Stock Market Development and Economic Growth in Nepal: An ARDL Representation

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Abstract This paper examines the empirical relationship between stock market development and economic growth in Nepal over the period of 22 years from 1993 to 2014. The long-run and short-run elasticities were estimated by the use of autoregressive distributed lag (ARDL) bounds testing approach for co-integration analysis. The economic growth has been measured by real GDP per capita, and stock market development has been measured by market capitalization of Nepal stock exchange (NEPSE). The relationship has also been controlled by gross capital formation as percentage of GDP and the inflation. Estimates of ARDL approach to cointegration indicate that economic growth, market capitalization, gross capital formation and inflation shared a stable long-run relationship in Nepal. The magnitudes of the ECT coefficients suggest that the speed of adjustment in estimated model is reasonably good. Findings indicate that market capitalization has a significant positive impact on the economic growth in both long as well as in short run. However, results show that inflation has negative and significant impact on GDP per capita in long as well as in short run. Further, the study indicates that there is unidirectional causality and that runs from stock market development to economic growth in Nepal. Therefore, this study concludes that long run policies should be formulated in such a way that they facilitate the development of stock market so as to increase the economic growth.

Keywords: stock market development, economic growth, ARDL bounds test, cointegration, causality

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1. Introduction

The development of financial sector plays an important in the development of an economy. There is enough literature to support the view that financial intermediaries are the essential drivers of economic growth [17,26,31], and [24]. [30] stated that financial intermediation can affect economic growth by acting on the saving rate, on the fraction of saving channelled to investment. The endogenous growth model argued that financial intermediaries affect growth by altering the savings [5] and [30].

A healthy financial system that mobilises and efficiently allocates savings and resources to the productive sectors is essential for economic growth. [9] argued that firms in countries with better functioning banks and equity markets grow faster. [21] proposed four ways that better financial system stimulates economic growth. Those are: financial system fosters productivity improvement by choosing higher quality entrepreneurs and projects, by more effectively mobilizing external financing for these entrepreneurs, by providing superior vehicles for diversifying the risk of innovative activities, and by revealing more accurately the potentially large profits associated with the uncertain business of innovation.

It is also important to note that the structure of financial sector plays important role on the growth of the economy. Literature presents the theoretical as well as empirical debate on whether it is the market based financial system or the bank based financial sector that has more impact on the economic growth. [22] argued that stock market liquidity is important for growth. However, [23] concluded that although overall financial development is robustly linked to economic growth, there is no support for either the bank-based or the market-based view. [25] and [20] stressed that the establishment of stock market has played a significant role in the development of banking institutions, particularly in emerging market economies.

Though there no consistent results on the finance growth nexus, almost all of the recent studies have accounted the importance of the development of stock market for the growth of an economy [4,12,22,24,25], and others have accounted a positive relationship between the development of stock market and economic growth. [38] accounted strong evidence that stock market development caused economic growth in Belgium, especially during the period 1873 and 1935.

Although various studies have been conducted to analyse the finance-growth relationship in other economies, very few studies as such have tried to investigate this relationship in Nepal. This relationship is not yet being analysed clearly as there are number of concerns with previous studies. For example, though stationarity of the variables has been recognized as critical and proper estimation techniques (organized around unit roots and cointegration) are used by [34] and [35], the used

maximum likelihood based Johansen cointegration technique and the Engle-Granger cointegration techniques [15], with small sample size may significantly distort the power of standard tests. [32] found that Johansen's cointegration test is very sensitive to the sample size. This study, therefore, has been conducted to evaluate the relationship between stock market development and economic growth using recent estimation technique (ARDL approach to cointegration) that performs reasonably better in the case of small sample size[1].

The rest of the paper is organized as follows. Section two consists of brief review of earlier studies on stock market and growth nexus. Section three describes sample, data, and methodology used in the study. The empirical results are presented in fourth section and the conclusions and implications of the study findings are drawn in final section.

2. Review of the Relationship between Stock Market Development and Economic Growth

The relationship between financial development and economic growth have long been studied. [36] argued that financial development is prerequisit for the economic growth. However, neoclasical theorists, argued that the role of financial development on economic growth is over stressed [7]. In line with this, [18] underlined the weakness of neoclassical approach that neglected the importance of financial aspects of the growth. [16] argued that economic backwardness of the country determines the role of finance. However, the recent literature shows that none of the recent scholars rejected the importance of stock market development on economic growth.

Though it is well emphasized in the literature that financial sector development affects economic growth in positive way, a wide theoretical debate is concerned with the fundamental relationship between stock market development and economic growth even in the recent literature. [22] argued that stock market is important for growth because savers do not like to abandon control of their savings for long periods while many profitable investments require a long-run commitment of capital. Liquid equity markets ease this tension by providing an asset to savers that they can quickly and inexpensively sell. Simultaneously, firms have permanent access to capital raised through equity issues. [25] argued that stock market liquidity and banking development both positively predict the growth making it consistent with the contention that financial markets provide important services for growth. However, a study by [3] on the relationship between stock market development and economic growth using the time series methods and data from five developed economies found that the effect of banking system in comparison with stock market development is more promoting the economic growth. Their argument is that the contribution of stock market development on economic growth may

have been exaggerated in the literature. Likewise, [19] concluded that there is no hard evidence that the level of stock market activity helps to explain growth in per capita output. Similarly, [27], using GMM estimators on an unbalanced panel data from 11 MENA region countries, even accounted a negative association between bank development and economic growth after controlling for stock market development. They further argued that underdeveloped financial systems in the MENA region is responsible for this negative relationship.

On the other hand, [4] using the generalised method of moments technique concluded that stock markets and banks positively influence economic growth. Likewise, [12], using the autoregressive distributed lag (ARDL) bounds test, found that stock market development has a significant positive long run impact on economic growth in the context of seven countries in Sub-Saharan Africa. [1] studied the causality relationship between stock market and economic growth based on the time series data compiled from 5 Euronext countries (Belgium, France, Portugal, Netherlands and United Kingdom) for the period 1995: Q1 to 2008: Q4. They found that there is a positive link between the stock market and economic growth for some countries for which the stock market is liquid and highly active.

[6] studied the causal link between stock market development and economic growth in seven countries (Argentina, Chile, Greece, Korea, Malaysia, Philippines and Portugal). Their findings argued that a well-developed stock market can foster economic growth in the long run. It also provides support to theories according to which well-functioning stock markets can promote economic development by fuelling the engine of growth through faster capital accumulation, and by tuning it through better resource allocation.

The causality nexus is also important for the relationship between stock market development and economic growth. It is not clearly argued in the literature that whether the causality runs from stock market development to economic growth or the reverse one or one causes the other. [12] found some mixed results. They found that causality is unidirectional from stock market development to economic growth in Egypt and South Africa. However, the study found bidirectional causality between stock market development and economic growth for Cote D'Ivoire, Kenya, Morocco and Zimbabwe. The study also found that stock market development has a significant positive long run impact on economic growth. There is a unidirectional causality running from stock market development to economic growth [28] and [8]. Similarly, [14] found that causality is unidirectional from stock market development to economic growth. However, the causality relationship is rejected for the countries in which the stock market is small and less liquid [1]. Likewise, [29] examined the causal connection between stock market expansion and economic development in Ghana, Kenya and Nigeria from 1989 to 2009. They found that equity market development and economic expansion have no casual association in the economy of Ghana and Nigeria.

The literature shows that another group of researchers have accounted some evidence for feedback effect. For example: [2,13], and [33] have accounted a bi-directional

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[1] The ARDL test statistics that are computed perform much better in small samples than the test statistics computed using the asymptotic formula that explicitly takes account of the fact that the regressors are I(1) (Pesaran and Shin, 1998).

causality between financial development and economic gnrowth. In line with this, [37] found that there is bi-directional causality between stock market development and economic growth in the long run.

In the context of Nepal, the literature lacks sufficient evidence on the relationship between financial development and economic growth. Some of the studies are conducted to analyse the relationship in Nepalese capital market. [35] concluded that stock market development has significantly contributed to the economic growth in Nepal for the period 1994- 2011. [15] found that there is long-run integration and causality of macroeconomic variables and stock market indicators in Nepal. Likewise, [34], using Engle-Granger and Johansen's cointegration test on the time series data from 1988 to 2013, found long run cointegrating relationship between stock market development and economic growth in Nepal. Similarly, a more recent study by [10] found that market capitalization is the most influential factor and highly associated to the real economic growth of Nepal. However, there are some issues on sample size and analysis techniques associated with these studies in Nepal. Therefore, this study has been conducted to use the collected data in most efficient way to draw the valid inferences

3. Data and Methodology

The primary focus of this study is to provide evidence for the long run cointegrating relationship between development of stock market and economic growth in Nepal. For which this study purposed a simple linear regression model. It is assumed that economic growth is the function of stock market development, investment, and inflation. In order to normalise the data, logarithm transformation has been employed and the coefficients, hence, are considered as the elasticities. This study is based on the time series data for a period of 22 years from 1993 to 2014.
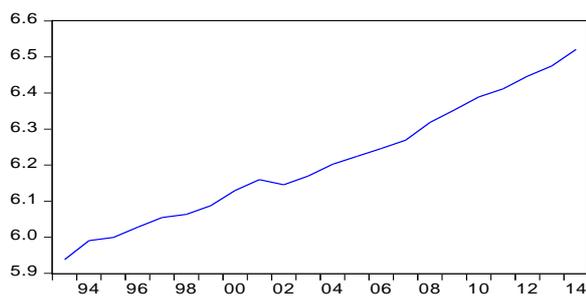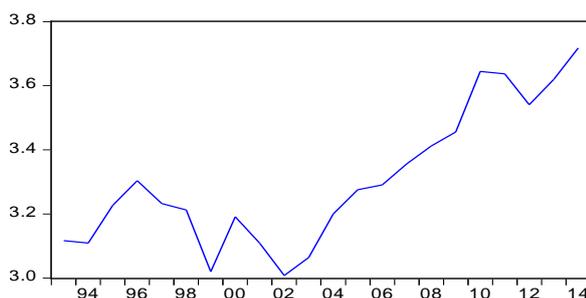
Figure 1. GDP per capita
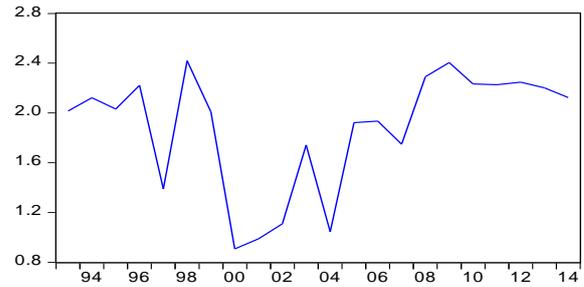
Figure 2. Gross Capital Formation
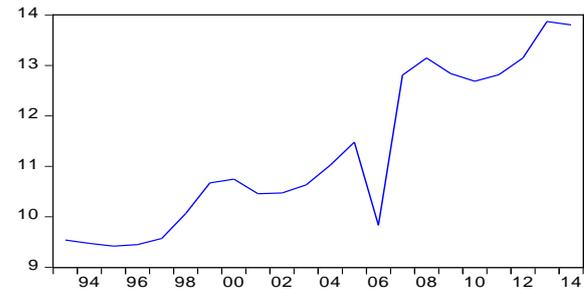
Figure 3. Inflation

Figure 4. Market Capitalization

Figure 1 presents the trend of GDP per capita, which is used as the measure of economic growth. The figure shows that GDP per capita is increasing throughout the study period. The Figure 2 exibits the trend of gross capital formaion, which is used as the measures of investment. Figure 2 shows that gross capital formation started to increase from 2002. Likewise, Figure 3 presents the inflation troughout the study period. The figure shows that the rate of inflation is minimum during 2000 and 2004. Similalry, the market capitalization NEPSE has been presented in Figure 4. The figure indicates that it is increasing through out the study period, however, the capitalization is decreased duirng the fiscal year 2006.

These data are collected from Annual Trading Reports of Nepal Stock Exchange (NEPSE) and World Development Indicators of World Bank.

Since, the used data in this study are of time series, this study used following two equations and both are considered to be long run or equilibrium relations.

$$\text{LG}_t = \beta_0 + \beta_1 \text{LMC}_t + \beta_2 \text{LINV}_t + \beta_3 \text{LINF}_t + u_t \quad (1)$$

Where, subscript t is the representative of time period. LG is the economic growth measured by log of real gross domestic product per capita (LG) in 2010 constant US dollar used as the measure of economic growth. Market capitalization (LMC) is the proxy for development of stock market and measured as the log of market capitalization. LINV is the gross domestic investment measured as the log of gross fixed capital formation to GDP, LINF represents log of percentage change in consumer price index.

$$\text{LMC}_t = \beta_0 + \beta_1 \text{LG}_t + \beta_2 \text{LINV}_t + \beta_3 \text{LINF}_t + u_t. \quad (2)$$

Since both the equations are assumed to be long run equations, valid inferences could be drawn if and only if variables are cointegrated [11]. The ARDL approach to cointegration by [32] has been employed to analyse the cointegrating relation between stock market development and economic growth in Nepal. Thus, the estimated ARDL(p,q,r,s,m,n) model takes the following form:

$$\Delta LG_t = \alpha + \sum_{i=1}^{p}\lambda_{1i}\Delta LG_{t-i} + \sum_{j=0}^{q}\lambda_{2j}\Delta LMC_{t-j}$$
$$+ \sum_{k=0}^{r}\lambda_{3k}\Delta LINV_{t-k} + \sum_{l=0}^{s}\lambda_{4l}\Delta LINF_{t-l} + \delta_1 LG_{t-1} \quad (3)$$
$$+ \delta_2 LMC_{t-1} + \delta_3 LINV_{t-1} + \delta_4 LINF_{t-1} + \varepsilon_t$$

$$\Delta LMC_t = \alpha + \sum_{i=1}^{p}\beta_{1i}\Delta LMC_{t-i} + \sum_{j=0}^{q}\beta_{2j}\Delta LG_{t-j}$$
$$+ \sum_{k=0}^{r}\beta_{3k}\Delta LINV_{t-k} + \sum_{l=0}^{s}\beta_{4l}\Delta LINF_{t-l} + \gamma_1 LMC_{t-1} \quad (4)$$
$$+ \gamma_2 LG_{t-1} + \gamma_3 LINV_{t-1} + \gamma_4 LINF_{t-1} + \varepsilon_t$$

Where, Δ is the difference operator. The coefficients ($\lambda_1 - \lambda_4$ and $\beta_1 - \beta_4$) represents the short term dynamics of the model whereas ($\delta_1 - \delta_4$ and $\gamma_1 - \gamma_4$) are the long run coefficints. The values (p, q, r, s,) are the selected numbers of lags for the cointegrating equations based on Schwarz Bayesian Criterion (SBC). The bound testing has been performaed in order to test the existence of a long-run relationship among the variables by conducting an F-test for the joint significance of the coefficients of the lagged levels of the variables. The wald coefficient restriction test has been performed to test the level effect with the null hypothesis of no level effecct i.e.

$$H_{null}: \delta_1 = \delta_2 = \ldots = \delta_6 = 0$$
$$\text{and } \gamma_1 = \gamma_2 = \ldots = \gamma_6 = 0.$$

[32] provides critical values, upper and lower critical values, which have to be compared with the F-statistic in order to accept or reject the null hypothesis. If the calculated f-statistics exceed upper critical bound, the null hypothesis of no cointegration is rejected. Similarly, if calculated statistics are below lower bound, the null hypothesis of no cointegration is accepted. However, if the F- statistics fall within the upper and lower bound values, the result is inconclusive. The upper and lower bound critical values have been calculated with the Software named Eviews 9.

After confirming the cointegrating relationship among the variables, the estimated long run models, using the ARDL approach, of the model (3) and (4) take the following form:

$$LG_t = \alpha + \delta_1 LMC_t + \delta_2 LINV_t + \delta_3 LINF_t + ECM1_t \quad (5)$$

$$LMC_t = \alpha + \delta_1 LG_t + \delta_2 LINV_t + \delta_3 LINF_t + ECM2_t \quad (6)$$

Where, ECM is the error term.

[11] argued that if two variables are co-integrated then first variable may Granger-cause second variable, second variable may Granger-cause first variable or each causes another. This study, therefore, tests Granger-causality between financial development and economic growth using Vector Error Correction Model (VECM) approach. This model has two advantages over simple granger causality test. The VECM approach enables us to find both long run and short run causality. The VECM is represented as:

$$\Delta LG_t = \alpha + \sum_{i=1}^{p}\lambda_{1i}\Delta LG_{t-i} + \sum_{j=0}^{q}\lambda_{2j}\Delta LMC_{t-j}$$
$$\quad (7)$$
$$+ \sum_{k=0}^{r}\lambda_{3k}HLINV_{t-k} + \sum_{l=0}^{s}\lambda_{4l}\Delta LINF_{t-l} + \gamma_1 ECM1_{,t-1} + \varepsilon_t$$

$$\Delta LMC_t = \alpha + \sum_{i=1}^{p}\beta_{1i}\Delta LMC_{t-i} + \sum_{j=0}^{q}\beta_{2j}HLG_{t-j}$$
$$\quad (8)$$
$$+ \sum_{k=0}^{r}\beta_{3k}\Delta LINV_{t-k} + \sum_{l=0}^{s}\beta_{4l}\Delta LINF_{t-l} + \gamma_2 ECM2_{,t-1} + \varepsilon_t$$

Where, Δ is the first difference operator, ECT_{t-1} is the lagged value of error term. The short run causality from stock market developemnet to economic growth is tested by $H_0: \lambda = 0$ in equation (7). Similarly, the short run causality from economic growth to stock market developemnet is tested by $H_0: \beta = 0$, in equation (8). The error corection term, ECT, indicates both long run causality and the speed of adjustment. The first important issue that is considered is whether $\gamma_i \neq 0$, (i=1,2). If this is not the case, the cointegration finding would not be reliable.

3.1. Testing for Integration

One major benefit of ARDL approach to cointegrating is that it does not require the variables to be integrated of the same order. However, the prerequisit of ARDL approach to cointegration is that varaibles should be stationary maximum of one time difference [32]. Therefore, this study employed Augmented Dickey Fuller (ADF) unit root test to test the level of integration of the variables used in this study. To give the glimpse of the unit root test, consider the following ADF test.

$$\Delta y_t = \alpha + \delta t + \rho y_{t-1} + \sum_{i=1}^{m}\lambda_i \Delta y_{t-i} + \varepsilon_t \quad (9)$$

Where, ε_t is a pure white noise error term and where $\Delta y_{t-1} = (y_{t-1}-y_{t-2})$, $\Delta y_{t-2} = (y_{t-2}-y_{t-3})$, etc. the ADF unit root test is based on the null hypothesis of unit root. The null hypothesis for unit root is $H_0: \rho = 0$ vs. $H_1: \rho < 0$.

4. Empirical Results

4.1. Test of Stationarity

Augmented Dickey Fuller (ADF) unit root test has been performed to test the stationarity of the variables and results are presented in Table 1.

The results indicate that all the variables used in this study have unit root at level. This indicates that the real GDP per capita, market capitalization, investment, and inflation are not stationary at level. However, the first difference of the variables is turned out to be the stationary. These results support the contention that variables under investigation are all *I(1)* variables.

Table 1. ADF Unit Root Test

| Variable | ADF | | | | Order of integration |
| | Levels | | First difference | | |
	T-stat.	P-value	T–stat.	P-value	
LG	-0.57089	0.8574	-5.44548	.000***	*I*(1)
LMC	-0.39963	0.8907	-4.24453	.0127**	*I*(1)
LINV	-1.2348	0.6391	-4.56893	.002***	*I*(1)
LINF	-2.65797	0.0979	-6.51616	.000***	*I*(1)

Note. Table presents results of Augmented Dickey Fuller unit root test. Where, LG is the log of Real GDP per capita, LMC is the logarithm of market capitalization, LINV is the investment measured as logarithm of gross fixed capital formation to GDP and LINF is the logarithm of inflation in terms of consumer price index. The null hypothesis of ADF test is of unit root. Schwarz criterions are used to select the number of lags.

Table 2. Bound testing for existence of a level relationship

Dependent variables	ARDL	F – statistics	Outcome	
Log of Real GDP Per capita (LG) Regressor: LMC LINV LINF	(2,1,0,0)	5.005**	Cointegration	
Log of Market Capitalization (LMC) Regressor: LG LINV LINF	(1,0,1,2)	3.32	No-cointegration	
Critical values	5% lower	5% upper	10% lower	10% upper
	3.23	4.35	2.72	3.77

Note. Table presents the results of bound testing for existence of cointegrating relationship. ARDL is the autoregressive distributed lag models with lags (p, q, r, s,). Where, LG is the log of Real GDP per capita, LMC is the logarithm of market capitalization, LINV is the investment measured as logarithm of gross fixed capital formation to GDP and LINF is the logarithm of inflation in terms of consumer price index. F represents the F values of Wald-test of coefficient restrictions.

Table 3. Estimated long run coefficients for economic growth with stock market development

Variable	Log of GDP per capita
LMC	0.101*** [.000]
LINV	0.325*** [.005]
LINF	-0.068** [.017]
CONSTANT	4.297*** [.000]
R-Bar-Squared	0.997
F-Stat.	1153*** [.000]
Lagrange Multiplier Test (LM)	1.1071 [.293]
Ramsey Test	1.5104 [.219]

Note. The table presents the estimated long run coefficients estimated using the ARDL (2,2,0,0) model selected based on Schwarz Bayesian Criterion. The estimated equation is: GDP per capita (LG) on LMC, LINV and LINF. Where, LMC is the logarithm of market capitalization, LINV is the investment measured as logarithm of gross fixed capital formation to GDP and LINF is the logarithm of inflation in terms of consumer price index. Figures in brackets represent p-values associated with the tests. Lagrange Multiplier Test (LM) tests for the null hypothesis that there is no serial correlation. The Ramsey test tests the null hypothesis that there is no functional form misspecification. *** and ** indicate that coefficients are significant at 1 and 5 percent level of significance respectively.

4.2. Cointegration Results

Table 2 presents the results of bound testing for existence of level relationship.

The results show that calculated F-statistic (5.005) is greater than the upper bound value i.e. 4.35 when economic growth is dependent variable. This indicates that stock market development, investment, inflation and growth share a long run (cointegrating) relationship in Nepal.

On the other hand, when stock market development is used as the dependent variable, the model agreed that cointegration does not exist as calculated f-statistic (3.32) is below the lower bound critical value. Therefore, results indicate that there is only one cointegrating vector in long run and the long run causality runs from stock market development to economic growth.

4.3. Estimation of Long Run Relationship

Once the study found that there exists a long-run cointegrating relationship between stock market development and economic growth when real GDP per capita is dependent variable, long and short run relationship between stock development and growth have been analysed and the long run estimates are presented in Table 3.

The Table 3 shows that long run market capitalization elasticity is positive and statistically significant at 1 percent level of significance. The positive and significant elasticity (0.10) indicates that higher the market capitalization in long run, higher would be the economic growth. For example, 1 percent point increase in market capitalization causes about 0.1 percent increase in real GDP per capita in long run. Therefore, result confirms that per capital in Nepal is stockmarket development elastic.

The Table 3 also shows that investment (gross capital formation) has statistically significant impact on economic growth. The investment elasticity of economic growth is found to to be 0.325, which is significant at 1 percent level of significance. This indicates that 1 percent increase in investment as percentage of GDP causes around 0.33 percent increase in economic growth in long run. These findings are important for policy makers. The emphasis should be given to increase the investment. Likewise, the Table 4 shows that long run inflation elasticity of growth

is negative. This indicates that higher level of inflation eradicates the economic growth in long run. Result suggests that 1 percent increase in inflation leads to 0.06 percent decrease in GDP per capita in long run. The diagnostic statistics (autocorrelation and functional form misspecification) show that the used ARDL model seems to be data congruent and free from specification error. Thus, the strong link between stock market development and growth does not appear to be spurious one.

4.4. Error Correction Representation

Error correction representation for the ARDL model is also carried out to observe the short run relationship between the variables. The error correction model provides information on partial adjustment and allows for estimation of short-run elasticity. More specifically, the error correction procedure is used to investigate how stock market development and economic growth variables are related in short run. Table 4 shows the empirical results for the ECM.

In short run, Table 4 shows positive market capitalization elasticity of GDP per capita. The positive elasticity (0.008) is significant at 5 percent level of significance. This indicates that 1 percent increase in market capitalization in short run causes 0.008 percent increase in GDP per capita. This is a clear indication that development of stock market stimulates economic growth in short run as well. The short run estimate for investment (gross capital formation) is 0.068, which is significant at 1 percent level of significance. This is also a clear indication that investment is important for economic growth. The result shows that 10 percent increase in investment causes 6 percent increase in real GDP per capita. However, the estimates show that one period lagged change in per capita has negative impact on current per capita. Similarly, result shows that inflation elasticity is negative (-0.014), which is significant at 5 percent level of significance. This indicates that 1 percent increase in inflation rate causes 0.014 percent decrease in real GDP per capita.

The coefficients of one period lagged error term are negative (correct) and highly significant. This indicates that stock market development, indeed, has cointegrating relationship with economic growth in Nepal. The coefficient of ECM lagged one period (-.209) indicates that there is a high speed of adjustment to equilibrium after a shock. This means that approximately 20% of disequilibria from the previous year's shock unite back to the long-run equilibrium in the current year. This, further, supports the contention that long run causality is running from stock market development to economic growth.

This study also performed the Cumulative Sum (CUSUM) of Recursive Residuals and Cumulative Sum of Square (CUSUMSQ) of Recursive Residuals stability test for estimated error correction models. Figure 5 plots the CUSUM and CUSUMSQ.

It can be seen from the Figure 5 that the plots of CUSUM and CUSUMSQ statistics are well within the critical bounds expect for CUSUMSQ, initially, implying that all the coefficients in the error correction model are stable.

Table 4. Estimation of short run relationship

Variable	GDP growth (ΔG)
ΔLG_{t-1}	-.469***
	[0.006]
ΔLMC	0.008**
	[0.028]
$\Delta LINV$	0.068***
	[0.005]
$\Delta LINF$	-0.014**
	[.015]
ECM (-1)	-.209***
	[0.001]
R-bar square	0.657
F-Stat.	8.48***
	[.001]

Note. This table presents short run, error correction, estimates of equations (3). ΔLG, ΔLMC, ΔLINV, and ΔLINF stands for the first difference of logarithm of real GDP per capita, market capitalization, investment, and inflation. The ECM is the error correction term and measures the speed of adjustment. The ECM is calculated using the estimated long run equation (ECM1 = GDPP - (0.101MC + 0.325NV - 0.068INF + 4.29). Values in the square bracket are p-values. *** and ** indicate that elasticities are significant at 1 and 5 percent level of significance respectively.
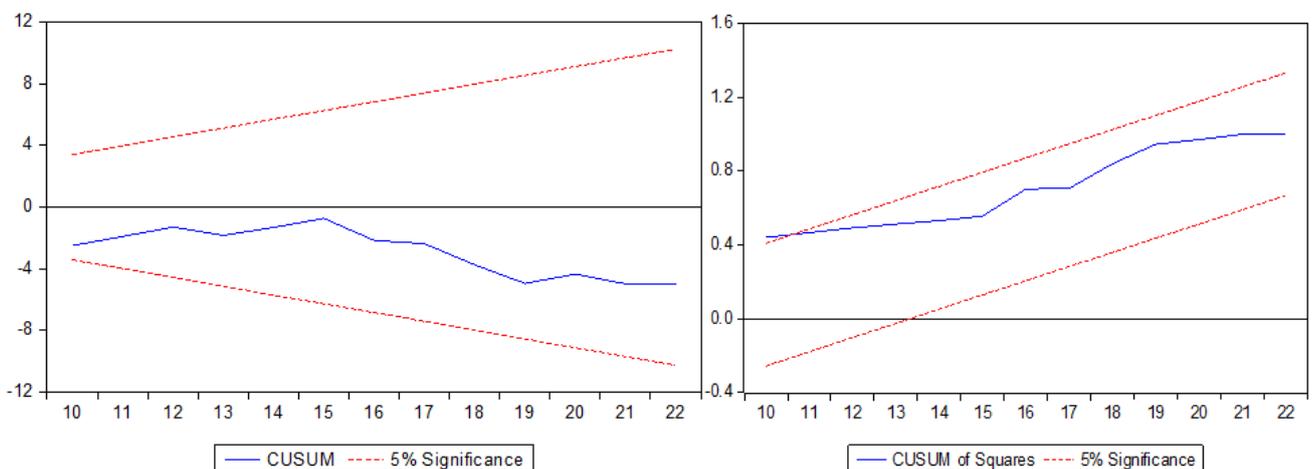

Figure 5. CUSUM and CUSUMSQ Plots for Stability Tests

5. Conclusions

Based on the findings of this study, the major conclusion of this study is that there is a stable long-run relationship among economic growth, stock market development, and control variables in Nepal. The empirical long run and short run estimates of ARDL indicate that there is positive and significant impact of market capitalization on economic growth in short as well as in long run. This indicates the importance stock market development on economic growth. This finding resembles the findings of Levine [22], Levine [24], Levine and Zervos [25], Beck and Levine [4], and [12].

The estimates of error correction model show that magnitude of the ECT is very high. Therefore, this study concludes that development of stock markets and economic growth has positive long run cointegrating relationship in Nepal. Similarly, the results of ECM shows that there is fair evidence in support with the unidirectional causality between stock market development and economic growth in Nepal and that runs from stock market development to economic growth. Which is consistent with Christopoulos & Tsionas [7]. The policy implication of this findings is that in order to enhance economic growth policy makers should put more emphasis on the development of stock market.

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