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The Stock Market Risk - Return Dynamics and the U.S. Presidential Elections

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The US presidential elections have a history of making financial markets volatile, and unpredictable before and after the elections in comparison to other times. The current study investigates if any systematic association exists between risk and return of corporate sector during the U.S. presidential elections. The secondary data have been collected from 50 U.S. publicly listed companies for the four election periods: 2004, 2008, 2012 and 2016. The empirical findings show that higher returns are accompanied by higher risks and the US presidential elections do make significant impact on stock markets' risk - return dynamics.

The U.S. presidential elections are reckoned as significant event not only for the U.S. but also for the entire world as the U.S. is the world's largest economy and the U.S. presidential elections can change the direction of the global social-politico-economic developments. The current study is based on the premise that the stock markets cannot remain unaffected by the political developments and the U.S. presidential elections can have a significant impact on the U.S. and global stock exchanges (Bajpai, 2020; Surz, 2018). The principal research problem of the current study is if there are any associations between the U.S. presidential elections and the risk and return dynamics of the companies. The U.S elections are often accompanied by controversies on the political, economic, and business frontiers in U.S. and elsewhere. Political mudslinging in the media including allegations and counter-allegations made by politicians against each other, before the presidential election, during and even after can have a stronger influence on stock prices. "Every time Presidential-elect Donald Trump tweets, the markets listen. Since his election victory he has sent shares in companies such as Boeing, Lockheed Martin, Toyota and Pfizer reeling into the red, shaving off billions of dollars from their market value in minutes", (Rodionova, 2017).

The principal research objective is to find out association between the U.S. presidential elections and the stock market reaction to such political exercise. The study addresses the following research questions: (i) does the risk-return dynamics of the U.S. firms experience any change during the US presidential elections? (ii) does the risk-return dynamics of the U.S. firms experience any specific change when a certain political party comes into power?

To answer the research questions four U.S. presidential election periods have been selected-2004, 2008, 2012 and 2016. Each period includes pre, during and post-elections years. The quantitative data analyses are based on the fifty biggest publicly listed U.S. companies, belonging to different sectors, taken from the S&P databases. The empirical findings show that there is a strong relationship between the U.S. presidential election and sock return fluctuations. Interestingly, the unsystematic risk has affected the sample companies' risk adjusted return inversely, whereas the systematic risk has been found to be positively associated with both annualized return and risk adjusted annualized return. Overall, the current study concludes that higher returns are accompanied by higher risks and the US presidential elections do make significant impact on stock markets' risk - return dynamics.

Review of Literature

Wisniewski et al. (2012) underline the importance of political events, such as the U.S. presidential elections, and their impact on financial markets, however, there is a paucity of empirical research in this filed. There are several studies which have attempted to explore the association between the U.S. presidential election and stock market fluctuation, however, there is a lack of consensus in terms of findings. Blanchard et al. (2018) apply the Gordon Growth Model (GGM) (Gordon, 1959) and find that the dividend ratio decreased from the time of the election until the end of 2017 implying that either the expected dividends growth increased and / or that the stock premium decreased during the abovementioned time. The study further finds that tax concessions announced by political parties during election years can raise expectations for future dividends and as a result stock prices start increasing.

In another study Behl & Sethi (2016) aimed to explore the impact of the U.S. presidential elections, that have taken place from 1980 to 2010, on the stock market performance for eight different industries. The study analyzed the stock market abnormal return in reference to the corporate tax policy of the state during election year as well as pre, and post-election years. The study finds that stock market reaction is not homogeneous with respect to the certain

political party's victory in the elections. Democratic party's victory impacts the stock return negatively but in case of Republican party's victory the results are inconclusive. The study also finds a positive association between abnormal stock price and firms' marginal tax rate during the election period. Similarly, the reaction of investors also varies across different industries, for example manufacturing and mining industries has reacted significantly negative to the elections when compared to remaining six industries. Furthermore, there has been a negative reaction of stock market after and before the election, whenever a Democratic candidate of Democratic party wins. However, the same is not true when the wining candidate belongs to the Republican party. Similarly, a change in the government causes stronger effect on the stock market in compression to the situation when the same party is getting a re-elected. A change in the ruling party affects the market sentiments and raises the expectations of the market players in terms of policy reforms which fluctuate the stock market. Similarly, it has been found that abnormality in the stock price returns can be caused by uncertain tax policy, approximated by marginal tax rate.

Niederhoffer et al. (1970) have investigated the movements in Dow Jones Industrial Average (DJI) before and after the US presidential elections. In this study, eighteen US presidential periods have been investigated during 1900 - 1968. The study finds that the pattern of stock market performances has not shown any systematic difference whether the US is ruled by Republican or Democratic administrations. Allvine and O'Neil (1980) have explored interconnection between politics and stock market. Their study shows that stock markets in the USA generally follow a four-year business cycle that corresponds to the US presidential election cycle. Riley and Luksetich (1980) have explored the investors' preference between Republicans and Demarcates. Huang (1985) has found out that there have been higher average returns during Democratic administrations, in contrast of the widely held belief that the Republican Party is preferred by stock markets. In a similar vein, Santa-Clara and Valkanov (2003), based on their investigation for the period between 1927 to 1998, conclude that the excess return in the stock markets is higher under Democratic rule than under Republican rule. Similarly, Johnson et al. (1999) have found that investors earn higher returns on small-cap stocks during Democratic administrations.

Goodell and Bodey (2012) underline that as the likely winning candidate in the US elections becomes obvious, the uncertainty diminishes. However, markets react unfavourably, and stocks become undervalued (lower P/E ratio). In another study, Goodell and Vähämaa (2013) have identified developing of certain patterns of investors' expectations amidst market uncertainties regarding future macroeconomic policy under the new US government.

Based on the above review of literature, the following two hypotheses have been formed:

H_1: The victory of Republicans in the US presidential elections impact on stock market risk - return dynamics.

H_2: The victory of Democrats in the US presidential elections impact on stock market risk - return dynamics.

Research Framework

The current study research is based on the secondary data analysis. The historical data of changes in companies stock prices and the dynamics of the market index has been taken from S&P 500 database and annual reports of fifty biggest U.S. companies belonging to different industrial sectors of economy. All secondary data was taken for four previous periods of presidential election in U.S. The time scale of collected data is starting from 2003 till 2017 having an interval of one year between each of the four election periods. Therefore, each one of those four periods have been divided as: the year of pre-election campaign; the election year; and the post-election year period.

This data four periods are: First period (2003, 2004, 2005); Second period (2007, 2008, 2009); Third period (2011, 2012, 2013); and Fourth period (2015, 2016, 2017).

Multivariate ordinary least square regression analysis models have been applied for the analysis purpose.

$Y_{it} = \alpha_{it} + \beta_{it}\Sigma X_{it} + \epsilon_{it}$

Y = Predicted variables (Annualized Return' and 'Risk Adjusted Annualized Return), X=predicting variable, α = Intercept term, ϵ= Stochastic error term, t=one year time, and i=sample firm (unit of analysis).

Table 1. Description of Variables description

Variable	Label	Formula/Definition	Variable	Label	Formula/Definition
Annualized Firm Stock Return	AnnulRetFirm	(1+Daily Stock Return)^{365} -1	Annualized Market Return	MarktRET	Annual (1+Daily Market Return)^{365} -1
Systematic Risk	ToTSysRisk	Beta times annualized market risk	Annualized Market Risk	TOTRISKMark	Daily market risk times square root of 365 days
Unsystematic Risk	ToTUnsysRisk	Total annualized risk minus total systematic risk	Jensen's Alpha	JenAlpha	Relative performance of firm stock return in comparison to the minimum expected return.
Risk Adjusted Annualized Return	RETToRISKFirm	Return on investment earned per unit of risk taken.	Market Return to Risk Rate	RETtoRISKMark	Return on index per unit of risk taken.
CAPM	CAPMRet	Minimum expected return calculated as per the capital	D/E (Leverage Ratio)	D2E	Financial leverage of firms.

		Asset Pricing Model (CAPM).			
Effective Corporate Tax	ETR	The ratio of actual amount of corporate tax paid by a company by the profit before tax, each year.	Debt Tax Shield	NLDTS	Potential addition to the firm value by leverage.
Unlevered Return	UnleverRetd	Implied rate of return a company expects to earn on its assets, without the effect of debt.	Total Debt	NLofDebt	Natural logarithm of total debt
Return on Capital Employed	ROCE	Financial ratio measuring profitability and efficiency of capital employed.	Return on Equity	ROE	Financial ratio measuring profitability and efficiency of capital employed.
Total Asset	NLASSETS	Natural logarithm of total assets			

Findings

Table 2 highlights *First period (2003, 2004, 2005)* of elections won by the Republicans. As the Market Annualized Return increases, the Annualized Return *(AnnulRetFirm)* of firms rises too, however, Risk Adjusted Annualized Return *(RETToRISKFirm)* is affected negatively. Similarly, Jensen's Alpha *(JenAlpha)*, measuring over/under-performance in comparison to the minimum expected return, affects both predicted variables- *AnnulRetFirm* and *RETToRISKFirm* positively. *RETtoRISKMark*, measuring risk adjusted market return, positively impacts both predicted variables. Interestingly, *TOTRISKMark* and *ToTSysRisk* affects both dependent variables positively, whereas *ToTUnsysRisk* and *UnleverRet* have the negative impact on the same variables. Firms having higher level of leverage *(NLofDebt)* negatively impacts *AnnulRetFirm*.

Table 2. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'First period' (2003, 2004, 2005) of US election won by the Republican Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	-0.248 (-0.328)	-0.247 (-0.266)
MarktAnnualRET	4.931 ** (2.179)	-4.018* (-1.489)
CAPMRet	-0.949 (-0.848)	-0.919 (-0.708)
JenAlpha	2.533 *** (36.572)	2.565 *** (32.656)
RETtoRISKMark	1.361 *** (3.385)	1.173 ** (2.377)
TOTRISKMark	9.286 ** (2.122)	8.911 * (1.534)
ToTSysRisk	3.836 ** (2.117)	3.586 * (1.467)
ToTUnsysRisk	-5.792 *** (-6.674)	-5.701 *** (-5.422)
UnleverRet	-1.962 ** (-2.045)	-1.758 *(-1.557)
D2E	-0.001 (-0.782)	-0.005 * (-1.464)
NLofDebt	-0.068 ** (-2.231)	-0.021 (-0.204)
ROE	0.023 (0.627)	0.426 *(1.373)
ROCE	1.09 (1.194)	0.270 (0.232)
ETR	-0.019 (-0.234)	0.028 (0.198)
NLDTS	-0.061 * (-1.87)	0.000 (0.656)
NLAssets	0.000 (0.916)	-0.045 (-0.435)
R-Square	0.939	0.928
Durbin-Watson Test	1.863	1.714
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10.

Table 3 highlights *Second period (2007, 2008, 2009)* of elections won by the Democrats. As the CAPMRet, highlighting the minimum expected return calculated as per the CAPM, increases the Annualized Return *(AnnulRetFirm)* and Risk Adjusted Annualized Return *(RETToRISKFirm)* of firms rise too. Similarly, Jensen's Alpha *(JenAlpha)*, measuring over/under-performance in comparison to the minimum expected return, affects both predicted variables- *AnnulRetFirm* and *RETToRISKFirm* positively. *ToTUnsysRisk* and *NLAssets* affect *RETToRISKFirm* negatively and positively, respectively.

Table 3. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'Second period' (2007, 2008, 2009) of US election won by the Democratic Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	0.006(0.025)	0.409(0.687)
MarktAnnualRET	0.001(0.013)	1.822(1.373)
CAPMRet	0.467*** (36.456)	0.337** (1.177)
JenAlpha	0.247*** (32.781)	1.693*** (23.685)
RETtoRISKMark	0.001(0.031)	-0.323(-0.643)
TOTRISKMark	0.001(0.016)	-0.798(-1.267)
ToTSysRisk	0.000(0.001)	-0.231(-0.511)
ToTUnsysRisk	-0.000(-0.016)	-1.221*(-1.598)
UnleverRet	-0.002(-0.085)	-0.291(-0.707)
D2E	0.013(0.234)	-0.002(-0.242)

NLofDebt	0.002(0.119)	-0.233(-0.779)
ROE	-0.013(-0.113)	0.070(0.309)
ROCE	0.006(0.213)	-0.795(-0.731)
ETR	-0.004(-0.113)	0.250(0.319)
NLAssets	-0.00(-0.026)	0.318*(1.616)
NLDTS	-0.000(-0.011)	-0.071(-0.341)
R-Square	0.756	0.894
Durbin-Watson Test	1.821	1.846
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10.

Table 4 highlights *Third period' (2011, 2012, 2013)* of elections won by the Democrats. As the MarktAnnualRET, CAPMRet, JenAlpha and RETtoRISKMark increase, the Annualized Return *(AnnulRetFirm)* and Risk Adjusted Annualized Return *(RETToRISKFirm)* of firms rise too. Similarly, *TOTRISKMark* affect both predicted variables positively. *ToTSysRisk* and *ToTUnsysRisk* affect *AnnulRetFirm* positively. However, *ToTUnsysRisk* affects *RETToRISKFirm negatively.*

Table 4. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'Third period' (2011, 2012, 2013) of US election won by the Democratic Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	0.006 (0.011)	0.328 (0.792)
MarktAnnualRET	2.111*** (2.051)	1.838** (1.953)
CAPMRet	2.567*** (45.781)	2.249*** (34.661)
JenAlpha	2.111*** (34.123)	3.175*** (30.802)
RETtoRISKMark	0.983*** (6.195)	0.158** (0.805)
TOTRISKMark	0.451** (2.071)	1.77** (2.215)
ToTSysRisk	0.012** (2.042)	-0.386 (-0.728)
ToTUnsysRisk	0.211*** (8.021)	-5.851*** (-7.037)
UnleverRet	0.021** (2.032)	-0.161* (-1.311)
D2E	-0.211*** (-12.025)	-0.121** (-2.277)
NLofDebt	0.001 (0.011)	-0.441* (-1.574)
ROE	-0.003 (-0.019)	-0.293 (-1.161)
ROCE	-0.005 (-0.058)	0.684*** (4.628)
ETR	0.000 (0.147)	0.036* (1.318)
NLASSETS	0.036** (2.021)	0.307*** (8.474)
NLDTS	-0.001 (-0.121)	0.107* (1.407)
R-Square	0.861	0.779
Durbin-Watson Test	1.981	2.021
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10

Table 5 highlights *Fourth period (2015, 2016, 2017)* of elections won by the Republicans. The CAPMRet, and JenAlpha affect the Annualized Return *(AnnulRetFirm)* and Risk Adjusted Annualized Return *(RETToRISKFirm)* of firms positively. Similarly, *RETtoRISKMark* affects *RETToRISKFirm* positively. *ToTUnsysRisk* affects *RETToRISKFirm* negatively. However, *TOTRISKMark*, *ToTSysRisk*, *UnleverRet*, *D2E*, *and NLofDebt* affect neither of the predicted variables significantly.

Table 5. Effect of Predicting variables on 'Annualized Return' and 'Risk Adjusted Annualized Return' for the 'Fourth period' (2015, 2016, 2017) of US election won by the Republican Party

Dependent Variable	Annualized Return (AnnulRetFirm)	Risk Adjusted Annualized Return (RETToRISKFirm)
(Constant)	0.000(0.001)	0.902(0.936)
MarktAnnualRET	0.000(0.001)	-0.692(-0.514)
CAPMRet	1.342*** (45.234)	1.082*** (21.804)
JenAlpha	2.345*** (52.221)	1.832*** (32.372)
RETtoRISKMark	0.001(0.018)	0.353**(2.022)
TOTRISKMark	0.000(0.011)	-2.557(-0.556)
ToTSysRisk	0.002(0.071)	1.028(1.114)
ToTUnsysRisk	0.002(0.083)	-2.194*** (-3.005)
UnleverRet	-0.021(-0.116)	0.03(0.358)
D2E	0.021(0.814)	-0.009(-0.843)
NLofDebt	0.022(1.011)	-0.101(-0.412)
ROE	-0.034(-1.221)	0.122(0.754)
ROCE	-0.01(-0.016)	-2.121*(-1.548)
ETR	-0.002(-0.029)	-0.349(-0.809)
NLAssets	-0.001(-0.018)	0.039(0.222)
NLDTS	0.000(0.002)	0.065(0.388)
R-Square	0.871	0.823
Durbin-Watson Test	1.981	2.021
Number of Observations	150	150

Significance level *** p<0.01; ** p<0.05; p* <0.10

Discussion

The current study aims to investigate if there are any associations between association the U.S. presidential elections and the stock market reactions and if the election of the certain political party affects the risk-return dynamics in the USA. The study finds that there is a strong relationship between the U.S. presidential election and sock return fluctuations, in general. Interestingly, the unsystematic risk has affected the sample companies' risk adjusted return

inversely, whereas the systematic risk has been found to be positively associated with both annualized return and risk adjusted annualized return. Overall, the current study concludes that higher returns are accompanied by higher risks and the US presidential elections do make significant impact on stock markets' risk - return dynamics.

The study concludes that whenever the Republicans come in power, stock returns, adjusted as well as unadjusted by risk, improve as the firms over-perform in comparison to the minimum expected return and overall risk in the market increases. However, as the market return increases, the unadjusted firm returns increase however the risk adjusted returns decline. Interestingly, both total risk and market risk influence both risk adjusted as well as risk unadjusted returns positively, however, the firm specific risk affect both types of returns negatively.

Similarly, the study concludes that whenever the Democrats come in power, the market return related variables have almost same positive effects on both risk adjusted as well as risk unadjusted returns, however, the unsystematic risk, unlike in the case of Republicans, affects both risk adjusted as well as risk unadjusted returns positively.

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