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Broad Market Indices of Nepal Stock Exchange: Testing of Efficient Market Hypothesis

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ABSTRACT

The objectives of the study was to examine whether the broad market indices of NEPSE is weak-form efficient empirically and to investigate whether there are any anomalies or inefficiencies in the market that can be exploited for profit. The study aims to determine the relationship between NEPSE indices. By collecting historical data and analyzing correlations, the research seeks to assess the degree of market efficiency in the NEPSE, examining if prices fully reflect available information and exhibit random walk behavior. The findings will contribute to understanding the NEPSE's market efficiency and provide insights into the applicability of the EMH in the context of Nepal's stock market. The study found that the EMH is not fully supported in the Nepal Stock Exchange, as evidenced by the rejection of the null hypothesis for the banking sub-index and the hotels and tourism index. The critical t-values were used to determine the significance of the results, with lower t-values indicating greater evidence against the null hypothesis. The results suggest that past observations of the NEPSE indices can be used to predict future values with some accuracy, indicating a violation of the weak form of the EMH. This research delves into the efficiency of the Nepalese stock market, which remains relatively underexplored in academic literature compared to more prominent global exchanges.

Keywords: Nepal Stock Exchange, efficient market hypothesis, broad market indices, market efficiency, random walk hypothesis

Introduction

The Efficient Market Hypothesis (EMH) is a foundational financial theory proposing that financial markets are informationally efficient, meaning that asset prices reflect all available information at any given time. Introduced by Eugene Fama in 1965, the EMH has been the subject of extensive research and debate, fundamentally asserting that all investors have equal access to information, which they utilize rationally to inform their investment decisions.

Fama (1970) identified three forms of market efficiency:

Weak Form. This version posits that current asset prices reflect all historical prices and returns, implying that technical analysis cannot yield excess returns.

Semi-Strong Form. This form suggests that asset prices adjust rapidly to incorporate all publicly available information, making both technical and fundamental analysis ineffective for achieving superior returns.

Strong Form. The strongest assertion states that asset prices reflect all information, including insider knowledge, thus no investor can achieve an advantage.

Empirical testing of the EMH has yielded mixed results. While some studies support the theory, others have challenged its validity, particularly in light of events like the 2008 global financial crisis, which some argue demonstrated market inefficiencies. Research by Fama and French (2010) indicated that stock prices do not always fully reflect available information, contradicting the EMH's assumptions.

In Nepal, the relevance of the EMH is heightened by the growing interest in the stock market, which has seen rapid development in recent years. Understanding whether the EMH holds true in this context is critical for investors seeking to make informed decisions and manage risks effectively. Several studies have explored the EMH's applicability in the Nepalese stock market. For example, Koirala (2017) focused on weak-form efficiency through historical price analysis. More recently, Bhatta and Gautam (2021) conducted an empirical investigation assessing the market's efficiency across all three forms of the EMH.

Overall, while the EMH remains a central concept in financial theory, its practical application and validity continue to be scrutinized, especially in emerging markets like Nepal, where investor behavior and market dynamics may differ significantly from established markets.

Problem Statement

Testing the Efficient Market Hypothesis (EMH) for the broad market indices of the Nepal Stock Exchange (NEPSE) is crucial for evaluating the overall efficiency of the Nepalese stock market. EMH testing helps identify any anomalies and assess how well asset prices reflect all available information. If the market is inefficient, it can create opportunities for investors to exploit pricing inefficiencies and generate abnormal returns. Conversely, if the market is efficient, investors will find it challenging to consistently outperform the market using publicly available information.

Moreover, EMH testing is essential for assessing the investment potential of the broad market indices of the Nepal Stock Exchange. By evaluating market efficiency, investors can gain insights into how well asset prices represent the underlying value of companies, enabling more informed investment decisions and efficient capital allocation.

Based on this problem gap, the following research questions can be formulated for EMH testing of the broad market indices of the Nepal Stock Exchange:

1. Are there any anomalies or inefficiencies in the market that can be exploited for profit?
2. Do the broad indices of Nepal follow a random walk, indicating market efficiency?

Testing the EMH for the NEPSE indices will provide valuable insights into the market's informational efficiency and help guide investment strategies and policy decisions. The findings will contribute to the understanding of the Nepalese stock market's characteristics and its potential for growth and development.

The EMH is a theory that suggests financial markets reflect all available information in the prices of securities, making it impossible to consistently outperform the market by using any information that the market does not already know. Therefore, it is important to test whether the EMH holds true for broad market indices of NEPSE.

1. It provides investors with information on the accuracy and reliability of stock prices, which can aid in making informed investment decisions.
2. Policymakers can use the findings of the EMH testing to identify problems with the stock market's operation and carry out necessary reforms.
3. EMH testing can help identify potential market manipulation or insider trading, encouraging transparency and accountability in the financial sector.

While the performance of the manufacturing sector is a crucial indicator of the nation's economic growth and development, the EMH testing can also help determine the overall economic health of the Nepal Stock Exchange.

Research Objective

The primary objective of this research is to empirically test the Efficient Market Hypothesis (EMH) for the broad market indices of the Nepal Stock Exchange (NEPSE) to determine whether these indices exhibit weak-form efficiency and to investigate the presence of any anomalies or inefficiencies in the market that could be exploited for profit.

Hypothesis of the Study

The hypotheses for EMH testing of Broad Market Indices of Nepal Stock Exchange are:

H1: There is no stationarity in the return series of broad market indices of NEPSE.

H2: Broad market indices of NEPSE indices follow a random walk.

Limitation of the Study

While the study provides insights into the efficiency of the Nepalese stock market, it has several limitations, including:

Narrow Focus on EMH. The study only focused on testing the Efficient Market Hypothesis (EMH) and did not consider other market efficiency models, such as the Behavioral Finance Theory or the Adaptive Market Hypothesis. These models may provide additional insights into the Nepalese stock market.

Limited Timeframe. The study only analyzed data up to a certain point in time, which may not reflect the current state of the Nepalese stock market. A more up-to-date analysis may provide a more accurate understanding of the market's efficiency in future.

Literature Review

In the first part, some theoretical bases are discussed and then previous literatures findings is presented.

Theoretical Review of Efficient Market Hypothesis

The Efficient Market Hypothesis (EMH) is a cornerstone of modern financial theory that has been extensively researched and debated since its introduction by Eugene Fama in 1965. The hypothesis posits that financial markets are informationally efficient, meaning asset prices always reflect all available information accurately.

Fama (1970) proposed three forms of market efficiency:

1. **Weak form Efficiency:** Historical prices and trading volumes are fully reflected in current market prices.
2. **Semi-strong form Efficiency:** All publicly available information is fully incorporated into current market prices.
3. **Strong form Efficiency:** All information, both public and private, is reflected in stock prices.

Numerous studies have tested the validity of EMH across different markets, yielding mixed results. Fama and French (1992) found the US stock market exhibited semi-strong form efficiency, while Bekaert et al. (2005) concluded the Chinese stock market was weak-form efficient. Kwon and Shin (1999) discovered inefficiencies in the Korean stock market, whereas Alles et al. (2002) found the UK stock market was efficient.

However, other studies have identified market inefficiencies that can be exploited to achieve abnormal returns. Lakonishok et al. (1994) demonstrated that momentum strategies based on past performance could generate excess returns, challenging the idea of complete market efficiency.

Recent research has explored varying levels of market efficiency across countries and regions. Some studies suggest emerging markets may be less efficient than developed markets, while others find no significant difference. Claessens et al. (1995) noted emerging markets maintain a high degree of efficiency despite potential lower efficiency compared to developed markets.

Ezeoke and Asogwa (2020) examined the Nigerian stock market, finding it inefficient in the weak form but efficient in the semi-strong form. Fama (2018) reviewed empirical evidence, concluding markets are generally weak-form efficient, but evidence for semi-strong and strong forms remains mixed. Goh and Ederington (2019) investigated the cryptocurrency market, finding it inefficient in the weak form but efficient in the semi-strong form.

In the context of the Nepalese stock market, Joshi (2012) found weak-form efficiency, while Khanal and Shakya (2014) identified semi-strong form efficiency. However, Risal and Koju (2019) noted inefficiencies, particularly during the global financial crisis. Lee and Zhang (2019) analyzed the Korean stock market using daily data from January 2000 to December 2015 and concluded the market is weak-form efficient through variance ratio tests.

While the EMH remains a central concept in financial theory, its practical application and validity continue to be scrutinized, especially in emerging markets like Nepal, where investor behavior and market dynamics may differ significantly from established markets. Testing the EMH for the broad market indices of NEPSE can provide valuable insights into the market's informational efficiency and guide investment strategies and policy decisions.

Efficient Market Hypothesis Testing in Nepal

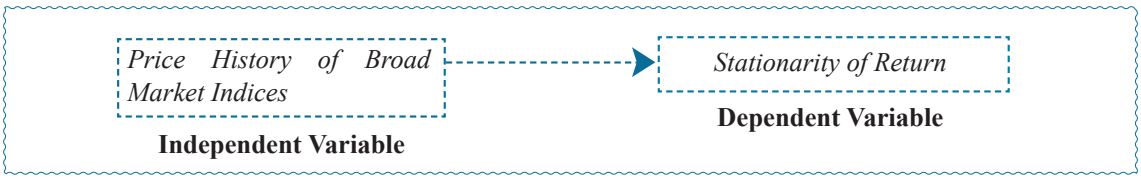
The Efficient Market Hypothesis (EMH) has been a significant area of research in the context of the Nepalese stock market, with various studies investigating its validity and identifying anomalies that could be exploited for profit. Acharya et al. (2018) highlighted notable anomalies in the Nepalese stock market, demonstrating that investors could leverage technical analysis to develop profitable trading strategies. Their findings suggest that the market does not fully adhere to the principles of efficiency, allowing for potential gains through systematic trading approaches. In a subsequent study, Acharya et al. (2017) examined the market's efficiency using daily data from 2007 to 2016. They employed the runs test and variance ratio test to detect serial correlation in stock prices, further contributing to the understanding of market behavior in Nepal. Adhikari and Karki (2018) utilized technical analysis methods, including moving averages and the relative strength index, to assess market efficiency. Their results indicated that the Nepalese stock market is inefficient in the weak form, suggesting that technical analysis could yield abnormal returns for investors. Bhandari and Neupane (2019) focused on testing the semi-strong form efficiency of the NEPSE by analyzing the relationship between stock returns and publicly available accounting information. They concluded that the market exhibited semi-strong form efficiency, with accounting information being rapidly incorporated into stock prices. Bhatta and Gautam (2021) investigated the weak-form EMH using daily data from January 2006 to December 2019. Their analysis revealed that while the overall market demonstrated weak-form efficiency, certain sectors, such as manufacturing, did not. This finding indicates that investors might achieve abnormal returns by analyzing historical price and volume data specific to these sectors. Bista and Dhungana (2018) also contributed to this body of research by testing market efficiency from 2007 to 2016 using daily data. Their application of the runs test, autocorrelation test, and variance ratio test supported the notion that the Nepalese stock market is weak-form efficient, aligning with the EMH. Collectively, these studies illustrate a complex landscape of market efficiency in the Nepalese stock market. While some research supports the existence of weak-form and semi-strong form efficiency, other studies reveal significant anomalies that challenge the EMH. This ongoing investigation into market behavior is essential for understanding the dynamics of the Nepalese stock market and for guiding investors in their strategies. The findings from these studies not only contribute to the academic discourse on market efficiency but also have practical implications for investors and policymakers in Nepal. By identifying inefficiencies and anomalies, stakeholders can make more informed decisions and potentially enhance market operations.

Conceptual Framework

The purpose of this study is to analyze the efficient market hypothesis of broad market indices of NEPSE. Similar previous studies were examined and pertinent data was used to locate literature. The theoretical frame work is developed in line with the evidence available in literature and has been conceptualize to show the interrelationship between independent and dependent variables.

Figure 1

Conceptual Framework



Descriptions on Variables

Price history is identified in the literature as a crucial factor in understanding the random walk and stationarity of return.

Price History

Price history of broad market indices refers to the chronological record of the historical prices of a specific set of indices that represent the overall performance and movement of a broad market. These indices are constructed by aggregating the prices of a selected group that collectively represent the market as a whole or a specific sector within the market.

Stationarity of Return

Stationarity of returns refers to the property of a financial time series where the statistical properties of the return series remain constant over time. In other words, a stationary return series exhibits consistent mean, variance, and autocovariance structures, regardless of when the observations are made.

Methodology

The methodology covers the research design, data sources, data collection methods, and data analysis techniques. The main goal is to describe the methodologies and processes employed to ensure the research accurately tests the hypothesis and achieves the most reliable results possible. The chosen approach and design were tailored to the type of research being conducted. EViews software was used to analyze the secondary data. Descriptive statistics, run tests, critical values, and autocorrelation were examined to identify patterns in the data.

Research Design

Research design serves as a framework or plan for a study, guiding the collection and analysis of data. It provides a comprehensive outline of the steps necessary to gather and analyze the required data, ensuring the research goals are met. This study employs a correlational research design to achieve its objectives.

By examining the correlation between various variables and NEPSE indices, this research aims to explore the level of market efficiency in Nepal's stock market. The correlational research design evaluates the validity of the Efficient Market Hypothesis (EMH) using broad indices from the Nepal Stock Exchange (NEPSE). The study aims to determine the relationships between NEPSE indices. Through the collection and analysis of historical data and correlations, the research assesses market efficiency in the NEPSE, specifically if prices fully reflect available information and demonstrate random walk behavior. The findings will enhance the understanding of market efficiency in the NEPSE and provide insights into the applicability of the EMH in Nepal's stock market context.

Description of Sample

To examine the weak-form market efficiency in the Nepal stock exchange, This Study have chosen the broad market indices of NEPSE. 15 Indices (NEPSE Index and other 14 Sub-Indices) are taken for data Analysis and to find pattern in them.

The data collected for this empirical study closing prices of broad market indices of NEPSE. Secondary Data are taken from website of Nepal Stock Exchange. This Study have chosen data from 22 July 2015 to 13 April 2023, which makes two complete bull and bear cycle of NEPSE Indices which helped us to seek pattern in data.

Analysis Plan

The tools used in this study are: (1) unit root test [The Augmented Dickey–Fuller [(ADF)] test to check the stationarity of time series, (2) descriptive statistics (maximum, minimum, standard deviation, skewness, kurtosis and Jarque–Bera Test), (3) autocorrelation (measuring the linear relationship between lagged values of a time series) and (4) runs test (to check whether observations vary around a constant mean, have constant variance and are probabilistically independent). To calculate the daily returns, This Study used the formula [(LN (Today closing price/yesterday closing price)]. These tools have been used by several researchers in the past (Degutis & Novickyte, 2014).

The ADF statistics used in the test should be a negative number, and the more the negative number, the stronger the rejection of the null hypothesis that there is a unit root. The runs test, a non-parametric test, is concerned with the price changes rather than the magnitude of price changes. It just considers whether the series consists of increasing values or decreasing values. The null hypothesis of the runs test is that the data set is from a random process.

Research Model

Based on the existing literature, the following model are specified.

1. The autocorrelation function (ACF) at lag k, denoted ρk, of a stationary stochastic process, is defined as $\rho k = \gamma k / \gamma 0$

   Where, $\gamma k = cov (yi, yi+k)$ for any i.

2. The value of the standard normal variate of the observed number of runs in the run test is given by the following:

   $Z = R – E (R)/Stdev (R)$.

3. Return over period = [(LN (average price of current period/ average price of previous period)]

Results and Discussion

This chapter presents, interprets, and analyzes the secondary data from Nepal Stock Exchange. Data analysis has been performed with reference to the study objectives, which are discussed in Chapter I, and includes descriptive analyses, correlation analysis and regression analysis.

Critical Values

Critical Values of all the indices of NEPSE has been summarized in the single table. Critical values are compared to the test statistic to determine whether there is sufficient evidence to reject the null hypothesis in favor of the alternative hypothesis.

Table 1

Critical Values

Indices	t-value	Critical Values		
		1%	5%	10%
Banking Sub-Index	-29.70186	-3.433821	-2.86296	-2.567573
Hotels and Tourism Index	-41.33392	-3.433819	-2.862959	-2.567573
Other Index	-18.4161	-3.433828	-2.862963	-2.567575
Hydro Power Index	-23.57883	-3.433824	-2.862961	-2.567574
Development Bank Index	-10.84987	-3.43384	-2.862968	-2.56757

Indices	t-value	Critical Values		
		1%	5%	10%
Manufacturing and Processing Index	-21.48842	-3.433824	-2.862961	-2.567574
Microfinance Index	-33.84792	-3.4351	-2.863525	-2.567876
Life Insurance Index	-22.89566	-3.433824	-2.862961	-2.567574
Non-Life Insurance Index	-22.54033	-3.433824	-2.862961	-2.567574
Finance Index	-10.20078	-3.433842	-2.862969	-2.567578
Trading Index	-14.34988	-3.433832	-2.862965	-2.567578
Float Index	-41.93303	-3.433819	-2.862959	-2.567573
Sensitive Float Index	-22.45899	-3.433824	2.862961	-2.567574
Sensitive Index	-22.61747	-3.433824	-2.862961	-2.567574
NEPSE Index	-22.1919	-3.433824	-2.862961	-2.567574

Table 1 shows critical values that represent the t-values corresponding to different levels of significance (0.01, 0.05, and 0.1) for each index. A t-value represents how many standard errors the sample mean is from the hypothesized population mean.

Banking Sub-Index. The t-value for this index is -29.70186. The critical t-value for a two-tailed test at a significance level of 0.01 is -3.433821. This means that the test statistic falls far beyond the critical value and reject the null hypothesis at a significance level of 0.01.

Run Test. The runs test is a statistical test used to assess whether a sequence of data points exhibits randomness or systematic patterns. It examines the occurrence of "runs" or consecutive observations that are either increasing or decreasing.

Table 2

Run Test

Indicators	Test Value	Cases < Test Value	Cases > = Test Value	Total Cases	Number of Runs	Z	Asymp. Sig. (2-tailed)
Banking Sub-Index	1348.636	1015.000	768.000	1783.000	37.000	-40.499	0.000
Hotels and Tourism Index	2263.577	1191.000	592.000	1783.000	22.000	-41.119	0.000
Other Index	1090.723	1200.000	583.000	1783.000	2.000	-42.187	0.000
Hydro Power Index	1934.076	885.000	898.000	1783.000	45.000	-40.153	0.000
Development Bank Index	2293.530	1241.000	542.000	1783.000	4.000	-42.074	0.000
Manufacturing and Processing Index	3414.201	1204.000	579.000	1783.000	4.000	-42.079	0.000
Microfinance Index	2924.554	751.000	569.000	1320.000	2.000	-36.290	0.000
Life Insurance Index	8958.348	1093.000	690.000	1783.000	30.000	-40.791	0.000
Non-Life Insurance Index	7904.595	986.000	797.000	1783.000	28.000	-40.944	0.000

Indicators	Test Value	Cases < Test Value	Cases >= Test Value	Total Cases	Number of Runs	Z	Asymp. Sig. (2-tailed)
Finance Index	1037.705	1247.000	536.000	1783.000	2.000	-42.186	0.000
Trading Index	1087.235	1189.000	594.000	1783.000	4.000	-42.081	0.000
Float Index	366.403	1675.000	108.000	1783.000	2.000	-42.110	0.000
Sensitive Float Index	107.639	1088.000	695.000	1783.000	26.000	-40.994	0.000
Sensitive Index	341.726	1040.000	743.000	1783.000	14.000	-41.605	0.000
NEPSE Index	1692.897	1116.000	667.000	1783.000	14.000	-41.581	0.000

Table 2 shows the results of a statistical test for each of the different indices listed. The test is comparing the number of cases that are less than a certain "Test Value" to the number of cases that are greater than or equal to that value. The data includes the total number of cases, the number of runs, and the Z-score and p-value for each test.

For example, let's take the first row of data for the Banking Sub-Index. The Test Value is 1348.636, and there were 1015 cases that were less than this value and 768 cases that were greater than or equal to it. The total number of cases was 1783, and there were 37 runs. The Z-score for this test was -40.499, which is very low, indicating that the difference between the two groups is significant.

Autocorrelation

It measures the degree of correlation between a time series variable and its lagged values. It quantifies the relationship between an observation and previous observations in a time series.

Table 3

Autocorrelation NEPSE Index

SN	Autocorrelation	Std. Error	Partial Autocorrelation	Std. Error	Q-Stat	Sig.
1	0.998341	0.023682	0.998341	0.023682	1780.082	0.000
2	0.996473	0.040974	-0.06424	0.023682	3554.502	0.000
3	0.994868	0.052845	0.083164	0.023682	5324.206	0.000
4	0.993072	0.062473	-0.07008	0.023682	7088.519	0.000
5	0.991216	0.070775	-0.00346	0.023682	8847.23	0.000
6	0.989316	0.078174	-0.0236	0.023682	10600.19	0.000
7	0.987236	0.084906	-0.05141	0.023682	12346.77	0.000
8	0.985149	0.091117	0.003161	0.023682	14086.95	0.000
9	0.983151	0.096907	0.019204	0.023682	15821.06	0.000
10	0.98112	0.102348	-0.00763	0.023682	17548.99	0.000
11	0.978855	0.107494	-0.06603	0.023682	19269.92	0.000
12	0.976438	0.112382	-0.04088	0.023682	20983.32	0.000
13	0.97404	0.117043	0.002159	0.023682	22689.29	0.000
14	0.971686	0.121505	0.012114	0.023682	24387.98	0.000
15	0.969423	0.125787	0.030649	0.023682	26079.72	0.000
16	0.967161	0.12991	0.000487	0.023682	27764.53	0.000

Table 3 shows autocorrelation, partial autocorrelation, and Q-Stat values for a time series data. Autocorrelation values range from 0.967 to 0.998, indicating a strong positive correlation between the current observation and the previous observations. Partial autocorrelation values range from -0.07 to 0.083, indicating a moderate to weak correlation between the current observation and the previous observations after accounting for the intervening observations. The Q-Stat values are large and significant (p-value=0), indicating the presence of serial correlation in the time series data.

This study analyzed the Broad Market Indices of the Nepal Stock Exchange (NEPSE) to test the Efficient Market Hypothesis (EMH). The indices examined include Banking, Hotels and Tourism, Other, Hydro Power, Development Bank, Manufacturing and Processing, Microfinance, Life Insurance, Non-Life Insurance, and Finance. For each index, data was summarized, detailing the sample size, range, mean, standard deviation, skewness, and kurtosis.

Statistical Analysis

Critical t-values were calculated for each index at significance levels of 0.01, 0.05, and 0.1. The Banking and Hotels and Tourism indices showed test statistics that exceeded the critical values significantly, allowing for the rejection of the null hypothesis at the 0.01 significance level. This indicates substantial evidence against the assumption of market efficiency for these indices.

The run test results revealed significant differences between the number of cases that fell above and below the test value for each index. The Z-scores and p-values were notably low, suggesting that these differences are unlikely to be attributed to random chance. This finding indicates a potential inefficiency in the market, particularly in the Banking and Hotels and Tourism sectors.

Support for the Efficient Market Hypothesis

The overall findings suggest that the Efficient Market Hypothesis is not fully supported in the NEPSE. The rejection of the null hypothesis for the Banking and Hotels and Tourism indices indicates that these markets do not reflect all available information efficiently. The critical t-values further demonstrated that lower t-values provide greater evidence against the null hypothesis, reinforcing the conclusion of inefficiencies.

Time Series Analysis

The study employed time series data to test the EMH across various indices, including the NEPSE Index, Sensitive Index, Sensitive Float Index, Float Index, Trading Index, and Finance Index. The results indicate that historical observations of these indices can be used to predict future values with a degree of accuracy, suggesting a violation of the weak form of the EMH. The autocorrelation values for all indices were high and positive, indicating a strong correlation between current and past values, which contradicts the principles of weak-form efficiency.

Implications of Findings

The implications of these findings are significant for investors and policymakers in Nepal. The identification of inefficiencies, particularly in the Banking and Hotels and Tourism sectors, suggests that investors may exploit these anomalies to achieve abnormal returns. The ability to predict future stock prices based on historical data highlights the potential for developing trading strategies that capitalize on market inefficiencies.

Furthermore, the study underscores the importance of continued research into the efficiency of the Nepalese stock market, as the results indicate that the market's characteristics may differ from those of more developed markets. Understanding these dynamics can help investors make more informed decisions and contribute to the overall development of the Nepalese financial market. This study provides valuable insights into the efficiency of the Nepal Stock Exchange. While certain indices exhibit signs of inefficiency, others appear to align more closely with the principles of the EMH. The findings emphasize the need for ongoing analysis and monitoring of market conditions to better understand the factors influencing stock price movements in Nepal.

Conclusion

This study analyzed the broad market indices of the Nepal Stock Exchange (NEPSE) to test the Efficient Market Hypothesis (EMH) and found that the EMH is not fully supported in the NEPSE. The critical t-values for the banking sub-index and the hotels and tourism index significantly exceeded the critical values, leading to the rejection of the null hypothesis at a significance level of 0.01. This finding indicates that past observations of the NEPSE indices can be utilized to predict future values with some accuracy, suggesting a violation of the weak form of the EMH. The results imply that the NEPSE market is not efficient in the weak form, as historical data can provide predictive insights into future stock performance. This has important implications for investors, who may leverage historical trends to inform their investment strategies. However, the presence of inefficiencies also poses risks, as it can lead to market distortions that undermine overall market efficiency. Additionally, the study offers valuable insights into the characteristics of the NEPSE market. For instance, the Finance Index exhibited a wide range of values, a relatively low mean, and a high standard deviation. The positive skewness and platykurtic distribution suggest a concentration of values towards the lower end of the distribution, with fewer outliers than a normal distribution. This information can assist investors in making more informed decisions regarding their investments in the NEPSE market.

Limited Market Efficiency

The study indicates that the Nepalese stock market is not fully efficient according to the EMH. Investors may exploit this inefficiency by utilizing historical data to make informed investment decisions.

Predictive Power of Past Observations

The ability to predict future values based on past observations implies that while historical data can be a useful tool, investors should exercise caution, as the predictive power may diminish over time.

Sector-Specific Inefficiencies

The significant results for the banking and hotels and tourism sub-indices suggest that these sectors may be less efficient than others. Investors should pay closer attention to these areas to identify potential investment opportunities.

Statistical Reliability of Indices

The statistical significance of all analyzed indices indicates that these values are reliable and not random, allowing investors to use them to make informed decisions. To enhance the efficiency of the NEPSE and mitigate the identified inefficiencies, the following suggestions are proposed: Enhancing Investor Education: Increasing awareness and understanding of market dynamics among investors can improve decision-making processes and reduce the likelihood of irrational trading behaviors. Strengthening Regulatory Frameworks: Implementing stricter regulations and enhancing transparency in trading practices can help build investor confidence and promote a more efficient market environment. Promoting Technological Integration: Investing in advanced trading platforms and technologies can facilitate smoother transactions and improve market accessibility for a broader range of investors .Encouraging Research and Development: Ongoing research into the factors affecting market efficiency, such as economic policies, political stability, and external influences, can provide valuable insights for both investors and policymakers. Monitoring Market Conditions: Regular assessments of market conditions and investor behaviors can help identify emerging trends and potential inefficiencies, allowing for timely interventions.

In conclusion, while the NEPSE exhibits certain inefficiencies, there are significant opportunities for investors to capitalize on these market dynamics. By addressing the identified limitations and implementing the suggested improvements, the Nepalese stock market can enhance its overall efficiency and attractiveness to both domestic and international investors. Continued research and vigilance are essential

to ensure the market's growth and stability in the evolving economic landscape.

Limitations and Future Research Directions

One limitation of the study is its exclusive focus on testing the weak form of the EMH. Future research could expand this analysis to include the semi-strong and strong forms of the EMH, which would provide a more comprehensive understanding of the efficiency of the NEPSE market. Additionally, this study concentrated on broad market indices; future investigations could delve into individual stocks or specific sectors to gain a more nuanced understanding of market dynamics.

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