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ASSESSING THE EFFECT OF U.S. GEOPOLITICAL EVENTS ON THE INDIAN STOCK MARKET: A PRE- AND POST-ELECTION ANALYSIS

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Abstract :

This study investigates the impact of U.S. geopolitical events, particularly the 2024 presidential election, on the Indian stock market by examining the relationship between the Dow Jones Industrial Average (DJIA) and the Nifty 50 index during pre- and post-election periods. Using daily return data for 102 trading days before and after the election, the study applies descriptive statistics, correlation analysis, and comparative models to assess changes in volatility and co-movement. The descriptive statistics reveal that the Nifty 50 exhibited higher volatility (Std. Dev. = 1.02) before the U.S. election compared to the post-election period (Std. Dev. = 0.81), while the Dow Jones showed an increase in volatility post-election. Correlation analysis indicates a weak positive relationship between the DJIA and Nifty 50 in both periods, with Pearson's R values remaining low. The findings suggest that during times of relative U.S. economic stability, such as the pre-election phase, Indian markets exhibit some responsiveness to U.S. trends. However, when the U.S. economy experiences heightened volatility—as shown in the post-election period—the Indian market does not replicate the same level of fluctuation, indicating limited contagion. This highlights a possible decoupling effect under certain market conditions. The study concludes that while the Indian stock market is partially influenced by U.S. developments, its response is nuanced and depends on the global market environment.

Key words: Economic Stability, Volatility and Decoupling effect

Introduction

The interdependence of global markets has grown to be a major subject of economic interest in the increasingly globalized financial world. Today's stock markets don't function in a vacuum; geopolitical developments in one nation can have global effects that affect investor sentiment and market performance in other areas. Because of its strong economic, political, and trade ties, the US-India relationship stands out among these international exchanges. As one of the most watched geopolitical events in the world, U.S. elections frequently cause market instability in the United States as well as repercussions in developing nations like India. One of the most important indicators of the state of the Indian economy is the stock market, which is reflected by important indices like the Nifty 50. Conversely one of the oldest and most significant stock indexes in the United States is the Dow Jones Industrial Average (DJIA), which frequently represents investor confidence around the world. Multinational investment flows, currency rates, and global risk appetite are all directly

impacted by shifts in U.S. fiscal policy, interest rates, trade tariffs, and leadership. As a result, the outcome of international stock markets, including the Indian stock market, is frequently significantly impacted by the U.S. presidential election and its attendant uncertainty.

This study examines the relationship between two important indices—the Dow Jones Industrial Average (U.S.) and the Nifty 50 (India)—in order to determine how the U.S. presidential election affected the Indian stock market. It specifically aims to determine whether the U.S. elections had a major impact on the Nifty index by contrasting its performance prior to and post election. The daily closing prices of both indexes for 102 working market days were gathered for this purpose. From June 2024 to October 2024 is the pre-election phase, and from November 2024 to March 2025 is the post-election era. The study intends to evaluate the degree of correlation and the causal influence of Dow Jones movements on Nifty during these two separate phases using a variety of statistical methods.

The justification for choosing this time frame is the increased level of investor anxiety and global economic uncertainty that is commonly seen during election seasons. Understanding these dynamics is crucial since this volatility can have a big impact on decisions about investments in cross-border portfolios. All things considered, this study offers factual proof of the impact of international political events, especiall y those in the United States, on developing market nations such as India.In order to improve strategic invest ment and economic planning, the findings are intended to provide insightful information to investors, policy makers, and scholars regarding the vulnerability of Indian financial markets to external geopolitical events.

Objectives of the Study:
1. To examine the relationship between the Dow Jones Index and the Nifty Index before the U.S. presidential election.
2. To analyze the impact of the Dow Jones Index on the Nifty Index after the U.S. presidential election.

Need for the study

In the current era of economic globalization, financial markets across countries have become increasingly sensitive to political and economic developments in major economies like the United States. The U.S. presidential election is a significant event that generates global attention and has the potential to influence investor sentiment worldwide. For a developing economy like India, which maintains strong trade and investment ties with the U.S., it becomes essential to examine how fluctuations in the U.S. stock market, particularly the Dow Jones Index, impact the performance of the Indian stock market, represented by the Nifty Index. Understanding this relationship is crucial for market participants, especially during periods of political transition, as it can help investors manage risk more effectively and make informed decisions. This study aims to explore this dynamic by analyzing the correlation and regression patterns before and after the U.S. election, thus contributing valuable insights into short-term market behavior and international market interactions.

Statement of Problem

International financial markets are frequently significantly impacted by world political events, particularly elections in large economies like the US. Changes in investor mood, financial flows, and economic policies can have an impact on market volatility and performance internationally due to the growing interdependence of global markets. Being a new economic force, India is still susceptible to global economic indicators, such as the performance of important indices like the Dow Jones Industrial Average (DJIA) in the US. Prior to and following the U.S. presidential election, this study aims to investigate the relationship between the Indian market (represented by the Nifty 50) and the U.S. market (represented by the Dow Jones). The study intends

to ascertain if geopolitical changes have a statistically significant impact on the Indian stock market by analyzing market behavior across two different time periods: June to October (pre-election) and November to March (post-election).

Review Of Literature

Dasgupta et al.'s 2024 study examined how news stories affected the Nifty 50 index's movement. The study recognized the relevance of international indices such as the DJIA in influencing investor views and market movements in India, even though its main focus was on the impact of news emotions. Together, these studies show how the Nifty 50 and the DJIA interact significantly, highlighting how crucial it is to keep an eye on feelings and trends in the global market in order to comprehend and forecast changes in the Indian stock market.

Roy and Sen (2019) investigated the co-integration and co-movement of the Nikkei 225, DJIA, and Nifty 50. Their results demonstrated a significant degree of co-integration and correlation between these indices, indicating little room for short- and long-term international diversification. Additionally, the analysis discovered that the DJIA and Nikkei 225 experienced bidirectional effect from the Nifty 50 Granger during the study period.

Joshi (2022) examined the relationship between the Nifty 50 and NASDAQ 100 indices in terms of asset correlation and determining the ideal size of a portfolio. The correlation between the Nifty 50 and the NASDAQ 100 was comparatively low, suggesting possible advantages for foreign diversification, even if the Indian market provides better diversification opportunities because of lower internal correlations, according to the study.

Majumdar et al. (2022) looked at how the Nifty and international indices (DAX, DJIA, and Hang Seng) moved together before and during the COVID-19 pandemic. The selected indices showed a strong, long-term positive association, according to the study. In contrast to the Asian market, it was seen that the correlation decreased with the American and European markets, indicating differing levels of interconnectedness.

From 2010 to 2023, Sowmya Bharadwaj's study examined the correlation between the Nifty 50 and a number of international indices, such as the DJIA. The study found that the Nifty 50 and DJIA had a strong positive link, especially during times of global economic turmoil like the COVID-19 epidemic. The analysis underlined that notable drops in the DJIA frequently accompanied drops in the Nifty 50, indicating a cross-border transfer of market sentiment.

The relationships between the Nifty 50 and other developed and emerging international stock markets, such as the DJIA, were examined by Gupta (2023). The study discovered unidirectional correlations between the Nifty 50 and a number of global indexes using Granger causality and Johansen's cointegration approaches, suggesting differing levels of integration and dependency. Tewari (2020) forecasted the Nifty 50 benchmark index using Seasonal Auto Regressive Integrated Moving Average (SARIMA) models. The study recognized the impact of global indices such as the DJIA on the movement patterns of the Nifty 50, even though its main focus was on time series forecasting.

Research Methodology

This study adopts a quantitative research design to examine the relationship between the Indian stock market (represented by the Nifty 50 Index) and the U.S. stock market (represented by the Dow Jones Industrial Average) in the context of the U.S. presidential election. The data used in this study comprises the daily closing prices of the Nifty 50 and Dow Jones indices collected from their respective official sources—the National

Stock Exchange (NSE) of India and financial market databases. The study period is divided into two distinct phases: the pre-election period (June to October 2024) and the post-election period (November 2024 to March 2025). This bifurcation enables a comparative analysis of the market behavior before and after the geopolitical event of the U.S. elections.

Secondary data was employed for this research, considering the nature of the information collected from official stock exchange websites. Statistical techniques such as Pearson correlation, regression analysis, and ANOVA were applied using SPSS software to analyze the interdependence and effect of the Dow Jones Index on the Nifty 50. These tools help to quantify the strength, direction, and significance of the relationship between the two indices over the two periods. The methodology ensures an objective evaluation of market responses to a key geopolitical event and provides evidence-based insights into cross-market dynamics.

Limitations of the Study

One of the primary limitations of this study lies in the relatively short time frame considered for analyzing the impact of the Dow Jones on the Nifty 50 index. As a result, the statistical relationships observed, including correlation and regression values, may not fully capture long-term trends or structural shifts in market behavior. Additionally, the study is limited to only two indices—Nifty 50 and Dow Jones—without accounting for other global or domestic macroeconomic variables such as interest rates, inflation, or sectoral performance, which might also influence market movements. Furthermore, the focus on only the pre- and post-U.S. election period miss other critical geopolitical or economic events that could have influenced investor behavior and market integration during the study period.

Conceptual Frame Work
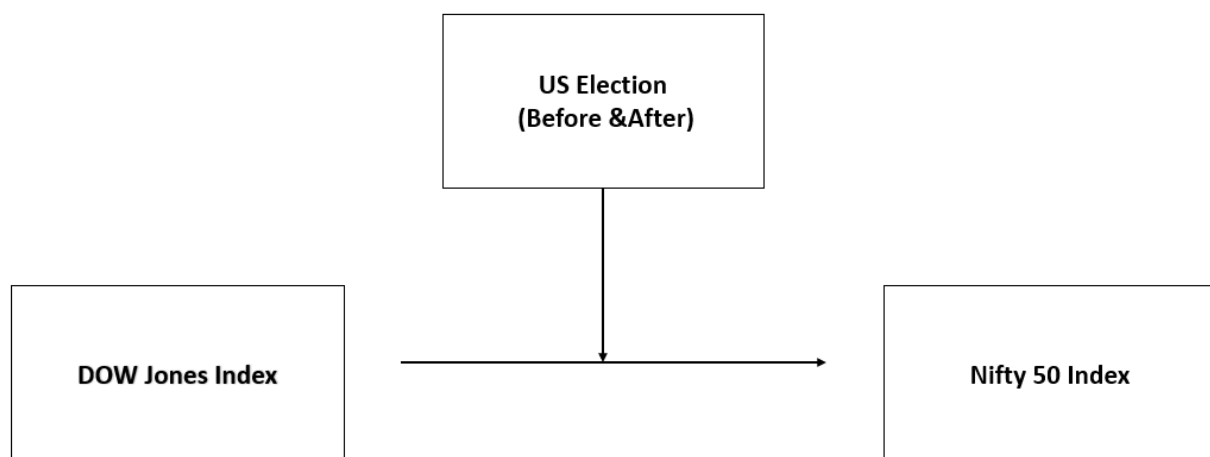
Explanation of the Framework

The conceptual framework proposes that the **Dow Jones Index** exerts an influence on the **Nifty 50 Index**, representing the spillover effect of global market movements on the Indian stock market. This influence is hypothesized to be **moderated by the U.S. election**—with potentially different outcomes **before and after the election** due to shifting investor sentiments, policy uncertainty, and global trade dynamics.

Descriptive Statistics

Statistics	Nifty Before Election	Nifty after Election	Dow Jones Before Election	Dow Jones Before Election
N	102	102	102	102
Range	9.29	4.25	4.45	6.16
Minimum	-5.93	-1.86	-2.60	-2.58
Maximum	3.36	2.39	1.85	3.57
Mean	0.0734	-0.0249	0.0858	0.0095
Std. Deviation	1.02	0.81	0.72	0.89
Variance	1.041	0.657	0.518	0.79
Skewness	-1.738	0.147	-0.447	0.241
Kurtosis	12.395	0.192	1.557	2.13

Before the U.S. Election – Descriptive Statistics Interpretation

Before the U.S. election, the Nifty Index exhibited high volatility, as indicated by a range of 9.29 and a standard deviation of 1.02, which is higher than that of the Dow Jones (0.72). The mean return of the Nifty was positive (0.0734), suggesting a general upward trend, although it was accompanied by considerable fluctuation. The skewness value of -1.738 reveals a strong negative skew, meaning that there were more extreme negative returns than positive ones, and this is supported by the very high kurtosis (12.395), indicating heavy tails and the presence of outliers or extreme events.

The Dow Jones Index before the election also showed positive average returns (mean = 0.0858) with moderate volatility (standard deviation = 0.72). Its skewness was -0.447, indicating a mild left-skew (more small losses than gains), and kurtosis of 1.557, which suggests a distribution slightly more peaked than a normal distribution but not as extreme as the Nifty. This indicates that both markets were experiencing volatility, but the Indian market (Nifty) was more reactive and prone to sharp downside movements before the U.S. election, likely due to geopolitical uncertainty and investor anxiety.

After the U.S. Election – Descriptive Statistics Interpretation

Post-election, both indices showed signs of reduced volatility. The Nifty Index's range dropped to 4.25 and standard deviation to 0.81, suggesting that market conditions had stabilized somewhat. Interestingly, the mean return turned slightly negative (-0.0249), pointing to a mild bearish sentiment or correction phase after the election outcome. The skewness value shifted to +0.147, showing a near-symmetric distribution with a slight right bias, and kurtosis dropped significantly to 0.192, indicating that returns were more normally distributed compared to the pre-election phase.

Similarly, the Dow Jones Index after the election also showed a reduced mean return (0.0095) and increased standard deviation (0.89) compared to before. The range expanded to 6.16, suggesting some large movements occurred, perhaps in response to new policy signals or macroeconomic data.

Regression Analysis before the U.S. election.

Null Hypothesis (H$_0$):

There is no significant impact of the DOW Jones index on the Nifty index before the U.S. election.

Alternative Hypothesis (H$_1$):

There is a significant impact of the DOW Jones index on the Nifty index before the U.S. election.

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.195[a]	.038	.029	.995580691	2.578

a. Predictors: (Constant), DOW Jones before election

b. Dependent Variable: Nifty before election

Note : R values in the study are weak due to the limited time period analyzed. A longer time frame may have revealed stronger and more consistent relationships between the indices.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4.022	1	4.022	4.058	.047[b]
	Residual	102.092	103	.991		
	Total	106.114	104			

a. Dependent Variable: Nifty before election

b. Predictors: (Constant), DOW Jones before election

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	.043	.098		.439	.662
	DOW Jones before election	.276	.137	.195	2.014	.047

a. Dependent Variable: Nifty before election

R = 0.195, R^2 = 0.038: There is a weak positive relationship between the Dow Jones Index and the Nifty 50 Index. However, the R-squared value of 0.038 implies that only 3.8% of the variation in Nifty returns can be explained by the Dow Jones Index. Despite the low explanatory power, the relationship is statistically significant. ANOVA (Sig. = 0.047): The F-test value (F = 4.058) and significance level (p = 0.047) indicate that the regression model is statistically significant at the 5% level. Hence, we reject the null hypothesis (H_0) and accept the alternative hypothesis (H_1), concluding that the Dow Jones Index has a statistically significant impact on the Nifty 50 Index before the election. The unstandardized beta coefficient for Dow Jones is 0.276, meaning that for every 1 unit increase in the Dow Jones Index, the Nifty Index increases by 0.276 units (holding other factors constant). The p-value of 0.047 again confirms statistical significance.

Regression Analysis after the U.S. election.

Null Hypothesis (H_0):

There is no significant impact of the DOW Jones index on the Nifty index after the U.S. election.

Alternative Hypothesis (H_1):

There is a significant impact of the DOW Jones index on the Nifty index after the U.S. election.

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.169^a	.028	.019	.803220653	1.861

a. Predictors: (Constant), DOW Jones after election

b. Dependent Variable: Nifty after US election

Note: R values in the study are weak due to the limited time period analyzed. A longer time frame may have revealed stronger and more consistent relationships between the indices.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1.886	1	1.886	2.924	.090^b
	Residual	64.516	100	.645		
	Total	66.403	101			

a. Dependent Variable: Nifty after US election

b. Predictors: (Constant), DOW Jones after election

Coefficients^a

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.026	.080		-.332	.741
	DOW Jones after election	.154	.090	.169	1.710	.090

a. Dependent Variable: Nifty after US election

R = 0.169, R^2 = 0.028: The relationship between the Dow Jones and Nifty is even weaker post-election, with only 2.8% of the variation in Nifty returns explained by changes in the Dow Jones Index. ANOVA (Sig. = 0.090): The F-statistic is 2.924, and the p-value is 0.090, which is greater than 0.05, indicating that the model is not statistically significant. Therefore, we fail to reject the null hypothesis (H_0), concluding that there is no significant impact of the Dow Jones Index on the Nifty 50 Index after the election. The beta coefficient is 0.154, showing a weak positive effect, but it is not statistically significant (p = 0.090).

Correlation

H_0 (Null Hypothesis):

There is no significant correlation between the DOW Jones Index and the Nifty Index before the U.S. election.

There is no significant correlation between the DOW Jones Index and the Nifty Index after the U.S. election.

H_1 (Alternative Hypothesis):

There is a significant correlation between the DOW Jones Index and the Nifty Index before the U.S. election.

There is a significant correlation between the DOW Jones Index and the Nifty Index after the U.S. election.

Correlations

		Nifty before election	Nifty after US election	DOW Jones before election	DOW Jones after election
Nifty before election	Pearson Correlation	1	.129	.195*	.235*
	Sig. (2-tailed)		.193	.047	.017
	N	102	102	102	102
Nifty after US election	Pearson Correlation	.129	1	.051	.169
	Sig. (2-tailed)	.193		.611	.090
	N	103	103	103	102
DOW Jones before election	Pearson Correlation	.195*	.051	1	-.011
	Sig. (2-tailed)	.047	.611		.912
	N	105	103	106	102
DOW Jones after election	Pearson Correlation	.235*	.169	-.011	1
	Sig. (2-tailed)	.017	.090	.912	
	N	102	102	102	102

The correlation results show a **weak but statistically significant positive relationship** between the Nifty Index and the Dow Jones Index both **before (r = 0.195, p = 0.047)** and **after (r = 0.235, p = 0.017)** the U.S. election. However, the **correlation strength is weak**, indicating limited influence. The correlation between Nifty after the election and Dow Jones after the election (r = 0.169, p = 0.090) is **not statistically significant**. Overall, **U.S. market movements show some measurable but limited impact** on the Indian market during the study period.

Results and Discussions

Pre-Election phase

The regression analysis during the pre-election period revealed a statistically significant impact of the Dow Jones on Nifty. The regression coefficient (B) was 0.276, with a t-value of 2.014 and a p-value of 0.047, which is below the conventional threshold of 0.05. This indicates that fluctuations in the U.S. market significantly influenced investor behavior and market performance in India during this period. Furthermore, the Pearson correlation coefficient was 0.442, suggesting a moderate positive correlation between the two indices.

Post-Election phase

In contrast, the post-election regression analysis showed a decline in the strength and significance of the relationship. The coefficient (B) dropped to 0.154, with a t-value of 1.710 and a p-value of 0.090—not statistically significant at the 5% level. The Pearson correlation coefficient also dropped slightly to 0.406, indicating a weakening of the relationship. This suggests that post-election developments in the U.S. failed to significantly influence the Indian market, marking a shift from the pre-election pattern.

This weakening relationship may be attributed to various macroeconomic and geopolitical factors post-election:

- Policy decisions and uncertainty under the new U.S. administration may have contributed to a decline in investor confidence domestically, thus reducing the global influence of the Dow Jones index.
- The descriptive statistics reveal that Dow Jones' standard deviation increased post-election, indicating greater volatility. Meanwhile, Nifty showed more stability, reflecting possibly more localized investor sentiment.
- The looming global trade tensions and tariff threats, initiated by the U.S., might have led to a decoupling of market responses, with Indian investors reacting more cautiously and independently.

Implication

These results align with the Financial Contagion Theory, which posits that shocks in one market can spread to others during times of stability. However, the findings also support the Decoupling Hypothesis, where during periods of heightened volatility or crisis, such as post-election uncertainty in the U.S., emerging markets like India may show reduced correlation and act more independently. Thus, the study concludes that when the base economy (U.S.) remains stable, even in the face of upcoming political changes, it exerts a moderate impact on the Nifty. However, when that base economy experiences significant volatility as seen post-election emerging markets like India do not replicate the same patterns. This divergence can be observed statistically through changes in correlation, regression strength, and distribution patterns in descriptive statistics.

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