The Persistence of Stock Market Returns during the Presidential elections in Nigeria

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Abstract

Following empirical evidences that political activities impact stock market performance, this present paper examines efficiency and volatility of Nigerian stock market during presidential elections. We use a 5-month event window approach to obtain the data for each election period. This implies that for each election period, we obtain the daily stock price index for the election month (4 weeks) and two months (8 weeks) before and after it. Our fractional integration technique reveals that the stock price index was persistent during most of the election years, with the exemptions of 2011 and 2019 election year, while 2015 election period recorded the highest volatility. However, accounting for structural breaks following the approach of Enders and Lee (2012a,b) that inculcates nonlinear smooth breaks in the Fourier function, the stock market seemed to be efficient only during the 1999, 2011 and 2019 presidential election periods. The 2011 and 2019 are periods when the elections produced candidates that ran for a two-term each. On the other hand, the highest stock market volatility is still maintained at the 2015 election which was also interestingly the year that the recent 2015/2016 recession in the country kick-started. Our findings have important policy implications for potential investors.

Keywords: Nigerian stock market; Market efficiency; Volatility; Fractional integration; Presidential election.

JEL Classification: C22

1. Introduction

Politics and economy are keenly intertwined (Huang, 2012). Electioneering process often gulps a lot of spending, affects government policies and corporate governance since the incumbent government would try every means to be re-elected, or make its candidate to emerge as winner. This further causes changes in business cycles and raises consumer expectations. Meanwhile, as rightly noted by (Gil-Alana et al., 2019), the most sensitive indicator to changes in business cycles is the stock market. This is particularly due to its unquantifiable role in the performance and development of the macroeconomy. Evidences have therefore shown that the government in power will possibly adjust the business cycle to the timing of elections through the pursuance of policies that increase its chances of being re-elected (Nordhaus, 1975; Vuchelen, 2003). Rival parties may also involve in huge spendings that have the ability to significantly alter aggregate price level and macroeconomic performance since major elections are not sector- or region-specific. These actions from the two sides would eventually trigger another round of tough policy measure by the winning party during his new term in office to curb high inflation induced during the election. Often times, the stock market is a receiving ground for all these political actions.

Nigeria is a republican country where public office holders are elected by majority votes. This has made her to experience several electioneering processes in which presidents have been sworn in to office. Since her return to civilian rule in 1999, six general elections have been conducted (1999, 2003, 2007, 2011, 2015 and 2019), with each term running through 4 years. Moreover, each president is constitutionally permitted to hold office for a maximum of 2 terms (8 years). Whether the presidential

election or presidential term, empirical evidences have shown that both have the ability to change the behaviour of stock market. For instance, while Wong and McAleer (2009) prove that stock markets are influenced by presidential elections, Gil-Alana, et al. (2019) show that they are also affected by presidential terms in office. We also perceive the tendency for Nigerian stock market performance to be influenced by her presidential elections. This is because, being the apex political election in the country, the presidential election is one of the toughest, money-gulping elections in Nigeria. In addition, the election is often followed by high economic tension and increased money supply which could subsequently make the stock market to behave differently from before.

Therefore, this paper specifically investigates the influence of Nigerian electioneering process of presidents on the Nigerian stock market performance. We consider a 5-month window, in which first two months are before the election and another two months after the election, with the one month for the electioneering process. Fractional integration approach in time series is employed and the value of integration parameter determines the persistence of transformed returns and absolute returns of stock index, as these two transformed series determine the level of market efficiency and volatility in the market, respectively. As noted by Aliyu (2019), the global financial crisis of 2007/2008, 2008 oil price crisis, the 2014/2015 oil price shock and the 2016/2017 recession in the country could bias the results, we therefore include structural breaks in form of nonlinear smooth breaks to robustify our results. The nonlinear smooth break is modelled following the approach of Enders and Lee (2012a,b). The general fractional integration, originally specified in the linear

framework is given in Robinson (1994), which uses a parametric Whittle function in the frequency domain.

Since the findings in this paper give the level of market efficiency and volatility in each election period, thus, the findings tell us how the efficiency of the Nigerian Stock Exchange is triggered during each election. Our paper is next to Aliyu (2019) in linking political activity to stock market performance in Nigeria. Notwithstanding, unlike Aliyu (2019) that focuses on stock market volatility during Nigerian presidential elections, we assess the efficiency and volatility of the Nigerian stock market using fractional persistence approach, amidst other innovative contributions.

The remaining part of the paper is structured as follows: Section 2 provides the review of relevant literature. Section 3 describes the methodology, while the presentation and discussion of results are offered in Section 4. Section 5 concludes the study.

2. Review of Literature

It is no longer news that beyond basic macroeconomic fundamentals, market uncertainty and external factors, among others, another major determinant of the level of economic activity, and consequently stock market, is the political process of the country. Essentially, empirical evidences have proved that political events have the tendency to enhance or depress stock markets, depending on whether the political activity is associated with violence, excessive spending, or able to induce investors, sentiments with respect to stock returns (Aliyu, 2019).

Considering a major component of the political process which is election, a plethora of studies has been conducted on how the stock markets of different countries behave around (briefly before, during and briefly after) election periods. Obviously, the earliest studies on the influential impacts of election and other electoral processes on stock market performance relates to the developed countries, especially the United States (see Niederhoffer et al., 1970; Riley and Luksetich, 1980; Huang and Schlarbaum, 1982, inter alia). For instance, Niederhoffer et al. (1970) discover for the US that for about 17 weeks around the main day of election, there are significant alterations in the stock market, such that abnormal behaviour is noticed in the market returns. They further show that when different event periods are put into consideration, abnormal returns are significantly non-zero during 10 days around the event, until 8 weeks surrounding the presidential election. Another study by Riley and Luksetich (1980) find that the election of Republican presidents improves the stock prices of the US, but fall in the stock prices are associated with the election of Democrats. However, contrary evidence is reported by Huang and Schlarbaum (1982) that establish that increase in stock returns are linked with the rule of the Democrats.

Since then, subsequent studies have been heralding for other countries with varying innovations. The study of Fuss and Bechtel (2008) analyses the response of German stock market to expected partisanship of the government in the 2002 federal election. They establish an inverse (direct) nexus between stock market returns and left (right) leaning coalition that won the election. Their analysis further confirms that as the electoral prospects of the right-leaning parties improves, the stock market becomes more volatile, but the volatility is eventually reduced as the electoral system

becomes uncertain. This empirical stand is later corroborated. In the UK, Smales (2017) proxies political event with Brexit referendum on the membership of EU to examine the behavioural response of stock market to political uncertainty outside election cycle. The resultant effect of the increased uncertainty in polling results is found to be an implied volatility in the stock markets of both Germany and the UK. In fact, according to them, the closer the polling date, the more uncertainty matters to potential investors.

The study of Balaji et al. (2018) is unique as it addresses the periodic influence of general elections on Indian stock markets over the short, medium and long terms. In the short term, election has high impact on stock returns, but the impact eventually reduces in the other periods. This is unlike in the pre-election period when stock returns are not triggered. However, the global study of Li et al. (2018) provides evidence against many studies. They unravel that the chances for stock market crash are only high after national elections, rather than during election periods.

Moreover, many other recent studies have departed from focusing on general elections to other forms of political or politically-motivated events. For example, while some consider the impact of political events and political uncertainty on stock market performance (see Chen et al., 2018; Hartwell, 2018; Ahmed, 2017; Jeribi et al., 2015, etc.), a few others focus on regime changes and comparison of ruling parties (see Kituku, 2014; Santa-Clara and Valkanov, 2003; Oumar and Ashraf, 2011, etc.). Other uncommon innovations are: consideration of presidential election cycle (see Wong and McAleer, 2007), rational and socio-psychological choice in voting attitude (Park,

2016), political risk (Ahmed, 2018), Brexit and Grexit referenda (Smales, 2017, and Haupenthal and Neuenkirch, 2017).

It is obvious from the foregoing that despite the myriad of studies on the evaluation of the behavior of Nigerian stock market, there is yet paucity of studies linking the stock market performance with political events of the country. Meanwhile, the Nigerian political scene is evidently unstable, tense and chaotic, especially during major election periods, thus creating a possibility for her financial market to be significantly impacted. So far, the only notable study that has linked major elections to the assessment of stock market performance is the recent work of Aliyu (2019). Considering how presidential elections affect stock returns in Nigeria, he uses the asymmetric GARCH and Markov Switching autoregressive methods to respectively unravel the volatility of stock returns and identify the possibility of multiple regime behaviour in the stock market. The study provides evidence in support of explosive and unstable conditional variance of stock returns during the 2015 presidential election, and leverage effect in the 1999 and 2007 elections. The implication of the latter evidence is that volatility is increased more by bad news than good news of the same magnitude. However, our study departs from that of Aliyu (2019) in focus and methodology. We address the issue of persistence, which is connected to market efficiency of the Nigerian stock market, during presidential elections in Nigeria. The second relates to our choice of technique which is based on the concept of fractional integration, while accounting for possible nonlinearities in the stock prices. The only study close to our statistical methodology on politics and stock market behaviour is Gil-Alana et al. (2019) in the case of US stocks.

3. Methodology

The approach of fractional integration is given in Gil-Alana and Yaya (2019). This is the extension of the linear framework of Robinson (1994) to nonlinear framework, which uses the smooth break functions, as proposed in Enders and Lee (2012 a,b), respectively. The general linear framework is,

$$y_t = f(t) + x_t, \quad t = 1,2, \ldots \tag{1}$$

where y_t is the dependent variable. The $f(t)$ is the smooth trend Fourier function in the spirit of Enders and Lee (2012 a,b) as,

$$f(t) = \lambda_1 \sin\left(\frac{2\pi t}{T}\right) + \gamma_1 \cos\left(\frac{2\pi t}{T}\right) \tag{2}$$

where $\lambda_1 and\, \gamma_1$ measure the amplitude and displacement of the sinusoidal component of the deterministic term, respectively. The Fourier function in (2) is of first order with $k = 1$ in $\left(\frac{2\pi kt}{T}\right)$ frequency of the trigonometrical function. For $\lambda_1 = \gamma_1 = 0$, (2) becomes linear in time.

From (1), x_t is the fractionally integrated process, given as,

$$(1 - L)^d x_t = u_t, \quad t = 1,2, \ldots \tag{3}$$

where d is the fractional persistence parameter, L is the lag operator, defined such that $L^k x_t = x_{t-k}$ and u_t is the noise process.

Robinson (1994) linear framework tests the null hypothesis,

$$d = d_0 \tag{4}$$

for a real – value d_0, and the test statistic is proved to follow an asymptotically $\mathcal{X}_h^2$-distribution. The linear specification is,

$$y_t = \beta_0 + \beta_2 t + x_t, \quad (1-L)^{d_0} x_t = u_t, \quad t = 1,2,\ldots, \tag{5}$$

where β_0 is the intercept and β_1 is the coefficient of the time trend, t. Thus, this model allows for specification of models with no deterministic term, intercept only and a linear trend (see Robinson, 1994 for details on functional from and test statistic). By extending this model in (6) to nonlinear framework, we consider (1) and (3) with (2). Thus, it is possible to have cases of only instantaneous breaks smooth breaks and both instantaneous and smooth non-linear breaks in the time series.

4. Data, empirical analysis and discussion

The data considered in this paper is the daily stock market index, particularly the All Share Index (ASI) of the Nigerian Stock Exchange (NSE). An event study approach is used to demarcate event windows, that is, using 2 months (8 weeks) before and after an election month, thus resulting into a total of 5 months (20 weeks) (including the election month). This sub-sampling results in a total of 6 presidential elections held in 1999, 2003, 2007, 2011, 2015 and 2019, as considered in Aliyu (2019). The sample periods with dates of elections are given in Table 1.

INSERT TABLE 1 ABOUT HERE

Conventionally, time series analysis often requires that the statistical features of the data under consideration be examined. We therefore provide the statistical description of both the stock price indices and their log returns around each presidential election (see Table 2).The 2007 election seems to influence the stock

market behaviour more than other elections. Not only is it that the maximum stock price and the highest average stock price are observed around that election period with values being #51,702.83 and #44,950 respectively, the stock market appears to be more volatile then than around other presidential elections held so far, as judged by the highest standard deviation statistic of 4191.45.The 2015 election ranks next to the 2007 election in terms of influence on stock market performance, while the 1999 election records the least values for all the descriptive statistics. This further indicates that volatility was lower during the 1999 election compared to other elections. Turning to the returns series, the lower panel of Table 2 shows that while the highest average stock returns is still associated with the 2007 election (0.0015), both the maximum and least values of 0.0347 and -0.0186 respectively are in favour of the 2015 election. There also seems to be little differentials in the volatilities of the returns series owing to the small values of the standard deviation measure, although higher volatility is seen to occur during the 2015 election than in other periods. For both series (stock price index and returns), evidence of normal distribution is mixed, with majority of the election periods supporting the rejection of the null hypothesis of normality.

Included in the statistical description of the series is the stationary test using the Augmented Dickey-Fuller (ADF) test. We further spice up our results by accounting for structural breaks in the unit root results following the occurrence of various exogenous shocks that could likely be the cause of the high volatility earlier reported. Expectedly, the null hypothesis of unit root cannot be rejected for the logged stock price indices in virtually all cases, except for the 2003 and 2015 elections under

the unit root with structural break test. On the other hand, the stock returns are stationary irrespective of the unit root test and the election period.

INSERT TABLE 2 ABOUT HERE

More so, since our study tends to be comparative in nature, we extend the preliminary analyses to capture the trends in the stock series in order to evaluate and compare their movements over time. We discover from Figure 1 that no coherent trend holds for the series, especially the stock price index, across the election periods. For instance, stock price index seems to observe a downward trend during the first presidential election, but an upward sloping trend during the 2007 election. The trend pattern in other periods is obviously unstable. Hence, we could deduce from this that there is likely to be differences in the stock market behaviour across the election periods. On this ground, we proceed to the formal analysis and evaluation of the degree of persistence in the series, and consequently determine the level of market efficiency and volatility.

INSERT FIGURE 1 ABOUT HERE

Table 3 presents the results for stock index, returns and absolute returns. Based on the Robinson (1994) fractional integration approach applied, model with no significant deterministic term (β_0=β_1= 0) is selected in the case of 1999, 2011, 2015 and 2019 elections while models with significant linear trend function are selected for 2003 and 2007 election for the stock index. In the selected results, it is observed that the null hypothesis of unit root I(d=1) cannot be rejected in virtually all the election years in the stock price index, except in 2011 and 2019. The results obtained in 1999, 2011 and 2019 elections imply the market efficiency of stocks. In the returns series, the selected

model is the one with no significant deterministic terms throughout. Evidence of randomness, i.e. I(d=0) are observed in 1999, 2011 and 2019 election periods, supporting evidences of efficiency of NSE market during these elections period, while long memory is found in the remaining election periods. Market volatility, as proxied by absolute returns, are also given in Table 3, where stock market portrayed highest volatility around 2015 election compared to other elections years. Next to this is 2003 election, while 1999 and 2019 election portrayed lowest market volatility.

INSERT TABLE 3 ABOUT HERE

Further probing into the results by looking at the possibility of nonlinearity in the form of smooth break induced by Fourier function, Table 4 reveals that stock prices are I(1) during four election periods, with the exemption being 2007 and 2011. One striking fact about Nigerian presidency is that each president, right from the time that there was a switch from military rule to civilian rule in 1999, successfully ran two terms. The only exemption to this trend relates to both 2007 and 2011 where we discover that stock prices do not exhibit random walk, thus overruling the market efficiency hypothesis. By looking at the returns series, market is sternly inefficient in 2015 election period as I(0) hypothesis for randomness is rejected. In short, our analysis suggests that stock market tends to be efficient during the elections of presidents that ran double terms in a row, while contrary evidence is established for presidential elections whose winner ended in running a term. These findings seem to contradict those of Gil-Alana et al. (2019) that establish that the US stock market is inefficient during the second terms of the presidents, following the mean reversion attributes of the stock series.

INSERT TABLE 4 ABOUT HERE

Interestingly, these two election periods (2007 and 2011) are also associated with low market volatility, especially 2011. Generally, the volatility results in Table 4 tend to be similar to those reported in Table, with minute differences. For instance, there is evidence of short memory in 1999 and 2019 in both cases, while 2015 consistently reports the highest volatility. The high volatility in 2015 is not surprising as that year was the preface to the eventual recession of Nigeria in 2015/2016. Caused by drastic fall in global oil price, the recession led to significant disruptions and unstable patterns in the financial system of the country, particularly the stock market.

5. Concluding remarks

In essence, our main objective in this study is to evaluate the behaviour of the Nigerian stock market, in terms of the persistence and volatility of the stock price indexes, during the presidential elections ever since there was a switch to civilian rule in 1999. By this, we are able to determine if the elections impacted on the efficiency of the stock market. This is premised on the fact that not only is the entire economy intertwined with politics, but electioneering processes are particularly associated with much spending, and sometimes policy alterations, capable of influencing the business cycle. Consequently, the stock market becomes a receiving ground for the changes in the business cycle. Employing daily data therefore, we use a 5-month (20 weeks) event window approach, such that data for each election period captures the main election month, and 2 months before and after it. In addition, we favour both the linear fractional integration approach of Robinson (1994) and its nonlinear extension which uses the smooth trend Fourier function as proposed by Enders and Lee (2012 a,b).

Summarizing our results, the linear fractional integration technique reveals that Nigerian stock markets are marked with market inefficiency during four presidential election periods which are 2003, 2007 and 2015, while market efficiency if found in 1999, 2011 and 2019 election period of the NSE. Coincidentally, during 2011 and 2019 elections, incumbent presidents were contesting their second term in the office. By assessing the volatility of the series, we notice that the stock market was most volatile during 2015 election and this period corresponded to the year the 2016 recession in the country kick-started.

On this note, it is important for investors to take note of the behaviour of the stock market during presidential elections. Unlike at other times when Nigerian stock market appears inefficient (see Ogbonna and Ejem, 2018; Yaya and Gil-Alana, 2014; and Emenike, 2010), periods of presidential elections are often marked with stock market efficiency, such that it becomes difficult for speculators to predict the future trends in stock prices and make abnormal returns. However, a slight alteration to this rule could be when there is a speculation that a presidential candidate will not succeed in winning the election to run a second term.

Compliance with Ethical Standards:

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Conflict of Interest: Author A, OlaOluwa S. Yaya declares that he has no conflict of interest. Author B, Olusegun Adekoya declares that he has no conflict of interest. Author C, Femi Adesiyan declares that he has no conflict of interest.

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Table 1: Sample Data

Election	Data Period	Date of Election
1999	01/12/1998 to 29/04/1999	27 February 1999
2003	03/02/2003 to 30/06/2003	19 April 2003
2007	01/02/2007 to 29/06/2007	21 April 2007
2011	02/02/2011 to 30/06/2011	16 April 2011
2015	05/01/2015 to 28/05/2015	28 March 2015
2019	03/12/2018 to 30/04/2019	23 February 2019

Table 2: Sample Data and ASI and Log-Returns performances

Statistics	1999	2003	2007	2011	2015	2019
Stock price index						
Mean	5486.0418	13825.6594	44950.9100	25500.2048	31739.9933	30901.9615
Median	5425.9100	13668.8100	45655.9100	25424.4200	30617.9600	30831.4750
Maximum	5715.9100	14684.7000	51702.8300	26895.3500	35728.1200	32715.2000
Minimum	5290.8900	13291.5500	37452.8400	24336.8500	27585.2600	29149.4600
Std. Dev.	131.5316	371.0753	4191.4540	632.4121	2391.1906	923.7422
Skewness	0.5062	0.7816	0.1689	0.4652	0.1988	0.0635
Kurtosis	1.7795	2.3376	1.6264	2.4874	1.4034	2.3966
Jarque-Bera	**10.4768**	**9.9688**	**7.6703**	4.6081	**11.3923**	1.6156
ADF	0.8994	-1.7875	-2.8333	-2.0659	-3.3224	-1.2175
ADF-SB	-3.0326	**-5.4602**	-4.4667	-3.2716	**-6.1474**	-4.1212
Stock returns						
Mean	-0.0003	0.0005	0.0015	-0.0003	4.67E-05	-0.0002
Median	-0.0003	0.0003	0.0010	-0.0005	-0.0001	-0.0002
Maximum	0.0029	0.0107	0.0140	0.0076	0.0347	0.0165
Minimum	-0.0033	-0.0089	-0.0115	-0.0107	-0.0186	-0.0102
Std. Dev.	0.0011	0.0036	0.0044	0.0028	0.0068	0.0040
Skewness	0.1741	0.1831	0.1607	-0.4144	0.9131	0.4798
Kurtosis	3.2580	3.6823	4.1080	4.6855	9.6549	5.3638
Jarque-Bera	0.7744	2.0486	5.0464	**14.2583**	**198.4275**	**27.3900**
ADF	**-8.4785**	**-5.8072**	**-6.9255**	**-7.5789**	**-6.1749**	**-9.2905**
ADF-SB	**-9.3995**	**-6.0730**	**-7.0854**	**-8.4637**	**-8.8275**	**-10.2624**

Values in bold indicate significance at 5% critical level.

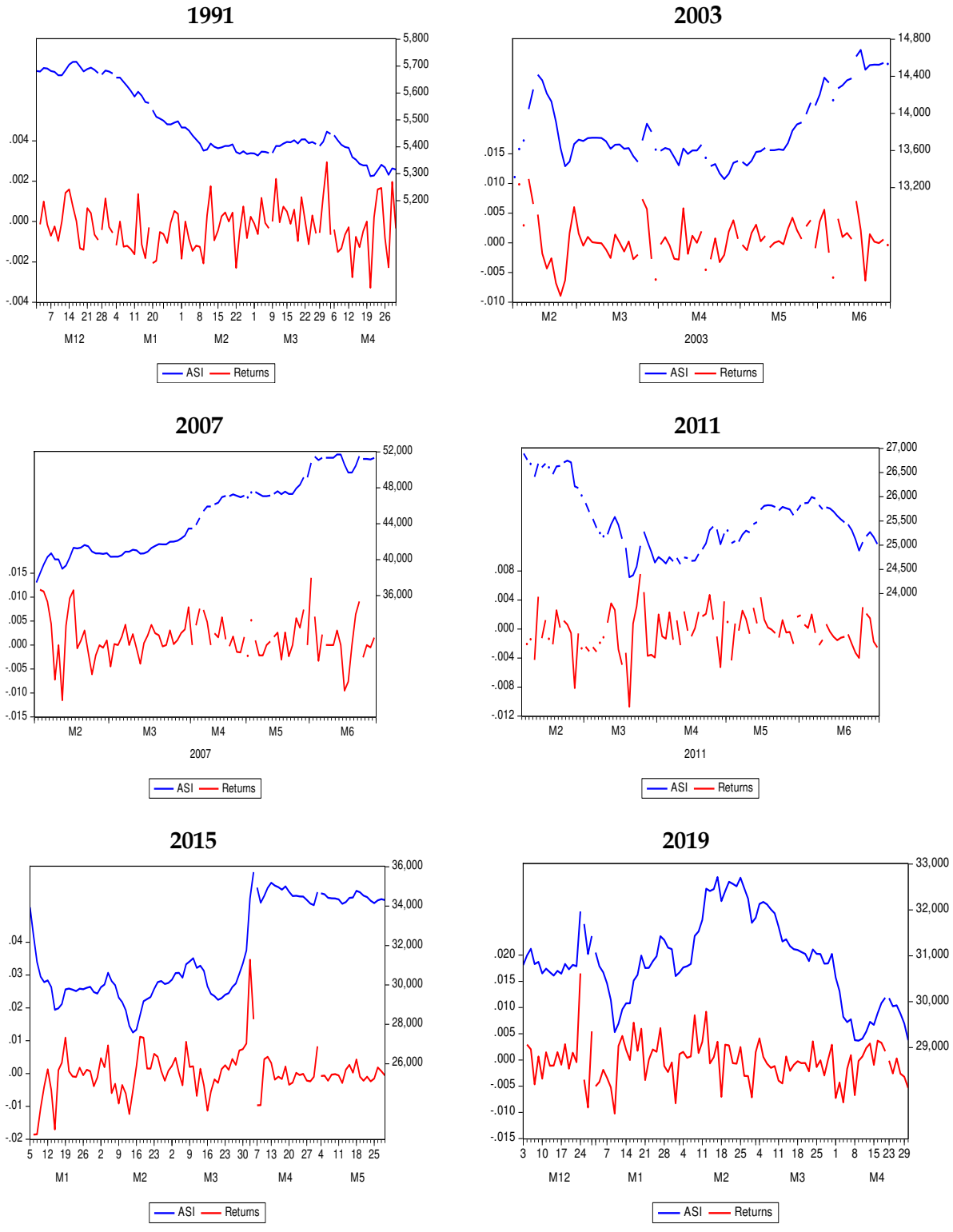

Figure 1: Plots of All Share Index and Log-Returns by Presidential Elections

Table 3: Results of Robinson (1994) Fractional integration approach

Election	No deterministic term	Constant only	Linear trend
ASI			
1999	**1.0684 (0.9780, 1.1588)**	1.0684 (0.9196, 1.2172)	1.0909 (0.9214, 1.2604)
2003	1.0511 (0.8586, 1.2436)	1.0511 (0.7791, 1.3231)	**1.1995 (1.0137, 1.3853)**
2007	0.9698 (0.8867, 1.0529)	0.9698 (0.8524, 1.0872)	**1.1731 (0.9998, 1.3464)**
2011	**1.0236 (0.8803, 1.1669)**	1.0236 (0.8286, 1.2186)	1.1268 (0.9273, 1.3263)
2015	**1.1732 (0.9915, 1.3549)**	1.1732 (0.9654, 1.3810)	1.0000 (0.9999, 1.0001)
2019	**1.0483 (0.8793, 1.2173)**	1.0483 (0.8094, 1.2872)	1.0430 (0.9083, 1.1777)
Returns			
1999	**0.0915 (-0.0780, 0.2610)**	0.0916 (-0.0770, 0.2602)	0.0903 (-0.0788, 0.2594)
2003	**0.2357 (0.0499, 0.4215)**	0.2416 (0.0031, 0.4801)	0.2511 (0.0112, 0.4910)
2007	**0.2046 (0.0313, 0.3779)**	0.2089 (-0.0200, 0.4378)	0.2100 (-0.0166, 0.4366)
2011	**0.1357 (-0.0638, 0.3352)**	0.1367 (-0.0611, 0.3345)	0.1220 (-0.0828, 0.3268)
2015	**0.3891 (0.1813, 0.5969)**	0.4083 (0.1841, 0.6345)	0.3957 (0.1763, 0.6191)
2019	**0.0498 (-0.0849, 0.1845)**	0.0499 (-0.1218, 0.2216)	0.0277 (-0.1505, 0.2059)
Absolute Returns			
1999	**-0.0109 (-0.1579, 0.1361)**	-0.0104 (-0.1572, 0.1364)	-0.0362 (-0.1826, 0.1102)
2003	**0.2457 (0.0628, 0.4286)**	0.2592 (0.0683, 0.4501)	0.2226 (0.0391, 0.4061)
2007	**0.1754 (0.0027, 0.3481)**	0.1836 (0.0058, 0.3614)	0.1803 (0.0084, 0.3524)
2011	0.1700 (0.0240, 0.3160)	0.1708 (0.0244, 0.3172)	**0.1303 (-0.0267, 0.2873)**
2015	**0.3385 (0.1594, 0.5176)**	0.3537 (0.1650, 0.5424)	0.3239 (0.1352, 0.5126)
2019	0.0371 (-0.1164, 0.1906)	0.0372 (-0.1165, 0.1909)	**-0.0055 (-0.1719, 0.1609)**

In bold the selected model based on the significance of deterministic terms at 5% level. Confidence intervals are given in parentheses.

Table 4: Results of Fourier form Robinson (1994) Fractional integration approach

Election	No deterministic term	Constant only	Linear trend
ASI			
1999	**1.0290 (0.9365, 1.1215)**	1.1364 (0.9904, 1.2824)	1.0290 (0.9365, 1.1215)
2003	**1.0000 (0.9999, 1.0001)**	1.0000 (0.9999, 1.0001)	1.0000 (0.9999, 1.0001)
2007	1.1249 (1.0353, 1.2145)	1.0000 (0.9999, 1.0001)	**1.1249 (1.0353, 1.2145)**
2011	0.9855 (0.8091, 1.1619)	**1.0477 (0.9217, 1.1737)**	0.9855 (0.8091, 1.1619)
2015	1.0000 (0.9999, 1.0001)	1.0000 (0.9999, 1.0001)	**0.9995 (0.9994, 0.9996)**
2019	**0.9778 (0.9137, 1.0419)**	1.0081 (0.7574, 1.2588)	0.9778 (0.9137, 1.0419)
Returns			
1999	0.0439 (-0.1313, 0.2191)	0.0439 (-0.1313, 0.2191)	**-0.0592 (-0.2634, 0.1450)**
2003	0.1869 (-0.0642, 0.4380)	0.1911 (-0.0647, 0.4469)	**0.1693 (-0.0777, 0.4163)**
2007	**0.2033 (-0.0241, 0.4307)**	0.2079 (-0.0236, 0.4394)	0.1858 (-0.0441, 0.4157)
2011	-0.0128 (-0.2609, 0.2353)	-0.0129 (-0.2610, 0.2352)	**-0.0302 (-0.2879, 0.2275)**
2015	0.3545 (0.1301, 0.5789)	0.3541 (0.1218, 0.5864)	**0.3528 (0.1213, 0.5843)**
2019	**-0.0135 (-0.2036, 0.1766)**	-0.0135 (-0.2036, 0.1766)	-0.0127 (-0.024, 0.1770)
Absolute Returns			
1999	-0.0224 (-0.1682, 0.1234)	-0.0222 (-0.1676, 0.1232)	**-0.0222 (-0.1676, 0.1232)**
2003	0.2020 (0.0054, 0.3986)	0.2091 (0.0062, 0.4120)	**0.1336 (-0.0516, 0.3188)**
2007	0.1153 (-0.0682, 0.2988)	0.1185 (-0.0683, 0.3053)	**0.0442 (-0.1365, 0.2249)**
2011	0.0240 (-0.1502, 0.1982)	0.0244 (-0.1498, 0.1986)	**-0.0002 (-0.1803, 0.1799)**
2015	0.3280 (0.1416, 0.5144)	0.3211 (0.1271, 0.5151)	**0.3223 (0.1302, 0.5144)**
2019	-0.0568 (-0.2316, 0.1180)	-0.0569 (-0.2317, 0.1179)	**-0.0631 (-0.2395, 0.1133)**

In bold the selected model based on the significance of deterministic terms at 5% level. Confidence intervals are given in parentheses.