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Impact of Macroeconomic Variables on the Performance of Multinational Corporations: Evidence from Bangladesh

Abstract

This research examines how macroeconomic variables affect multinational firms' performance in Bangladesh. A secondary panel dataset comprising with firms' performance data from three randomly chosen DSE- Dhaka Stock Exchange- and CSE- Chittagong Stock Exchange- listed multinational companies ranging from 2013 to 2022 has been employed for the purpose. For financial performance measurement, return on assets (ROA), return on equity (ROE), and earnings per share (EPS) are used. Explanatory macroeconomic variables include inflation, terms of trade, balance of payment, governmental debt, political stability, and interest rate. An empirical fixed effect panel regression suggests that the specified explanatory variables can explain changes in the dependent variables. Inflation, terms of trade, balance of payment, and public debt affect ROA. The only factor affecting ROE is governmental debt. EPS is affected by interest rates. Regression fitness tests support the models' reliability.

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1. Introduction

MNCs are important participants in the international economy, working in many nations and using their strengths to benefit from and deal with a range of challenges and opportunities found around the world. Most MNCs operate a central office that manages the company, while they also open branches, subsidiaries or affiliates worldwide for production, distribution and sales. Many businesses expand by entering new markets, extracting natural resources, using skilled people and acquiring necessary resources, along with seeking to spread their activities to avoid risks from market oversaturation, changes in laws or instabilities with neighboring countries.

Foreign investors find great interest in Bangladesh because its incentives are very flexible when compared to many other countries. Many multinational companies continue operating in Bangladesh by investing greatly over a long period, earning income by paying taxes and preparing skilled workers (The Daily Star, 2023).

Recently, the leading MNCs in Bangladesh have gone through ups and downs in their financial performance, as seen in *figure 1 of the appendix*. Financial performance of

a multinational corporation (MNC) is a very important measure of how efficient the operations of the business are, how well the management performs, and how valuable the business is in general. Though internal forces like corporate strategy, management of working capital and innovations within the firm are important drivers of success or failure of a firm, external macroeconomic environment is a key determinant of business success or failure. These external forces tend to be more volatile and complicated in the case of the firms in the emerging economy such as Bangladesh. It is crucial to learn the exact mechanisms by which such macroeconomic variables spread their impact on firm performance indicators, including Return on Assets (ROA), Return on Equity (ROE), and Earnings Per Share (EPS) to make strategic decisions, both by the corporate management and regulatory policymakers.

The world financial literature presents a fertile, but frequently conflicting world in terms of the influence of macroeconomic shocks. The impact of variables on the corporate profitability of business in various countries and industries is constantly debated regarding inflation, interest rates, balance of payments, terms of trade, and public debt (Willy, 2012; Chioma *et al.*, 2015; Pacini *et al.*, 2017). This research falls at the edge of international business and financial economics, in an attempt to bring some empirical evidence to bear in the setting of the Dhaka and Chittagong Stock Exchange (DSE and CSE) of Bangladesh.

1.1 Objectives

The objective of this study is to find how the performance of multinational corporations operating in Bangladesh is impacted by the selected macroeconomic variables.

To serve this objective, the following specific objectives are set:

i. To verify whether the selected macroeconomic variables collectively influence the performance of MNCs;

ii. To understand whether the macroeconomic variables independently influence the performance of MNCs.

1.2 Significance of the Study

The study uses a panel data regression model with a time frame of 10 years, 2013-2022, to examine how six independent macroeconomic variables are related to the three chosen financial performance measures (ROA, ROE, and EPS). This paper narrows down to an analysis of three multinational companies listed in the Dhaka Stock Exchange (DSE) and Chittagong Stock Exchange (CSE) of Bangladesh and collects their financial information of annual reports and macroeconomic information of the World Bank. It is hoped that the results of this study would bring forth important information to the government policymakers, the central bank and MNCs management in order to develop strategies to counter the external risks and increase corporate profitability within Bangladeshi economic context.

2. Review of Literature

Willy (2012) investigated the impact of macroeconomic variations on the financial performance of industrial firms listed in Kenya's NSE. The goals were achieved by the use of linear regression analysis with data collected from 2009 to 2018.

The results demonstrated that interest rate has a substantial positive impact on the performance of manufacturing enterprises, whereas inflation rate has an insignificant negative effect.

The impact of inflation on the performance of Nigerian businesses was studied by **Chioma *et al.* (2015)**. The research proved that businesses like banks are impacted by inflation in terms of profitability. The findings disproved the hypothesis that reported earnings, inflation, and return on equity were positively related.

Mark and Nwaiwu (2015) have studied the role of political environment on performance of MNC in the context of Nigeria. Their study conducted on 27 quoted manufacturing multinational companies using regression found a strong negative association between the degree of political stability and absence of violence and company profitability.

The impact of interest rate variables on the efficiency of commercial banks in Kenya was studied by **Maigua and Muoni (2016)**. The findings show that commercial banks' performance is negatively affected by inflation, and this influence is statistically significant. The analysis has been conducted using a linear regression model.

Selected macroeconomic variables' effects on UK firm performance were the focus of an attempt by **Pacini *et al.* (2017)**. Panel data with instrumental variables were utilized to examine the effects of macroeconomic conditions on the top 100 enterprises in the UK from 2000 to 2014. Corporate profits are impacted by interest rates in a negative way and inflation rates in a positive way. There is a statistically significant relationship between the two variables.

Mulinya and Olweny (2019) examined multinational firms' financial performance and exchange rate issues. Two models used return on assets (ROA) and return on equity (ROE) to quantify financial performance. The balance of payments (BoP), inflation, terms of trade (ToT), and public debt have explained ROA and ROE. The study uses ordinary least squares and panel data from four MNCs from 2002–2017. The study found that BoP and public debt had substantial positive and negative effects on the dependent variables respectively. Terms of trade favorably affect explanatory variables, but not statistically. Inflation has a significant negative impact on ROE, not ROA.

The effect of working capital management (WCM) on the performance of listed Iranian manufacturing enterprises was studied by **Soukhakian and Khodakarami (2019)**, who looked at the roles of inflation and GDP in both direct ways and as moderators. Panel data spanning 2010–2016 is analyzed in this study using the ordinary least squares method with robust standard errors. The firm's profitability was discovered to be positively and significantly affected by inflation.

In their recently released study on firms' ROA, **Mohd and Siddiqui (2020)** delved into macro-economic concerns. For this objective, 35 companies' 10-year data from 7 different industries in Pakistan was utilized. The analysis has been conducted using the generalized method of moments (GMM), a regression-based statistical method. Based on the research, inflation has a negative effect on ROA for five of the industries analyzed, while having a positive impact for two of them. Statistical significance is found for each of the inflation coefficients.

In **Ullah's (2020)** study, an investigation was conducted to determine the impact of macro-economic variables on the financial performance of various sectors in Pakistan. He carefully examined the data of 169 companies from 2006 to 2018. The research has utilized the following factors as explanatory: real effective exchange rate, crude oil price, inflation (CPI), rate of real interest, and GDP; while dependent variables include Tobin's Q, ROA, ROE, EPS, and capital gain. Control variables have been utilized to account for the size and age of the firms. The author has employed a panel data regression model for the analysis. All five models employed have shown a significant negative association with inflation. The rate of real interest has been found to have a significant negative association with EPS and ROE, a significant positive association with capital gain, and a negative but insignificant association with ROA and Tobin's Q.

Ullah *et al.* (2020) have researched and analyzed how changes in macro-economic variables affect Pakistan's textile industry's return on assets. The study used secondary data from 1997 to 2019. Two models of least square (fully modified, and residual), and Engel Granger Co-integration have been applied for analyzing the impact. The analysis has revealed that the rate of inflation and exchange rate have a significant negative relationship, while the interest rate has a statistically significant positive relationship on ROA of Pakistan's textile industry.

Augustine and Ayobami (2022) conducted a study that analyzed the impact of currency rate volatility on the performance assessments of multinational corporations in Nigeria. The Ordinary Least Square Linear Regression model was applied to yearly data spanning from 2001 to 2018. The research asserts that there is a negative correlation between inflation and business performance, while there is a positive correlation between interest rates and firm performance. Both correlations lack statistical significance.

Ondaye (2023) looked into how economic policies in both developed and emerging economies affected business success. Companies from South Africa, Angola, Egypt, Tunisia, and Senegal were selected for emerging nations. For the analysis, information from 1985 to 2019 was utilized. The study utilized the GMM technique to elucidate the impact of specific economic policy variables on business performance. It was discovered that inflation and public debt had a positive effect on shifts in business performance. The impact of inflation was insignificant, in contrast to the significant part played by public debt.

Ali and Rahman (2024) have investigated the exposure of interest rate and exchange rate to the financial performance of textile industry in Bangladesh. Operating cash flows has been employed as the proxy of financial performance whereas real effective exchange rate (REER), and real interest rate have been used as explanatory variables. Time series data ranging from 2013 to 2022 has been employed in ARDL model for the analysis purpose. The study revealed that interest rate has significant impact on the performance of textile industry both in the short and long term.

3. Methodology

3.1. Data and Its Sources

This report has been compiled using secondary data sources. The data at hand is panel data. The panel dataset consists

of 10 years' financial data from 2013 to 2022 for a selection of three multinational corporations (MNCs) listed on both the Dhaka Stock Exchange (DSE), and Chittagong Stock Exchange (CSE) as mentioned in *Appendix Table 1*. The annual reports of each selected MNC were accessed through their respective websites to gather the necessary data for this study. The macroeconomic data for the same time period has been obtained from the World Bank. In addition to these sources, a variety of websites, journals, and research papers were utilized to gather the necessary information for preparing this report.

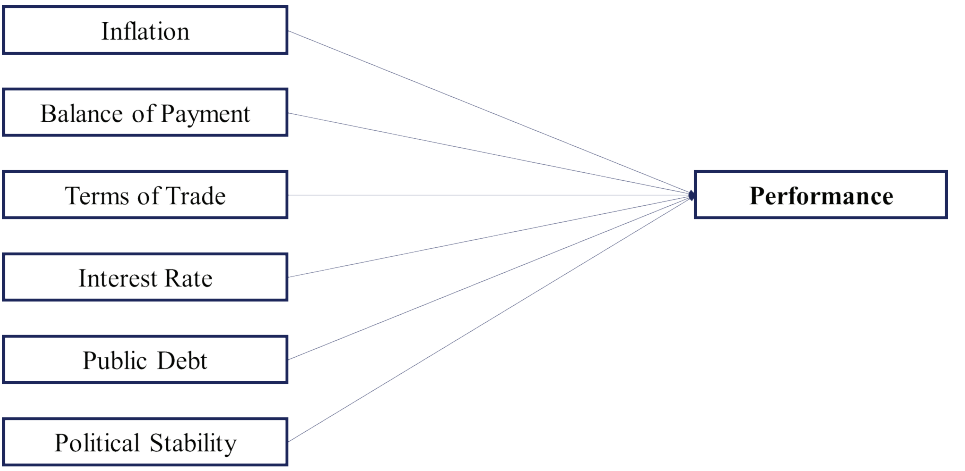
Sample Selection and Size

Currently, there are 13 multinational corporations listed in the DSE—Dhaka Stock Exchange (Habib, 2023). Accordingly, 13 companies make up the population for this study. For this study, a random sampling model was used to select three companies. The aim is to analyze how macroeconomic variables impact the financial performance of multinational corporations. As a result, data from three publicly traded multinational companies is utilized, covering the period from 2013 to 2022.

Variables

Based on the rigorous review of literature, to analyze how macroeconomic variables impact the financial performance of multinational corporations in Bangladesh, the following conceptual framework (*shown in figure 1*) has been developed. *Table 1* presents the justification of using the variables, and proxy used for each variable.

Figure 1: Theoretical Framework of the Research



(Research model developed from the perspective of the literature review)

So, the independent variables of this study consist of the balance of payments, terms of trade, interest rate, inflation rate, public debt, and political stability. The dependent variables utilized in this study are earnings per share, return on assets, and return on equity as the proxy of the financial performance of MNCs.

Table 1: Definitions of Variables

	Variables	Proxy	Supporting Literature
Dependent Variables	Return on assets (ROA)	$\frac{Net\ profit\ after\ tax}{Total\ assets}$	Mulinya and Olweny (2019); Mohd and Siddiqui (2020); Ullah (2020); Ullah *et al.* (2020); Hasan *et al.* (2023)
	Return on equity (ROE)	$\frac{Net\ profit\ after\ tax}{Total\ equity}$	Mulinya and Olweny (2019); Ullah (2020); Hasan *et al.* (2023)
	Earnings per share (EPS)	$\frac{Net\ profit\ after\ tax}{Number\ of\ shares\ outstanding}$	Ullah (2020); Hasan *et al.* (2023)
Independent Variables	Balance of payment (BoP)	Current account balance	Mulinya and Olweny (2019)
	Terms of Trade (ToT)	Ratio of export price to import price	Mulinya and Olweny (2019)
	Rate of interest (INT)	Policy rate*	Willy (2012); Ullah *et al.* (2020); Ali and Rahman (2024)
	Rate of inflation (INF)	Consumer price index (CPI)	Maigua and Muoni (2016); Mulinya and Olweny (2019); Mohd and Siddiqui (2020); Ullah (2020); Ullah *et al.* (2020);
	Public debt (PD)	Government Debt as % of total GDP	Mulinya and Olweny (2019), Ondaye (2023)
	Political stability (PS)	Political Stability and Absence of Violence/ Terrorism**	Mark and Nwaiwu (2015)

*Ridhwan *et al.* (2010) has used central bank's policy rate as a proxy measurement of interest rate.

**Estimate gives the country's score on the aggregate indicator, in units of a standard normal distribution, i.e., ranging from approximately -2.5 to 2.5.

3.2. Data Analysis Tools and Software

3.3. Descriptive Statistics

Nick (2007) classifies descriptive statistics into one of two major categories: data summarization and analysis. To help find patterns that fit the data's unique needs, descriptive statistics is a data analysis tool that attempts to give thorough explanations, presentations, or summaries of data points.

3.4 Correlation Analysis

A correlation is a quantitative assessment of the association between two variables. The statistic is most effective when applied to variables that have a linear correlation with each other (CFI, 2023). The Pearson correlation approach is widely used for numerical variables. It assigns a number ranging from -1 to +1, where 0 indicates no connection, 1 indicates complete positive correlation, and -1 indicates complete negative correlation (Nettleton, 2014).

3.5 Regression Analysis

It is common practice for financial analysts to check if one variable may be used to explain another. For problems like this, regression analysis is a useful tool. Unlike simple linear regression, which uses a single independent variable to explain the variation in the dependent variable, multiple regression makes use of two or more independent variables. If applied properly, it enables the analyst to make more sophisticated forecasts by estimating utilizing models with numerous explanatory factors.

A linear regression can be expressed as follows:

$y = c + \beta * x$

where, y = the estimated score of the dependent variable, c = constant, β = the regression coefficient, x = the score on the independent variable, defines the simplest form of the regression equation with one dependent and one independent variable.

The following multiple regression models have been developed for this study.

$ROA = c + \beta_1 BoP + \beta_2 INF + \beta_3 ToT + \beta_4 PD + \beta_5 PS + \beta_6 INT + e$ …… *(i)*

$ROE = c + \beta_1 BoP + \beta_2 INF + \beta_3 ToT + \beta_4 PD + \beta_5 PS + \beta_6 INT + e$ …… *(ii)*

$EPS = c + \beta_1 BoP + \beta_2 INF + \beta_3 ToT + \beta_4 PD + \beta_5 PS + \beta_6 INT + e$ …… *(iii)*

Where,

ROA = return on assets

ROE = return on equity

EPS = earnings per share

c = constant

β_1 = beta coefficient of balance of payment (BoP)

β_2 = beta coefficient of rate of inflation (INF)

β_3 = beta coefficient of terms of trade (ToT)

β_4 = beta coefficient of public debt (PD)

β_5 = beta coefficient of political stability (PS)

β_6 = beta coefficient of rate of interest (INT)

e = error

This study also ran tests for heteroskedasticity, multicollinearity, and normality to verify whether the assumptions for the regression analysis are met.

3.6 Test of Heteroskedasticity

When the residual variance is not uniform across all measured values, this is called heteroskedasticity. Analysis results could be deemed invalid in the presence of heteroskedasticity, which occurs when the population utilized for the regression exhibits unequal variance (Griffiths, 2001). A popular method for determining heteroskedasticity is the White (1980) test (Klein *et al.*, 2016).

3.7 Test for Multicollinearity

Multicollinearity refers to a situation in multiple regression when the predictor variables are strongly associated with each other (Paul, 2006). Multicollinearity increases the variability and type II error, which is a failure to reject the incorrect null hypothesis due to insufficient statistical power to discover enough evidence for the alternative hypothesis. The Variance Inflation Factor (VIF) quantifies the extent of multicollinearity in regression analysis. As a result of collinearity, the variance of a regression coefficient increases, according to this statistical notion (Cheng *et al.*, 2022).

3.8 Normality Test

Assumption of normalcy is standard practice in statistics. This assumption underpins the whole statistical framework; in its absence, using less-than-ideal estimators, making false inferential claims, and making erroneous predictions are all possible outcomes. Because of this, verifying or testing this assumption is crucial prior to conducting any data statistical analysis (Das and Imon, 2016). According to Thadewald and Büning (2007), among the tests that were investigated for determining normalcy, the Jarque-Bera test (1981) was the best overall.

3.9 Data Analysis Software

The dataset for this investigation was collected, cleaned, and organized using Microsoft Excel. Graphs and charts are also made with the help of Excel. Word processing has been done using Microsoft Word. The analysis was carried out using Stata 14.2, which is among the most used tools for statistical and data analysis.

4. Empirical Results

Descriptive statistics for the selected variables of the study are shown in *table 2*. The standard deviation (Std. Dev.) quantifies the degree to which the sample observations are dispersed around the mean value, while the mean represents the central value of the sample. The selected multinational corporations have an average 23.9% rate of return, while the average return on equity of the same is 78.4%. Both of the returns' observations are clustered around their respective mean value. Average earnings per share for the sample is BDT 56.377. The observations of earnings per share are most scattered from their mean value in comparison to those of the other variables. The mean values of the balance of payment, rate of inflation, terms of trade, public debt, political stability, and interest rate are USD -3.866 billion, 7.4%, 0.70, 18.9%, -1.121, and 6.3%, respectively. All of the independent variables' observations are clustered around their respective mean value. From now on, the variable balance of payment has been transformed to its natural logarithm.

Table 2: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
ROA	30	.239	.151	.005	.535
ROE	30	.784	.507	.024	1.901
EPS	30	56.377	49.836	.73	171.03
BoP	30	-3.866	6.548	-15.775	2.58
INF	30	.074	.07	.037	.279
ToT	30	.7	.061	.578	.782
PD	30	.189	.034	.142	.252
PS	30	-1.121	.218	-1.628	-.896
INT	30	.063	.009	.048	.072

Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share, BoP= Balance of Payment, INF= Inflation Rate, ToT= Terms of Trade, PD= Public Debt, PS= Political Stability, INT= Interest Rate.

Table 3 shows the correlation among the variables used in the study. For dependent variables, ROA is very strongly and moderately connected with ROE and EPS, respectively, whereas ROE is strongly connected with EPS. Three dependent variables' correlations with the independent variables are observed separately. The correlation matrix shows that ROA has a very weak association with the independent variables; ROE has a very weak association with balance of payment, inflation, and terms of trade, and a weak association with public debt, political stability, and interest rate; EPS has a very weak association with inflation and public debt, a weak association with balance of payment and political stability, and a moderate association with terms of trade and interest rate. Among the independent variables, terms of trade have a significant, strong correlation with the balance of payments and a significant, very strong correlation with interest rates. The purpose of correlation analysis is to determine whether or not multicollinearity exists among independent variables. According to Fidell et al. (1996), independent variables with correlations over 0.70 should not be included in multiple regression analyses due to multicollinearity. As terms of trade don't comply with the aforementioned requirement, according to the Pearson correlation matrix, each variable other than terms of trade should be included in the regression. Further, a variance inflation factor (VIF) test for multicollinearity would be employed to check whether terms of trade can be included in the regression.

Table 3: Correlation Matrix

Variables	ROA	ROE	EPS	BoP	INF	ToT	PD	PS
ROE	.870*	1.000						
EPS	.524*	.626*	1.000					
BoP	-.063	-.013	-.288	1.000				
INF	-.053	-.034	-.182	.180	1.000			
ToT	-.069	-.108	-.430*	.734*	.532*	1.000		
PD	-.141	-.304	-.118	-.025	-.225	.178	1.000	
PS	.158	.253	.267	-.144	-.317	-.470*	-.321	1.000
INT	-.124	-.200	-.480*	.574*	.291	.821*	.265	-.529*

*Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share, BoP= Balance of Payment, INF= Inflation Rate, ToT= Terms of Trade, PD= Public Debt, PS= Political Stability, INT= Interest Rate; * $p<0.05$*

Table 4 shows that across all models, the VIF values for all variables are the same. The VIF for all variables is below 10, while the tolerance value for each variable is over 0.10. Therefore, these models do not exhibit significant multicollinearity problems that need to be corrected (CFI, 2023). So, all the independent variables, including terms of trade, can be included in regression analysis.

Table 4: Test of Multicollinearity

Variance Inflation Factor (VIF) test for multicollinearity

Null Hypothesis: No multicollinearity exists

Variables	ROA		ROE		EPS	
	VIF	1/VIF	VIF	1/VIF	VIF	1/VIF
ToT	8.886	.113	8.886	.113	8.886	.113
BoP	3.845	.26	3.845	.26	3.845	.26
INT	3.274	.305	3.274	.305	3.274	.305
INF	2.49	.402	2.49	.402	2.49	.402
PS	1.66	.603	1.66	.603	1.66	.603
PD	1.576	.634	1.576	.634	1.576	.634
Mean VIF	3.622	.	3.622	.	3.622	.

Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share, BoP= Balance of Payment, INF= Inflation Rate, ToT= Terms of Trade, PD= Public Debt, PS= Political Stability, INT= Interest Rate.

Table 5 exhibits the results of white test for heteroskedasticity. The results advocate that the error terms of all the three developed models are homoscedastic.

Table 5 : Test of Heteroskedasticity

White's test for heteroskedasticity
Null Hypothesis: Homoskedasticity

	ROA	ROE	EPS
$Chi^2(9)$	7.54	10.38	14.88
Prob > chi^2	.5815	.3209	.0942

Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share.

Using skewness and kurtosis in the sample, the Jarque-Bera test (1987) measures how well a distribution fits the normal distribution. *Table 6* shows Jarque-Bera Normality Test findings that failed to reject the null hypothesis that residuals are normally distributed for all three models.

Table 6: Test of Normality

Jarque-Bera (JB) test for normality

Null Hypothesis: Residuals are normally distributed

	ROA	ROE	EPS
Jarque-Bera (JB)	2.422	2.502	2.711
Chi^2	.2979	.2862	.2578

Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share.

The tests conducted so far give a go-ahead remark to continue further with ordinary regression analysis. Now to interpret the magnitude to what extent the independent variables influence the changes in the dependent variables, they are examined using ordinary least squares regression. Three regression models are developed for three different dependent variables. The Hausman (1978) specification test *appendix table 2* advocates the appropriateness of the random effects model of ordinary least squares regressions for the developed models. The Breusch and Pagan Lagrangian multiplier test shown in *appendix table 4* further advocates that random effects models are significant for the same. The random effects models' results are as follows, while the fixed effects models' results are shown in *appendix table 3*.

Table 7: Panel OLS Regression (Random Effect)

Variables	ROA			ROE			EPS		
	Coef.	t-value	p-value	Coef.	t-value	p-value	Coef.	t-value	p-value
BoP	-.005	-2.44	**.015***	-.008	-0.61	.541	.264	0.21	.836
INF	-.453	-2.38	**.017***	-1.277	-1.11	.269	3.177	0.03	.977
ToT	1.185	2.86	**.004***	3.311	1.32	.188	-116.911	-0.48	.633
PD	-.852	-2.70	**.007***	-4.619	-2.41	**.016***	20.56	0.11	.912
PS	.077	1.55	.122	.308	1.01	.311	1.88	0.06	.949
INT	-3.302	-1.86	.063	-14.112	-1.31	.192	-2059.482	-1.96	**.05***
Constant	.006	0.03	.975	.824	0.78	.435	259.444	2.54	**.011***
R-squared	.063			.142			.235		
Prob > chi^2	**.003***			**.03***			**.001***		
No. of obs	30			30			30		

*Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share, BoP= Balance of Payment, INF= Inflation Rate, ToT= Terms of Trade, PD= Public Debt, PS= Political Stability, INT= Interest Rate; * p<0.05*

Since there are three dependent variables—ROA, ROE, and EPS—three regression findings are also produced. Each three-regression model's regression outcome is displayed in *Table 7*.

The equations of the 3 developed regression models' results can be written as follows-

ROA = .006 – .005*BoP – .453*INF + 1.185*ToT – .852*PD + .077*PS – 3.302*INT + *e* … *(i)*

ROE = .824 – .008*BoP – 1.277*INF + 3.311*ToT – 4.619*PD + .308*PS – 14.112*INT + *e* … *(ii)*

EPS = 259.444 + .264*BoP + 3.177*INF – 116.911*ToT + 20.56*PD + 1.88*PS – 2059.482*INT + *e* … *(iii)*

The R^2 value shows that the independent variables explain approximately 6.3% of the variation in ROA, 14.2% of the variation in ROE, and 23.5% of the variation in EPS, respectively. For ROA, ROE, and EPS, all three models are considered trustworthy at the 5% level of significance. There is a statistically significant inverse

correlation between ROA and the balance of payment coefficient. The coefficient exhibits a positive correlation with EPS and a negative correlation with ROE, both of which are statistically insignificant. Therefore, the balance of payments is one of the major factors in the performance metric, ROA, as opposed to ROE and EPS.

A statistically substantial negative correlation exists between the inflation coefficient and ROA. A negative correlation between the same coefficient and ROE and a positive correlation with EPS do not reach statistical significance. This indicates that ROA, not ROE and EPS, is the primary metric through which inflation affects the performance of multinational corporations.

A positive and statistically significant association exists between the terms of trade coefficient and return on assets (ROA). Return on equity (ROE) and earnings per share (EPS), respectively, are positively and negatively correlated with the same coefficient; however, the correlations are not statistically significant. This indicates that trade terms significantly affect MNCs' ROA performance in contrast to ROE and EPS.

Both ROA and ROE are significantly and negatively correlated with the public debt coefficient. While there is a positive correlation between the same and EPS, it is not statistically significant. This indicates that public debt significantly affects the ROA and ROE, but not the EPS, of multinational corporations.

There is a positive, but statistically insignificant, correlation between the three discussed variables and the political stability coefficient. Based on the three criteria that were discussed, it can be concluded that political stability does not significantly affect the performance of multinational corporations.

Finally, there is a statistically significant negative correlation between EPS and the interest rate coefficient. Neither ROA nor ROE is statistically significantly correlated with the same coefficient. Hence, interest rate significantly affects EPS performance, but not ROA and ROE, of multinational corporations.

Having a significant correlation, ROA is negatively impacted by the balance of payment, inflation, and public debt and positively impacted by terms of trade. This implies that the higher the balance of payment, inflation, and public debt, the lower the performance of multinational corporations. The more favorable the terms of trade, the more favorable performance multinational corporations achieve. Again, having a negative correlation, ROE is negatively influenced by the amount of public debt of the host country, which implies that the lower the public debt of the host country, the higher the performance of the MNCs.

Lastly, having a negative correlation, EPS is negatively affected by the interest rate in the host country, which exhibits that the higher the interest rate in the host country, the lower the performance the multinational companies achieve.

5. Discussion

Empirical results in the previous chapter have found that the independent variables—balance of payment, rate of inflation, terms of trade, public debt, political stability, and rate of interest—have an influence on the changes in all three dependent variables: return on assets, return on equity, and earnings per share. For return on assets (ROA), the balance of

payments, rate of inflation, and public debt have negative and significant influence, while terms of trade have significant positive influence. The associations mean that if the balance of payments, the rate of inflation, and public debt increase, the return on assets of multinational corporations will decrease; if the terms of trade increases, that of multinational corporations will also increase.

For return on equity (ROE), the only significant influencing factor is public debt with an adverse effect, which implies that for an increase in public debt, the return on equity of multinational corporations will decrease, and for earnings per share (EPS), the only influencing factor is the rate of interest, which has an adverse effect, which advocates that for an increase in the rate of interest, the earnings per share will decrease.

Finally, this research states that the performance of the multinational corporations operating in Bangladesh is affected by the changes in the selected independent macro variables but political stability.

Because of their diverse financial goals, macroeconomic factors have varying effects on ROA, ROE, and EPS. For instance, the balance of payments (BoP) has a negative influence on ROA, which reflects operational issues, but it has an insignificant positive impact on EPS, which could be the result of inflation or financial adjustments. These discrepancies result from the fact that ROA, ROE, and EPS, respectively, measure net earnings, equity profitability, and operational efficiency. Due to its absolute character, EPS is more susceptible to fluctuations and financial tactics, highlighting the necessity of examining a variety of measures to provide thorough insights.

6. Recommendation

According to the aggregate results of these three performance indices, a few macroeconomic variables, including balance of payments, inflation rate, public debt and interest rate, exhibit negative impacts on MNC performances and thus necessitate good policies. Increasing balance of payment towards zero would stabilize the local currency and decrease the exchange rate pressures. It is also necessary to control the inflation rate and regulate the interest rates at a manageable level that would accommodate a stable macroeconomic environment that will enable MNC operations. Despite the significance of a country such as Bangladesh in terms of infrastructure and other development financing purposes of using public debt, it should not exceed a sustainable level, because of its adverse effects on the overall investment growth and corporate profitability. Although the element of political stability is not statistically significant in this sample, it is a crucial qualitative variable, as in an unstable political situation, economic confidence is reduced, supply chains are disrupted, and foreign investors are prevented. Hence, it is important to have a stable political environment to secure long-term growth of MNC in Bangladesh. Lastly, terms of trade, although not critical to ROE and EPS, are important in enhancing the domestic currency and decreasing costs incurred in imports. Positive terms of trade can be maintained by maintaining positive trade relations with the major trade partners particularly the ones who Bangladesh imports commodities, hence enabling the establishment of a more robust macroeconomic base upon which the MNC performance can be built on.

Future Research Scope

Nonetheless, the study has its limits. The potential impact of non-identified financial and non-financial factors is not accounted for in this study. More complete findings may emerge from a more extensive data collection covering a longer time frame and increasing the number of MNCs.

7. Conclusion

In this study, the selected macroeconomic variables are employed to observe the impact on the performance in terms of ROA, ROE, and EPS of multinational corporations. Based on a 10-year panel dataset, panel regression has been employed to find out the relationship between the independent and dependent variables.

Evidence suggests that all three dependent variables can be explained by the independent variables employed. The balance of payments, rate of inflation, and public debt have been found to have a negative influence on the changes in ROA; terms of trade have been found to have a positive influence on the same. Only one variable has been found to have a significant impact on the changes in ROE and EPS. Public debt and the rate of interest are found to have a negative impact on the changes in ROE and EPS, respectively. The findings of this study are aligned with much of the literature. To boost the economy of Bangladesh through the better performance of multinational corporations in Bangladesh, especially the government policymakers, i.e., Central Bank, Ministry of Finance, may find the findings stated in this research useful in reflecting on key issues and taking measures to keep these macro variables favorable.

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References

Ali, M. B., & Rahman, M. A., 2024. Exchange Rate and Interest Rate Exposure on Textile Industry Performance in Bangladesh: An Econometric Approach. *Jagannath University Journal of Business Studies*, 12(2), 1-22.

Augustine, E. O., and Ayobami, O., 2022. Exchange rates fluctuations, economic factors and financial performance evaluation of multinational companies in Nigeria. *Acta Universitatis Danubius. Œconomica*, *18*(5).

Bera, A.K. and Jarque, C.M., 1981. Efficient tests for normality, homoscedasticity and serial independence of regression residuals: Monte Carlo evidence. *Economics letters*, *7*(4), pp.313-318.

Cheng, J., Sun, J., Yao, K., Xu, M. and Cao, Y., 2022. A variable selection method based

on mutual information and variance inflation factor. *Spectrochimica Acta Part A: Molecular and Biomolecular Spectroscopy*, *268*, p.120652.

Chioma, D., Adanma, S. and Ebue, M., 2015. Relationship between Inflation and Firms' Performance: Evidence from Nigeria. *World Applied Sciences Journal*, *35*(9), pp.814-882.

Das, K.R. and Imon, A.H.M.R., 2016. A brief review of tests for normality. *American Journal of Theoretical and Applied Statistics*, *5*(1), pp.5-12.

Griffiths, W.E., 2001. Heteroskedasticity. *A companion to theoretical econometrics*, pp.82-100.

Habib, A., 2023. *Most listed MNCs post higher profits despite headwinds*. [online] The Daily Star. Available at: https://www.thedailystar.net/business/economy/news/most-listed-mncs-post-higher-profits-despite-headwinds-3383266 [Accessed 15 Jun. 2024].

Hasan, S.M., Hossain, S.A., Islam, R. and Hasan, M.M., 2023. Corporate governance and firm's performance: Evidence from Dhaka Stock Exchange. *Indian Journal of Finance and Banking*, *13*(1), pp.28-38.

Klein, A.G., Gerhard, C., Büchner, R.D., Diestel, S. and Schermelleh-Engel, K., 2016. The detection of heteroscedasticity in regression models for psychological data. *Psychological Test and Assessment Modeling*, *58*(4), p.567.

Maigua, C. and Mouni, G., 2016. Influence of interest rates determinants on the performance of commercial banks in Kenya. *International journal of academic research in accounting, finance and management sciences*, *6*(2), pp.121-133.

Mark, J. and Nwaiwu, J.N., 2015. Impact of political environment on business performance of multinational companies in Nigeria. *African Research Review*, *9*(3), pp.1-10.

Mulinya, K.M. and Olweny, T., 2019. Effects of Exchange Rate Determinants on Financial Performance of Multinational Companies.

Nettleton, D., 2014. Selection of variables and factor derivation. *Commercial data mining*, pp.79-104.

Nick, T. G., 2007. Descriptive statistics. *Topics in biostatistics*, pp.33-52.

Ondaye, W. G., 2023. Effects of Economic Policy on Firm Performance in Developed and Developing Countries. *Theoretical Economics Letters*, *13*(1), pp.169-182.

Pacini, K., Mayer, P., Attar, S. and Azam, J., 2017. Macroeconomic factors and firm performance in The United Kingdom. *Journal of Smart Economic Growth*, *2*(3), pp.1-11.

Paul, R. K., 2006. Multicollinearity: Causes, effects and remedies. *IASRI, New Delhi*, *1*(1), pp.58-65.

Ridhwan, M.M., de Groot, H.L. and Nijkamp, P., 2010. *The impact of monetary policy on economic activity-Evidence from a meta-analysis* (No. 10-043/3). Tinbergen institute discussion paper.

Soukhakian, I. and Khodakarami, M., 2019. Working capital management, firm performance and macroeconomic factors: Evidence from Iran. *Cogent Business & Management*, *6*(1), p.1684227.

Mohd, A.S. and Siddiqui, D.A., 2020. Effect of macroeconomic factors on firms' ROA: A comparative sectorial analysis from Pakistan. *International Journal of Publication and Social Studies*, *5*(1), pp.1–17.

The Daily Star, 2023. *HSBC publication showcases MNCs in Bangladesh*. [online] The Daily Star. Available at: https://www.thedailystar.net/business/economy/news/hsbc-publication-showcases-mncs-bangladesh-3264956 [Accessed 15 Jun. 2024].

Thadewald, T. and Büning, H., 2007. Jarque–Bera test and its competitors for testing normality–a power comparison. *Journal of applied statistics*, *34*(1), pp.87-105.

Ullah, B., 2020. *Macro Level Determinants of Firm Performance: A Sector Wise Approach with Evidence from Pakistan* (Doctoral dissertation, CAPITAL UNIVERSITY).

Ullah, I., Noreen, H., Rehman, Z.U. and Shinwari, N., 2020. Impact of Macro

Economic Variables on Return on Assets of Textile Industry of Pakistan. *European Journal of Business and Management Research*, *5*(6).

White, H., 1980. A heteroskedasticity-consistent covariance matrix estimator and a direct test for heteroskedasticity. *Econometrica: journal of the Econometric Society*, pp.817-838.

Willy, O.C.O., 2012. Macroeconomic fluctuations effects on the financial performance of listed manufacturing firms in Kenya. *International journal of social sciences*, *21*(1), pp.26-40.

Appendix

Appendix Table 1: Companies in the Sample

Serial	Company Name	Trading Code
1	Marico Bangladesh Limited	MARICO
2	Reckitt Benckiser (Bangladesh) PLC	RECKITTBEN
3	Singer Bangladesh Limited	SINGERBD

Appendix Table 2: Specification Test

Hausman (1978) specification test
Null Hypothesis: Random Effect (RE) is appropriate model

	Coef. (ROA)	Coef. (ROE)	Coef. (EPS)
Chi^2	.000	.000	.000
P-value	1.000	1.000	1.000

Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share.

Appendix Table 3: Pannel OLS Regression (Fixed Effect)

Fixed Effects (FE)

Variables	ROA			ROE			EPS		
	Coef.	t-value	p-value	Coef.	t-value	p-value	Coef.	t-value	p-value
BoP	-.005	-2.44	.024	-.008	-0.61	.548	.264	0.21	.838
INF	-.453	-2.38	.027	-1.277	-1.11	.282	3.177	0.03	.978
ToT	1.185	2.86	.009	3.311	1.32	.203	-116.911	-0.48	.638
PD	-.852	-2.70	.013	-4.619	-2.41	.025	20.56	0.11	.913
PS	.077	1.55	.137	.308	1.01	.322	1.88	0.06	.95
INT	-3.302	-1.86	.077	-14.112	-1.31	.206	-2059.482	-1.96	.064
Constant	.006	0.04	.971	.824	0.81	.428	259.444	2.62	.016
R-squared	.491			.399			.527		
Prob > chi^2	**.012***			.058			**.006***		
No. of obs	30			30			30		

*Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share, BoP= Balance of Payment, INF= Inflation Rate, ToT= Terms of Trade, PD= Public Debt, PS= Political Stability, INT= Interest Rate; * p<0.05*

Appendix Table 4: Breusch and Pagan Lagrangian multiplier test for random effects

Breusch and Pagan Lagrangian multiplier test for random effects Null Hypothesis: Random Effects are insignificant			
	ROA	**ROE**	**EPS**
Chibar^2(01)	114.84	70.33	65.01
Chibar^2	**.000***	**.000***	**.000***

Note: Authors' own calculation using Stata 14.2; ROA= Return on Assets, ROE= Return on Equity, EPS= Earnings Per Share.

Appendix Figure 2: Financial Performance of selected MNCs

