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Empirical Examination of Determinants of Stock Index in Nepal

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ABSTRACT

This paper empirically examines the determinants of the stock index (NEPSE) in Nepal using monthly data for the period of mid-August 2000 to mid-July 2014. In order to incorporate the major changes in politics and NRB's policy on lending against collateral of shares, two dummy variables have also been used. The correlation analysis shows the existence of the significant relationship between the NEPSE index and macro variables chosen for the study such as Consumer Price Index, Broad Money and Treasury Bill Rate. Time series properties of selected variables have been examined. Moreover, empirical results obtained from OLS estimations of behavioral equations reveal that the NEPSE index is found to respond positively to inflation and broad money growth, and negatively to treasury bills rate. This suggests that, in Nepal, share investors seem to take equities as a hedge against inflation and consider stock as an alternative financial instrument. Further, the lowering borrowing costs stimulate the investment in the Nepalese stock market. More importantly, stock market has been found to respond significantly to changes in political environment and the policy of NRB.

JEL Codes: G10, E44

Key Words: Stock Market, Stock Index, Macro variables

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I.   BACKGROUND

The stock market is one of the important parts of capital markets in the economy. The history of stock market is not long in Nepal. The organized development of stock market began with the establishment of Securities Exchange Center in 1983. This was later converted into Nepal Stock Exchange (NEPSE) Limited by the government in 1993. NEPSE opened its trading floor on 13th January 1994 only. Till now, it is the only stock exchange in the country. Hence, the stock market in Nepal is still in evolving stage.

Within a short period of time since its inception, the NEPSE index[1] witnessed significant ups and downs. Recently, after the results of the second CA election, the NEPSE index has been taking an upward trend until August 2014. On July 14, 2014 the benchmark index reached 1036.1 points, 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 points on June 15, 2011.

Normally, the stock index is taken as a barometer of an economy. Growth in NEPSE index is normally considered a good sign as 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 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.

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 buildup of bubbles in the market. For this, it is necessary to understand the relationship between the stock index and the factors that influence it. Several factors may affect the stock market such as economic growth, government policies, financial literacy, political stability, external stability, etc. 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 tries to analyze the relationship between the NEPSE index and macroeconomic variables in Nepal using monthly data that span from mid-August 2000 to mid-July 2014.

The paper is structured as follows. Section 2 reviews the literature and section 3 describes the data and methodology used. Section 4 presents the empirical results. Finally, Section 4 concludes the discussion.

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[1]   A ratio of market capitalization at current period to that at base period of all companies listed at NEPSE.

II.   REVIEW OF LITERATURE

Stock prices are affected by an array of factors, which may be company specific, sector specific or environment specific (macroeconomic or political). According to Singh (2010), stock price movements are influenced by macroeconomic factors, social or political events, market sentiments / expectations about future economic growth trajectory, monetary and fiscal policy announcements, among others. This section presents some empirical evidence on determinants of stock index in different countries. There is no one-size-fit situation; scholars have considered different variables to explain the movement of stock indexes.

2.1   Macroeconomy and Stock Market

A number of studies have tried to analyze the relationship between the stock price index and the macroeconomic variables in the literature and found different variables determining the movement of stock index. In recent study by covering three South Asian countries such as Pakistan, India and Sri Lanka, Aurangzeb (2012) identified the factor affecting performance of stock market in South Asia using the data from the period of 1997 to 2010. They found that significant positive impact of foreign direct investment and exchange rate on the performance of stock market. On the other hand, they found significant but negative impact of interest rate on performance of stock market, but insignificant impact of inflation.

Hsing (2011) examined the macroeconomic determinants of Hungary's stock market index based on a quarterly sample during 2000.Q1 – 2010.Q2. The study investigated that Hungary's stock market index has a positive relationship with real GDP, the ratio of the government debt to GDP, the nominal effective exchange rate and the German stock market index, a negative relationship with the real interest rate, the expected inflation rate and the government bond yield in the euro area, and a quadratic relationship with real M2 money supply.

In case of Namibia, Eita (2012), also using quarterly data covering the period of 1998Q1 to 2009Q4 based on a VAR model, revealed that Namibian stock market prices are mainly determined by economic activity, interest rates, inflation, money supply and exchange rates. The study conclude that an increase in economic activity and the money supply increases stock market prices, while increases in inflation and interest rates decrease stock prices. The results suggest that equities are not a hedge against inflation in Namibia, and contractionary monetary policy generally depresses stock prices.

On the other hand, Maghayereh (2003) investigated the long run relationship between the Jordanian stock prices and selected macroeconomic variables by using Johansen's methodology and monthly time series data over for the period of January 1987 to December 2000. This study identifies exports, foreign reserves, interest rates, inflation, and industrial production as the major macroeconomic variables influencing stock prices. The results

illustrate that the stock price index is cointegrated with exports, foreign reserves, interest rates, inflation, and industrial production. The results also show that investors' perceptions of stock price movements in the Amman Stock Exchange are highly sensitive to the international environment especially to the economic and political environments in the neighboring Arab countries.

Moreover, Rahman et al. (2009) examined the interactions between selected macroeconomic variables and stock prices of Malaysia in a VAR framework using the monthly data from January 1986 to March 2008. The study used some conventional econometric techniques along with the complementary tests to trace out both short and long run dynamics. Upon testing a vector error correction model, the results indicate that Malaysian stock market index has a cointegrating relationship with changes in money supply, interest rate, exchange rate, reserves and industrial production index. This indicates that the Malaysian stock market is sensitive to changes in the macroeconomic variables. Furthermore, based on the variance decomposition analysis, the study highlights that Malaysian stock market has stronger dynamic interaction with reserves and industrial production index as compared to money supply, interest rate, and exchange rate.

Quadir (2012) investigated the effects of macroeconomic variables such as Treasury bill rate and industrial production on stock returns on Dhaka Stock Exchange for the period between January 2000 and February 2007 using monthly time series data by applying Autoregressive Integrated Moving Average (ARIMA) model. Though the results show a positive relationship between the selected variables and market stock returns, the coefficients are statistically insignificant.

Naik and Padhi (2012) examined the relationships between the Indian stock market index (BSE Sensex) and five macroeconomic variables, namely, industrial production index, wholesale price index, money supply, treasury bills rates and exchange rates over the period of 1994:04–2011:06. The study applies the Johansen's co-integration and vector error correction model to explore the long-run equilibrium relationship between stock market index and macroeconomic variables in line with Maghayereh (2003). The analysis reveals that macroeconomic variables and the stock market index are co-integrated and, hence, a long-run equilibrium relationship exists between them. It has also been observed that the stock prices positively relate to money supply and industrial production but negatively relate to inflation. The exchange rate and the short-term interest rate were found to be insignificant in determining stock prices.

2.2   Politics and Stock Market

The stock index, in general, is also 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.

2.3   News and Stock Market

Stock markets are heavily affected by news and rumors, 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.

2.4   *Past Empirical Evidence from Nepal*

Some studies have been done to understand the movement of Nepalese stock index as well. For example, 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. He found that the Nepalese stock market does not show the characteristics of random walk and thus, is not weak form efficient. This means news affects the movement of the stock 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.

2.5   *Research Gap*

Despite some valuable studies on stock market of Nepal, there remains a large scope for research on various areas related to the Nepalese stock market. Especially regarding what determines the movement in the stock market, very few studies have been done in the past. The study that incorporates macroeconomic, political and policy variables in determining the stock performance is not found to our knowledge. Also Nepal's stock market has been undergoing significant changes in the last few years with the introduction of new rules and bylaws, improvement in the infrastructure of trading and entry of mutual funds and market makers. This research will attempt to fill the research gap by exploring the determinants of the NEPSE index using the updated stock market data of Nepal.

III.   DATA AND METHODOLOGY

3.1   *Data and Sample*

Based on the availability and relevancy as guided by the literature, the following data are taken to examine the determinants of stock index in Nepal as shown in Table 1.

Table 1: Variables and their Description

Variable	Description	Unit
SI	NEPSE Index (mid-month)	
GDP	Annual real GDP	Rs in million
CPI	CPI index, monthly average (base year = 2005/06)	
M2	Broad Money Supply (mid-month)	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 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 is unavailable on a monthly basis (not even a quarterly basis), and therefore is collected for annual basis only. Hence, GDP variable has been dropped in empirical estimation. All the other data are collected on a monthly basis. Given the data availability, 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.

3.2 Methodology

At first, correlation analysis will be carried out to identify the relationship between different macro-economic variables and the NEPSE. The next step involves the time series data analysis technique to analyze the relationship between the selected macroeconomic variables and the NEPSE. The study has used the following behavior model.

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

where the meanings of symbols are same as described in Table 1. The two dummies d1 and d2 are introduced to capture the impact of political uncertainty and the NRB's policy changes.

Among the many macroeconomic variables, inflation, money supply and interest rate have been selected based on their theoretical importance, and also their uses and findings in the literature. Though the level of real economic activity is considered as the crucial determinants of stock market returns, we could not include it in our model as GDP data is unavailable at a higher frequency. In the literature, the impact of inflation on stock price is empirically mixed. Some researchers have found negative relationship between inflation and stock return, and

have tried explaining such a behavior using dividend discount model[2]. Others have found positive relationship between inflation and stock return (e.g. Ratanapakorn and Sharma, 2007) suggesting that equity acts as a hedge against inflation. Money supply is also widely used in the literature to determine the stock prices. However, the relationship between money supply and stock price is still ambiguous. Ratanapakorn and Sharma, (2007) found positive relationship between money supply and stock prices, whereas Rahman et al. (2009) found negative relationship. Finally, interest earning is considered as the earnings from alternative source of investment. With rise in interest rate, investors tend to divert their money from share market to banks, and therefore, likely to cause fall in share prices. Gjerde and Saettem (1999) found interest rate negatively related to stock returns.

The first lag of stock 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 just "chartist" who just follows the trend of movement of stock 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 only partially adjust to information arriving to the market. A study by Bhatta (2010) has found that, based on random walk hypothesis, stock prices in Nepal are not weak form efficient. His findings indicated that the stock prices in Nepal show a systematic pattern that is valuable for observing the behavior of past price movements to predict future price.

After performing unit root test to analyze time series properties of data, the equation (1) is estimated using OLS method in stationary variables.

IV. EMPIRICAL RESULTS

4.1 *Feature of Nepalese Stock Market*

Before doing regression analysis, it is better to have a glimpse of Nepalese stock market. 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 2). The growth in the listed companies mostly comprises the financial institutions that were opened following the liberal licensing policy of the NRB in the post-liberalization period. Existing regulations require bank and financial institution 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

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[2] A procedure for valuing the price of a stock by using predicted dividends and discounting them back to present value.

stock market. The Nepalese stock market, thus, has been dominated by the banking sector and financial institutions. This domination is reflected in major stock market indicators, such as the amount of share traded, number of share traded and market capitalization. As of mid-July 2014, there were 182 (76 %) financial institutions out of 237 listed companies in NEPSE (Table 3). Similarly, banks and financial institutions comprised 64.3 percent of the total market capitalization followed by insurance (13.3 percent) and hydropower (8.7 percent).

Table 2 : 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, Current Macroeconomic Situation of Nepal, FY 2013/14, NRB

Table 3: 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

4.2   Movement of the NEPSE Index

The NEPSE index 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 NEPSE peaking up three times in the past 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 has reached as high as 1036.1 points in mid-July 2014.

Figure 1: NEPSE Index (mid-month)
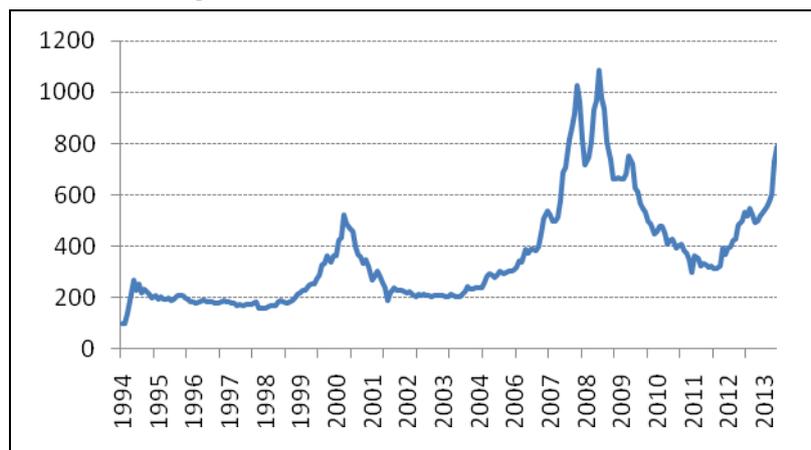
Source: www.nepalstock.com.np

4.3   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. However, due to lack of quarterly GDP data, we do not have sufficient data points to carry out further econometric analysis involving GDP as a scale variable.

The correlation of other macro variables (except interest rate i.e 91 days Treasury Bill rate, TB91) such as Consumer Price Index (CPI), Broad Money (M2) with NEPSE index (SI) are found to be statistically significant at 5 percent level of significance, when monthly data covering mid-August 2000 to mid-July 2014 are used (Table 4). This suggests that there must be some relationship between stock index and macro variables.

Table 4: Correlation between LOG(SI) and Macro variables

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

Source: Authors' calculation

4.4   Unit Root Test

Augmented Dickey Fuller (ADF) tests are conducted to test the stationarity of the data series. As the ADF test is often criticized for low power, Phillips-Perron (PP) tests are also carried out. Results as shown in Table 5 indicate that log of SI, CPI and M2 are non-stationary at level but TB91 is stationary. However, these series are found to be stationary at 1 or 5 percent significance level at first difference. Thus, unit root tests indicates all these variables are integrated of the order I(1) and the 91 day treasury bills rate is I(0).

Table 5: 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

4.5 *Empirical Estimation and Discussion*

After observing time series properties of the data, in line with the model mentioned in Section 3, the following four models are estimated as shown below. 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).

$$dlog(SI) = \alpha + \beta1\, dlog(CPI) + \delta1 D1 + \delta2 D2 + \gamma dlog(SI(-1)) + \varepsilon \qquad .... (2)$$

$$dlog(SI) = \alpha + \beta2\, dlog(M2) + \delta1 D1 + \delta2 D2 + \gamma dlog(SI(-1)) + \varepsilon \qquad .... (3)$$

$$dlog(SI) = \alpha + \beta3\, TB91 + \delta1 D1 + \delta2 Dd2 + \gamma dlog(SI(-1)) + \varepsilon \qquad .... (4)$$

$$dlog(SI) = \alpha + \beta1 dlog(CPI) + \beta2\, dlog(M2) + \beta3 TB91 + \delta1 D1 + \delta2 D2 + \gamma dlog(SI(-1)) + \varepsilon \qquad .... (5)$$

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 individually as well as jointly. The dummy variables for political uncertainty as well as for margin lending policy 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: 165

	Equation 1	*Equation 2*	*Equation 3*	*Equation 4*
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.

The growth in NEPSE is found to be positively related to the growth in CPI and 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 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.

The negative sign for the coefficients of both dummies indicate that political uncertainty and tightening of margin lending have negative implications for the NEPSE index. The positive coefficient for lagged stock index term indicates the momentum of past month's stock price having significant impact on the current month stock index. It shows the persistence behavior, in other words, chartist behavior exhibited by stock investors. In all four equations, R^2 is not so high which indicates that news, rumors and speculations must have played the important role in fluctuating stock 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). This gives the indication that the possibility of multicollinearity in equation (5) is quite low. Hence, the possibility of multicollinearity can be ruled out.

Table 7: Cross -correlation between 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.

V.   CONCLUSION

This paper examines the determinants of NEPSE index 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 index on monthly data. We do not have any real sector data such as GDP or industrial production index at a higher frequency. Excluding the real sector variable, 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 association with interest rate. It shows that people have been gradually taking stock market as a hedge against inflation when there is ample liquidity available at a low interest rate. More importantly, the NEPSE index has been found to be influenced by political and NRB's policy. The positive outlook for political stability has positive impact on stock index. Similarly change in NRB's policy on lending against collateral of share has significant impact on the movement of stock index.

A number of policy implications can be drawn from this study. First, Nepalese stock market has been quite responsive to marcroeconomic 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. Fourth, NRB's policy on lending, especially against share collateral has been effective in influencing share market. This indicates the significant role of NRB in share market. As our results reveal that share market is also influenced by rumors, news and speculations, transparency should be increased in share

market by making easily accessible of information related to companies. Concerned authorities should be proactive to clarify the gossips and rumors emerged in the market.

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REFERENCES

Alanyali, M., H. S. Moat, and T. Preis. 2013. "Quantifying the Relationship Between Financial News and the Stock Market", *Scientific Reports, 3*, Article number 3578, December.

Aurangzeb, CDR. 2012. "Factors Affecting Performance of Stock Market: Evidence from South Asian Countries", *International Journal of Academic Research in Business and Social Sciences. 2(9).*

Beaulieu, M.C., J.C. Cosset and N. Essaddam. 2006. "Political Uncertainty and Stock Market Returns: Evidence from the 1995 Quebec Referendum." *Canadian Journal of Economic,* 39 (2): 621-641.

Bhatta, G. P.. 2010. "Does Nepalese stock market follow random walk?", *Sebon Journal, 4,* June.

Boudoukh, J., R. Feldman, S. Kogan, M. Richardson. 2013. "Which News Moves Stock Prices? A Textual Analysis", *NBER Working Paper* No. 18725.

Boudoukh, J., M. P. Richardson, R. F. Whitelaw. 1994. "A Tale of Three Schools: Insights on Autocorrelations of Short-Horizon Stock Returns", *Review of Financial Studies,* 7(3).

Dangol, J. 2008. "Unanticipated Political Events and Stock Returns: An Event Study", *Economic Review,* 20, Kathmandu: Nepal Rastra Bank.

Dangol, J. 2010. "Testing Random-Walk Behaviour in Nepalese Stock Market", *PYC Nepal Journal of Management,* 3(1).

Eita, J. H. 2012. "Modeling Macroeconomic Determinants of Stock Market Prices: Evidence from Namibia" *The Journal of Applied Business Research, 28(5).*

Gjerde, O., and F. Saettem. 1999. "Causal relations among stock returns and macroeconomic variables in a small, open economy", *Journal of International Financial Markets, Institutions and Money*, 9.

Hsing, Y. 2011. "Macroeconomic Determinants of the Stock Market Index and Policy Implications: The Case of a Central European Country", *Eurasian Journal of Business and Economics, 4 (7): 1-11.*

Jensen, N. M., and S. Schmith. 2005. "Market responses to politics: The rise of Lula and the decline of the Brazilian stock market", *Comparative Political Studies*, 38 (10).

Keynes, J.M. 1936. *The General Theory of Employment, Interest and Money*. New York: Harcourt Brace and Co.

Maghayereh, A. 2003. "Causal Relations among Stock Prices and Macroeconomic Variables in the Small, Open Economy of Jordan", *Journal of King Abdulaziz University: Economics and Administration, 17(2): 3-12.*

Naik, P. K. and P. Padhi 2012. "The Impact of Macroeconomic Fundamentals on Stock Prices Revisited: Evidence from Indian Data", *Eurasian Journal of Business and Economics, 5(10):25-44.*

Pradhan, R. S. and K.C. Saraswari 2010. "Efficient market hypothesis and behaviour of share prices: the Nepalese evidence", *SEBON Journal, 4.*

Quadir, M.M. 2012. "The Effect of Macroeconomic Variables On Stock Returns on Dhaka Stock Exchange", *International Journal of Economics and Financial Issues, 2(4): 480-487.*

Rahman, A. A., N. Z. M. Sidek and H. T. Fauziah. 2009. "Macroeconomic Determinants of Malaysian Stock Market", *African Journal of Business Management*, 3 (3): 95-106.

Ratanapakorn, O. and S. C. Sharma. 2007. "Dynamics analysis between the US Stock Return and the Macroeconomics Variables", *Applied Financial Economics*, 17 (4): 369-377.

Singh, D. 2010."Causal Relationship Between Macro-Economic Variables and Stock Market: A Case Study for India", *Pakistan Journal of Social Sciences*, 30(2), December.

APPENDIX I
List of Major Political Events since 2005 August

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 takes them into the political mainstream.	Good
8	Jan. 2008	A series of bomb blasts kill and injure dozens in the southern Terai plains, where activists have been demanding regional autonomy.	Bad
9	Apr. 2008	Former Maoist rebels win the largest bloc of seats in elections to the new Constituent Assembly (CA), but fail to achieve an outright majority.	Bad
10	Aug. 2008	Maoist leader Prachanda forms coalition government, with Nepali Congress going into opposition.	Good
11	May 2009	Prime Minister Prachanda resigns in a row with President Yadav. Maoists leave government after other parties oppose integration of former rebel fighters into national army. Gurkha veterans with at least four years' service in the British army are given permission to settle in the UK.	Bad
12	Jun. 2010	PM Madhav Kumar Nepal quits under Maoist pressure.	Bad
13	May, 2011	Constituent Assembly fails to meet deadline for drawing up new constitution.	Bad
14	Aug. 2011	PM Jhalnath Khanal resigns after government fails to reach compromise with opposition on new constitution and fate of former Maoist fighters. Parliament elects the Maoist party's Baburam Bhattari as prime minister. He vows to forge a cross-party consensus over the new constitution and the Maoist fighters issue.	Bad
15	May 2012	Prime Minister Bhattari dissolves parliament, calls elections for November after politicians miss a final deadline to agree on a new constitution. Mr Bhattari remains in charge of a caretaker government.	Bad
16	Nov. 2013	Election for an assembly which will write a new constitution. Nepali Congress party wins most seats, Maoist party disputes results.	Good

Sources:

1. *Dangol, Jeetendra "Unanticipated Political Events and Stock Returns: An Event Study", NRB Economic Review.*
2. *BBC News, South Asia: http://www.bbc.com/news/world-south-asia-12499391*

APPENDIX II

List of Major Policy Changes by NRB on Margin Lending

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