JDE (Journal of Developing Economies)
https://e-journal.unair.ac.id/JDE/index

PREDICTION OF STOCK PRICES USING CAPITAL ASSET PRICING MODEL IN NIGERIAN STOCK MARKET

Muhammed Lamin Jabbi[1]
Novrys Suhardianto[2]

[1,2]Department of Accounting- Faculty of Economics and Business, Airlangga University, Indonesia

ABSTRACT

The main intention of this study is to use the accounting data using CAPM to determine the stock prices/returns for the Nigerian capital market. In this study, the independent variable is the prediction of the stock prices and the dependent variable is stock prices in the market. The proxy that is used in this study to measure the dependent variable is CAPM in Nigerian Market. The most important and interesting phenomenon to investors is the analysis from financial market pertaining to stock returns. The research method employed is quantitative which is unlike qualitative as a way of assessing the stock price. The study mainly aims at assessing the correlation of beta factors and the predictability of stock returns from Nigerian firms listed on the stock exchange. In order to boost the beta estimates and mitigate statistical problems resulted from incorrect measurement, the securities were combined into portfolios. In conclusion the study employs ordinary least squares (OLS) regression technique and obtained beta value which is positive and found conclusive evidence for using CAPM and is thus consistent with Nigerian stock market prices. The CAPM has implications for asset pricing since it shows how to calculate the requisite rate of return to assess the value of the stock prices with any given amount of systematic risk (beta) and since the beta is positive hence the policy makers and investors in the Nigerian stock market would make better informed decisions.

Key words: *Capital Asset Pricing Model, Accounting Data, Arbitrage Pricing, Asset Pricing Model*
JEL: E22;R53

ARTICLE INFO

Received: Jan 27th, 2023
Revised: Mar 10th, 2023
Accepted: Mar 20th, 2023
Online: Jun 15th, 2023

*Correspondence:
Muhammed Lamin Jabbi
E-mail:
muhammed.l.jabbi.360537-2021@feb.unair.ac.id

To cite this document: Jabbi, M. L. & Suhardianto, N. (2023). Prediction of Stock Prices Using Capital Asset Pricing Model in Nigerian Stock Market. *JDE (Journal of Developing Economies), 8*(1), 80-93. http://dx.doi.org/10.20473/jde.v8i1.42956

Introduction

The capital market is important for a nation's economic development. The money and capital markets in any country's economy have an impact on its overall economic growth. The CAPM model, derived from modern portfolio theory, was developed to quantify systematic risk. However, in the context of Nigeria, valuation multiples and macroeconomic variables such the impact of economic variables, political stability, industry attractiveness, and business position in the industry are closely related variables that have an impact on stock returns. Today, from the perspective of the investor, the estimation of stock returns and prices is a very important issue. This particular study, named as Capital Asset Pricing Model, is a technique recognized as one of the stock return forecasters. The use of CAPM as a model for pricing offers the most advantageous and effective on stock return predictability in order to cover a wide range of forecasts that have been employed by almost all past works.

However the two primary models that are used in the calculation of this study are the

JDE (Journal of Developing Economies) p-ISSN: 2541-1012; e-ISSN: 2528-2018
DOI:http://dx.doi.org/10.20473/jde.v8i1.42956

theory of arbitrage pricing (APT) and the asset pricing model (CAPM). The term "Corporate Financiers" means the most respected corporate funders and financial experts. This study concentrates on how the CAPM is employed in practice as "investment practitioners". In order to appraise equity and evaluate investment prospects, the WAC of Capital is calculated using the CAPM, which is a key technique, according to academic research by the South African Institute of Chartered Accountants (SAICA) (Nel & Nel, 2011).

The research method employed is quantitative method, which is unlike qualitative, as a way of assessing the stock price .The most effective methods for determining the stock return have been the subject of extensive research (Paul & Asarebea, 2015). While the majority of research (Magni, 2005; Fama & French, 2004) agree that using CAPM is an essential application area of finance for stock valuations and investment decisions, they disagree on relative advantages of the CAPM and the APT model. The CAPM's rigid assumptions and incapacity to be empirically tested are cited by those who favor the APT model (Harrington & Korajczyk, 1993; Nel & Nel, 2011).

In this research, it has been observed that it has predicted stock returns based on the historical financial information on CAPM. Therefore, the answers obtained are based on the estimation that foretelling 100% accuracy is impossible. I have investigated the above Capital Asset Pricing Model in that it has predicted stock returns and on the grounds of their applicable regression models. Statistically, there is a significant relationship between stock return and the method employed where it gained 70% confidence level. Therefore, it's probable that the majority of the investors in the Nigerian capital market follow speculation and other macro-economic factors such as political stability, attractiveness of the industry, economic factors, etc. The major purpose of the study is to determine or predict the stock prices in the Nigerian capital market for the period of 1 year from (22/6/2021 - 17/6/2022). Research and investment specialists may be impacted if there is a gap. The computation will be highlighted consistently throughout the entire study.

The most well-known model for determining the risk and return of a speculation is the CAPM. It is defined as an idealized portrayal of how financial market prices, securities are thereby determined by return on capital investment. Therefore, the model provides a methodology for quantifying risk and translating risk into estimates of expected return on equity. The CAPM was established by Sharpe (1964), Lintner (1965) and Mossin (1966) in the 1960s (Majumder, 2012). The foundation of CAPM is a theory that bases a security's relevance completely on a portfolio setting. The CAPM defines the frequency with which investors clutch or seize onto a portfolio in order to prevent unsystematic risk exposure through diversification. As a result, a security's equilibrium rate of return is solely based on systematic risk scaled using the security's beta. Fama & French (2004) examined the period from 2003 and 2004. In light of the companies listed on the Nigerian capital market, the aim of this study is to apply CAPM to estimate or forecast stock prices and returns.

Literature Review

A literature review is a survey review of the literature undertaken by other writers to assess the current state of a certain research area. In this chapter, we'll look at previous CAPM research studies undertaken by other academics. In the analysis of Capital Asset Pricing Model predicting stock prices /returns in the Nigerian capital market I use journals (secondary data) that are related to this research topic.

Theoretical Issues

A variety of research studies based on stock returns have used asset pricing models to determine the most likely drivers of stock market indices, specifically stock prices and returns. The financial products used by the models include shares, bonds, Treasury bills, and

certificates. Compared to other asset classes, stocks are perceived as being riskier. We assess the most popular APM, such as CAPM and the Arbitrage Pricing Theory (APT), in light of this (Nurhan et al., 2016).

Capital Asset Pricing Model (APM)

Investors continue to compare different APM and use the CAPM as their benchmark when assessing the profitability of certain stocks (i.e., company-specific stock returns). According to Sharpe (1964), investors can select an asset mix that will maximize expected returns while lowering associated risks. Systematic and non-systematic hazards are the two categories into which the strategy classifies risks. When compared to the latter, which can be totally avoided by employing strategies like portfolio diversification and hedging, the former can only be controlled. According to the CAPM, market returns, the risk-free rate, and a beta factor all affect expected investment returns. The beta-factor measures the riskiness of an asset. In other words, the beta component shows how much changes in market returns overall influence changes in returns on particular stocks (Adekunle et al., 2020).

Theory of Arbitrage Pricing

Ross created the arbitrage pricing model (APT) in 1976 as an alternative method for valuing assets. An arbitrage portfolio is one that, according to Krause (2001), has a guaranteed positive return but no risk or net investment. The arbitrage pricing model makes the assumption that there is no chance of arbitrage at an equilibrium. In contrast, the arbitrage pricing model is a multifactor model with many beta factors. As a result, in addition to market risk, the APT also considers other types of risk, such as issues unique to a given industry. The arbitrage pricing theory, in contrast to the CAPM, embraces both efficient and inefficient assets as well as the whole systemic risk of the market. In other words, the beta factor is a measure of the market's volatility sensitivity of the returns on each stock.

Empirical Research

The CAPM was applied to the Nigerian stock market using weekly stock returns from 20 companies listed on the Nigerian Stock Exchange (NSE) between June 22, 2021 and June 22, 2022. The study supports the CAPM's hypotheses that increased risk (beta) is connected with higher levels of return and that the intercept should equal zero when estimating SML. This analysis also disproves the CAPM's claim that the excess return on the market portfolio should be equal to the slope of the security market line (SML). This effectively invalidates the CAPM's projection for Nigeria. Adedokun & Olakojo (2012) compare using the monthly stock prices of the top 20 most profitable. Between June 22, 2021 and June 17, 2022, researchers looked at capitalized companies in Nigeria to assess the empirical validity of CAPM on the Nigerian Stock Exchange (NSE). The empirical findings show that CAPM falls short in its ability to effectively explain how asset risk affects the anticipated return on investment in Nigeria's equity market. They discovered data that contradicted the CAPM's assertion that more risk is connected with higher asset returns and prices (Man & Wong, 2013; Rossi, 2017).

Over the past few decades, many studies have looked at the variables that affect stock returns in both single-country and multi-country settings. Here, a quick review of the empirical literature is provided. Narayan & Sharma (2011) examined the relationship between the price of oil and business returns for 560 US companies listed on the New York Stock Exchange, looking beyond financial indicators as potential drivers of stock returns. The aforementioned makes it evident that there is controversy regarding the empirical validity of CAPM. Academics have used CAPM to tie a number of variables other than the risk component (beta) to returns in various ways. The variables not previously discussed include debt, earnings yield from 1977, conditional due to non-normality in stock prices, and the proportion of a company's book value of equity to its market value (Chan et al., 1991).

Testing the Capital Asset Pricing Model in the Nigerian Stock Market by Shobayo and Ibrahim was published in 2018 and looked at the CAPM's application to the Nigerian stock market. The study used data from 2000 to 2015 as its source and concluded that the CAPM is a valid model for predicting stock returns in the Nigerian market. The Nigerian stock market was empirically examined by Afolabi et. al. (2017) using the Capital Asset Pricing Model (CAPM). The beta coefficients and expected returns for the Nigerian stock market were compared in this study (Harrington & Korajczyk, 1993). The CAPM is supported by the analyses' finding of a positive association between expected returns and beta coefficients. The Validity of the Capital Asset Pricing Model in the Nigerian Stock Market by (Okoli, 2012) the hypothesis can also be used to describe the size of an asset's risk premium, which is the disparity between the asset's expected return and the risk-free interest rate. The CAPM is a reliable model, according to the study, for forecasting stock returns in the Nigerian market. These studies, along with numerous others of a similar nature, demonstrate that the CAPM can be a helpful technique for forecasting stock returns on the Nigerian stock market. The CAPM may not be the only factor influencing stock prices in the Nigerian market, and it is crucial to remember that no model can accurately forecast stock returns.

Previous studies using the Capital Asset Pricing Model CAPM in the Nigerian capital market have focused on a range of model-related issues, such as examining the model's verifiability of assumptions and determining how well the model can explain stock returns in the Nigerian market. Other studies have also looked at the relationship between macroeconomic conditions and stock returns using the CAPM. Here are a few illustrations of potential hypotheses that might be developed for this kind of research:

1. The CAPM is a trustworthy model for predicting stock returns in the Nigerian capital market.

2. Expected returns and a stock's beta coefficient are correlated on the Nigerian stock market.

3. The market risk premium in Nigeria's capital market is considerably different from that of industrialized economies.

4. On the Nigerian stock market, forecasting stock returns can be done using the book value of equity as well as other accounting factors like earnings per share.

Data and Research Method

This research intend to use quantitative method by which obtained the information from Nigerian stock exchange which consist of returns of monthly stocks from share index effective from the period of 22nd June 2021 to 17th June 2022. In this study will use secondary data obtained from journal articles, text books, Nigerian Stock Exchange and so on. This particular index is structured in a way to provide real time measures of the Nigerian Stock Exchange. All stocks in this area here are traded in NSE on a continuous basis throughout the NSE trading day. The time period was selected because it intends to use return volatility with historically high and low returns for the NSE. When conducting research analysis, it is critical that the practicality meets the applicant's perception rather than simply addressing what the study entails or comprises. The data were selected from the NSE data base and all stocks returns were adjusted and I used regression model to do the analysis. In order to arrive at a beta estimated value of the study I adopted returns from each month representing the sample. The return was based on a long time period of several months which might be the results of the beta examined period, thereby introducing high frequency data such as observation consisting relatively short and stable can result from using unusual data. The predicted price was determined through the use of regression spread sheet analysis and the trend reflects stock market price. The proxy that is used to measure the dependent variable in this study is CAPM. Since this is a quantitative study, the data analysis techniques will be regression analysis, which will be based on information from the Nigerian Stock Exchange. There are numerous methods for quantitative data analysis, and the method used here is

specially tailored to the research topic being addressed. This study specifically uses regression analysis, which is the process of using a mathematical model to forecast the value of one variable based on the values of one or more other variables. The independent variable in this study is stock price prediction, and the dependent variable is market stock prices. The proxy that is used in this study to measure the dependent variable is CAPM in the Nigerian market. The study follows the procedure of OKE and Mihailidis, Tsopoglou, Papanastasiou, and Mariola (2006) (Man & Wong, 2013). At the beginning stage is the estimation of beta coefficient for each stock using weekly returns during the approximation period. Moreover, in this particular study I approximate beta by regressing each month's return against the market index as highlighted in following equation:

$$\beta_i = \frac{COV(R_i, R_m)}{\alpha^2 R_m}$$

where; β_i = beta (systematic risk) of asset I, $COV(R_i, R_m)$ = the covariance between asset I and the market, $\alpha^2(R_m)$ = the variance of market returns (Nel & Nel, 2011)

Findings and Discussions

The beta value estimated for the individual stocks are obtained from the observation of rate of return for the sequence of dates in the table presented below and which range from monthly records from stock A to stock B in the year 22/6/2021 - 17/6/2022. Subsequently, it is in line with the principles of CAPM assumption and it examines the law as it assumes that high risk beta is associated with high level of return. This law is in line with the Nigerian Stock Exchange which is consistent with the period reviewed or examined; stock with high risk portfolio is B because it has highest alpha whiles portfolio A is the one with low risk according to their alpha, as shown in the table below.

Table 1: Summary of Output 1

Summary of Output 1	
Regression Statistics	
Multiple R	0.054640323
R Square	0.002985565
Adjusted R Square	-0.007188052
Standard Error	0.046800576
Observations	100

Table 2: ANOVA Result

ANOVA					
	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	0.000642767	0.000642767	0.293462	0.589240338
Residual	98	0.214648806	0.002190294		
Total	99	0.215291573			

Table 3: Summary Statistics

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**	**Lower 95.0%**	**Upper 95.0%**
Intercept	0.003022002	0.0046806	0.645641	0.52002	-0.006267	0.01231054	-0.006267	0.0123105
Market	-0.00968692	0.0178817	-0.541721	0.58924	-0.045173	0.02579883	-0.045173	0.0257988

Table 4: Summary Output 4

Summary of Output 4	
Regression Statistics	
Multiple R	0.237449203
R Square	0.056382124
Adjusted R Square	0.04675337
Standard Error	0.033533345
Observations	100

Table 5: ANOVA Result

ANOVA					
	df	**SS**	**MS**	**F**	**Significance F**
Regression	1	0.0065845	0.006585	5.8556	0.0173707
Residual	98	0.1101996	0.001124		
Total	99	0.1167841			

Table 6: Summary Statement

	Coefficients	**Standard Error**	**t Stat**	**P-value**	**Lower 95%**	**Upper 95%**	**Lower 95.0%**	**Upper 95.0%**
Intercept	0.002741	0.003354	0.81732	0.41573	-0.00391	0.009396	-0.00391	0.0093964
Market	0.031004	0.012813	2.41983	0.01737	0.005578	0.05643	0.005578	0.0564304

Table 7: Summarized Table

	stock A	**stock B**
Average	-0.0005	-0.00072
Variance	0.035338	0.035019
STD-TSLA	0.188457	0.187135
COVARIANCE	-0.00067	0.002145
CORRELATION	-0.05464	0.237449
BETA	0.00302	0.002741
SLOP	0.00969	0.031004

The table under footnote (appendix) indicates the assumption tested the following values as indicated in Table above and the table for output 1 and output 4 contain the following subheadings- coefficient, standard error, t-stat, P-values, lower and Upper and these answers were obtained from regression analysis and are summarized in Table 7 which shows the subheadings average, variance, standard deviation, covariance, correlation, beta and alpha. As indicated in the summary in Table 7, in terms of average both of the stock A (-0.005) and B (-0.00072) have negative value whiles the variance and standard deviation in both cases are equal, which is (0.035) and (0.19), respectively, and the covariance and correlation of stock B has shown positive values (0.002145, 0.237449) as the highest value. Table 5 indicated that stock A has high beta value (0.003022) while stock B shows highest alpha (0.031004), showing that stock B is high risk. These particular results have invalidated zero beta assumption of CAPM. Meanwhile the assumption that the slope of regression analysis (SML) should equal to excess return on market portfolio was found to be valid. While the slope of approximated SML for output 1 in the regression analysis the value for significant F (0.589240338) is greater than

market MS (0.000642767) and for that of output 2 the value for significant F (0.017370691) is higher than that of the market (MS 0.006584535). Therefore, it can be concluded the results obtained from the beta are positive which is consistent with Nigerian Stock Exchange for the period examined (22nd June 2021 - 17th Jun 2022), hence t the average excess return on portfolio (RP) and the approximated beta of Portfolio (β) are important statistically.

Conclusion

This particular research was aimed to establish the validity of the law of CAPM in the Nigerian Stock Exchange (NSE) using monthly stock returns from 20 companies for the period of one year (22/6/2021 - 17/6/2022). The results obtained concluded that the value that is obtained is beta and it is positive and thus consistent with CAPM in the Nigerian stock exchange since the final results are consistent with NSE for the period examined and, thus, it shows evidence of correlation between NSE and CAPM. In summary, both the Capital Asset Pricing Model (CAPM) and the Arbitrage Pricing Theory (APT) describe the link between risk and return. The CAPM is a popular model that only analyzes one element (beta) and assumes a linear relationship between risk and return, whereas the APT considers numerous factors and generalizes the risk-return relationship. The main limitation of this study is that it is difficult to estimate beta, which is the fundamental problem with CAPM. The sample size and the period for analysis may have an impact on the CAPM's efficiency. Results may not be generalizable to the broader Nigerian capital market if the sample size is too small or the time period is not representative. Determining an exact beta value can be difficult and time-consuming. Usually, a proxy value for beta is used.

Declarations

From today i the author of this paper with above mentioned title declared that there is no conflict of interest that warrant me to write this paper but is a requirement for the partial fulfillment of Master of Accounting in university of Airlannga

Conflict of Interests

I the authors declared that there is no significant competing financial, professional, or personal interests that might have affected the performance.

Availability of Data and Materials

The data that is used in this is obtained strictly from Nigerian stock market and the references that are provided in the references column.

Author's Contribution

This article intends to contribute by offering empirical evidence of the chosen model's applicability and reliability (like CAPM) in the setting of the Nigerian stock market.

Funding Sources

This program, where I am studying in Airlangga University it's a scholarship program under ADS.

Acknowledgments

I would first and foremost like to express my sincere gratitude to Novrys Suhardianto, SE., MSA., Ph.D., Ak., CA, my principal supervisor, for his selfless dedication, priceless time, ongoing guidance, astute advice, closed supervision, and enthusiastic encouragement while I was writing this paper. His feedback and meticulous review of several revisions had a considerable impact on this paper style and content. He supplied advice and suggestions that will significantly enhance my school life in addition to advice for this paper.

I want to publicly thank Prof. Dr. Moh Nasih, S.E., M.T., Ak., CMA, the rector of Airlangga University, as well as the academic staff of Universitas Airlangga in Surabaya for providing me with the opportunity and support I needed to complete the Master's degree in Accounting. I also want to thank The Gambia's government for allowing me to pursue my studies abroad.

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Appendix

Table 8: Result Calculation

Date	S&P (stock A)	TSLA (stock B)	Market
22/6/2021	618.25	628.570007	19158900
23/6/2021	632	657.200012	31099200
24/6/2021	674.98999	697.619995	45982400
25/6/2021	689.580017	693.809998	32496700
28/6/2021	671.640015	694.700012	21628200
29/6/2021	684.650024	687.51001	17381300
30/6/2021	679.77002	692.809998	18924900
1/7/2021	683.919983	687.98999	18634500
2/7/2021	678.97998	700	27054500
6/7/2021	681.710022	684	23284500
7/7/2021	664.27002	665.700012	18792000
8/7/2021	628.369995	654.429993	22773300
9/7/2021	653.179993	658.909973	18140500
12/7/2021	662.200012	687.23999	25927000
13/7/2021	686.320007	693.280029	20966100
14/7/2021	670.75	678.609985	21641200
15/7/2021	658.390015	666.140015	20209600
16/7/2021	654.679993	656.700012	16371000
18/2/2022	886	886.869995	22833900
22/2/2022	834.130005	856.72998	27762700
23/2/2022	830.429993	835.299988	31752300
24/2/2022	700.390015	802.47998	45107400
25/2/2022	809.22998	819.5	25355900
28/2/2022	815.01001	876.859985	33002300
1/3/2022	869.679993	889.880005	24922300
2/3/2022	872.130005	886.47998	24881100
3/3/2022	878.77002	886.440002	20541200
4/3/2022	849.099976	855.650024	22333200
7/3/2022	856.299988	866.140015	24164700
8/3/2022	795.530029	849.98999	26799700
9/3/2022	839.47998	860.559998	19728000
10/3/2022	851.450012	854.450012	19549500
11/3/2022	840.200012	843.799988	22345700
14/3/2022	780.609985	800.700012	23717400
15/3/2022	775.27002	805.570007	22280400
16/3/2022	809	842	28009600
17/3/2022	830.98999	875	22194300
18/3/2022	874.48999	907.849976	33471400
21/3/2022	914.97998	942.849976	27327200
22/3/2022	930	997.859985	35289500
23/3/2022	979.940002	1040.699951	40225400
24/3/2022	1009.72998	1024.48999	22973600
25/3/2022	1008	1021.799988	20677200

Date	S&P (stock A)	TSLA (stock B)	Market
28/3/2022	1065.099976	1097.880005	34168700
29/3/2022	1107.98999	1114.77002	24538300
30/3/2022	1091.170044	1113.949951	19955000
31/3/2022	1094.569946	1103.140015	16330900
1/4/2022	1081.150024	1094.75	18087700
4/4/2022	1089.380005	1149.910034	27345300
5/4/2022	1136.300049	1152.869995	26691700
6/4/2022	1073.469971	1079	29782800
7/4/2022	1052.390015	1076.589966	26482400
8/4/2022	1043.209961	1048.439941	18337900
11/4/2022	980.400024	1008.469971	19785700
12/4/2022	997.640015	1021.190002	21992000
13/4/2022	981.080017	1026.23999	18373700
14/4/2022	999.289978	1012.710022	19474100
18/4/2022	989.030029	1014.919983	17238400
19/4/2022	1005.059998	1034.939941	16615900
20/4/2022	1030	1034	23570400
21/4/2022	1074.72998	1092.219971	35138800
22/4/2022	1014.909973	1034.849976	23232200
25/4/2022	978.969971	1008.619995	22780400
26/4/2022	995.429993	1000	45377900
27/4/2022	898.580017	918	25652100
28/4/2022	899.97998	900	41649500
29/4/2022	902.25	934.400024	29377700
2/5/2022	860.77002	906.359985	25260500
3/5/2022	903.179993	924.080017	21236500
4/5/2022	903.940002	955.5	27214600
5/5/2022	939.02002	945.599976	30839700
6/5/2022	887	888	24301000
9/5/2022	836.450012	845.630005	30270100
10/5/2022	819.309998	825.359985	28133900
11/5/2022	795	809.77002	32408200
12/5/2022	701	759.659973	46771000
13/5/2022	773.47998	787.349976	30716900
16/5/2022	767.159973	769.76001	28699500
17/5/2022	747.359985	764.47998	26745400
18/5/2022	744.52002	760.5	29270600
19/5/2022	707	734	30098900
20/5/2022	713.98999	721.580017	48324400
23/5/2022	655.02002	679.960022	29634500
24/5/2022	653.530029	653.919983	29697500
25/5/2022	623.849976	669.320007	30713100
26/5/2022	661.419983	718.669983	35334400

Date	S&P (stock A)	TSLA (stock B)	Market
27/5/2022	723.25	759.799988	29765000
31/5/2022	773.840027	778.799988	33971500
1/6/2022	755.159973	771.97998	25749300
2/6/2022	732.469971	792.630005	31157700
3/6/2022	729.679993	743.390015	37348100
6/6/2022	733.059998	734.599976	28068200
7/6/2022	702	719.98999	24269500
8/6/2022	720.26001	749.890015	25403500
9/6/2022	748.02002	766.640015	32163800
10/6/2022	705.469971	718.5	32512200
13/6/2022	669.5	679.900024	34255800
14/6/2022	654.859985	678.98999	32662900
15/6/2022	662.75	706.98999	39710600
16/6/2022	668.210022	675.5	35796900
17/6/2022	640.299988	662.909973	30810900

Table 9: Data Analysis Rate of Return = LN(B2/B3)

Date	Stock A	Stock B	Market
22/6/2021	-0.022	-0.04454	-0.48441
23/6/2021	-0.06581	-0.05969	-0.39108
24/6/2021	-0.02138	0.005476	0.34712
25/6/2021	0.02636	-0.00128	0.407141
28/6/2021	-0.01919	0.010404	0.218603
29/6/2021	0.007153	-0.00768	-0.08508
30/6/2021	-0.00609	0.006982	0.015464
1/7/2021	0.007249	-0.01731	-0.37284
2/7/2021	-0.00401	0.023122	0.150065
6/7/2021	0.025916	0.027119	0.214357
7/7/2021	0.05556	0.017075	-0.19216
8/7/2021	-0.03872	-0.00682	0.227442
9/7/2021	-0.01371	-0.0421	-0.35714
12/7/2021	-0.03578	-0.00875	0.212378
13/7/2021	0.022948	0.021387	-0.03169
14/7/2021	0.018599	0.018547	0.068441
15/7/2021	0.005651	0.014273	0.210646
16/7/2021	0.038601	0.014257	-0.26306
18/2/2022	0.060328	0.034576	-0.19545
22/2/2022	0.004446	0.025332	-0.13427
23/2/2022	0.170306	0.040084	-0.35108
24/2/2022	-0.14445	-0.02099	0.576035
25/2/2022	-0.00712	-0.06765	-0.26357
28/2/2022	-0.06492	-0.01474	0.280814
1/3/2022	-0.00281	0.003828	0.001655

Date	Stock A	Stock B	Market
2/3/2022	-0.00758	4.51E-05	0.191676
3/3/2022	0.034346	0.035352	-0.08364
4/3/2022	-0.00844	-0.01219	-0.07882
7/3/2022	0.073612	0.018822	-0.1035
8/3/2022	-0.05377	-0.01236	0.306352
9/3/2022	-0.01416	0.007125	0.009089
10/3/2022	0.013301	0.012543	-0.13368
11/3/2022	0.073564	0.052429	-0.05958
14/3/2022	0.006864	-0.00606	0.062502
15/3/2022	-0.04259	-0.04423	-0.22884
16/3/2022	-0.02682	-0.03844	0.232712
17/3/2022	-0.05102	-0.03686	-0.41086
18/3/2022	-0.04526	-0.03783	0.202809
21/3/2022	-0.01628	-0.05671	-0.2557
22/3/2022	-0.05231	-0.04204	-0.13091
23/3/2022	-0.02995	0.015699	0.560153
24/3/2022	0.001715	0.002629	0.105314
25/3/2022	-0.0551	-0.07182	-0.50228
28/3/2022	-0.03948	-0.01527	0.331075
29/3/2022	0.015297	0.000736	0.206755
30/3/2022	-0.00311	0.009752	0.200421
31/3/2022	0.012336	0.007635	-0.10217
1/4/2022	-0.00758	-0.04916	-0.41331
4/4/2022	-0.04217	-0.00257	0.024192
5/4/2022	0.056881	0.06622	-0.10958
6/4/2022	0.019833	0.002236	0.117451
7/4/2022	0.008761	0.026495	0.36751
8/4/2022	0.062097	0.038869	-0.07599
11/4/2022	-0.01743	-0.01253	-0.10572
12/4/2022	0.016738	-0.00493	0.179758
13/4/2022	-0.01839	0.013272	-0.05817
14/4/2022	0.01032	-0.00218	0.121946
18/4/2022	-0.01608	-0.01953	0.036779
19/4/2022	-0.02451	0.000909	-0.34963
20/4/2022	-0.04251	-0.05478	-0.39931
21/4/2022	0.05727	0.053956	0.413767
22/4/2022	0.036054	0.025673	0.019639
25/4/2022	-0.01667	0.008583	-0.68912
26/4/2022	0.102359	0.085558	0.5704
27/4/2022	-0.00156	0.019803	-0.48466
28/4/2022	-0.00252	-0.03751	0.349053
29/4/2022	0.047064	0.030468	0.150994
2/5/2022	-0.04809	-0.01936	0.173521

Date	Stock A	Stock B	Market
3/5/2022	-0.00084	-0.03344	-0.24803
4/5/2022	-0.03807	0.010415	-0.12505
5/5/2022	0.056992	0.062848	0.238285
6/5/2022	0.058678	0.04889	-0.21964
9/5/2022	0.020704	0.024262	0.073185
10/5/2022	0.03012	0.019069	-0.14144
11/5/2022	0.125834	0.063879	-0.36685
12/5/2022	-0.09839	-0.0358	0.42045
13/5/2022	0.008204	0.022594	0.067933
16/5/2022	0.026148	0.006883	0.070517
17/5/2022	0.003807	0.00522	-0.09022
18/5/2022	0.051709	0.035467	-0.02791
19/5/2022	-0.00984	0.017066	-0.47345
20/5/2022	0.086203	0.059409	0.488997
23/5/2022	0.002277	0.039049	-0.00212
24/5/2022	0.046479	-0.02328	-0.03363
25/5/2022	-0.05848	-0.07114	-0.14017
26/5/2022	-0.08937	-0.05565	0.171524
27/5/2022	-0.06761	-0.0247	-0.13219
31/5/2022	0.024436	0.008796	0.277114
1/6/2022	0.030507	-0.0264	-0.19065
2/6/2022	0.003816	0.064136	-0.18122
3/6/2022	-0.00462	0.011895	0.285645
6/6/2022	0.043294	0.020089	0.145417
7/6/2022	-0.02568	-0.04069	-0.04567
8/6/2022	-0.03782	-0.02209	-0.23595
9/6/2022	0.058566	0.064852	-0.01077
10/6/2022	0.052333	0.05522	-0.05224
13/6/2022	0.02211	0.001339	0.047616
14/6/2022	-0.01198	-0.04041	-0.19538
15/6/2022	-0.0082	0.045563	0.103757
16/6/2022	0.042666	0.018814	0.149993
17/6/2022	0	0	0