Impact of Capital Market on GDP Growth in Nepal

Khimananda Bhandari[1]

Abstract

This study explores the connection between the capital market and Nepal's GDP growth from 1994 to 2002. The study examines how capital market performance affects the GDP growth of Nepal. The ARDL approach was used to examine the capital market's long-term effect on economic growth. To this extent, variables like market capitalization, gross fixed capital formation as investment, broad money supply, the NEPSE Index, the number of listed companies in NEPSE, and recurring expenditures were used in the system, affecting GDP growth. According to the study, the correlation shows the presence of a strong linkage between the capital market and GDP growth in Nepal. Findings show that the capital market has a significant influence on GDP growth. Negative and significant error correction terms indicate how quickly shocks and equilibrium are corrected. Some of the variables are insignificant in the short and long run, indicating the presence of structural and institutional lacks in Nepal's capital markets.

Key Words: Gross Domestic Product, Market Capitalization, Gross Fixed Capital Formation, Expenditure, Nepse Index,

I. Introduction

Economic growth is expanding an economy's production(Shearear, 1961). It is a term that refers to the positive physical transformation that occurs in an economy (Todaro& Smith,2006).Some might say that stocks are tools used to improve the performance of local financial institutions and the economy (Kenny & moss, 1998). Creating a securities market in a developing country is expected to increase savings in the local markets and improve the amount and quality of savings in the country (Yartey & Adjasi, 2007). The capital market is essential to economic reform in a developing country. Thus, it indicates capital market ensures the undeveloped economy's growth stability. Through the financial market and stock market growth, economic reform is achieved. The financial market dominates securities trading, which mobilizes savings, distributes money from institutions, and mitigates financial risks (Levine &Zervos, 1998). The growing global concern for financial development has re-established the widespread opinion that finance is a critical component of economic progress. The financial sector is well-developed, which has led to very stable growth. Getting resources to work for development is one of the most important things. For countries that have always put a high value on solid and effective mechanization for resource mobilization, the biggest challenge and practice for growth and development has

[1]Mr. Khimananda Bhandari is a Lecturer of Resunga Multiple Campus, Nepal

been to find ways to attract and use resources in a way that is both effective and appealing (Devkota,2019).

Stock performance is vital for GDP performance since it is a fundamental component of the theory behind higher production (Nazir, Nawaz & Gilani, 2010). People think the stock market is a crucial area where cash can be saved to help the economy run smoothly. Analysts say that stock markets in countries with low incomes are snowballing (Bhoyu, 2011).It is thought that a sharp drop in stock prices is a sign of a possible recession and that rising stock prices are the leading cause of rising GDP (Siong & Thing, 2008). During the late-2000s economic crisis, the value of shares on the world's main securities markets collapsed dramatically, reducing the likelihood much more(Fuentes & Pereira, 2010). Stock markets are often linked to economic growth because they are a source of capital, and a growing economy also helps the securities market grow (Osamwony & Abudu, 2013).

The capital market generally represents the stock of the share market which serves as a mechanism for mobilizing money for economic growth. So, the capital market is seen as a reflection of the economy (Chalise, 2020). The stock market is comparable to other types of markets where individuals purchase and sell their stocks individually or in the groupsin this market in an attempt to benefit. Additionally, individuals purchase and sell bonds, debentures, and mutual fund shares on the stock market (Ritter & Silber,2012). The capital market is vital in an economy because it mobilizes savings and channels them into investment inproductive sectors. It serves as a barometer of economic progress and how data from the capital markets are used to keep an eye on the economy and make predictions about it. The capital market is seen as an efficient means of obtaining long-term financing for businesses and governments via the insuring of shares, debentures, and bonds, while also providing an investment opportunity for people and organizations (Adhikari,2013).

Nepal's stock market has not been a long history of its development. The capital market was set up when the Security Exchange Centre (SEC) was created in 1976. Following this, it was anticipated that the secondary market would multiply, but the SEC was not provided with the requisite legal and institutional framework. In 1983 A.D., only the Securities Exchange Act was enacted. Following the foundation of a new democratic political system in 1993, a new elected political administration was formed, transforming SEC into the Nepal Stock Exchange (NEPSE) in 1994. A security act was enacted in 2006 A.D.to facilitate and enhance security trading in the security market. A regulation governing the security market operation was issued in 2007. Since then, Nepal's capital market and securities dealing have been governed by these rules and conducted electronically. Following the implementation of an online system in the capital market, rural residents are being attracted to the capital market. Youth, women, and even students and daily wage employees are investing their meager funds in the stock market to earn a higher return than a bank account. The number of Demat accounts is increasing daily. It demonstrates investors' enthusiasm for the stock market.Initial Public Offerings (IPOs) are a common way for publicly traded companies to raise money from the public and organized institutions.

Statement of the Problem

Nepal's capital market has emerged over the past four decades. Despite its immaturity, it cannot cover the investment gap, the most alternative significant resource mobilization approach, and convert the small quantity of savings by different classes of people into investment. The bond market is in its infancy, and debentures are gaining popularity to raise capital for Nepal's listed firms.

Nepal's capital market needs to be developed to reach international standards. Nepal's security board (SEBON) has joined the International Organization of Securities Markets Regulations/Commissions (IOSMRC). SEBON has launched an online trading system based on an internationally recognized online software platform. The capital market has been influenced by non-economic factors such as political, social, ethical, and other behavioural aspects; hence, these components' effects and policy changes should be studied to ascertain the capital market's actual performance in reality. These variables are unsecured in Nepal due to the country's unstable administration and fluid political circumstances. Due to a lack of appropriate economic resources, the country's overall investment falls short of meeting national demand in critical areas. For productive investors, the capital market assists in mobilizing the surplus unit to the deficit unit. Additionally, it collects scattered resources from individuals through initial public offerings, bonds, and secondary market shares (Sagi, Maskus, & Hoekman, 2004).

The long-term viability of a country's economic development is contingent upon its capacity to accelerate the accumulation of physical and human capital, maximize the efficiency of the resultant productive assets, and guarantee that the whole population has access to financial assets(Regmi, 2018).Theresearch studies and policymakers have concluded that rapid economic expansion results in a surge in demand for certain financial agreements or arrangements and that a developed financial system would naturally react to these demands. Since the finance-led growth and growth-led finance hypotheses were introduced, debates are raised about the relationship between financial development and economic growth. In line with these debates,it is essential to examine the relationship between financial sector developments and the economic growth of Nepal; becauseof a lack of appropriate government policies and political insecurity, the Nepalese stock market seems more volatile. During the research period, there were not enough institutional investors in the market, and more individual investors were found. It is a challenging problem in Nepal's Stock Market.This research aims to determine how the stock market has helped Nepal's economic growth.

In general, a growing stock market is a good sign of economic growth, and a quick rise or fall in the stock market is always causing alarm to the economy since it might jeopardizefinancial stability. Additionally, it is essential to investigate the link between the stock market index and the influencing elements to formulate the optimal stock market policy.

Various factors may influence the stock market, and some of the primary influencing factors on GDP growth are examined in detail in this research. Without examining the influence of these variables on GDP, we cannot infer that the capital market is a mirror of economic

progress and growth. Therefore, this study examines the effect of the capital market and the other control variables on GDP growth. Additionally, the research result is expected tofind the factors affecting the capital market and their influence on GDP growth, and it will bebeneficial to policymakers in developing policies related to the capital market. In addition, it may be helpful to students and academicians for their research about capital markets.

The research questions, which are set based onthe purpose of the study, are as below.

1. What is the nature and trend of Nepal's capital market and GDP growth?
2. What is the short-run or long-run link between the capital market and the economy's GDP growth?

Objectives of the study

The study's primary goal is to examine the relationship between Gross Domestic Product (GDP) and the capital market's performance. This study's specific purpose is as follows.

1. To determine the nature and trend of Nepal's capital market and economic growth.
2. To examine the short-run and long-run link between growth and the capital market.

Research Hypothesis

The research has been done based on two main ideas:

i. H_0: The capital market has no significant effect on GDP growth.

ii. H_1: The capital market has a significant effect on economic growth.

Significance of the Study

The stock market is aware of the state of the economy. When the stock market rises, the economy improves; when it falls, the economy declines. Hence, the stock market is essential to economic growth. As the economy expands, people's ability to work, save, and invest grows. It should be mentioned that economic development is highly reliant on a country's industrialization. It reflects the need for research to ascertain the issue, prospects, and growth soon. What policies may be developed, what regulatory actions are required, and what adjustments to existing rules and regulations are necessary to develop further and perfect the market functioning? This research is particularly significant for economists since it may be used to estimate economic performance by examining the NEPSE index's future performance. Lastly, the study will significantly affect empirical work since few academics have looked at the link between stock performance and GDP growth in Nepal. This research will benefit university students interested in learning about the present condition of the Nepalese stock market, its growth, and the concerns and obstacles that face the market's development. Similarly, the suggestions based on its results will likely benefit policymakers responsible for capital market development

II. Theoretical Framework

The Conceptual View

People use the term "review of the literature" when they look at research studies or other relevant prepositions in their study's field to figure out what other studies have been done, what their results and limitations were, and how new research can be studied. The main reason to thoroughly review previous research is to find out what other studies have found in areas where similar ideas and approaches have worked well. This part will give the learner the facts they need to explain how the stock market and economic growth work together so they can understand it. In recent years, scholars of the capital market have found different mechanisms and routes via which the stock market might influence the nation's economic development (Levine,1996, Levine & Zervos,1998).

According toLevine(1996) and Levine & Zervos (1998),the capital market has the following benefits.

1. **Providing liquidity** - Liquidity means the ability of fixed assets to be turned into cash. The stock market's main job is to keep the market liquid (Levine, 1996). Without the liquid nature of the stock market, long-term investments would be unprofitable. The capital market connects savers and investors so that investors are unaware of their lack of investment resources. Intelligent investors monitor the stock market's liquidity and allocate financial resources to the most successful company ventures.

2. Polling saving — At any point throughout the development phase, long-term financial resources are required to expedite expansion. The stock market delivers long-term help to the private and public sectors by collecting savings from people and their production projects that need significant capital and benefit from economies of scale. Thus, the capital market mechanism facilitates the mobilization of resources to expedite attractive economic development.

3. Maintaining corporate governance—The way companies are run affected by the stock market's growth. Takeover threats force managers to increase the value of their company's shares.If the manager cannot optimize the firm's worth, the economic agent will take over and enjoy the profits. Thus, the sound manager does not want to be unsuccessful and therefore miss out on the benefits of the stock market mechanism, which contributes to the effective administration and operation of the business and economic growth.

4. Risk diversification — Risk diversification is the most complex and time-consuming requirement for every successful investor. A well-developed stock market may give investors the chance to diversify. Investors have no other option if the stock market is immature and does not operate appropriately in an economy. Investors may shun stock shares in such a circumstance owing to the significant risk. Selling equity shares is not a way to get money. Investors constantly diversify their risk by investing in firms with higher profit margins. More risk diversification is expected to result in a more lucrative scenario.

5. Information generation - The stock market gives investors information. By getting important information about different businesses from the stock market, investors may be

able to improve the resource allocation process, which in turn helps the economy grow. The stock market requires companies to give information to investors, and it permits the necessary funds to be sent to the top business in the market. A more liquid stock market can provide investors with the essential information to maximize their profits.

The Theoretical Views

Adam Smith in his book Wealth of Nations (1776) mentions three important things: accumulating capital, growing populations, and developing new ideas. People who only want to improve their lives will make the economy grow over time (Mansson, & Nykvist, 2021). It used to be called a "technical change," as Brewer Anthony (2010, p. 4) has said. The main focus of this study will be on how people build up their wealth, and the stock market will be used as a proxy for that. Brewer (2010, p. 4) says that the argument for building up capital comes from saving. According to Brewer (2010, p. 5), Smith believed that machines would make things easier and cut down on work. In other words, technology would help the labor force rather than help the economy Since the 1970s, rational expectations have been the most crucial theory in neo-classical macroeconomics (Lucas, 1972). By combining macroeconomic theory with the Rational Expectation Hypothesis (REH), this point of view did not give enough credit to monetary factors in the macro economy. Economic growth was looked at using fundamental elements, with the financial sector thought to be a small part that could be left out. (Modigliani & Miller, 1958) said that firms' investment decisions are not the same as their financial processesgrow.Several economists claim a link between investing and stock market fluctuations. According to James Tobin, investment should be a function of the market value of the capital gain versus its replacement cost. Tobin's q hypothesis(Gottfries,2013, p. 500) is represented as follows; $q = S / K'$, where S is the capital stock's market value, K' shows the capital stock's replacement cost.

Mankiw (2010, p. 517) contends that net investment is based on q's value. If q > 1, the market value of the capital stock exceeds the replacement cost and S > K'. If q is less than one, the capital stock's replacement cost is more than its market value.If q > 1, adding capital to a firm's capital stock increases its market value. If q > 1, the company will not replace money as it declines because of high replacement costs. A falling q might reflect investors' concerns about capital's current and future returns.

According to Gottfries (2013, p. 497), a stock signifies a financial share of the company. Apart from the price fluctuation, the stockholder is entitled to a part of the company's dividend. According to Mankiw (2016, p. 527), these equities are traded on the stock market, and their values reflect investor sentiment. According to Gottfries (2013, p.497), future dividends are derived from future earnings. Investors can get rewards or put them back into the business to help it grow. Since bonuses are connected to profitability, if yields rise, so do future payouts, share prices, and business expectations. Investing is not about the present but the future. The stock market is supposed to forecast future economic growth, which is the goal of this research. Investors' expectations must be accurate for the stock market to be a trustworthy leading macroeconomic indicator.

Endogenous growth thinkers must talk about economic scale or how the value of things grows with more money—private-sector investments in research and development (R&D) fuel technological innovation. Private property rights and patents are fundamental in getting businesses and entrepreneurs to invest in R&D, so keeping them safe is essential. Long-term growth requires an investment in human capital (including education and training).Government policy should encourage entrepreneurship as a way to create new businesses, jobs, investments, and new ideas (Unalmis, 2002). Endogenous growth theory was used extensively in the late 1980s and early 1990s to investigate the relationship between financial development and economic growth. Financial deepening has been shown to affect long-term production and economic growth (Ukamaka, 2021).

Bencivenga and Smith (1991) say that financial intermediation helps the economy grow by turning savings into capital that can be used to make suitable investments for the economy. According to King and Levine (1993), financial indicators are very closely linked to economic growth, the rate at which physical capital is built, and the efficiency of capital allocation.

Rousseau and Wachtel (2011) explored how the financial development of a nation affects its growth. The researchers studied cross-sectional and panel data from 84 countries between 1960 and 2004. Finally, the factors were less narrow money (M_1), commerce, and government consumption. Researchers examined the whole dataset and the first subsample, 1960–1989, and discovered a correlation between financial and economic development.Craigwell et al. (2001) investigated the long-term relationship between financial development and economic growth in Barbados using a multivariate VAR approach. Data from 1974 to 1998 were reviewed in the research. It examined factors such as real GDP per capita, real interest rate, natural capital per person, and financial development using data from 1987 to 2012, Araç and Ozcan (2014) looked at how financial and economic growth in Turkey are linked. Pesaran's (2001) bounds testing and Johansen's (1991) Granger causality were applied. It works like this: Total banking sector assets to the central bank and other banking sector assets: The ratios were total banking sector assets to GDP, total deposits to GDP, and M2 to GDPdicators such as the ratio of total commercial bank deposits to nominal GDP at market prices.From 1960 to 2014, Osuji (2015) examined the link between financial development and economic growth. He considered how this friendship had evolved. He employed a concept known as VECM (vector error correction model).The Granger causality test was also used in multivariate cointegration to see if there was a link between two things. Use these ratios to show how finance can affect growth in various ways.Hoque and Yakob (2017) investigated the influence of the Malaysian stock market on economic development. Market capitalization and GDP were the study's factors. They examined the associations between variables using ARDL and multivariate regression.Khan, Chana, and Ali (2017) explored the link between Pakistan's stock market development and economic growth. From 2000 to 2014, they used panel data. The study looked at four key stock market indicators: market capitalization (MC), average daily value traded (ADVT), turnover ratio (TOR), and the number of listed companies (L.C.). Because market capitalization is vital in supporting economic progress, it is used in this study.

Ukamaka (2021) investigated the relationship between financial deepening and economic development in Nigeria from 2007 to 2019. The Nigerian financial industry has grown, including banking, capital markets, insurance, and pensions. For the research, a link between economic growth and financial deepening variables such as Net Domestic Credit, Market Capitalization, Total Pension Assets, and Insurance Income was constructed using the Vector Error Correction Model. A secondary technique was used to collect data for the study. Shrestha and Pokhrael (2019) used monthly data from mid-August 2000 to mid-July 2017 to evaluate the variables impacting the Nepalese stock market index. Significant political developments and Nepal Rastra Bank's stance on share collateral and paid-up capital have also been reviewed. For empirical investigation, simple OLS and ARDL Bound testing procedures were utilized. According to OLS estimations of behavioral equations, the Nepalese stock index reacts positively to broad money growth and negatively to interest rate fluctuations. Thus, low-interest rates and plenty of available capital boost the stock market. ARDL investigates the long-term cointegration of the stock index with the CPI, broad money, and interest rate. Inflation is linked to the stock market index but not broad money or interest rates. More crucially, the stock index responds considerably to changes in the political climate, Nepal Rastra Bank's policy on lending against share collateral, and paid-up capital increases. News, rumors, and guesses hugely affect share price fluctuations despite this. These insights assist in understanding the Nepalese stock market and devisinga market stabilization policy.

Devkota (2019) looked at how the stock market's development affects Nepal's economic growth. He found a weak relationship between stock market turnover and real GDP, which meant there was a problem with the stock market in Nepal. The co-instigation Bound test discovered a long-term association between economic growth and stock market development indicators, as shown in the test. The study found a considerable error correction term that said that the speed at which the estimated model could be changed was good. The causality test has also shown that the stock market index and economic growth do not go in the same direction. The study found that Nepal's stock market helps the country's economy grow.

Pokhrael(2020) evaluated the causal association between Nepal's capital market expansion and economic growth using yearly data from 1994 to 2019. Total market capitalization was used to predict secondary market development, while total public securities issued in a particular year were used to predict primary market development. The research foundthat capital markets in Nepal assist economic progress via effective fundraising, resource distribution, appropriate pricing setting, and liquidity. This study discovered a long-term and short-term unidirectional relationship between capital market development and economic growth. The study found no causal relationship between economic progress and the capital market. Thus, this study's results advocated strategies to expand the capital market's accessibility to SMEs and private investors.

The long-run link between selected macroeconomic factors and Nepalese stock market returns was explored by Bista (2021). The analysis found a substantial long-run positive influence on real GDP growth and a negative impact of exchange rate and inflation on Nepalese stock market returns.It was shown that using error-correcting representation, the

short-run disequilibrium among variables tends to return to long-run equilibrium at 47.57 percent each year. The report recommends that policymakers devise strategies to increase economic development and promote exports to boost the stock market. Finally, the research found that a regulated and stable interest rate environment promotes the depth and breadth of stock market trading by bringing new investors to Nepal's stock market.

Research Gap

A literature survey revealed some research on the link between stock market expansion and economic growth. The studiesexamined are generally limited to how the Nepalese stock market has grown. There is already a considerable body of empirical evidence demonstrating how the development of Nepal's stock market affects economic growth. Some other investigations were descriptive and did not investigate how the stock market supported economic growth and development. There are several issues with the size, source of data, and analytic methodologies used in all of the studies conducted. It is an important topic to ask if we want to learn how stock market development impacts a country's economy and growth. Therefore, evaluating Nepal's stock market growth affects the country's economy is vital, and this study adds that information to the body of scientific knowledge.

The study uses quantitative research to examine the Nepalese stock market's effect on economic growth. The deductive technique and data analysis tools are utilized to fulfill the study's purpose.

III. Research Methodology

The Research Design and Source of Data

Because the data used in this study are of a secondary type, the research approach used is ex-post facto or after the fact.The data utilized in this research are taken from secondary sources. The study uses the Nepalese stock market data ranging from 1994 to 2020 to examine how the development of the stock market impacted the country's economy and how it changed. The research analysis depends on data and information collected from secondary sources. For the data, annual reports published by the Nepal Stock Exchange (NEPSE), the Security Board of Nepal (SEBON), the Statistical Pocket Book published by the Central Bureau of Statistics (CBS), a quarterly economic bulletin published by Nepal Rastra Bank (NRB), Economic Survey published by Ministry of Finance (MOF) are the primary sources of statistics.The data over the 27 years are considered to estimate the proposed model. All the data are transformed into asolid form using the consumer price index (CPI) and converted into a log form. Software E-views 10, Micro-Fit 5.0, and Microsoft Excel are used to analyze the data and estimate the model.

Tools and Methods of Data Analysis

The model analyzed data using descriptive statistics, quantitative techniques, and econometric tools. In the study, statistical tools like tables, graphs, diagrams, percentages, ratios, averages, and others are also will be utilized. Unit root tests andcointegration tests are used to ensure that the relationships between variables are integrated or not. An

empirical test is conducted using the Autoregressive Distributed Lag (ARDL) method. This was published by Palamalai and Prakasham (2014), Bista (2017), and Hoque and Yakob (2017. These tests are also used to confirm the model's ability to relate the stability of serial and residuals. They include linear and serial correlation, as well as the CUSUM test.

Model Specification

Time-series data are considered to estimate the model. The dependent variable is real GDP (RGDP), whereas the independent variables include the money supply, market capitalization, Gross Fixed Capital Formation (GFCF), the Nepse Index, Listed Companies, and Recurring Expenditure. So, the econometric model is constructed for the study of this research based on the system used by Gujarati, Porter, & Gunasekher (2015). The econometric model based on the data used in this research is below.

RGDP = f(MC, M_2, GFCF, N.I., L.C., RE)……..(1). A linear version of the equation may be expressed as follows:

RGDP = ά +β_1 MC +β_2 M_2 + β_3 GFCF + β_4NI + β_5LC +β_6RE +ε. By placing the natural log on both sides, the equation can be expressed in its natural log form,

lnRGDP =ά +$\beta_1$ln MC +$\beta_2$ln M_2 + β_3 lnGFCF + β4lnNI + β5lnLC +β6lnRE +ε. Where ά is the constant term, β_1, β_2, β_3, β_4, β_5, and β_6 are the coefficients of the variables. RGDP, MC, M_2, GFCF, N.I., L.C., and RE are Real Gross Domestic Product, Market Capitalization, Broad Money Supply, Gross Fixed Capital Formation, NEPSE Index, No of Listed Companies in NEPSE, and Recurrent Expenditure, respectively

Data Presentation and Analysis

Descriptive Statistics

The descriptive statistics, as derived through E-Views 10, facilitate to description and understanding of the characteristics of the data set under study. The mean, median, maximum, and minimum values, standard deviation, skewness, kurtosis, and Jarqua-Bera statistics, are shown for each variable.

The Jarqua-Bera estimates and the probability value were used to examine the above descriptive statistics. It was found that GDP, L.C., MC, and NEP NDX are all normally distributed because of the high probability value of 0.05. The remaining variables do not follow a normal distribution since their probability values are much lower than 0.05. The Jarque Bera test statistic compares the skewness and kurtosis of a series to the skewness and kurtosis of a normal distribution to determine whether or not the series deviates significantly from the normal distribution (Crunch Econometrix, 2018).There are positive values for skewness in the table above, which means the distribution is skewed to the right (long right tail). If the kurtosis value is greater than 3 (K>3), then the distribution is leptokurtic; hence, GFCF, M2, and recurrent exp. are all leptokurtic.

Table 1

Descriptive Statistics

	GDP	GFCF	LC	M2	MC	NEP_NDX	RECURENT_EXP
Mean	1212161.0	321092.0	152.9630	1008040.2	50664.50	610.2904	200172.2
Median	727827.00	153337.0	135.0000	395518.23	18360.10	386.8300	77122.40
Maximum	3767043..	1164939	233.0000	4230970.0	189013.0	1718.150	786533.9
Minimum	199272.00	42032.00	66.00000	69777.100	1229.500	163.3500	10511.00
Std. Dev.	1060715.2	344997.2	55.80218	1182057.9	65087.80	476.4335	232235.0
Skewness	1.046209	1.33280 4	0.17033 1	1.3869199	1.14914	0.956081	1.381698
Kurtosis	2.935395	3.46483 1	1.49530 6	3.8176926	2.79230	2.616965	3.733688
Jarque-Bera	4.930188	8.23671 9	2.67767 5	9.4081487	5.99097	4.278464	9.196489
Probability	0.085001	0.01627 1	0.26215 0	0.0090582	0.05001	0.117745	0.010069
Sum	3272833 8	8669484 .	4130.00 0	2721708 0	1367942 .	16477.84	5404651.
Sum Sq. Dev.	2.93E+13	3.09E+12	80960.96	3.63E+13	1.10E+11	5901712.	1.40E+12
Observations	27	27	27	27	27	27	27

Table 2

Correlation Matrix

Correlation	LN_GDP	LN_GFCF	LN_LC	LN_MC	LN_NEP_DX	LN_RECURE_EXP	IN_M2
LN_GDP	1						
LN_GFCF	0.97	1					
LN_LC	-0.83	-0.89	1				
LN_MC	0.94	0.92	-0.77	1			
LN_NEP_DX	0.87	0.89	-0.81	0.95	1		
LN_RECURE_EXP	0.99	0.96	-0.83	0.93	0.85	1	
IN_M_2	0.99	0.97	-0.85	0.95	0.89	0.99	1

(Source: Result obtained from the E- Views 10)

During the period under consideration, the variables of Gross Fixed Capital Formation (GFCF), Market Capitalization (MC), Recurrent Expenditure, and Money Supply all exhibit a significant and positive association that is more than 90 percent of the time (M2). There is an 83 percent association between the Gross Domestic Product and listed corporations (L.C.).The Nepse index, on the other hand, shows an 87 percent connection with GDP, and none of the factors examined in this study were adversely associated with GDP.

The figure shows that all the data (GDP, GFCF, MC, M2, Nepse index, recurrent expenditure) are stationary at the first level. When we look at this graph, we can see that all variables fluctuate around their average mean, which means that they are all stable after the first difference.

Looking at the ADF tables 5.3 and 5.4, it can be shown in this part that the Nepse Index is stationary at a level compared to the other indices, which are not stationary at the data level. When we differentiate the data in the first differentiation, we find that all variables are static at the beginning. We get to the conclusion that the variables are of mixed type, with one of type I(0) and the rest variables of type I (1). The unit root test establishes that none of the data originates from I (2). Because the Johansen Co-integration test cannot be performed on data with mixed order of integration, the research proceeded to the cointegration bound test, which was then applied to the Auto-Regressive Distributed Lag (ARDL) model for further processing.

Table 3

Results obtained fromADF Unit Root Test

Variable	Level from I(0) with constant and level				Level from I(1)) with constant and level			
	t-statistics	P-value	Lags AIC	Order of integration	t-statistics	P-value	Lags AIC	Order of integration
ln_RGDp	-3.5535	0.05	1	yes	-4.5545	0.0001	0	I(1)
ln_GFCF	-1.9826	0.58	0	No	-3.6403	0.01	0	I(1)
ln_MC	-3.5166	0.06	2	No	-4.3714	0.002	3	I(1)
ln_M2	-0.891	0.93	6	No	-4.5055	0.01	6	I(1)
ln_LC	-1.4806	0.81	0	No	-4.6861	0.01	0	I(1)
ln_Nep_NDx	-3.8639	0.003	3	yes	-4.2066	0.004	4	I(1)
ln_Recurent_Exp	-3.3957	0.07	3	No	-4.4224	0.002	6	I(1)

(Source: Result obtained from the E- Views 10)

To choose more models, the researchers used the AIC approach. Table 5.6 shows the results of the bound test. It took 23.06756 to figure out the value of F-statistics, and the upper bounds are 3028,3.61, and 3.99. 23.06756 is higher than I (1) at each level of significance. Since the variables are linked over the long term, the null hypothesis cannot be accepted. The study's next stage is to estimate the long- and short-term effects on the economy.

Table 4

Philips-Pearsons Unit Root Result

Variable	At level I(0) with constant and level			At first, divergence(1)) with constant and level		
	t-statistics	P-value	Order of integration	t-statistics	P-value	Order of integration
ln_RGDp	-2.8944	0.99	I(0)	-4.7621	0.0009	I(1)
ln_GFCF	-1.892	0.66	I(0)	-3.5595	0.0014	I(1)
ln_MC	-2.5725	0.29	I(0)	-3.542	0.015	I(1)
ln_M2	-1.6697	0.73	I(0)	-4.2929	0.002	I(1)
ln_LC	0.6162	0.75	I(0)	-4.6906	0.001	I(1)
ln_Nep_NDx	-2.7976	0.21	I(0)	-3.5884	0.013	I(1)
ln_Recurent_Exp	-3.381	0.07	I(0)	5.372	0.0002	I(1)

(Source: Result obtained from the E- Views 10)

Table 5:

Bounds/Wald (F-Test) Test

F-Bounds Test		Null Hypothesis: No levels of relationship		
Test Statistic	Value	Significant.	I(0)	I(1)
			Asymptotic: n=1000	
F-statistic	23.06756	10%	1.99	2.94
k	6	5%	2.27	3.28

	2.5%	2.55	3.61
	1%	2.88	3.99

In the table 6, It is seen that LN GFCF, Ln_M2, and Ln_Recurent _Exp are significant at a one percent level of significance. The remaining variables, such as L.N._ L.C., L.N._ MC, and Ln Nep_ Index, are insignificant in the long run. This result shows the vital role of GFCF and Recurrent expenditure in increasing the GDP of Nepal in the long run. If GFCF increases by one percent, it increases the GDP by 0.19 percent in the long run. Similarly, the recurrent expenditure is grown by one unit the GDP of Nepal is up by 1.044 units. The long-term link between Nepal's money supply and GDP growth is negatively correlated, as seen by the negative sign of M_2. It means that if the money supply increases by one unit, GDP growth decreases by o.68 in the long run in the Nepalese economy. The significant capital market variable such as the Nepse index, market capitalization, and the listed companies are not effective in the long run. These variables have no long-term impact on GDP, according to this statement. It implies that the economy in Nepal is not integrated with the capital market now.

Table 6

ARDL Long run Form and Bound Test Estimation

Levels Equation

Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Probability.
LN_GFCF	0.192111	0.062664	3.065715	0.0182

LN_LC	0.036876	0.136183	0.270783	0.7944
LN_MC	-0.023428	0.077639	-0.301760	0.7716
LN_NEP_DX	0.111597	0.111860	0.997651	0.3517
IN_M2	-0.685503	0.183146	-3.742931	0.0072
LN_RECURE_EXP	1.044266	0.217877	4.792909	0.0020
C	3.464073	0.668587	5.181185	0.0013

EC = LN_GDP – (0.1921*LN_GFCF + 0.0369*LN_LC -0.0234*LN_MC +

0.1116*LN_NEP_DX -0.6855*IN_M2 + 1.0443*LN_RECURE_EXP +

3.4641)

Table 7 shows that cointegration is considerable, with a negative sign at 1%. This negative sign and the statistical significance of the error correction coefficient (cont Eq-1) suggest a long-term association. The ECM (-1) coefficient of 0.570114 implies that the underlying GDP gap will be rectified by 57.01 percent the next year. Models with R_2 = 0.98 explain 98% of variables, leaving 2% unexplained. The model's variables affect the result, as observed. All variables except the NEPSE index are significant at 1%. At 2% significance, MC(-1) is negative. A negative indication indicates a short-term effect on GDP. The recurring expenditure coefficient is negative (-1). Short-term, it hurts GDP. All variable coefficients are positive. These elements are believed to be short-term drivers of Nepal's GDP growth. GFCF is 0.18. It shows that boosting GFCF by 1% would boost Nepal's GDP by 18%.

Similarly, recurring spending is o.37. It finds that recurring expenses affect Nepal's GDP growth by 37%. Thus, we can examine the impact of factors on Nepal's GDP. The table shows a statistically significant positive correlation between real GDP growth and stock market indices, and stock market growth affects short- and long-term growth. The research found that the variables had a long-term connection using a cointegration bound test. This graph shows that the stock market development indicator correlates strongly with Nepal's economic growth.

Table 7

Short Run Result

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Probability.
D(LN_GFCF)	0.185664	0.022569	8.226571	0.0001
D(LN_GFCF(-1))	-0.077846	0.019141	-4.066940	0.0048
D(LN_LC)	0.188241	0.019718	9.546661	0.0000
D(LN_LC(-1))	0.158780	0.019491	8.146474	0.0001
D(LN_MC)	0.058532	0.014422	4.058620	0.0048
D(LN_MC(-1))	-0.045141	0.016257	-2.776745	0.0274
D(LN_NEP_DX)	-0.013886	0.014238	-0.975244	0.3619
D(LN_NEP_DX(-1))	0.079603	0.014351	5.546991	0.0009
D(LN_RECURE_EXP)	0.372909	0.015777	23.63678	0.0000
D(LN_RECURE_EXP(-1))	-0.108877	0.015468	-7.039028	0.0002
CointEq(-1)*	-0.570114	0.029676	-19.21148	0.0000
R-squared	0.988004	Mean dependent var		0.020339
Adjusted R-squared	0.979435	S.D. dependent var		0.016795
S.E. of regression	0.002408	Akaike info criterion		-8.919531
Sum squared resid	8.12E-05	Schwarz criterion		-8.383226
Log likelihood	122.4941	Hannan-Quinn criter.		-8.770783
Durbin-Watson stat	2.711368			

* p-value incompatible with t-Bounds distribution.

Table 8

Breusch-Godfrey Serial Correlation LM Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	0.570833	Probability. F(2,5)	0.5980
Obs*R-squared	4.647213	Probability. Chi-Square(2)	0.0979

Because the F statistic is 0.570833 and the corresponding P-value is 0.59, the observed R-squared value is 0.09, which is more than 0.05. It indicates that the study rejects the null hypothesis of serial correlation and concludes that there is no autocorrelation, as shown quite clearly in table 5.10.Multi-co-linearity is not discussed since there is no serial correlation.

Table 9:

Ramsey Reset Test

	Value	df	Probability
t-statistic	1.978849	6	0.0952
F-statistic	3.915843	(1, 6)	0.0952

The above table reveals that the corresponding P-value of the Ramsey Reset is 0.09, which is more than 0.05, or 5 percent, indicating that the Ramsey Reset is effective. It shows a general presence well explained by this model, as seen by the data.

Table 10

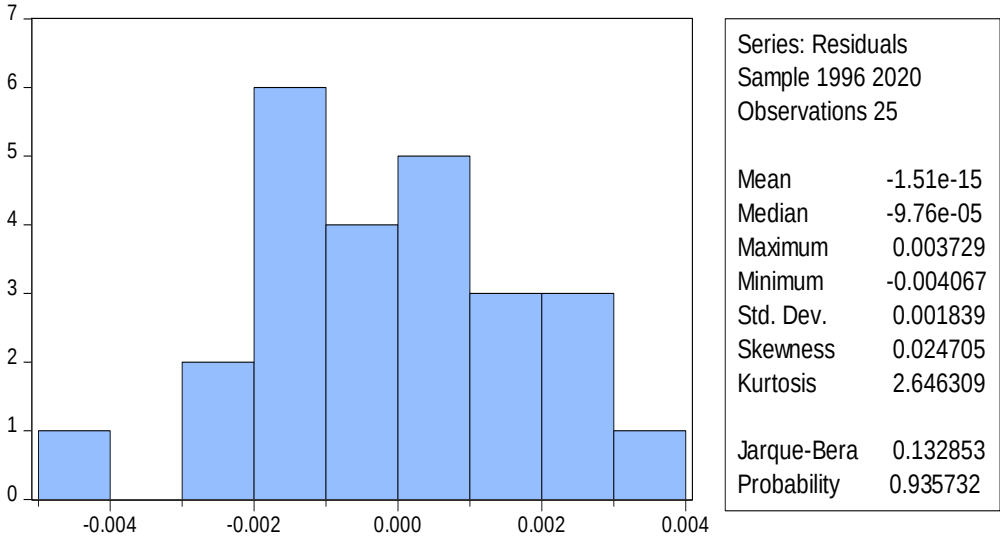
Heteroscedasticity Test, Breusn –Pagan -Godfrey

F-statistic	1.024506	Probability. F(17,7)	0.5208
Obs*R-squared	17.83275	Probability. Chi-Square(17)	0.3995
Scaled explained SS	1.150842	Probability. Chi-Square(17)	1.0000

The corresponding P-value for the Breush Pagan-Godfrey test is 0.52, which is more than 5 percent, indicating that the data disturbance factor in the model is homoscedastic.

Figure 4:

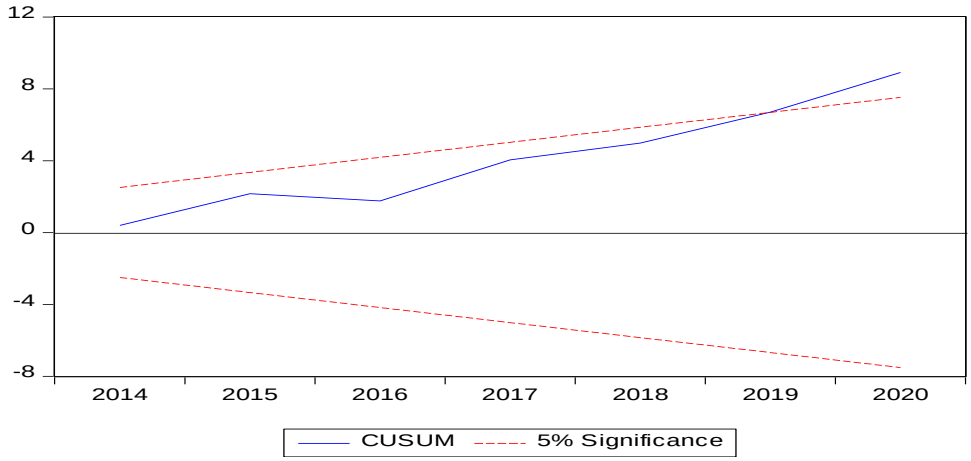
Normality Test



The results of the Jarque-Bera test statistics are depicted in the figure above, where J-B is 0.13, the P-value is 0.9357, or 93 percent, and J-B is 0.13. Thus, residuals are regularly distributed if the P-value is statistically significant and the error term's null hypothesis is normally distributed.

Figure 5

Cumulative Sum of Recursive Residuals (CUSUM)

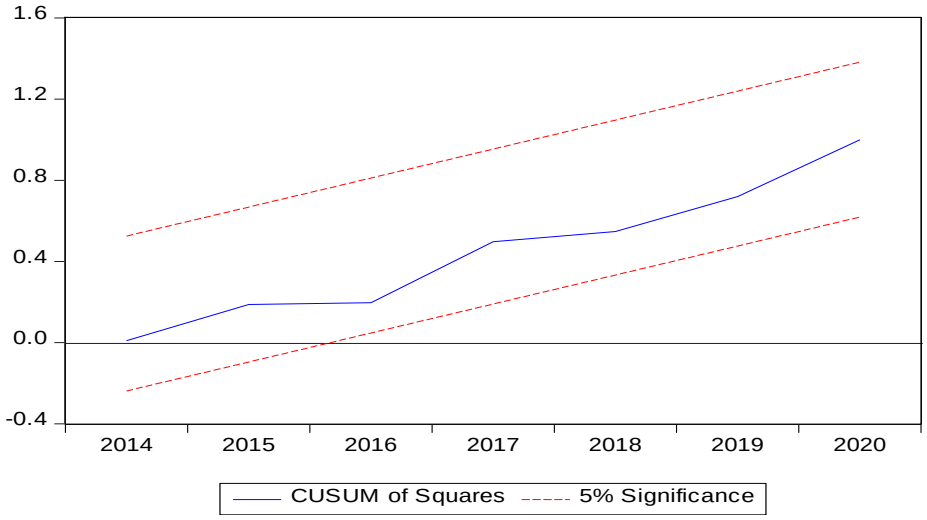


The graph depicts the trend line of GDP growth, which has not been corrected to the statistically significant threshold of 5 percent. Because of this, it is determined that the regression equation parameters do not affect the country's GDP growth trend. There is no such thing as a single CUSMS test or CUSUMQ test.

An example is shown in Figure 5, which shows the cumulative sum of the square of residuals (CUSUMQ).

Figure 6

The cumulative sum of the square of residuals (CUSUMQ).



The study indicated that CUSUMQ was responsible for the model's stability. In this scenario, if the CUSUMQ plot falls inside the 5 percent critical constraint, we cannot rule out the null hypothesis of parameter stability. Figure 6 shows the lines between the 5 percent and 10 percent significance thresholds. The model has stayed solid and steady from 1994 to 2020 due to good long-run and short-run coefficients. When the models pass this diagnostic test, they have the necessary econometric parameters.

Table 11

Granger Causality Test

Lags: 1

Null Hypothesis:	Obs	F-Statistic	Probability.
LN_GFCF does not Granger Cause LN_GDP	26	0.16185	0.6912
LN_GDP does not Granger Cause LN_GFCF		1.31662	0.2630
LN_LC does not Granger Cause LN_GDP	26	2.13352	0.1576

LN_GDP does not Granger Cause LN_LC		4.43412	0.0463
LN_NEP_DX does not Granger Cause LN_GDP	26	7.92019	0.0098
LN_GDP does not Granger Cause LN_NEP_DX		3.26340	0.0839
LN_MC does not Granger Cause LN_GDP	26	8.85971	0.0068
LN_GDP does not Granger Cause LN_MC		1.46153	0.2390
LN_RECURE_EXP does not Granger Cause LN_GDP	26	2.59730	0.1207
LN_GDP does not Granger Cause LN_RECURE_EXP		3.60097	0.0704
IN_M2 does not Granger Cause LN_GDP	26	7.29305	0.0128
LN_GDP does not Granger Cause IN_M2		0.01913	0.8912
LN_LC does not Granger Cause LN_GFCF	26	0.14211	0.7097
LN_GFCF does not Granger Cause LN_LC		6.66374	0.0167
LN_NEP_DX does not Granger Cause LN_GFCF	26	11.2956	0.0027
LN_GFCF does not Granger Cause LN_NEP_DX		2.44174	0.1318
LN_MC does not Granger Cause LN_GFCF	26	13.9765	0.0011
LN_GFCF does not Granger Cause LN_MC		0.10103	0.7535
LN_RECURE_EXP does not Granger Cause LN_GFCF	26	1.32981	0.2607
LN_GFCF does not Granger Cause LN_RECURE_EXP		3.01980	0.0956
IN_M2 does not Granger Cause LN_GFCF	26	5.26668	0.0312

LN_GFCF does not Granger Cause IN_M2		0.09730	0.7579
LN_NEP_DX does not Granger Cause LN_LC	26	7.57195	0.0114
LN_LC does not Granger Cause LN_NEP_DX		0.06897	0.7952
LN_MC does not Granger Cause LN_LC	26	4.33616	0.0486
LN_LC does not Granger Cause LN_MC		0.25922	0.6155
LN_RECURE_EXP does not Granger Cause LN_LC	26	4.45840	0.0458
LN_LC does not Granger Cause LN_RECURE_EXP		2.98067	0.0977
IN_M2 does not Granger Cause LN_LC	26	7.21097	0.0132
LN_LC does not Granger Cause IN_M2		0.01614	0.9000
LN_MC does not Granger Cause LN_NEP_DX	26	1.13428	0.2979
LN_NEP_DX does not Granger Cause LN_MC		0.34223	0.5642
LN_RECURE_EXP does not Granger Cause LN_NEP_DX	26	2.20083	0.1515
LN_NEP_DX does not Granger Cause LN_RECURE_EXP		20.2944	0.0002
IN_M2 does not Granger Cause LN_NEP_DX	26	4.55389	0.0437
LN_NEP_DX does not Granger Cause IN_M2		1.51582	0.2307
LN_RECURE_EXP does not Granger Cause LN_MC	26	0.50434	0.4847
LN_MC does not Granger Cause LN_RECURE_EXP		27.8126	2.E-05
IN_M2 does not Granger Cause LN_MC	26	1.86064	0.1858

LN_MC does not Granger Cause IN_M2		1.47797	0.2364
IN_M2 does not Granger Cause LN_RECURE_EXP	26	16.3630	0.0005
LN_RECURE_EXP does not Granger Cause IN_M2		0.09380	0.7622

(Source: Author's calculation by E-Views 10)

According to Table 11, the P-value (0.6912) is insignificant at the 5 Percent level. As a result, we cannot reject the null hypothesis (H_o). We accept H_0, which suggests no causal link between GFCF and GDP.Hence, GFCF does not affect GDP growth. Similarly, the P-value (0.2630) also shows that the H_o is accepted. The meaning is that GDP growth also does not affect the GFCF. Here, both variables seem to be not interlinked with each other. Instead, they are independent of each other. It is an example of a variable-to-variable non-directional causal interaction. A similar conclusion may be found between GDP and recurrent spending in table 11 above. Similarly, the Nepse Index and market capitalization get the same outcome. Furthermore, the MC and M2 variables exhibit a non-directional association due to their high P-values (more significant than 0.05).

Table 11 demonstrates that there is no direct association between GDP and GFCF. GDP and recurrent spending both have the same outcome. The other factors, such as the Nepse Index, MC, and M_2, impact GDP growth. Similarly, GDP growth influences the number of listed firms, while the number of listed companies does not affect GDP. GDP and the number of publicly traded firms have a one-way connection. The unidirectional link between the remaining variables, which have yet to be interpreted, can be noticed.

There is no way to create a two-way link (bi-directional) between variables in table 11. For the bi-directional casual relationship, both variables' P- values should be less than 0.05. We have no such result between any variables

Conclusion

This paper uses ARDL estimation to show the relationship between stock returns and GDP growth. Additionally, it is possible to forecast future GDP growth using the stock market's performance this year. Despite the problematic long-term correlation, this demonstrates how closely the Nepalese economy follows stock market performance. This research investigates Nepal's capital markets and the GDP growth of the Nepalese economy. Results show a positive and statistically significant association between GDP growth and Nepal's early capital market. The non-significance of the capital market coefficient in OLS estimates suggests that the Nepalese stock market is not yet sufficiently integrated with the economy to predict future output growth based on market performance. The coefficient estimate is statistically significant even if it violates short-term equilibrium. The findings highlight infrastructural concerns in the Nepalese stock market. A lack of quality data is a challenge in real estate. Statistical information makes it possible to calculate the correlation

between the quarterly GDP and market outcomes. The cointegration model shows that the significant stock market variables are insignificant in the long run. This finding suggests that encouraging real estate enterprises to raise money on stock markets is not a good idea. Institutions, legal and regulatory areas, and technology must be adjusted and upgraded to develop an efficient stock market by extending the engagement of real-sector public limited businesses capable of anticipating economic output performance.

References

Adhiari, N. (2013). Capital Market Development in Nepal. *Reshaping Organizations to Develop Responsible Global leadership-Confrance proceding,* (pp. 321-334). 1(1).

Akinlo, E. A., and Egbetunde, T. (2010). Financial Development and Economic Growth: The Experience of 10 Sub-Saharan African Countries Revisited. Journal of Review of Finance and Banking, 2(1), 17-28.

Arac, A., and Ozcan, S. K. (2014). The Causality between Financial Development and Economic Growth: The Case of Turkey. Journal of Economic Cooperation and Development, 35(3), 171-198

Bhoyu, P. (2011). Macroeconomic relationship in Indonesia stock market.Georgia State University.

Bista, S. B. (2021). Cointegration Between Macroeconomic Variables And Stock Market Returns In Nepal. *Journal Of Business And Social Sciences Research*, 6(1). DOI URL: https://doi.org/10.3126/jbssr.v6i1.38120

Brewer, Anthony (2010). The Making of the Classical Theory of Economic Growth, New York: Routledge.

Chalise, D. (November,2020). Capital Market. *Saptagandaki Journal Vol. XI /issue 11* , 50- 60.

Craigwell, R., Downes, D., and Howard, M. (2001). The Finance-Growth Nexus: A Multivariate VAR Analysis of a Small Open Economy. Savings and Development, 25(2), 209-223.

Crunch Econometrix.(2018),https://www.youtube.com/watch?v=S7ZO0cgv2IU&t=96s.

Devekota, T. P. (2019). *Role of Stock Market Development on Economic Growth: A Case of Nepal* (Unpublished Thesis). Central Department ofEconomics.Kirtipur,Kathmandu,Nepal.

Fuentes, N. R., & Pereira, I. (2010).The disconnect between indicators of sustainability and human development. Human Development research paper,34.

Gottfries Nils (2013). Macroeconomics. Basingstoke: Palgrave Macmillan.

Gurajati, D. N., Porter, D. C., & Gunasekar, S. (2015). *Basic Econometrics* (9 th reprent ed.). New Delhi, India: Mc Graw Hill Education Private Limited.

Hoque, M.E. & Yakob, N.A. (2017).Revisiting stock market development and economic growth nexus: The moderating role of foreign capital inflows and exchange rates.COGENT Economics and Finance. Retrieved from https://cogentoa.com /article/ 10.1080/ 23322039.2017.1329975.pdf.

Kenny, C. J., &Moss, T. J. (1998). Stock markets in Africa: Emerging lions or white elephant, world Development, 829-843.

Khan, S, Channa, M.A. & Ali, I. (2017). Stock market development and economic growth in Pakistan: The causal Linkage. the case Studies journal. 6 (1) Karachi, Pakistan.retrieved from www.casestudiesjournal.

Levine, R. (1996). Financial Development and Economic Growth : View and agenda. *Journal of Economic Literature* , 668-726.

Levine, R., & Zervos, S. (1998). *Stock markets, banks and ecoomic growth*. The American Economic Review , 88(3).

Lucas, R. (1972). Expectation and the neutrality of money. Journal of economic theory, No.4 , 103-124

Mankiw Gregory (2016). Macroeconomics, ninth edition. New York, NY: Macmillan Education.

Mansson, E., & Nykvist, M. (2021).*The Stock Market as a Leading Macroeconomic Indicator*.Linnaeus University,

Modigliani, F., & Miller, M. (1958).The cost of capital, corporation finance, and the theory of investment. American Economic Review,Vol.48, 261-297.

Nazir, M. S., Nawaz, M. M., & Gilani, U. J. (2010).Relationship between economic growth and stock market development. African Journal of Business Management 4(16) 3473.

Osamwony, I. O., & Abudu, K. (2013). Stock market and economic growth in ghana Kenya and Nigeria. International Journal of Financial Research (2),83.

Osuji, O. (2015). Financial Development and Economic Growth in Nigeria. Journal of Economics and Sustainable Development, 6(20), 26-40.

Pokhrael, J. (Fall 2020). Capital Market Linkage to Economic Growth in Nepal, . *Westcliff International Journal of Appliied Research Vol 4,No 1* , 44-56.

Regmi, G. P. (2018). *A STUDY ON RELATIONSHIP BETWEEN STOCK*. Submitted in partial fulfillment of the requirements for the degree ofUnpublished disertation.

Ritter, L., & Silber, W. (2012). *Principle of money , banking and financial marke (8th ed.)*. United State of America: pearson Addison weslaey.

Sagi, K., Maskus, K., & Hoekman, B. (2004). *Transfre of Technology to Developing Countries*. World Bank: unilateral and Multilaleral Policy options,.

Sagi, K., Maskus, K., & Hoekman, B. (2004). *Transfre of Technology to Developing Countries*. World Bank: unilateral and Multilaleral Policy options,.

Shearear, R. (1961). The Concept of Economic Growth. *Kyklos* , 497-532

Shrestha, P. K., & Pokhrael, S. R. (2019).SEBON Journal. *Factors Affecting Stock Index In Nepal*, 8, 33–48.

Siong, & Thing, A. (2008).The stock market, financial liberalization, and economic development. Economic Journal,107, 771-782.

Todaro, M., & Smith, C. (2006). *Economic Development (12th edition)*. England Pearson Education Limited: Retrived http://www.gpv.de/d,s/zbw/782106943.pdf.

Unalmis, D. (2002). The Causality between Financial Development and Economic Growth: The Case of Turkey (Working Paper No. 3). Research Department, Central Bank of the Turkish Republic.