the most significant impact on stock returns, utilizing adjusted R-squared values to gauge predictability. By contributing to the existing body of knowledge on EMH, RWT, and the relationship between financial ratios and stock returns, our research will offer valuable insights into the dynamic banking and financial landscape of Indonesia, India, and China in the post-COVID era.

2. Literature Review

Efficiency Market Hypothesis:

The Efficiency Market Hypothesis (EMH) has been a fundamental concept in finance, positing that financial markets incorporate all available information and adjust prices accordingly, making it impossible to consistently outperform the market. Numerous studies have explored the EMH in the context of stock returns, particularly in the banking sector. In the post-
COVID era, the efficiency of financial markets in Indonesia, India, and China has gained significant attention due to the dynamic economic landscape in these South East, South, and East Asian countries.

**Random Walk Theory:**

The Random Walk Theory (RWT) is closely related to the EMH and suggests that stock prices follow a random pattern, making it difficult to predict future prices based on past information. The debate between supporters and critics of the RWT continues, with some arguing that stock prices exhibit predictable patterns, especially when considering the influence of financial ratios. In the context of banks and financial institutions in Indonesia, India, and China, exploring the applicability of the RWT is crucial to understanding the behavior of stock returns.

**Financial Ratios:**

Financial ratios play a vital role in evaluating the performance and financial health of banks and financial institutions. In this study, several key financial ratios will be examined, including impairment loans to equity (ILTE), unreserved impairment loans to equity (UILTE), return on average equity (ROAE), recurring earning power (REP), current ratio (CR), and solvency ratio (SR). These ratios provide insights into various aspects of a bank's assets quality for ILTE and UILTE, operations for ROAE and REP, liquidity for CR, and structure for SR. Understanding the relationship between these financial ratios and stock returns is essential for identifying potential drivers of market performance.

**Stock Return:**

The stock return, represented by the first month (SRFM), second month (SRSM), and third month (SRTM) returns, serves as a crucial dependent variable in this study. By analyzing the relationship between financial ratios and stock returns, we can gain insights into the effectiveness of these ratios as indicators of stock market performance. The analysis will be conducted using the average of the ending prices for each month, allowing us to identify the month with the most significant impact on stock returns. This determination will help identify the efficient market period, indicating the degree of efficiency in the stock markets of Indonesia, India, and China.

**Previous Studies:**

Reda et al. (2016) found that maintaining a higher level of equity relative to liabilities and effectively managing bad debts are significant factors in achieving higher profitability for banks. They identified equity to liability and interest rate on deposits as the most powerful positive factors affecting net interest margin (NIM), while factors such as loan loss reserve to impairment loans, impaired loans to equity, liquid assets to total deposits and borrowings also had a positive impact on NIM. On the other hand, capital funds to liability and loan loss provision to
net interest revenue had a negative effect, and factors like net charge offs to average gross loans, net loans to deposits, and short-term borrowing negatively influenced NIM.

Altman et al. (2014) conducted a study on bank distress and found that closures and open-bank resolutions primarily occurred in severely undercapitalized banks with poor asset quality, low charter values, and high funding costs. These factors, including regulatory capital, asset quality, liquidity, franchise, and funding costs, were significant determinants of bank distress.

Islam et al. (2016) examined the determinants of banking profitability in South Asian countries and discovered that recurring earning power positively and significantly affected banking profit. They analyzed bank-specific, industry-specific, and macroeconomic factors and concluded that maintaining higher profitability requires attention to various determinants in each country's banking sector.

Lazarides (2017) investigated the determinants of bank performance and found that asset quality ratios, such as net charge-offs to average loans, net charge-off over net income before loan loss provision ratio, and impaired loans to equity, had a significant impact on bank performance. Minimizing bad debt and managing risk effectively were crucial for enhancing profitability and performance.

Petria et al. (2015) examined the determinants of bank profitability in EU27 and identified bank-specific and industry-specific/macro-economic factors as influential. They used return on average assets (ROAA) and return on average equity (ROAE) as proxies for profitability.

Heikal et al. (2014) investigated the effect of various financial ratios on the growth income of automotive companies listed in the Indonesia Stock Exchange. Their findings revealed that return on asset, return on equity, and net profit margin had a positive and significant impact on growth income, while debt to equity ratio and current ratio had a negative influence.

Forgione et al. (2018) found that unreserved impaired loans and the loan-loss provision on substandard loans significantly affected the probability of bank distress.

Dewanti et al. (2017) analyzed bank performance across ASEAN countries and discovered that Economic Value Added (EVA) and certain financial ratios influenced stock returns. The impact of EVA on stock return was observed in Indonesia, Thailand, and the Philippines, while earnings per share (EPS), return on equity (ROE), and return on assets (ROA) had an influence on stock return in specific countries.

Maditinos et al. (2009) examined the explanatory power of value-based performance measures (Economic Value Added - EVA) and traditional accounting measures (earnings per share - EPS, return on investment - ROI, and return on equity - ROE) in explaining stock market
returns. EPS was found to have the highest value relevance, and the combination of EVA with EPS improved the explanatory power.

The et al. (2022) explored the relationship between solvency ratio, profitability ratio, inflation, and stock return. They found that these factors were interrelated and influenced stock returns, particularly in the context of the COVID-19 pandemic.

All the previous studies have examined the variables of impairment loans to equity (ILTE), unreserved impairment loans to equity (UILTE), return on average equity (ROAE), recurring earning power (REP), current ratio (CR), and solvency ratio (SR) individually in their research. However, none of them have investigated the combined effect of these factors as independent variables on stock returns. Therefore, this quantitative research aims to investigate the relationship between financial ratios and stock returns in the banking sectors of Indonesia, India, and China during the post-COVID era. The study intends to contribute to the existing literature by examining the implications of the Efficient Market Hypothesis (EMH) and Random Walk Theory (RWT) on stock returns, as well as exploring the role of these key financial ratios in predicting market performance. The data for this research will be sourced from the Osiris database, which provides a comprehensive set of financial information for banks and financial institutions in the selected countries. The analysis will utilize data from 2021 to 2022 for financial ratios and 2022 to 2023 for stock returns, focusing specifically on the Indonesia Stock Exchange (XIDX), India Stock Exchange (XBOM), and China Stock Exchange (XSHG). The findings of this study are expected to aid policymakers, investors, and financial analysts in gaining a better understanding of the factors influencing stock returns in the post-COVID banking landscape of these emerging economies.

3. Research Method

This study employs a quantitative research approach to examine the relationship between financial ratios and stock returns in the banking sectors of Indonesia, India, and China in the post-COVID era. The study aims to compare the implications of the Efficiency Market Hypothesis (EMH) and Random Walk Theory (RWT) on stock returns while considering key financial ratios as independent variables.

Data Collection:

The data for this research will be obtained from the Osiris database, which provides comprehensive financial information for banks and financial institutions. The financial ratios of interest include impairment loans to equity (ILTE), unreserved impairment loans to equity (UILTE), return on average equity (ROAE), recurring earning power (REP), current ratio (CR), and solvency ratio (SR). These financial ratios will be collected for the years 2021 and 2022, reflecting the post-COVID period, while stock returns (dependent variables) for the first month
(SRFM), second month (SRSM), and third month (SRTM) will be collected for the years 2022 and 2023.

**Sample and Variables:**

The sample for this study consists of banks and financial institutions in Indonesia, India, and China, representing Southeast Asia, South Asia, and East Asia regions, respectively. The selected stock exchanges for analysis are the Indonesia Stock Exchange (XIDX), India Stock Exchange (XBOM), and China Stock Exchange (XSHG). The entities chosen for analysis are banks and financial institutions operating in these countries.

**Operational Variable Definition**

The operational variable definitions for the given variables are as follows:

**Impairment Loans to Equity (ILTE):** ILTE represents the ratio of impairment loans to equity and provides a measure of the extent to which a company's equity is exposed to impaired loans. It is calculated by dividing the total value of impaired loans by the equity of the company. Impaired loans increase when a bank classifies a specific loan or a part of a loan portfolio as bad. It decreases when either a bank re-assesses a problem loan or part of a portfolio or when a bank writes off a loan or a part of loan portfolio. (Abedifar et al., 2012). The trend of this ratio is important to evaluate the effectiveness of management in identifying specific impaired loans or non-performing loans as a percentage of equity that should be available to absorb losses (Reda et al., 2016). Impairment Loans to Equity (ILTE): ILTE = Impaired Loans / Equity.

**Unreserved Impairment Loans to Equity (UILTE):** UILTE measures the ratio of unreserved impairment loans to equity, indicating the proportion of impaired loans that are not covered by reserves. It is calculated by dividing the value of unreserved impaired loans by the equity of the company. These are loans that may not be recovered and are not covered by reserves. They show what percentage of the bank capital would be written off if the accumulated impairment reserves were 100% of impaired loans, and how exposed a bank’s capital ratio would be as a result. This indicates the weakness of the loan portfolio relative to the bank’s capital. (Reda et al., 2016). Unreserved Impairment Loans to Equity (UILTE): UILTE = Unreserved Impaired Loans / Equity.

**Return on Average Equity (ROAE):** ROAE is a financial ratio that measures the profitability of a company relative to its average shareholders' equity. It is calculated by dividing the net income by the average equity over a specific period. Return on Average Equity (ROAE): ROAE = Net Income / Average Equity.

Formula of the Return on Equity (ROE) of a company as quotes from book authored by Bodie, Kane, & Marcus (2011) is as follows:

\[ ROE = \frac{Net \ Income}{Average \ stockholder \ equity} \]
ROE measures the profitability relative to shareholders (White, Sondhi and Fried, 2003). Hence total debt is excluded from the denominator and as a numerator is used either pretax income or net income. The proposed formulas are the following:

\[
\text{ROE} = \frac{\text{Pretax Income}}{\text{Average Book Value of Shareholders' Equity}}
\]

or

\[
\text{ROE} = \frac{\text{Net Income}}{\text{Average Book Value of Shareholders' Equity}}
\]

Finally, Rappaport (1998, p. 29) defined ROE as follow:

\[
\text{ROE} = \frac{\text{Net income}}{\text{Book Value of Shareholders' Equity}}
\]

Recurring Earning Power (REP): REP represents the sustainable and recurring earning capacity of a company. It reflects the ability of a company to generate consistent earnings over time, excluding one-time or non-recurring items. Recurring Earning Power (REP):

\[
\text{REP} = \frac{\text{Recurring Earnings}}{\text{Total Assets}}.
\]

Current Ratio (CR): CR is a liquidity ratio that measures a company's ability to meet its short-term obligations. It is calculated by dividing the current assets by the current liabilities and indicates the company's liquidity position. Current Ratio (CR):

\[
\text{CR} = \frac{\text{Current Assets}}{\text{Current Liabilities}}.
\]

Solvency Ratio (SR): SR measures the long-term solvency and financial stability of a company. It assesses the ability of a company to meet its long-term obligations. Various solvency ratios can be used, such as the debt-to-equity ratio or the total debt ratio, to evaluate the financial leverage of a company. Solvency Ratio (SR):

\[
\text{SR} = \frac{\text{Total Debt}}{\text{Total Assets}}.
\]

From the rationalization above, here are the hypothesis made for this research:

H0: There is no significant relationship between the independent variables (ILTE, UILTE, ROAE, REP, CR, SR) and the dependent variable (stock_return_first/second/third_month).

H1: There is a significant relationship between the independent variables and the dependent variable.

**Data Treatment:**

Any missing data denoted as "n.a." or "n.s." will be removed from the dataset to ensure the accuracy of the calculations. The dependent variables, stock returns for the first, second, and third months, will be calculated based on the average ending prices during those periods. This calculation allows for the identification of the month with the most significant impact on stock returns, determining the efficient market period. A higher adjusted R-square value indicates a stronger likelihood of following the non-random walk theory.
**Statistical Analysis:**

The primary statistical analysis technique employed in this research is regression analysis. Multiple regression models will be constructed to examine the relationship between the independent variables (financial ratios) and the dependent variables (stock returns). The adjusted R-square will be used to evaluate the goodness of fit of the models. The comparative analysis will be conducted to identify variations and similarities in the relationship between financial ratios and stock returns across the three countries.

**Ethical Considerations:**

This research adheres to ethical guidelines, ensuring the confidentiality and privacy of the data obtained from the Osiris database. The study is solely based on publicly available financial information, and the results will be presented in aggregate form to maintain the anonymity of the banks and financial institutions involved.

In conclusion, this quantitative research aims to compare the implications of the Efficiency Market Hypothesis and Random Walk Theory on stock returns in the banking sectors of Indonesia, India, and China in the post-COVID era. The study utilizes financial ratios as independent variables and stock returns as dependent variables. The analysis will be conducted using regression analysis and will focus on banks and financial institutions in the selected countries. The findings will contribute to the understanding of the relationship between financial ratios and stock returns, shedding light on the efficiency of the banking sectors in these three economies.

The generic form of the models is: 

\[
\text{Stock Return} = \text{constant} + \beta_1 x \text{impaired loans to equity} + \beta_2 x \text{unreserved impaired loans to equity} + \beta_3 x \text{return on average equity} + \beta_4 x \text{recurring earning power} + \beta_5 x \text{current ratio} + \beta_6 x \text{solvency ratio} + u_i
\]

4. **Result and Discussion**

Table 1 presents the data availability for observed companies in Indonesia, China, and India. In Indonesia, for the year 2021, there were 68 companies available in the Osiris database. After applying the data filtering process, 48 companies remained, resulting in a total of 92 firm years. For the year 2022, the number of available companies decreased to 44. In China, there were 47 companies available in the database for the year 2021, which reduced to 28 after filtering, resulting in 47 firm years. In 2022, the number of available companies further decreased to 19. In India, there were 72 companies available in the database for the year 2021, and after applying the data filtering process, 36 companies remained, resulting in 45 firm years. For the year 2022, the number of available companies reduced to 9.
Table 2 provides the descriptive statistics for the observed companies in Indonesia, China, and India. The statistics include the range, minimum, maximum, mean, standard deviation, variance, skewness, and kurtosis for each variable.

In Indonesia, the impairment loans to equity (ILTE) ranged from 0.01 to 81.25, with a mean of 11.7133 and a standard deviation of 13.98979. The unreserved impairment loans to equity (UILTE) ranged from -57.53 to 38.65, with a mean of -2.2958 and a standard deviation of 11.35929. The return on average equity (ROAE) ranged from -90.30 to 23.32, with a mean of 2.4850 and a standard deviation of 16.27436. The recurring earning power (REP) ranged from -9.45 to 16.00, with a mean of 2.2648 and a standard deviation of 2.93382. The current ratio (CR) ranged from 9.33 to 981.32, with a mean of 53.0200 and a standard deviation of 100.94620. The solvency ratio (SR) ranged from 5.76 to 73.97, with a mean of 22.6752 and a standard deviation of 14.76275. The stock returns for the first month (SRFM) ranged from -0.35 to 0.34, with a mean of -0.0352 and a standard deviation of 0.10701. The stock returns for the second month (SRSM) ranged from -0.45 to 0.17, with a mean of -0.0333 and a standard deviation of 0.10487. The stock returns for the third month (SRTM) ranged from -0.48 to 0.19, with a mean of -0.0393 and a standard deviation of 0.11225.

In China, the ILTE ranged from 0.07 to 14.72, with a mean of 7.7551 and a standard deviation of 3.69210. The UILTE ranged from -26.70 to 4.58, with a mean of -11.5743 and a standard deviation of 8.48657. The ROAE ranged from 2.92 to 17.70, with a mean of 10.6917 and a standard deviation of 2.97356. The REP ranged from 1.22 to 3.95, with a mean of 1.8951 and a standard deviation of 0.57917. The CR ranged from 8.18 to 417.28, with a mean of 74.8604 and a standard deviation of 129.38340. The SR ranged from 6.48 to 23.86, with a mean of 10.5162 and a standard deviation of 4.80666. The SRFM ranged from -0.16 to 0.17,
with a mean of 0.0085 and a standard deviation of 0.06561. The SRSM ranged from -0.16 to 0.19, with a mean of 0.0057 and a standard deviation of 0.06990. The SRTM ranged from -0.19 to 0.21, with a mean of 0.0021 and a standard deviation of 0.07901.

The descriptive statistics for the observed companies in India for the variable ILTE (impairment loans to equity), the range is 96.57, with a minimum value of 0.05 and a maximum value of 96.62. The mean is 32.8829, and the standard deviation is 3.87310. The variance is 25.98157, skewness is 0.794, and kurtosis is -0.450. For the variable UILTE (unreserved impairment loans to equity), the range is 235.04, with a minimum value of -198.68 and a maximum value of 36.36. The mean is 2.8520, and the standard deviation is 4.83735. The variance is 32.44996, skewness is -5.620, and kurtosis is 35.610. For the variable ROAE (return on average equity), the range is 87.25, with a minimum value of -22.23 and a maximum value of 65.02. The mean is 10.2784, skewness is 1.464, and kurtosis is 19.370. For the variable CR (current ratio), the range is 218.10, with a minimum value of 4.90 and a maximum value of 223.00. The mean is 24.1493, and the standard deviation is 5.94293. The variance is 39.86636, skewness is 3.931, and kurtosis is 16.325.

The correlations between different variables in Table 3 represented in sentences for the observed companies in Indonesia. There is a significant positive correlation between ILTE (impairment loans to equity) and UILTE (unreserved impairment loans to equity) at the 0.01 level. ILTE has a weak negative correlation with ROAE (return on average equity) and REP (recurring earning power), and a weak positive correlation with CR (current ratio) and SR (solvency ratio) at the 0.05 level. UILTE has a weak positive correlation with ROAE and a weak negative correlation with REP, CR, and SR at the 0.05 level. ROAE has a weak negative
correlation with REP and a weak positive correlation with CR at the 0.05 level. REP has a weak positive correlation with CR and SR at the 0.05 level. CR has a weak positive correlation with SR at the 0.05 level. SR has a significant negative correlation with UILTE at the 0.01 level.

For the observed companies in China. ILTE has a weak negative correlation with CR at the 0.01 level and a strong negative correlation with SR at the 0.01 level. UILTE has a strong positive correlation with CR and SR at the 0.01 level. ROAE has a weak negative correlation with UILTE at the 0.01 level. REP has a weak positive correlation with CR at the 0.05 level. CR has a strong positive correlation with SR at the 0.01 level. SR has a strong negative correlation with ILTE and UILTE at the 0.01 level.

For the observed companies in India. ILTE has a weak positive correlation with SR at the 0.05 level. ROAE has a significant negative correlation with ILTE at the 0.01 level and a strong positive correlation with REP at the 0.01 level. REP has a strong positive correlation with CR and SR at the 0.01 level. CR has a strong positive correlation with SR at the 0.01 level. SR has a significant negative correlation with ILTE at the 0.01 level.

The model summary and regression results presented in Table 4. For the observed companies in Indonesia. For the SRFM model, the R-squared value is 0.097, indicating that 9.7% of the variance in the dependent variable can be explained by the independent variables. The adjusted R-squared is 0.034, taking into account the number of predictors in the model. The standard error of the estimate is 0.10519, which represents the average difference between the observed and predicted values. The model's change statistics indicate that the addition of the predictors resulted in a significant increase in R-squared (0.097), as determined by the F-test (F(6, 85) = 1.529, p = 0.179). The Durbin-Watson statistic is 2.071, which measures
autocorrelation in the residuals. The SRSM model shows similar statistics, with an R-squared of 0.115, adjusted R-squared of 0.052, and a standard error of the estimate of 0.10210. The change statistics indicate a significant increase in R-squared (0.115) with an F(6, 85) value of 1.835 (p = 0.102). The Durbin-Watson statistic is 2.037. The SRTM model has an R-squared of 0.151 and an adjusted R-squared of 0.091. The standard error of the estimate is 0.10700. The addition of predictors resulted in a significant increase in R-squared (0.151) as indicated by an F(6, 85) value of 2.525 (p = 0.027). The Durbin-Watson statistic is 2.046.

For the observed companies in China. In the SRFM model, the R-squared value is 0.213, indicating that 21.3% of the variance in the dependent variable can be explained by the independent variables. The adjusted R-squared is 0.095, and the standard error of the estimate is 0.06243. The change statistics show a significant increase in R-squared (0.213) with an F(6, 40) value of 1.801 (p = 0.124). The Durbin-Watson statistic is 2.139. The SRSM model has an R-squared of 0.235 and an adjusted R-squared of 0.121. The standard error of the estimate is 0.06554. The addition of predictors resulted in a significant increase in R-squared (0.235) as indicated by an F(6, 40) value of 2.053 (p = 0.081). The Durbin-Watson statistic is 2.032. The SRTM model shows an R-squared of 0.228 and an adjusted R-squared of 0.112. The standard error of the estimate is 0.07445. The change statistics indicate a significant increase in R-squared (0.228) with an F(6, 40) value of 1.969 (p = 0.093). The Durbin-Watson statistic is 2.028.

For the observed companies in India. In the SRFM model, the R-squared value is 0.295, indicating that 29.5% of the variance in the dependent variable can be explained by the independent variables. The adjusted R-squared is 0.184, and the standard error of the estimate is 0.12251. The change statistics show a significant increase in R-squared (0.295) with an F(6, 38) value of 2.656 (p = 0.030). The Durbin-Watson statistic is 1.755. The SRSM model has an R-squared of 0.279 and an adjusted R-squared of 0.165. The standard error of the estimate is 0.08834. The addition of predictors resulted in a significant increase in R-squared (0.279) as indicated by an F(6, 38) value of 2.452 (p = 0.042). The Durbin-Watson statistic is 1.982. The SRTM model shows an R-squared of 0.270 and an adjusted R-squared of 0.154. The standard error of the estimate is 0.05964. The change statistics indicate a significant increase in R-squared (0.270) with an F(6, 38) value of 2.340 (p = 0.051). The Durbin-Watson statistic is 1.930.

The R-squared values for the different models are as follows: For the observed companies in Indonesia. SRFM model: R-squared = 0.097. SRSM model: R-squared = 0.115. SRTM model: R-squared = 0.151. For the observed companies in China. SRFM model: R-squared = 0.213. SRSM model: R-squared = 0.235. SRTM model: R-squared = 0.228.
observed companies in India. SRFM model: $R^2 = 0.295$. SRSM model: $R^2 = 0.279$. SRTM model: $R^2 = 0.270$.

Based on the $R^2$ values, the highest $R^2$ for each country and the corresponding month are. Indonesia: SRTM model in the third month with an $R^2$ of 0.151. China: SRSM model in the second month with an $R^2$ of 0.235. India: SRFM model in the first month with an $R^2$ of 0.295.

This indicates that the SRFM model for India represents the most efficient market form, followed by the SRSM model for China, while Indonesia has the weakest form of market based on the SRTM model.

The range of $R^2$ values across the models suggests that the models' ability to explain the variance in the dependent variable varies. India has the highest $R^2$ (0.295), indicating a relatively higher likelihood of not following the random walk theory. On the other hand, Indonesia has the weakest $R^2$ (0.097), suggesting a higher likelihood of following the random walk theory.

Overall, the models presented in the table collectively explain less than 30% of the variance in the dependent variable. This implies that the independent variables included in the models have limited explanatory power, and there are other factors influencing the dependent variable that are not accounted for in the models.

Previous research findings indicate that the relationship between financial ratios and stock returns varies across different countries. Studies examining EVA (Economic Value Added) as a predictor of stock returns have generally found non-significant results, similar to the findings of Turvey et al. (2000). On the other hand, regression models exploring the impact of financial ratios such as EPS (Earnings Per Share), ROE (Return on Equity), and ROA (Return on Assets) on stock returns have shown mixed results. Only a few calculations have demonstrated explanatory power on stock returns, with Singapore's EPS having a 43.6% explanatory power and the Philippines' ROA and ROE having explanatory powers of 35.5% and 12.4% respectively. These findings are consistent with research conducted by Maditinos et al. (2009), Mandilas et al. (2009), Worthington & West (2001), and Biddle et al. (1997).

The regression results presented in Table 5 provide insights into the relationship between the independent variables and three different dependent variables: $\text{stock\_return\_first\_month\_indonesia}$, $\text{stock\_return\_second\_month\_indonesia}$, and $\text{stock\_return\_third\_month\_indonesia}$.

In the first model ($\text{stock\_return\_first\_month\_indonesia}$), the constant term is -0.056, indicating the expected value of the dependent variable when all independent variables are zero.
The coefficient for impairment_loans_to_equity_indonesia is 0.001, suggesting that a one-unit increase in this variable is associated with a 0.001 increase in the dependent variable, holding other variables constant. However, the variable unreserved_impairment_loans_to_equity_indonesia has a coefficient of 0.000, indicating that it has a negligible impact on the dependent variable. On the other hand, return_on_average_equity_indonesia has a coefficient of 0.002, implying that a one-unit increase in this variable is associated with a 0.002 increase in the dependent variable, holding other variables constant. The remaining independent variables (recurring_earning_power_indonesia, current_ratio_indonesia, and solvency_ratio_indonesia) have coefficients close to zero, suggesting their limited impact on the dependent variable. It’s worth noting that the significance column (Sig.) should be considered, as it indicates the statistical significance of the coefficients.

The variable “Return on Average Equity Indonesia” demonstrates standardized coefficients (Beta) of 0.284, 0.326, and 0.366, indicating a relatively strong positive influence on the first, second, and third-month stock returns in Indonesia. These coefficients are statistically significant (Sig. = 0.035, 0.015, and 0.006), underscoring the variable’s importance as a predictor in the model. Therefore, when predicting stock returns in Indonesia, it is crucial to consider this variable.

Table 6 provides the regression results for the relationship between the independent variables and three different dependent variables: stock_return_first_month_china, stock_return_second_month_china, and stock_return_third_month_china.
In the first model (stock_return_first_month_china), the constant term is 0.001, indicating the expected value of the dependent variable when all independent variables are zero. The coefficient for impairment_loans_to_equity_china is 0.000, suggesting that this variable has a minimal impact on the dependent variable. Conversely, unreserved_impairment_loans_to_equity_china has a coefficient of -0.005, indicating that a one-unit increase in this variable is associated with a 0.005 decrease in the dependent variable, holding other variables constant. Similarly, return_on_average_equity_china has a coefficient of -0.006, suggesting that a one-unit increase in this variable is associated with a 0.006 decrease in the dependent variable. The remaining independent variables (recurring_earning_power_china, current_ratio_china, and solvency_ratio_china) have coefficients close to zero, implying their limited impact on the dependent variable.

The variable "Unreserved Impairment Loans to Equity China" exhibits standardized coefficients (Beta) of -0.680, -0.711, and -0.589, indicating a significant negative impact on the first, second, and third-month stock returns in China. These coefficients are statistically significant (Sig. = 0.015, 0.010, and 0.032), emphasizing the variable's significance as a predictor in the model. Hence, when making stock return predictions in China, it is vital to take this variable into account.

Table 7 presents the regression results for the relationship between the independent variables and four different dependent variables: stock_return_first_month_india, stock_return_second_month_india, and stock_return_third_month_india.
In the first model (stock_return_first_month_india), the constant term is -0.007, indicating the expected value of the dependent variable when all independent variables are zero. The coefficient for impairment_loans_to_equity_india is 0.002, suggesting that a one-unit increase in this variable is associated with a 0.002 increase in the dependent variable, holding other variables constant. However, unreserved_impairment_loans_to_equity_india has a coefficient of -6.002e-05, indicating a negligible impact on the dependent variable.

Return_on_average_equity_india has a coefficient of -0.004, implying that a one-unit increase in this variable is associated with a 0.004 decrease in the dependent variable. Similarly, recurring_earning_power_india has a coefficient of 0.018, suggesting that a one-unit increase in this variable is associated with a 0.018 increase in the dependent variable. The coefficients for current_ratio_india and solvency_ratio_india are -0.001 and 0.003, respectively, indicating their modest impact on the dependent variable.

The variable "Impairment Loans to Equity India" demonstrates standardized coefficients (Beta) of 0.448, 0.344, and 0.341, signifying a noteworthy positive influence on the first, second, and third-month stock returns in India. These coefficients hold statistical significance (Sig. = 0.028, 0.092, and 0.096), highlighting the variable's importance as a predictor in the model. Similarly, the variable "Return on Average Equity India" displays standardized coefficients (Beta) of -0.450 and -0.445, indicating a significant negative impact on the second and third-month stock returns in India. These coefficients are statistically significant (Sig. = 0.082 and 0.087), underscoring the variable's significance as a predictor in the model. Additionally, the variable "Recurring Earning Power India" exhibits standardized coefficients (Beta) of 0.432 and 0.430, indicating a significant positive impact on the second and third-month stock returns in India. These coefficients are statistically significant (Sig. = 0.082 and 0.085), further highlighting the variable's importance as a predictor in the model. Therefore, when predicting stock returns in India, it is crucial to consider these three variables.
5. Conclusion

In conclusion, the article presents an analysis of different market models for observed companies in Indonesia, China, and India. The R-squared values indicate the level of variance explained by the models, with India demonstrating the highest level of explanatory power, followed by China and then Indonesia. These results suggest that India has the most efficient market form, while Indonesia exhibits the weakest form of market efficiency, likely aligning with the random walk theory.

The analysis reveals important variables that significantly influence stock returns in different countries. In Indonesia, the variable "Return on Average Equity" demonstrates a strong positive impact on stock returns. Meanwhile, in China, the variable "Unreserved Impairment Loans to Equity" has a significant negative influence. In India, multiple variables play significant roles. "Impairment Loans to Equity" and "Recurring Earning Power" exhibit positive effects, while "Return on Average Equity" has a negative impact on stock returns.

Interestingly, the variable "Return on Average Equity" appears to be important in both Indonesia and India, albeit with opposite influences. On the other hand, "Impairment Loans to Equity" shows a positive impact on stock returns in India and a negative impact in China. These findings highlight the need to consider country-specific factors when predicting stock returns, as the significance and direction of these variables can vary across different markets.

However, it is important to note that the models presented in the article explain only a relatively small portion of the variance in the dependent variable. This indicates that there are other factors at play that influence the observed companies' performance, which are not captured by the current models. Therefore, further research is needed to identify and incorporate additional variables that could enhance the models' explanatory power.

To form better models, researchers could consider including a wider range of independent variables that are known to affect the performance of companies in these markets. Factors such as macroeconomic indicators, industry-specific variables, and company-specific characteristics could be considered. Additionally, exploring alternative modeling techniques, such as time series analysis or machine learning algorithms, may provide additional insights and improve the models' predictive capabilities.

Furthermore, it is important to continuously update the models with new data and validate their performance over time. This would allow for the identification of changing market dynamics and the adjustment of the models accordingly.

Overall, by incorporating more comprehensive variables, exploring alternative modeling approaches, and regularly updating the models, researchers can aim to develop more robust and accurate models to better explain and predict the performance of companies in these markets.
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