Determinants of Stock Market Performance in Nepal[#]

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Abstract

This paper empirically examines the determinants of the stock market performance in Nepal using monthly data for the period of mid-August 2000 to mid-July 2014. The impact of major changes in politics and Nepal Rastra Bank's policy on lending against share collateral has also been assessed. Empirical results obtained from OLS estimations of behavioural equations reveal that the performance of stock market is found to respond positively to inflation and broad money growth, and negatively to interest rate. This suggests that, in Nepal, share investors seem to take equity as a hedge against inflation and consider stock as an alternative financial instrument. Further, availability of liquidity and the low interest rates stimulate the performance of the Nepalese stock market. More importantly, stock market has been found to respond significantly to changes in political environment and the policy of Nepal Rastra Bank. These findings help to design policies to stabilize or stimulate the share market in Nepal.

Key Words: Stock Market, Macro Variables, Nepal

JEL Classification: G10, E44

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I. BACKGROUND

The history of stock market is not long in Nepal. Securities Exchange Centre (SEC) was established in 1976 with an objective of facilitating and promoting the growth of capital market (Gurung, 2004). However, it opened its floor for secondary trading of shares only in 1981, which was only for government bonds (NRB, 1996). With enactment of Securities Exchange Act 1984, SEC opened its floor for corporate share trading also, but it was very limited. The organized and full fledged stock market began with the conversion of Securities Exchange Centre into Nepal Stock Exchange (NEPSE) Limited in 1993. The NEPSE opened its trading floor in the beginning of 1994. Till now, it is the only stock exchange in Nepal. Hence, the stock market in Nepal is still in evolving stage but of special interest as it has grown significantly since its establishment. It was established in order to mobilize capital alternative to traditional banking sector for promoting economic growth and development in the country.

Within a short period of time since its inception, the NEPSE index witnessed significant ups and downs. Recently, after the results of the second CA election in November 2014, the NEPSE index took an upward trend until August 2014. On July 14, 2014 the benchmark index reached 1036.1, the highest in the last six years. Earlier on August 31, 2008, the NEPSE index had reached its all-time high of 1175 points before plunging to a record low of 292 on June 15, 2011.

Normally, the stock market index is taken as a barometer of an economy. Growth in stock index is normally considered as a good sign since it implies the investors are confident about the future prospect of the economy. It helps promote investment in the economy. However, a rapid increase in the stock market index is always a matter of concern. If the increase in the index is not justified by the fundamentals, such a rise cannot be sustained and eventually the index will plummet endangering the economic and financial stability. Hence, it is essential that the policymakers keep eyes on the stock market development and be ready to take appropriate measures, if needs arise, to prevent the build up of bubbles and collapse in the market. For this, it is necessary to understand the relationship between the stock market index and the factors that influence it. Several factors may affect the stock market. Any factors that have an effect on cash flows of firms or discount rate will have impact on the stock market. However, which factors affect to what degree will vary from country to country, depending on the size, type and other characteristics of the economy and the market. In this context, this paper aims to analyze the relationship between the performance of NEPSE index and major macroeconomic variables in Nepal using monthly data that span from mid-August 2000 to mid-July 2014. In addition to main variables, this paper also assesses the impact of changes in politics and Nepal Rastra Bank's policy on lending against share collateral. It is expected that the findings of this study would provide some meaningful insights to understand the determinants behind the performance of Nepalese stock market, useful for both policymakers and investors.

There are a lot of research studies on the determinants of stock market in other countries such as Asprem (1989), Yosuf and Majid (2007), Rahman et al. (2009), Singh (2010), Hsing (2011, 2014), Eita (2012), Quadir (2012), Naik and Padhi (2012), Jauhari and Yadav (2014), and Khan (2014). A very few studies have been done on the Nepalese stock market such as Dangol (2008, 2010), Pradhan and KC (2010), Bhatta (2010) and Regmi (2012). These studies mainly focused on micro perspective rather than macro and policy perspectives. This study differs from them since we have examined the impact of macroeconomic variables as well as politics and NRB's policy changes on the stock market performance.

The paper is structured as follows. Section 2 presents the glimpse of the Nepalese stock market, which is followed by the review of literature in section3. Section 4 describes the data and methodology used and section 5 presents the empirical results and discussion. Finally, Section 6 concludes the study.

II. GLIMPSE OF THE NEPALESE STOCK MARKET

The Nepalese stock market is still in infant stage. However, there has been some progress. In the last two decades, the number of listed companies at NEPSE has increased from 79 in 1995 to 237 in 2014. During the same period, market capitalization has increased from 5.9 percent to 54.8 percent of GDP (Table 1). The growth in the listed companies mostly includes banks and financial institutions that were opened with the adoption of financial liberalization. Existing regulations require bank and financial institutions to publicly float at least 30 percent of shares and get listed in the stock exchange within a specific period of time. However, there is no such a mandatory requirement for companies in the real sector. As such, very few real sector companies have been listed in the stock market. As of mid-July 2014, there were 182 (76 %) financial institutions out of 237 listed companies at NEPSE (Table 2). Similarly, banks and financial institutions contributed to 64.3 percent of the total market capitalization followed by insurance (13.3 percent) and hydropower (8.7 percent). Market capitalization of manufacturing and processing firms remained just at 1.9 percent.

Table 1: Glimpse of the Nepalese Stock Market

Year	No. of listed companies	Market Capitalization *(Rs in million)*	Market Capitalization/GDP *(percent)*
1995	79	12963	5.9
2000	110	43123	11.4
2005	125	61366	10.4
2010	176	376871	31.6
2014	237	1057166	54.8

Source: Quarterly Economic Bulletin and Current Macroeconomic Situation of Nepal (2013/14), NRB

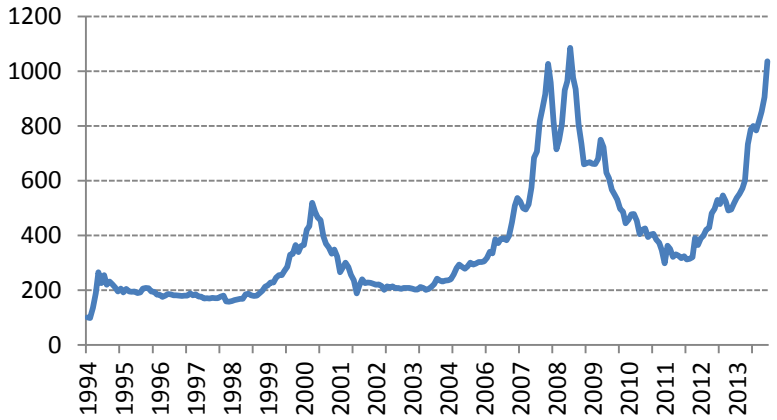
Table 2: Structure of the Nepalese Stock Market
(Mid-July 2014)

Type of Institution	Number	Market Capitalization (%)
Financial Institutions	182	64.3
Insurance Companies	22	13.3
Manufacturing & Processing	18	1.9
Hotel	4	2.4
Trading	4	0.1
Hydro Power	5	8.7
Others	2	9.3
Total	237	100.0

Source: Current Macroeconomic Situation of Nepal (2013/14), NRB

As regards the movement of the NEPSE index, it hovered around 200 points between 1994 and 1999. This was also the period when Nepalese stock market was evolving in terms of number of listed companies and the market capitalization. From 2000 onwards, the NEPSE index observed a greater fluctuation. In Figure 1, we can see the NEPSE peaking up three times in the past such as in November 2000, December 2007 and August 2008 before taking a sharp plunge. Now again in 2014, after the election of second Constituent Assembly, the NEPSE index reached as high as 1036.1 points in mid-July 2014. What factors can explain the movement of the NEPSE is a matter of study in this paper.

Figure 1: NEPSE Index (mid-month)



Source: www.nepalstock.com.np

III. REVIEW OF LITERATURE

The Arbitrage Pricing Theory, introduced by Ross (1976), establishes the theoretical framework to link stock returns with several variables which can influence the source of income volatility (Rahman, et al. 2009). Mukherjee and Naka (1995) showed that economic variables influence stock market returns through their effects on future dividends and discount rates. Macroeconomic variables selected to examine the determinants of stock market tend to differ slightly across studies, however (Rahman, et.al. 2009). Most common variables are the rate of inflation, money growth, interest rates, industrial production and exchange rates for explaining the stock market movement. Selection of these macroeconomic variables has theoretical justifications as follows.

Higher interest rates or discount rates would reduce the present value of cash flows, which would reduce the attractiveness of investment, hence, shrinks the value of stock returns (Rahman, et al. 2009). Another impact could be through portfolio substitution, a rise in the rate of interest increases the opportunity cost of holding cash, which later on leads to a substitution effect between stocks and other interest bearing securities like bonds (Rahman, 2009, p.98). In the literature, the common interest rate proxies are the treasury bills rates as being employed by Mukherjee and Naka (1995), Ratanapakorn and Sharma (2007), Yusof and Majid (2007), and Eita (2012)[1]. In case of money supply, Mukherjee and Naka (1995) argue that if an increase in money supply leads to economic growth, stock prices would benefit from expansionary monetary policy. In another way, with increase in money supply, the availability of liquidity at a lower interest rate increases, which can flow into the stock market. In contrast, Fama (1981) argues that an increase in money supply leads to inflation (or expected inflation) in the economy, which in turn increases the discount rate and lowers the stock market returns.

Moreover, inflation is also an important variable that investors consider before making any investment decisions. Theoretically, Asprem (1989) put forward that inflation should be positively related to stock return if stocks provide a hedge against inflation. This is based on Fisher (1930) who posits that stock markets are independent of inflation expectations since equities are a claim against real assets of the company. Fama (1981) however, disagrees with the generalized Fisher hypothesis on the basis that an increase in inflation causes uncertainty and reduces future economic activity, which reduces the stock price.

Another variable of interest used in the literature is the exchange rate. The exchange rate influences the firm's cash flow and the amount of dividend to be paid, especially in open economy (Eita, 2012). A depreciation of the local currency makes exporting goods less expensive and may lead to an increase in foreign demand and sales for the exporting firms (Pan et al., 2007). As a result, the value of exporting (importing) firms would increase (decrease). Rehman et al. (2009) argue that the importance of

[1] Lending rate used by Hsing (2014).

international trade in the economy determines the impact of exchange rate on stock price. However, we do not consider exchange rate in our case because of several reasons. First, the Nepalese stock exchange is overwhelmingly dominated by banks and financial institution; there are no any trading companies. Second, Nepal has not opened the capital account so that there is no foreign portfolio investment in stock market. Third, Nepal has been following the pegged exchange rate with India currency so that exchange rate may not be the important variable for stock market.

Other than monetary variables mentioned above, the level of real economic activity is the crucial factor in determining the stock market returns (Rehman et al. 2009). There is a general consensus that an increase in economic activity causes stock market returns to increase (Eita, 2012, p874). The most popular measure of real economic activity is the gross domestic product (GDP). Unfortunately, data on GDP is normally on annual basis and only in some countries, it can be available on a quarterly frequency. Some use industrial production index as another measure for real economic indicator (Rashid, 2008; Rehman et al., 2009). In addition, researchers have used other additional variables as well such as debt/GDP ratio and yields of alternative financial assets by Hsing (2014), foreign reserves by Rahman et al. (2009), and variables like capital formation and gold price by Jauhari and Yadav (2014), gross capital formation relative to GDP, credit to the private Sector to GDP and net remittance relative to GDP by El-Nadar and Alraimony (2013) and federal fund rate by Yusof and Majid (2007) as factors affecting the performance of stock market.

Empirical results regarding macroeconomic determinants are mixed types. Estonian and Hungarian stock market index have a positive relationship with debt/GDP ratio, real GDP and the German stock market index and a negative relationship with the exchange rate, the domestic interest rate, the expected inflation rate, and the euro area government bond yield (Hsing 2011; 2014). In case of Namibia, an increase in economic activity and the money supply increases stock market prices, while increases in inflation and interest rates decrease stock prices (Eita, 2012). The results suggest that equities are not a hedge against inflation in Namibia, and contractionary monetary policy generally depresses stock prices. In Jordon, money supply, gross capital formation, inflation, and credit to the private sector have significant positive relationship, and income and net remittance have negative relationship with stock market (El-Nadar and Alraimony, 2013). Moreover, there is a co-integrating relationship of Malaysian stock market index with changes in money supply, interest rate, exchange rate, reserves and industrial production index (Rahman et al., 2009). In case of India, the macroeconomic variables like GDP, savings, capital formation, gold price, industrial output, money supply, exchange rate, WPI, and interest rate have concurrence with the variability of the Sensex index (Jauhari and Yadav, 2014). On the other hand, Naik and Padhi (2012) also examined the Indian stock market index (BSE Sensex) and observed the positive relationship between stock price and money supply and industrial production but negative relationship with inflation. The exchange rate and the short-term interest rate were found to be insignificant in determining stock prices in India. However, Rashid (2008) showed the long run relationship between stock prices and macroeconomic variables like exchange rate, industrial index, interest rate, inflation in Pakistan. Specially, in Pakistan, exchange rate, inflation and GDP growth rate

were positively related with stock prices (KSE-100 index) while the interest rate was negatively related as found by Khan (2014). Yusof and Majid (2007) found a significant direct impact of US federal fund rate on the Malaysian stock market, reflecting the impact of capital flows on the stock market.

Most studies use either monthly or quarterly data for examining the determinants of stock performance. Ratanapakorn and Sharma (2007), Eita (2012), and Kemboi and Tarus (2012) use quarterly data, while Yusof and Majid (2007), Rahman et al. (2009), Singh (2010), El-Nadar and Alraimony (2013) use monthly data. With regards to methodology, Rahman et al. (2009), Eita (2012) employ VAR framework. Kwon and Shin (2001), Rashid (2008), and El-Nadar and Alraimony (2013) use cointergration and variance decomposition, while Hsing (2011, 2014) uses GARCH method and Rashid (2008), Singh (2010), and Jauhari and Yadav (2014) apply Granger causality test. On the other hand, Yusof and Majid (2007) apply the ARDL approach. Hence, there is no unique way to investigate the determinants of stock market performance.

3.1 Politics and Stock Market

The stock market index, in general, is considered as the reflection of the expectation of future profitability of the companies. This market, therefore, tends to be influenced not only by macroeconomic fundamentals, but also by the unexpected political events as well as policy changes. Several studies have found the relationship between the political event and the stock market performance. For example, Beaulieu et al. (2006) investigated the short run impact of the political uncertainty associated with the 1995 Quebec referendum on the stock returns. The study found that the uncertainty surrounding the referendum outcome had short run impact on stock returns of Quebec firm, implying that the stock market was directly influenced by the political risk and uncertainty. Similarly, Jensen and Schmith (2005) estimated the impact of the four main Brazilian presidential candidates on the mean and variance of the Brazilian stock market using a number of time-series regressions. They argue that political events, such as the election of a politician that is expected to enact "market-friendly" policies, lead to increases in stock market returns while political events that are expected to have a negative impact on the economy and specific firms lead to decreases in stock market returns.

3.2 News and Stock Market

Stock markets are heavily affected by news and rumours, like a "beauty context" as described by Keynes (1936). News can affect sentiments as well as expectation of the investors and performance of the companies. Most importantly, people interpret news differently based on their own cognitive power. There are some empirical examinations on the impacts of news on the performance of stock. For example, Boudoukh et.al.(2013) investigated the relation between news and the stock prices of 795 S&P500 companies, covering the period of January 1, 2000 to December 31, 2009. Using advanced textual analysis method, they find that, when information can be identified and that the tone (i.e., positive versus negative) of this information can be determined, there is a closer link between stock prices and information.

Similarly, Alanyali et. al. (2013) investigated daily print issues of the *Financial Times* from 2nd January 2007 to 31st December 2012 to quantify the relationship between decisions taken in financial markets and developments in financial news. They find a positive correlation between numbers of times the name of a company mentioned daily in the *Financial Times* and the daily transaction volume of a company's stock both on the day before and on the same day of the news released. Their results provide quantitative support for the suggestion that movements in financial markets and movements in financial news are closely interlinked.

3.3 Past Empirical Evidence from Nepal

There are a few other studies on the explaining stock market performance, mainly from micro perspectives. For example, Joshi (2012) examined the impact of dividends on stock price in the context of Nepal and found the impact of dividends is more pronounced than that of retained earnings on stock prices in Nepal. Dangol (2008) studied the reaction of Nepalese stock market to announcements of unanticipated political events using the event analysis methodology. His analysis covered the period from 2001 to 2006. He found that good-news (bad news) political announcements generate positive (negative) abnormal returns in the post-event period. This finding suggests that there is a strong linkage between political uncertainty and common stock returns in Nepal.

In another study of Dangol (2010) examined the random walk behaviour on daily market returns of the Nepal Stock Exchange for the period between July 2000 and January 2010 and found that the Nepalese stock market does not show any characteristics of random walk and thus, is not weak form efficient. Findings of Bhatt (2010) are also similar. This means news affects the movement of the stock market index. Further, Pradhan and KC (2010) assessed equity share price behaviour in Nepal and tested the hypothesis that share price changes are independent using weekly data of 26 listed companies from mid-July 2005 to mid-July 2008. They found that random walk hypothesis holds for less frequently traded stocks but do not hold for highly traded stocks at NEPSE.

IV. DATA AND METHODOLOGY

4.1 Data and Sample

Based on the availability of data and their relevancy as guided by the literature and considering the feature of Nepalese stock market, the following data are taken to examine the determinants of stock market index in Nepal as shown in Table 3.

Table 3: Variables and their Description

Variable	Description	Unit
SI	NEPSE Index	
GDP	Annual real GDP	Rs in million
CPI	CPI index, monthly average (base year = 2005/06)	
M2	Broad Money Supply	Rs in million
TB91	91 day Treasury bill rate	Percent
D1	Political Event Dummy (takes value 1 if negative scenario, 0 otherwise)	
D2	Policy Change Dummy (takes value 1 if margin lending is tightened, 0 if it is relaxed)	

The level of real economic activities is one of the crucial determinants of the stock market performance as a scale variable. The traditional measure for such activities is the gross domestic product (GDP). However, GDP data are unavailable on a monthly basis (not even on a quarterly basis). Hence, GDP variable has been dropped in further empirical estimation. All other data are collected on a monthly basis. Given the data availability and relevancy, the sample period of August 2000 to July 2014 has been chosen. Though the formal trading in Nepalese stock market started in 1994, the stock market was in evolving stage and highly immature until 2000. This fact is also reflected in Figure 1, which shows that NEPSE remained relatively flat until 2000.

4.2 Methodology

Based on the literature and the availability of data, the study has used the following general behaviour model.

$$SI_t = f\,(CPI_t, M2_t, TB91_t, SI_{t-1}, D1, D2) \quad \ldots\ldots (1)$$

where the meanings of symbols are same as described in Table 3. The two dummies d1 and d2 are introduced to capture the impact of political changes and the NRB's policy changes. All other variables are standard in the literature.

The first lag of stock market index is also included in our model as the literature suggests that stock prices tend to be highly persistent. A large section of investors are "chartist" who just follows the trend of movement of stock market index. Moreover, information on fundamental comes late so a majority of stock investors apply their own gut feeling. Though stock returns are theoretically assumed to follow random walk as argued by the efficient market hypothesis, many studies have found that the stock returns are auto-correlated. Boudoukh et al. (1994) points out that time series patterns occur in stock returns because investors either overreact or partially adjust to information arriving to the market.

Prior to deciding on the appropriate method, a preliminary examination of the nature of the data is necessary. We follow the standard procedure of unit root testing by employing the Augmented Dickey Fuller (ADF) test. Since the ADF test is often

criticized for low power, we complement this test with the Phillips Perron (PP) test. Based on the unit root test results in Table 4, all variables, except TB91 are I(1).

Table 4: ADF and Philip Perron test

Variables	ADF Test	Philips Perron Test	Order of Integration
	H0: Variable is non-stationary	H0: Variable is non-stationary	
log(SI)	-1.552	-1.304	I(1)
dlog(SI)	-10.297***	-10.297***	
log(CPI)	-2.419	-2.612	I(1)
dlog(CPI)	-0.582**	-10.435***	
log(M2)	-1.516	-1.516	I(1)
dlog(M2)	-12.408***	-13.768***	
TB91	-2.821*	-2.918**	I(0)
*** implies significant at 1% level, ** implies significant at 5% level and * implies significant at 10% level.			

Source: Authors' calculation

Since not all selected variables are in same order, we cannot follow VAR or co-integration approach. More importantly, application of VAR method may not be appropriate when the real sector variable is missing. Rather, the following models are estimated by OLS using first difference of I(1) variable[2]. It seems that following models are able to capture the performance of stock market. Considering the possibility of multi-collinearity among explanatory variables, we do the estimation on step by step basis, and finally all explanatory variables are included in equation (5).

$$dlog(SI)_t = \alpha + \beta 1\ dlog(CPI)_t + \delta 1D1 + \delta 2D2 + \gamma dlog(SI)_{(t-1)} + \varepsilon_t \quad \ldots\ldots (2)$$

$$dlog(SI)_t = \alpha + \beta 2\ dlog(M2)_t + \delta 1D1 + \delta 2D2 + \gamma dlog(SI)_{(t-1)} + \varepsilon_t \quad \ldots\ldots (3)$$

$$dlog(SI)_t = \alpha + \beta 3\ TB91_t + \delta 1D1 + \delta 2D2 + \gamma dlog(SI)_{(t-1)} + \varepsilon_t \quad \ldots\ldots (4)$$

$$dlog(SI)_t = \alpha + \beta 1\ dlog(CPI)_t + \beta 2\ dlog(M2)_t + \beta 3\ TB91_t + \delta 1D1 + \delta 2D2 + \gamma dlog(SI)_{(t-1)} + \varepsilon_t \quad \ldots\ldots (5)$$

V. EMPIRICAL RESULTS

5.1 Correlation Analysis

Based on annual data from 2000/01 to 2013/14, the correlation between the real GDP and NEPSE index is found to be 0.57 (P-value=0.03), both positive and significant. Lack of GDP (or industrial production index) at a monthly frequency prevent us to use it in econometric estimation. The correlation of other macro variables (except interest rate, TB91) such as Consumer Price Index (CPI), Broad Money (M2) with NEPSE index (SI)

[2] However, this study can be extended using ARDL approach with the expansion of stock market in Nepal.

are found to be statistically significant at 5 percent level of significance on monthly data covering mid-August 2000 to mid-July 2014 (Table 5). This suggests that there must be some relationship between stock market index and these macro variables.

Table 5: Correlation between Log (SI) and macroeconomic variables

	LOG(CPI)	LOG(M2)	TB91
Correlation	0.552	0.563	0.033
P-Value	0.000	0.000	0.671

Source: Authors' calculation

5.2 Empirical Estimation and Discussion

Table 6 presents the empirical results of the above model, estimated by using Eviews software. Each of the macro variables CPI, M2 and TB91 rate are found to be statistically significant, separately as well as taking all together. The dummy variables for political changes as well as for NRB's policy on lending against share collateral are also found to be significant. The signs of the coefficient are also as expected.

Table 6: Regression Results

Dependent Variable: dlog(SI)
Number of observations: 166

	Eq 2	*Eq 3*	*Eq 4*	*Eq 5*
const	0.035***	0.029**	0.054***	0.038***
	(0.002)	(0.013)	(0.000)	(0.005)
dlog(CPI)	0.755**			0.713**
	(0.034)			(0.039)
dlog(M2)		0.800***		0.754***
		(0.005)		(0.007)
tb91			-0.005*	-0.005*
			(0.042)	(0.064)
d1	-0.042***	-0.041***	-0.037***	-0.035***
	(0.001)	(0.001)	(0.005)	(0.005)
d2	-0.039**	-0.047***	-0.026	-0.039**
	(0.019)	(0.005)	(0.130)	(0.022)
dlog(SI(-1))	0.149*	0.175**	0.115	0.130*
	(0.049)	(0.020)	(0.140)	(0.089)
Adj. R-squared	0.119	0.138	0.117	0.169
D-W stat	2.000	2.048	2.034	2.036

*Note: *** implies significant at 1% level, ** implies significant at 5% level and * implies significant at 10% level. Figures in parenthesis are the respective P-values.*
Source: Authors' calculation

The performance of the stock market is found to be positively related to inflation and growth of M2, and inversely related to TB91. This implies that higher inflation induces investors to invest in equity as a hedge against inflation, thereby pushing up stock prices. Likewise, growth in money supply leads to greater demand for stocks as result of portfolio substitution with ample liquidity. Given the limited supply of stocks, this exerts upward pressure on stock prices. Negative relationship between interest rate and stock market index implies that low interest rate make stocks more attractive because of low cost of credit as well as low opportunity cost foregone by holding bank deposits. Hence, in case of low interest rates, depositors may use their deposits to buy stock on the one hand and on the other hand, people can borrow at the low interest rates from banks and financial institution to make investment in share market. Our findings are similar to Khan (2014).

The negative signs for the coefficients of both dummies indicate that political uncertainty and tightening of loans against share collateral by the NRB have negative impact on the NEPSE index. The positive coefficient for lagged stock market index term indicates the past month's stock price has a significant impact on the current month stock index. It shows the persistence behaviour, in other words, chartist behaviour in stock market. In all four equations, R^2 is not so high which indicates that news, rumours and speculations must have played the important role in fluctuating stock market index. Moreover, stock market changes daily while other macroeconomic data are not available on a daily basis.

For the results of equation (5) to be robust, it is necessary that it should not suffer from the problem of multicollinearity. Though CPI, M2 and TB91 have significant correlation in level form, no such correlation was found in log difference form (Table 7)[3]. This gives the indication that the possibility of multicollinearity in equation (5) is very low.

Table 7: Cross -correlation between Explanatory Variables

	CPI	M2	TB91		DLOG(CPI)	DLOG(M2)	TB91
CPI	1			DLOG(CPI)	1		
	-----				-----		
M2	0.994	1		DLOG(M2)	0.036	1	
	(0.000)	-----			(0.643)	-----	
TB91	-0.257	-0.271	1	TB91	-0.034	0.018	1
	(0.000)	(0.000)	-----		(0.663)	(0.814)	-----

Note: Figures in parenthesis are the P-value for the null hypothesis of no correlation.
Source: Authors' calculation

[3] Most researchers appear to consider the value of 0.9 as the threshold beyond which problem of multicollinearity can occur (Asteriou and Hall, 2007).

VI. CONCLUSIONS

This paper examines the determinants of stock market performance in Nepal, which has been passing through up and down in recent years. Since stock market tends to be highly sensitive and volatile, we examine the determinants of stock market index on monthly data. We have found the Nepalese stock market has been behaving as we expected theoretically. It has strong positive relationship with inflation and growth of money supply, and negative response to interest rate. It shows that people have been gradually taking stock market as a hedge against inflation and invest in this market when there is ample liquidity available at a low interest rate. More importantly, the stock market performance has been found to be influenced by political changes similar to finding of Dangol (2008) and the NRB's policy. The positive outlook for political stability has positive impact on stock market index. Similarly change in NRB's policy on lending against share collateral has significant impact on the movement of stock market index.

A number of policy implications can be drawn from this study. First, Nepalese stock market has been quite responsive to macroeconomic development, especially monetary sector development. Second, a loose monetary policy could trigger an asset price bubble in share market, which is mainly dominated by banks and financial institutions. Third, share investors seem to watch the political development closely. Hence, a positive political development with stability can promote share market further which can play a vital role for financial intermediation and resource mobilization through capital market. Fourth, NRB's policy on lending against share collateral has been effective in influencing the share market. This indicates the significant role of NRB's policy in the share market. As our results reveal that share market is also influenced by rumours, news and speculations, transparency should be increased in this market by making information related to listed companies easily accessible. Transparency and communication should, in fact, be enhanced by the concerned authorities in order to clear gossips and rumours in the market.

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Appendix 1

List of Major Political Events and Likely Impact on Share Market

S. N.	Date	Event	Possible Impact
1	June 2001	The Royal massacre.	Bad
2	Feb. 2005	King Gyanendra dismissed Prime Minister Sher Bahadur Deuba and took up executive power.	Bad
3	Oct. 2005	Cease fire by the Maoists.	Good
4	Jan. 2006	Cease fire withdrawn by the Maoists	Bad
5	Apr. 2006	Restoration of Parliament and start of peace process	Good
6	Nov. 2006	Peace agreement between the government and Maoists; Maoists agreed to lay down arms.	Good
7	Apr. 2007	Maoists joined interim government, a move that took them into the political mainstream.	Good
8	Jan. 2008	A series of bomb blasts killed and injured dozens in the southern Terai plains, where activists were demanding regional autonomy.	Bad
9	Apr. 2008	Former Maoist rebels became the largest party in elections of the new Constituent Assembly (CA), but failed to get an outright majority.	Bad
10	Aug. 2008	Maoist leader Puspa Kamal Dahal (Prachanda) formed coalition government, with Nepali Congress in opposition.	Good
11	May 2009	Prime Minister Prachanda resigned in a row with President Yadav. Maoists left the government after other parties opposed integration of former rebel fighters into national army.	Bad
12	Jun. 2010	PM Madhav Kumar Nepal quit under Maoist pressure.	Bad
13	May, 2011	Constituent Assembly failed to meet deadline for drawing up new constitution.	Bad
14	Aug. 2011	PM Jhalnath Khanal resigned after government failed to reach compromise with opposition on new constitution.	Bad
15	May 2012	Prime Minister Baburam Bhattarai dissolved CA, called elections for November 2012, after politicians missed a final deadline to agree on a new constitution.	Bad
16	Nov. 2013	Election for CA second time. Nepali Congress party, Nepal Communist Party (UML) became the first and second largest party with two-third majority together. These two parties have some common political agenda.	Good

Sources: Dangol (2008) and BBC News, South Asia: http://www.bbc.com/news/world-south-asia-12499391

Appendix 2

List of Major Policy Changes by NRB on Loans against Share Collateral and Likely Impact on Share Market

S. N.	Date	Event	Possible Impact
1	Oct7, 2007	Margin lending limit reduced to 50 % of last 90 days average price of shares; restriction on restructuring of margin loan; regulation requiring maximum period of margin loan not to exceed 1 year.	Bad
2	Jan 22, 2008	Margin lending limit not to exceed 50 % of the last 180 days average price of shares or 50 % of market price, whichever is minimum.	Bad
3.	Jan 15, 2009	Regulation requiring to make a margin call if the collateral is seen not sufficient to secure the loan.	Bad
4.	Oct 30, 2009	Restructuring of the margin loan was allowed provided that the 50 % of principal and interest has been repaid.	Good
5.	Feb 22, 2010	No need to make margin call if the price fall of the share is not more than 10%; About 75 % of margin loan amount was allowed to restructure	Good
6.	Aug 10, 2010	Margin lending limit increased to 60% of the last 180 days average price of shares or 50 % of market price, whichever is minimum.	Good
7.	Jul 14, 2011	BFIs were allowed to make self decision on the limit of margin lending based on the last 180 days average price of shares or 50 % of market price, whichever is minimum; Revaluating the shares and extending loan limit was restricted.	Good
8.	Jun 10, 2012	Loan could be extended with the guarantee from the broker instead of pledging original share certificates.	Good

Source: Various NRB Circulars