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Impact of Macro-Economic Variables on Stock Market in Nepal: An ARDL Approach

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Abstract

The study examines the relationship between stock market index (NESPSE Index) and four macroeconomic variables; broad money supply, gold price, interest rate of 91 days treasury bills and real exchange rate for the period of 1994 to 2017. Time series data have been used to examine the relationship between the variables under consideration. The Bound test result confirmed that there is a long-run relationship among the variables. The ARDL result, aligning empirical results, reveals that interest rate is the most determining factors for the stock market index in Nepal. Nepalese stock market is highly interest rate sensitive while the gold price has insignificant impact on the stock market. Though Nepalese economy is termed as remitonomy (remittance based economy), the real exchange rate has insignificant effect on the stock market. In a nutshell, macroeconomic variables have a notable impact on stock market. Considering the result, the policymaker should take care of macroeconomic variables while formulating policies regarding capital market development.

Keywords: Derivatives, Nepse Index, Market Capitalization, Macro-economics

1. Introduction

Does the stock index illustrate the performance of the economy? Are the various macro-economic indicators affecting the stock market? Is there any causal relationship between the stock market index and macro-economic variables in Nepal? There is a strong debate among the researchers and policymakers in Nepal– why Nepalese stock market fails to capture real picture of the economy? Is the stock market index fundamentally operated or rumors contribute in its fluctuation? Nepal, after decades of internal conflict, is on the pace of stability. The federal restructure is successfully designed and now in the implementation phase. The country requires huge investment resources for a peaceful, secured and esteemed country with high and sustained growth. Resource mobilization is crucial for economic development. Financial markets regardless of

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capital market based or banked based, have crucial role in the process of funds mobilization. As a constituent of capital market, stock market has major role to allocate the resource in two ways; first it contributes to raising the capital and second it helps in liquidity transformation. The stock market is a channel through which the unbounded resources are properly channelized.

The stock market is an economic institution, which promotes efficiency in capital formation and allocation. The stock market enables governments and industry to raise long-term capital for financing new projects and expanding and modernizing industries/ commercial concerns. If capital resources are not provided to those economic areas, especially industries where demand is growing and which are capable of increasing production and productivity, the rate of expansion of the economy often suffers. A unique benefit of the stock market to corporate entities is the provision of long-term non-debt financial capital. Through the issuance of equity securities, companies acquire perpetual capital for development. The stock market performance is supposed to illustrate the state of the country's economy: if stock prices start to fall economic depression is likely to take place and, conversely, rising stock prices show possible economic growth. (Pilinkus, 2010).

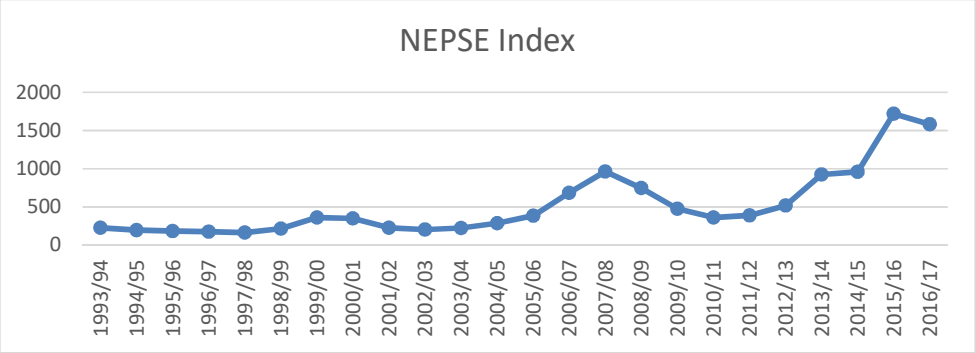
There are controversies whether macro-economic indicators impact the stock market. Some believed that financial development has a positive impact on economic growth. A country with well-developed financial sector promotes economic growth, which then leads to a high and growing demand for financial products. When the economy starts to grow, there is increase in the economic activities as well the industry to grow. Increased economic activities tend to influence employment, inflation, investment, GDP, imports, exports, exchange rates, etc. when there is high demand on financial products, as a constituent of financial market, ultimately stock market needs to develop and thus, macro-economic variables tend to impact on stock market development. But the empirical researchers have debates on the impact on macro-economic variable on stock markets for decades. Some researchers successfully established the positive relationship between macro-economic variables and stock market development while others argue that there is a weak relationship between the macro-economic variables and stock market development.

Generally, the stock market is information sensitive and tends to highly volatile. The stock markets of emerging economies are likely to be sensitive to various factors such as changes in the level of economic activities, political and international economic

environment and also related to the changes in other macroeconomic factors. (Naik and Padhi, 2012)

Over the years, the development of stock market Nepal was at slow pace (see Figure 1). Nepal Stock Exchange started formalization of operation in 1993 and several surpassed various changes under the existing securities act. In the last few years, Nepalese capital market has made remarkable progress in terms of NEPSE index, number of securities listed, and transaction amount, numbers of investors involved in the trading business, market capitalization, and securities transaction. The market capitalization was Rs 1890 billion and ratio of market capitalization to GDP was 84.04 in FY 2072/72 (SEBON, 2016). Likewise, securities transaction was 163 Billion 950 million, average daily transaction of Rs 706 Million; Nepse index reached a peak of 1718.15 in the FY 2072/73 (SEBON, 2016). It is said that growth of real sector in capital market followed by another sector positively contribute the economy but, in our case, banking sector is dominating the market and real sector is following. More than 84 percent of the market is dominated by the banking and financial sector (SEBON, 2016). The trend of Nepse over the study period is presented as:

Figure 1: Trend of Nepse Index over the Study Period



The stock market indicator is said to be the barometer of the economy. Nepalese economy is a very small economy with a GDP of Rs 34.64 billion (Economic Survey 2075/76), compared to regional economies. Stock Indices has not cross 2000 point to date. Nepalese stock market is dominated by banking sector companies. More than 80 percent companies listed in the Nepal Stock Exchange are from banking and financial sector. The general objective of this study is to examine whether the macro-economic factors in Nepal explain the behavior of the Nepal Stock Exchange Index (Nepse Index). The specific objectives of the study are:

i. To examine the impact of macro-economic variables on Nepalese stock market.

ii. To study the direction and degree of relationship between selected macro-economic variables and the stock market index.

2. Review of Literature

Mashayekh, Moradkhani, and Jafari (2011) examined the relationship between economic variables and stock market indicators in Iran for the period of April 1998 to March 2008. They employed VAR model and Johansen co-integration test to examine the relationship among the variables. They claimed a meaningful and positive relationship between inflation and stock transaction volume growth and returns. But the study explored a negative relationship between deposit interest rate and stock market indicators. Oskenbayev, Yilmaz and Chagirov (2011) explored co-integrations between the major variables namely, inflation, per capita income and exchange rate and stock market index in Kazakhstan for the period of Jan-2001 to Aug-2009. By applying ARDL and co-integration technique, the study revealed a long-run as well short-run relationship between the variables. They concluded that there was a co-integration between the variables. Naik and Padhi (2012) conducted a study on the relationship between stock market index and macroeconomic variables in India for the period of 1994:04 to2011:06. The long-run relationships between the variables were checked by employing Johansen co-integration and VECM model. The study revealed that Indian stock market index formed a significant relationship with major three variables namely money supply, industrial production index, and wholesale price index. They claimed that there exists bi-directional causality between industrial production index and stock market index both in long-run and short-run. It is claimed that money supply causes stock price only in the long-run but no causality exists between them either in long-run or in short-run. Sireesha (2016) claimed that there is interdependence of the returns on the stocks, gold, and silver in India. It is observed by conducting an examination of the effect of selected macro-economic variables on stock return in India for the period of 20 years from Jan-1993 to Dec-2012. The study explored that stock returns are significantly influenced by inflation, GDP, exchange rate. Venkatraja, (2014) explored the fact that there was a combined influence of wholesale price index, gold price, foreign institutional investment, index of industrial production and effective exchange rate on Sensex of Bombay Stock Exchange in India. They studied using time-series data for the period of April 2010 to June 2014. Ihali, Ali, and Jamil (2015) examined the linkage between macro-economic variables and stock market returns in Pakistan. Result revealed that there is weak linkage between the variables under study. The researchers claimed that there is insignificance of exchange rate which shows that it has no impact

on stock market returns and foreign investors were free from risk. Sur and Bhunia (2016) explored a unidirectional causal relationship between the nifty and crude oil price, Sensex and crude oil price, nifty and gold price, sense and gold price, nifty and real interest rates by conducting an examination of the impact of macroeconomic variables on Indian stock market for the period of July 1997 to July 2015. It is asserted that the co-integration results obtained from the study proved unrestricted co-integration affiliation among the variables under the study.

Aanchal (2017) has taken five variables namely; GDP, inflation, export, import and investment and market indices of CNX Nifty 50 to investigate the impact of macro-economic variables in Indian Stock market for the period of 2004 to 2005. The researcher explored that there exists no cause and effect relationship between the Indian stock market indices and variables under study. Matadeen (2017) explored that economic growth, banking development, stock market liquidity, investment, and macro-economic stability are key determinants of stock market development in a set of 14 sub-African countries. The time period of 28 years (1989-2016) was under-consider for the study. The researcher employed dynamic panel Vector Error Correction model to analyze the relationship. It is claimed that saving has significant and determinately impact on the growth of equity markets in the region. Further, it is explored that economic growth stimulates stock market development in short-run but indirectly.

Megaravalli and Sampagnaro (2018) conducted a study on the relationship between macro-economic indicators and their impact on the stock market in Asian 3 (India, China, and Japan) economies. The study found that exchange rate has a positive and significant relationship in long-run with stock market. But stock market and inflation had no significant relationship in the long run.

There are a few studies regarding the impact of macro-economic variables on the stock market in Nepal. Some of the researchers focused their studies on the consequences of stock market development and some others focused their attention on financial development and economic development. A limited number of studies have been conducted on the relationship between macro-economic variables and stock market index. Shrestha and Subedi (2014) conducted an examination on the determinants of the stock market performance in Nepal. The study was conducted using the monthly data set for the period of mid-August to mid-July 2014, applying OLS estimations of behavioral equations. The result found that performance of stock market was responsive to inflation and broad money. Gaire (2017) established a long-run relationship between the NEPSE index, short term interest rate and gold prices in Nepal. The study was conducted for the period of Jan-2006 to Jan-2016 and employed unit root tests and co-

integration test. The unilateral causality between the NEPSE index and short-term interest rate is discovered by the study. Finally, the study concluded that stock price of Nepal is very sensitive to short-term interest rate. Karki (2018) asserted that the macro-economic variables could not explain the variation in stock price in the long-run. But the empirical result obtained by the study revealed that there is positive and significant relationship between stock market price and GDP, inflation and money supply but negative with interest rate.

The above literature review marked that there is no consensus on the impact of macroeconomic variables on the stock market. Findings of the researchers vary and that might be due to the different approaches and methods applied in the research. It is tried here to capture the fundamental impacts of macroeconomic variables on the stock market in Nepal.

3. Specification of the Variables and Model

Among various variables of the economy, four variable i.e. broad money supply, gold price, 91 days weighted average T-bill rate, the exchange rate of Nepalese currency to US$ are considered as the independent variables under study. Broad money is more inclusive in calculating total money supply of an economy Money supply affects the investment in stock market indirectly and economic growth directly. Gold price: Normally people used to hold gold as a secured investment. As and when people save some portion from their income, tend to purchase gold. Nepalese stock market offers very limited investment instruments, NEPSE Index (NDX): Stock Index is termed as the barometer of the economy as it indicates the performance of the economy. NEPSE index is calculated by dividing the current market capitalization by base year market capitalization and then multiplied by 100. The base year market capitalization is taken as the market capitalization of 1994-02-12. Weighted Average T-Bill rate (IR) and exchange rate (NRS with US$) are taken other independent variables as per their importance in the economy. Hence, the general model is:

$$NDX = f(M2, GP, IR, ER) \quad \text{.....(1)}$$

The equation can be arranged in a linear form as;

$$NDX_t = \alpha+\beta_1 M2_t+\beta_2 GP_t +\beta_3 IR_S +\beta_4 ER_t+\mu_t \quad \text{.....(2)}$$

By placing natural logarithm on both sides, the equation obtained is in its natural log

$$\ln NDX_t = \alpha+\beta_1 \ln M2_t+\beta_2 \ln GPt+\beta_3 \ln IR_t+\beta_4 \ln ER_t+\mu_t \quad \text{.....(3)}$$

Where, α = Constant, β_{I-4} = Coefficients, μ_t = Error Term. NDX = NepseIndex, M2 = Broad Money Supply, GP = Gold Price, IR = Interest Rate, ER = Exchange Rate

The basic ARDL model can be written as:

$$y_t=\beta_0+\beta_1 y_{t-1}+\beta_2 y_{t-2}+\beta_3 y_{t-3}+\ldots+\beta_n y_{t-n1}+\lambda_0 X_t+\lambda_1 X_{t-1}+\lambda_2 X_{t-2}+\lambda_p X_{t-p}\ldots+\mu_t \quad \text{..... (4)}$$

Again, the above equation is termed into error correction model as:

$$DlnNDX_t=\alpha+\beta_1 D\ lnM2_t+\beta_2 D\ lnGPt+\beta_3 DlnIR_t+\beta_4 lnER_t+\beta_5 ECT_{t-1}+\ldots\ldots\ \mu_t \quad \text{..... (5)}$$

Here, lnNDX, lnM2, ln GP, lnIR, ln ER are the first differentiated variables, $\beta_{1-5}$are coefficient and μ_t is the error term. The ECT_{t-1} is the equilibrium error term of one-period lag. It guides the variables of the systems to restore back to the equilibrium means it signifies the time period to correct the disequilibrium.

4. Data and Methodology

The study is based on the secondary time series data. The study period covered a period of 1994 to 2017. Data source for the study are Nepal stock exchange ltd, Securities Board of Nepal (SEBON), Nepal Rastra Bank (NRB), Central Bureau of Statistics (CBS), and Ministry of Finance (MOF). Data regarding the gold price is obtained from the federation of Nepal gold and silver dealers Association (FENEGOSIDA) and processed as per the requirement.

The ARDL process is statistically more significant approach to determine the co-integration relationship in small sample to those of the Johansen and Juselius co-integration technique (Pesaran and Shin, 1999). It can be applied irrespective of whether the underlying variables are I(0), I(1) or a combination of both. (Pesaran and Pesaran, 1997). ARDL considered sufficient number of lags to capture the data generating process in a general specific modeling framework, removes dilemma connected with omitted variables and provide unbiased and efficient results. (Narayan, 2004). The general hypothesis for co-integration can be stated as:

H_0 = No co-integrating equation

H_1= H_0 is not true.

Based on our model, ARDL bound testing will be as:

$$\Delta ln\ nex_t = \beta_0 \sum_{i=1}^{q} \beta_{1i}\ \Delta l\ ndx_{t-i} + \sum_{i=0}^{q} \beta_{2i}\ \Delta lnm2_{t-i} + \sum_{i=0}^{q} \beta_{3i}\ \Delta lngp_{t-i} + \sum_{i=0}^{q} \beta_{4i}\ \Delta lnir_{t-i} +$$

$$+ \sum_{i=0}^{q} \beta_{5i}\ \Delta lnerx_{t-i} + \beta_6\ ln\ rndx_{t-1} + \beta_7 lnm2_{t-1} + \beta_8 lngp_{t-1} + 9_0 lnir_{t-1} + \beta_{10} lner_{t-1} +$$

$$\mu_t \text{ .....(6)}$$

Where Δ is the first difference operator, q is the optimum lag length, β_1 --- β_6 are short-run dynamics of the model and β_6 --- β_{10} are long-run elasticity. μ_t is the error term. The error correction form of the ARDL model is presented as:

$$\Delta lnndx_t = \beta_0 \sum_{i=1}^{q_1} \beta_{1i}\ \Delta lnndx_{t-i} + \sum_{i=0}^{q_2} \beta_{2i}\ \Delta lnm2_{t-i} + \sum_{i=0}^{q_3} \beta_{3i}\ \Delta lngp_{t-i} + \sum_{i=0}^{q_4} \beta_{4i}\ \Delta l\ ir_{t-i} +$$

$$\sum_{i=0}^{q_5} \beta_{5i}\ \Delta lntr_{t-i} + \lambda Ec_{t-i} + \mu_t \text{ .....(7)}$$

Where q_1 --- q_5 is the optimal lag length and λ is the speed of adjustment parameter. Ec represents the error correction term derived from a long-run relationship from the above equation.

5. Empirical Results

The result shows the impact of macro-economic variables on stock market in Nepal.

Unit Root Test Result

Table 1: ADF Unit Root Test Result

Variables	At levels		At first difference	
	T statistics	P value	T statistics	P value
lnndx	-1.2665	0.6259	-3.9574	0.0082
lnm2	0.0463	0.9444	-3.2797	0.0286
lngp	-0.4191	0.8895	-3.0560	0.0459
lnir	-1.1968	0.2976	-4.2734	0.0047
lner	-1.6154	0.0489	-5.8932	0.0001

(Result obtained from Eviews 10)

Table 2: Phillip-Perron Unit Root Test Result

Variables	At levels		At first difference	
	T statistics	P value	T statistics	P value
lnndx	-3.259	0.0982	-3.3910	0.0251
lnm2	-0.0758	0.9411	-3.2797	0.0286
lngp	-0.0199	0.9473	-2.7007	0.0898
lnir	-2.0279	0.2737	-5.5174	0.0002
lner	-1.6154	0.0489	-5.8985	0.0001

(Result obtained from Eviews 10)

Table 1 and 2 exhibit that variable are of mix order. When the variables are in level form, only the lner is stationary. After getting into first differentiation, all the variables under study are stationary. It is also observed that none of the variables are of I(2).

Table 3: Lag Length Selection

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-34.48406	NA	2.49e-05	3.589460	3.837424	3.647873
1	85.38296	174.3520*	4.81e-09	-5.034814	-3.547029*	-4.684337
2	119.0005	33.61757	3.35e-09*	-5.818230*	-3.090624	-5.175688*

The VAR approach is used to select the Lag Length Criteria.

Co-integration Result

Table 4: Bound Test for Co-integration Analysis of the Model

F-Statistics Value	9.17	
Significance Level	Lower Bound	Upper Bound
10%	2.2	3.09
5%	2.56	3.49
2.5%	2.88	3.87
1%	23.29	4.37

Table 4 exhibits the result of the bound test. The calculated value of the F statistics is 9.17 whereas the values on upper bounds are 3.09, 3.49, 3.87 and 4.37 respectively. The result implied that the null hypothesis of no level relationship is rejected i.e. there is a co-integration of a long-run relationship among the variables under study.

Table 5: Error Correction Representation of the Model (2, 2, 2, 2, 1)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
D(LNNDX(-1))	0.270170	0.099458	2.716430	0.0264
D(LNM2)	0.036276	0.549877	-0.065970	0.0490
D(LNM2(-1))	2.308400	0.574637	4.017147	0.0039
D(LNGP)	-0.387273	0.282428	-1.371228	0.2075
D(LNGP(-1))	0.778645	0.278270	2.798165	0.0233
D(LNIR)	-0.183860	0.036903	-4.982199	0.0011
D(LNIR(-1))	0.284185	0.045372	6.263472	0.0002
D(LNER)	-0.264592	0.505038	-0.523905	0.6145
CointEq(-1)*	-0.643798	0.068086	-9.455607	0.0000
R-squared	0.913633	Mean dependent var		0.095059
Adjusted R-squared	0.860484	S.D. dependent var		0.324111
S.E. of regression	0.121061	Akaike info criterion		-1.092950
Sum squared resid	0.190526	Schwarz criterion		-0.646614
Log-likelihood	21.02245	Hannan-Quinn criteria.		-0.987806
Durbin-Watson stat	2.074833			

From the Table 5, It can be seen that the value of coefficient of the Error correction is negative and significant. The negative sign and statistically significance of the error correction (cointEq-1) suggests the long run association-ship of the variables under study. The coefficient of ECM (-1) as -0.6437 suggests that a deviation from the long-run equilibrium level of lnRGDP in one year is corrected by 64.37 percent over the following year. It can be observed that the model has a reliable value adjusted R square (0.86). As well the value of Durbin-Watson is evident enough to state that there is absence of autocorrelation i.e. no autocorrelation.

Table 6: The Estimated Long-Run Equilibrium of the Model

The estimated long-run NDX function can be expressed as the following equation:

LNNDX= (0.6517*LNM2 - 0.2078*LNGP - 0.7040*LNIR - 2.5559*LNER + 10.9222)

Variable	Coefficient	Std. Error	t-Statistic	Prob.
LNM2	0.651658	0.382562	1.703408	0.0469
LNGP	-0.207811	0.311623	-0.666869	0.5236
LNIR	-0.703985	0.358223	-1.965214	0.0350
LNER	-2.555917	1.663729	-1.536258	0.1630
C	10.92221	6.307544	1.731611	0.1216

Table 6 showed that an increase in M2 by one percent it will increase in the NDX by 0.6516 percent as well an increase in the IR with 1 percent will decrease the NDX by 0.70 percent? Hence, M2 has a positive impact on the Nepse index. But the NDX is interest-sensitive when there is an increase in interest rates, it will cause a decrease in NDX. This result is aligned with Gaire (2017), Al-Shami and Ibharim (2013), Al Zararee and Ananzeh (2014). The gold price and exchange rate have negative coefficient but are insignificant. Nepse index is not influenced by the gold price and exchange rate. It follows the result obtained by Naik and Padhi (20) and Patel (2012).

Table 7 (a): The Heteroskedasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	0.676882	Prob. F (13,8)	0.7447
Obs*R-squared	11.52347	Prob. Chi-Square (13)	0.5671
Scaled explained SS	0.669566	Prob. Chi-Square (13)	1.0000

The corresponding P-value of the Brush-Pagan-Godrey test is 0.56 which is higher than 5 percent and it can be concluded that the disturbance term in the model is homoscedastic.

Table 7 (b): Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.452707	Prob. F (2,6)	0.6560
Obs*R-squared	2.884566	Prob. Chi-Square (2)	0.2364

In table 7(b), we observe that the F statistics in 2.88 and its corresponding P-value is 0.23, from which the study rejects the null hypothesis of serial correlation and concluded that there is no autocorrelation.

Figure 2: Normality Test

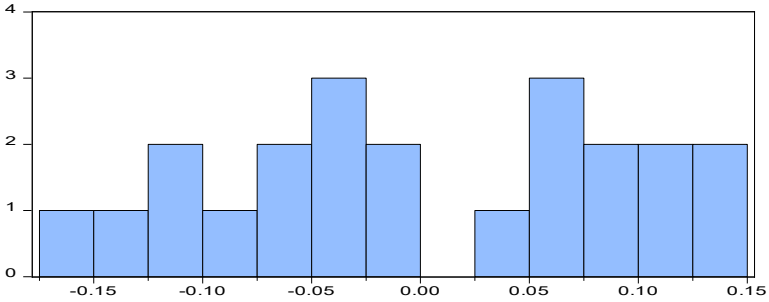


Figure 2 exhibits the result of Jarque-Bera test statistics showed that residuals are normally distributed.

Table 7 (c): Pairwise Granger Causality Test

Null Hypothesis:	Obs	F-Statistic	Prob.
LNM2 does not Granger Cause LNNDX	22	5.72217	0.0126
LNNDX does not Granger Cause LNM2		0.12463	0.8836
LNGP does not Granger Cause LNNDX	22	3.69831	0.0464
LNNDX does not Granger Cause LNGP		4.62236	0.1249
LNIR does not Granger Cause LNNDX	22	5.55865	0.0139
LNNDX does not Granger Cause LNIR		0.20198	0.8190
LNER does not Granger Cause LNNDX	22	1.69414	0.2133
LNNDX does not Granger Cause LNER		0.13411	0.8754
LNGP does not Granger Cause LNM2	22	3.85611	0.0416
LNM2 does not Granger Cause LNGP		4.15999	0.1338
LNIR does not Granger Cause LNM2	22	0.04267	0.9583
LNM2 does not Granger Cause LNIR		1.30537	0.2969
LNER does not Granger Cause LNM2	22	1.38824	0.2764
LNM2 does not Granger Cause LNER		1.32615	0.2916
LNIR does not Granger Cause LNGP	22	0.36057	0.7025
LNGP does not Granger Cause LNIR		3.83116	0.0423
LNER does not Granger Cause LNGP	22	1.79577	0.1961
LNGP does not Granger Cause LNER		4.13837	0.0343
LNER does not Granger Cause LNIR	22	4.69871	0.0237
LNIR does not Granger Cause LNER		0.36123	0.7020

The study employed the pairwise Granger causality test and found that there is no bidirectional causal relationship between the variables. It is found that LNNDX is the cause of M2, LNNDX of LNGP, as well as ER causes IR, and IR causes NDX.

Figure 3: Cusum Test

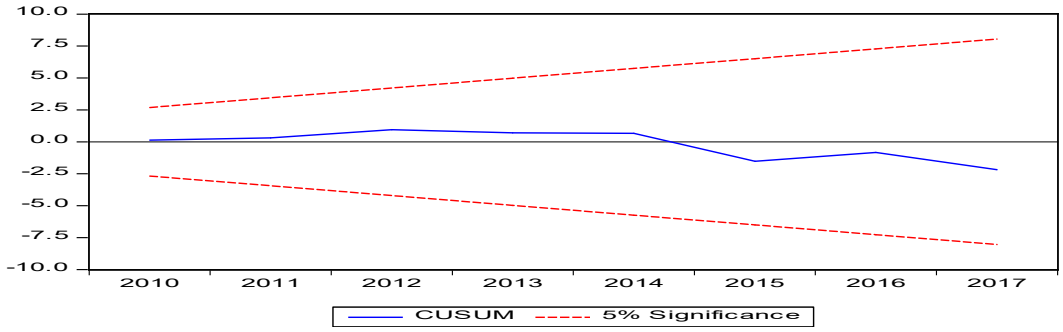
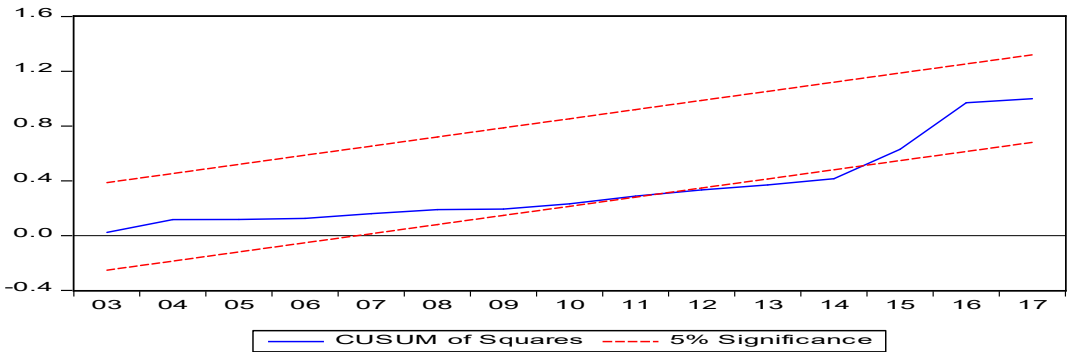


Figure 4: Cusum of Square Test



As it is observed in figure 3 and 4, it can be seen that the lines are between the significant of 5 percent. There is a little structural break-in the lines, shown in 4, It implies that there was a break on 2013. Further, our model is robust and stable as both lines long run and short-run coefficients are acceptable over the study period 1994 to 2017. The diagnostic tests confirm that the models have the desired econometric properties.

6. Conclusions

Based on the result revealed form the empirical study, it is confirmed that there is long-run equilibrium among the variables under study. From the result obtained above, it is clear that interest rate is the most determining variable of the stock market in Nepal. As well, money supply has significant effect on the stock market. But interestingly, exchange rate does not have significant impact. The gold price has negative impact on stock market but it is insignificant and we claim that there are no alternative options to the investors to invest in gold derivatives in the market. In the meantime, money supply

has positive significant impact on stock market in Nepal. To conclude, Nepalese stock market is highly affected by macro-economic variables in long run. Policymakers should take into consideration of various macro-economic indicators while formulating economic as well as financial policies. Furthermore, it is recommended that capital market development policies should be aligned with the macro-economic fundamental policies. The concerned policymakers should initiate to start derivative market, which will provide alternatives options to the investors in the market.

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Annex 1: Compiled Data Set

Year	M2 (Rs m)	GP (Rs)	IR (Pc)	ER (Rs)
1994	69,777.1	8442.7	6.5	50.94
1995	80,984.7	9117.08	7.35	56.8
1996	92,652.2	9230.42	10.93	57.3
1997	126,462.6	6921.79	10.22	68.25
1998	152,800.2	6865.83	3.52	68.8
1999	186,120.8	7209.83	2.33	71.1
2000	214,454.2	7051.46	4.66	75.4
2001	223,988.3	7324.17	4.96	78.6
2002	245,911.2	8472.5	4.71	75.34
2003	277,306.1	8896.12	3.48	74.75
2004	300,440.0	9979.58	2.93	70.94
2005	346,824.1	11301.25	2.46	74.69
2006	395,518.2	15128.54	2.84	65.44
2007	495,377.1	16387.5	2.42	69.1
2008	630,521.2	15128.54	4.22	78.65
2009	719,599.1	19031.04	5.83	75.04
2010	788,281.4	32138.75	6.5	71.55
2011	921,320.1	42907.25	7.41	89.2
2012	1,130,302.3	49547.29	1.31	88.62
2013	1,315,376.3	46297.08	1.74	98.53
2014	1,565,967.2	44886.67	0.13	100.16
2015	1,877,801.5	43998.33	0.43	106.79
2016	2,244,578.6	47995.71	0.79	106.25
2017	2,591,702.0	47794.79	1.45	102.89

(NEPSE, SEBON and NRB)