Stock Market Development and Sustainable Economic Growth in Nepal: A Decade Experiences

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Abstract

Stock market is the mirror of economic growth of any country. It directly links with the economic growth and measures the sustainable economic growth. It has various causes like the political instability, low development national budget, high inflation, unstable economic policies and economic crisis, role of the Rastra Bank, World Bank decectatives, correction, institutional disparities and many others including political and economic scenario in which Nepal is facing from the early decades. This study mainly looks at how Nepal's growth of stock market links to its long-term economic development and Nepal's financial sector and stock market. This study uses data from (2014 to 2024) to see in what way Nepal's capital market has formed the country's economic growth. These changes show up in the way people invest, the rules shape on the market and the bigger economic areas. This research delves into how stock market indicators show market capitalization, trading volume and price upsets line up with big-picture economic factors like GDP growth, inflation and gross capital formation. The study uses time-series econometric tools including Granger Causation tests to look at both short-term market ups and downs and longer-term links between the stock market and economic growth. There's a modest but positive relationship between Nepal's stock market and its economic development. Equally sides seem to influence each other over time but there are real obstacles. Through those changes, the stock market could play a much bigger role in helping the country to develop sustainable economic growth. This research adds information on frontier market and gives clear steps to governments, development agencies and investors.

Keywords: *Economic growth, market performance, sustainability*

Introduction

At recent, developing nations have increasingly known the importance of financial markets, clearly stock markets, for development sustainable economic growth. The Stock markets help difference risk, improve business power, allocate capital efficiently, and activate savings. The development of Nepal's stock market offers an actual chance to promote on sensible and sustainable economic development. In this study examines the connection between Nepal's stock market develop between 2014 and 2024 and sustainable economic growth. Actual adjustments, law modifications, an increase in domestic investment, updated economic laws, and technical advancements have all had a negative impact on Nepal's economy.

The Nepal Stock Exchange and its regulatory bodies gradually broadened their purview and regulations during the 1990s. Market capitalization, turnover, the number of listed businesses and the NEPSE index are examples of stock market growth indicators that have all shown an upward tendency. Governments and companies have used the stock market to raise long-term capital. This capital has funded the expansion and modernization of businesses and industries as well as new initiatives (Thapa, 2019). By expanding the range of financial products that savers can use to diversify their portfolios and stock markets help to mobilize domestic savings. By doing this, they offer a significant and reasonably priced source of investment cash.

As a crucial first step toward financial deregulation, efficient stock markets offer guidance for maintaining adequate monetary policy via the issuing and buyback of government securities on the market that is liquid. In a similar strain, vibrant and well-run stock markets have the potential to alter the money demand pattern and contribute to the creation of liquidity which in turn boosts economic expansion. In a robust and liquid stock market, investors can diversify away from unsystematic risk, increasing the capital's marginal productivity. Risk diversification is another significant way that changes in the stock market may impact economic expansion. Obstfeld contends that better economic growth allocation results from global risk sharing via globally integrated stock markets. Significant developments have occurred over the past 10 years including global financial volatility, regulatory reforms, macro-economic shocks like COVID-19 and digitalization. These might change the way that stock markets support long-term, steady growth.

A lot of earlier empirical research focused on GDP growth or per capita income but less stability, equity or crisis resilience, computation out if economic growth drives stock market development or if growth serves as the foundation for stock market expansion or

both, particularly in recent years in which particular metrics such as market capitalization, liquidity, the number of listed companies, trading turnover, digitalization, etc. have had the biggest impact recently. It is necessary to evaluate the policy consequences under present and future circumstances in light of the global push for sustainable development, climate-related financing, environmental, social and governance concerns and changing financial sector regulation.

Review of Literature

According to Akingbohungbe (1996), the capital market is the place where medium- and long-term financing can be raised. A range of financial instruments are available on the capital market, allowing economic agents to exchange, price, and pool risk. It promotes financial saving through assets with alluring yields, liquidity, and risk characteristics. For the government and other organizations that require long-term funding, this is crucial (Nwankwo, 1999).

According to the findings, Nepal's economic advancement has been substantially facilitated by the creation of the stock market. So, in order to sustain the economy's robust growth, more sophisticated policy measures should be implemented to enhance and strengthen the stock market's function. One of the main behavioral phenomena of the stock market is the turnover of securities. The marketplace turnover takes into account the number of trading share units, share turnover values, and percentage share value of stocks because it is always dependent on the supply and demand for the securities. Nwankwo (1999) examined the various facets of stock market value coverage and turnover. The market turnover is a measure of the small businesses that account for a significant portion of the overall trading value of shares. The analysis came to the conclusion that the Nepalese stock market cannot achieve risk diversification since the portfolio of many enterprises is not idle.

Previous authors have attempted in a number of ways to connect the expansion of the capital market and the economy. According to Levine (1991), a developed stock market increases the economy's output capacity and lessens the productivity and liquidity shocks that businesspeople experience when investing money. This, in turn, leads to higher economic growth. King and Levine (1993) backed up the idea that financial development promotes economic expansion. Furthermore, Bensivenga et al. (1996) came to the conclusion that a robust stock market and financial market contribute to sustained economic expansion. Zervos and Levine (1996) investigate whether the

evolution regarding the stock market and long-term economic expansion are empirically strongly connected.

According to Tekin & Yener (2019), there is unidirectional or occasionally bidirectional causality between the stock market and growth. According to several studies, market efficiency and liquidity rather than merely size are critical factors. However, there are inconsistencies: SMD may not yet make a substantial contribution in certain low-income or extremely young markets or the effect may be modest or delayed. Additionally, if markets are illiquid or liquidity is thin, metrics such as turnover may not have a strong impact. Although size is important, the benefits of liquidity are typically weaker and occasionally less effective. According to studies, turnover has a "weak contribution," indicating that liquidity is insufficient or ineffective, Ranjit (2021).

According to above studies that split the sample, the stock market's impact on growth is less pronounced or negligible in the early stages but grows as the market evolves. In "Stock Market's Contribution on Economic Growth in Nepal: A Brief Note," Shah (2017) compared the periods from mid-2001 to mid-2007 and mid-2008 to mid-2015 and finds that the latter had a positive impact while the former had little. Numerous studies indicate that investor awareness, macroeconomic stability, transparency, and regulatory reforms are key policy levers. Dhungana (2023) suggests improving disclosure, openness, and other elements. Furthermore, private capital flows and the expansion of the banking industry are factors that impact SMD, according to Pyakurel (2024). Market size and index are favorable indicators, although turnover frequently doesn't have a significant positive effect. This implies that depth, frequency, transaction costs, and market microstructure are important factors that affect trading volume.

Certain studies incorporate concentration and demonstrate adverse effects (Pajiyar, 2024). However, many people overlook factors like market concentration, risk, and volatility that could mitigate the effects. Not much research has been conducted in Nepal on the potential for non-linear effects of SMD on growth (for example, only beyond specific liquidity, legal, or regulatory thresholds). Fewer studies investigate whether stock market expansion in certain sectors (industry, finance, and infrastructure) has a greater impact than the majority, which use aggregate SMD indicators.

Recent years are covered in studies like Dhungana (2023), Pyakurel (2024), Bist (2024), and Pajiyar (2024), which occasionally go into post-COVID or at the very least address the effects of recent macro issues. This makes it possible to comprehend more volatile times better. In addition to standard measurements, some current work includes

digitalization (Bijukchhe, 2024), concentration ratio (Pajiyar, 2024), and "number of listed securities." Cointegration, Granger causality, or ARDL models are used in studies with lengthy data spans, such as Dhungana (2023) and Bhattarai et al. (2024). Fewer studies completely encompass the COVID-19 timeframe (2020-2022) and beyond, however, some work includes post-2018. This is a gap because stock markets around the world experienced significant disruptions, growth shocks, etc.

Numerous studies continue to use traditional indicators, such as market capitalization, turnover, and listing count. Digitalization, concentration ratio and volatility are some among the more recent ones. However, metrics such as bid-ask spreads, stock market depth, investor activity and foreign versus local ownership can be included. Even though regulatory changes are regularly mentioned in recommendations, empirical studies, particularly those that span time are less likely to include variables that capture investor protection, regulatory enforcement, transparency indices, etc. GDP or GDP per capita, rarely indicates whether economic growth is sustainable (i.e., inclusive, resilient and low environmental cost). There hasn't been much discussion of how stock markets support sustainable growth in Nepalese literature up to this point.

Though more thorough identification of regime alterations (pre-vs.post-political/economic reforms; pre- vs. post-COVID; crises) could provide more information, some research takes structural breaks into consideration (Bhattarai et al., 2024) highlight possible structural breaks. As a result, it is anticipated that this study will support government and policymakers' initiatives to revive the Nepal stock market and win back the trust of investors and other market participants. Furthermore, it is thought that a thriving and advanced stock market will draw in foreign capital and facilitate the achievement of greater economic expansion.

Methodology

The quantitative research design was used in this study. Secondary data and previously published works about Nepal's stock market and economic expansion have been incorporated. These secondary data sources span a ten-year period from (2014 to 2024) and include the Securities Board of Nepal (SEBON) database, the Nepal Rastra Bank (NRB) Statistical Bulletin and the official website of the Nepal Stock Exchange (NEPSE). These platforms offer data on GDP, market capitalization and other macroeconomic factors, which can be linked to stock market concert with ongoing economic growth.

I measured GDP at constant prices to get a strong image of financial growth while market capitalization (MCAP) gave us a reason of responsibility. Primarily, I checked if the variables were stationary and running unit root tests like the Improved Dickey-Fuller (ADF) test. Similar Granger and Newbold (1974) and Engle and Granger (1987) noted out the need of co-integration for non-stationary time series regression can lead down the wrong path. By this method, we can see how a rising stock market boosts economic productivity, boosts investment efficiency and supports financial intermediation. Collected, these factors all play a role in powerful Nepal's sustainable economic development.

Model Specification

The improvement proposed by Demirgue-Kunt and Levine (1996), Ewah et al. and Levine and Zervos (1996). (2009) who have examined the relationship between the stock market and economic growth, served as the foundation for the technique used in this work. According to their research, market capitalization, new issues, transaction value, and total listing are some of the capital market indices that have a major impact on economic growth (as measured by GDP). One would need to create an over-parameterized error correction model (ECM1) and a parsimonious error correction model (ECM2) in order to analyze the long-term relationship using the Johansen co-integration test. Leading and lagging of the variables in the regression equation are part of ECM1. Dynamism is added to the model by ECM2.

Expectations for the model's coefficients are as follows: a1,a2 > 0. Our econometric model is based on the following functional form:

$$Y = f(x1, x2) \ldots\ldots\ldots\ldots(1)$$

Where Y is either GDP = dependents or economic growth. F is the functional idea, and x1–x4 are independent variables. In particular, this can be expressed as;

$$GDP = f(MCAP) \ldots\ldots\ldots\ldots(2)$$

Where GDP, a stand-in for economic growth is equal to gross domestic output. Market capitalization or MCAP and Total New Issues (TNI), TLE = Total Listed Equities and VLT = Total Value for Transactions. GDP = ß0 + ß1 MCAP + ß2 TNI + €…(3) is the explicit form of the equation (i). where ß0 is the model's intercept of the connection and ß1–ß2 are the coefficients of each independent variable. The model is as follows: € = stochastic/error terms via log-linear emerging

$$Log (GDP) = ß0 + ß1 \log(MCAP) + ß2\log(TNI) + € \ldots\ldots\ldots(4)$$

Where; Log = Natural log from equation (4) model can be specified in a time series forms as;

$$Log\ (GDP)t = ß0 + ß1\ log(MCAP)t + ß2log(TNI)t + € \ldots\ldots\ldots(5)$$

$$\Delta log(GDP) = ß0 + \sum_{i=0}^{n} ß1\ log(MCAP)t - 1 + ß0 + \sum_{i=0}^{n} ß2\ log(TNI)t\text{-}1 + ß0 + \sum_{i=0}^{n} (ECM)t - 1 + ß0 + \sum_{t}^{n} \ldots\ldots\ldots(6)$$

Equation (5) can be used to express the model for error correction (ECM), which is the following: $\sum_{(i=0)}^{n}(ECM)\ t\ \text{-}1$ Error The variables were lagged by one period $\sum t$ White Noise Residual, as indicated by the correction term t-1. By imposing certain limitations on the projected long-run coefficient of variables, the error correction model, or equation (6) can be used to test for the presence of a long-run equilibrium connection. Consequently, the following is the formulation of the test's hypothesis: H0, B1 = B2 = 0 (meaning there is no long-term relationship, or co-integration). H1: B1 # B2 # 0 (meaning there is a long-term relationship, or co-integration).

Results and Discussion

As previously mentioned, the Granger causality test and the Johansen integration technique serve as the foundation for the estimated regression results. This title presents and discusses these findings. Every variable included in the regression model have their time series properties investigated and determined is a component of the procedure. The unit root test, which in this instance is based on the Augmented Dickey-Fuller (ADF) test, is the proper test in this situation. It provides a framework for determining each time series' order of integration and, as a result, its (non)stationarity.

Utilizing Quantities Micro's EViews 1.9.5 exe software, estimate connection (1). Table 1 below displays the findings of the unit root test for stationarity.

Table1. *The outcome of the unit root test*

| Variable	Lag	ADF Stat@Stationary	Remarks
LGDP	2	-4.6833	Stationary
LMCAP	1	-2.9826	Stationary
LTNI	0	-3.8705	Stationary
LVLTS	0	-6.9102	Stationary
LTLE	0	-4.9963	Stationary

Table 1 above displays the findings of the unit root analysis for stationary. The GDP is integrated of order one as the table illustrates whereas the MCAP, TNI, VLT and TLE are level and stationery. This indicates that whereas the other time series variables reached stationary without any differentiation, the GDP had to be differentiated once before it

could achieve stationary. For all variables, the non-stationary hypothesis was thus disproved. The table's second column reports the ideal lag length, which serves as a selection guide for models and was chosen using the Schwarz Criterion (SC). The test for an integrating relationship between stationary series of the same order is based on this. The integration test will then be explained as follows:

Table 2. *Johansen integration test result*

H0	HA	Eigen value	Trace (stat)	Critical Value (0.05)	Prob.
R = 0	r = 1	0.849295	142.5567	66.28	0.0000
R≤1	r = 2	0.710452	81.7298	44.0790	0.0000
R≤2	r = 3	0.64742	49.1009	25.1926	0.0000
R≤3	r = 4	0.590531	31.1886	10.2418	0.0000
R≤4	r = 5	0.3248	9.40773	8.1645	0.0277

The findings of the Johansen integration test show a robust long-term correlation between the variables being examined. Because the trace statistic (142.56) is greater than the crucial value (66.28), with a p-value of 0.0000, the null hypothesis of no integration (R = 0) is rejected at the 5% significance level. Multiple integrating vectors are confirmed by subsequent tests for R ≤ 1, R ≤ 2, and R ≤ 3, which also reject the null and have trace statistics that are consistently greater than their corresponding critical values. This suggests a fifth integrating relationship, as the null is rejected even at R ≤ 4 (trace = 9.41 > critical value = 8.16, p = 0.0277). These findings validate the use of an error correction model to capture short-term deviations while remaining consistent with the long-run dynamics by confirming that the time-series variables share a stable long-term equilibrium connection.
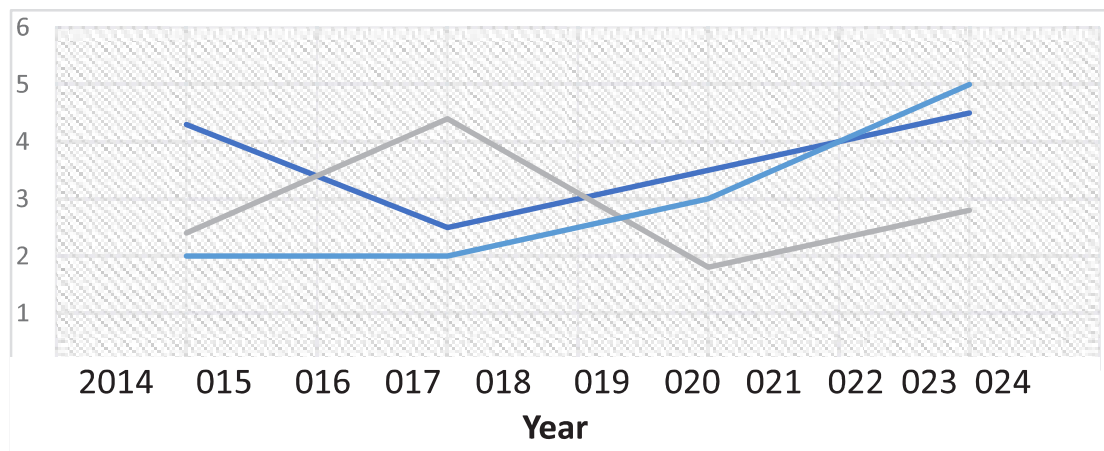

Figure 1. *The Residual Plot*

Table 3. *Garner causality test*

The Null Hypothesis	Obs	F-Statistics	Probability
LGDP is not Granger Caused by LMCAP.	18	3.62074	0.04060
LMCAP is not Granger Caused by LGDP.		1.87486	0.16559
LTNI does not Granger Cause LGDP	18	0.00828	0.89077
LGDP does not Granger Cause LTNI		0.74916	0.34867
LGDP is not Granger Caused by LVLT.	18	2.29890	0.11710
LGDP does not Granger Cause LVLT		4.46805	0.01971
LLEGS does not Granger Cause LGDP	18	0.02847	0.86236
LGDP does not Granger Cause LTLE		0.22420	0.78416

The results of the causality test indicate a bidirectional relationship between GDP and the value of new issues (LVLT) and a unidirectional causal relationship between market capitalization and GDP rather than the other way around. The F statistic is significant at 5% using a two-tailed test; 2.08 is the crucial value for 15 (4 degrees of freedom). Nevertheless, "reverse causation" does not exist between GDP and LMCAP. Additionally, "no causation" or disassociation between LGDP and LTNI and GDP and LTLE. This clearly illustrates the capital market's relatively positive role in the country's economic growth.
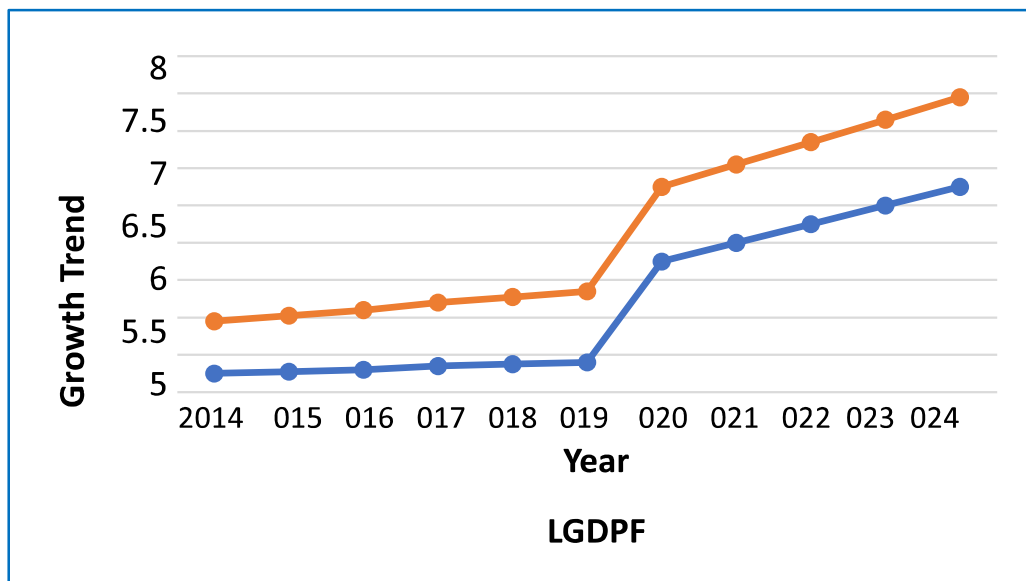
Figure 2. *The Economic Growth Forecast Graph*

From 2014 to 2024, the LGDP forecast graph displays a trend and a consistent growth rate. Although the rise is somewhat reflected in the GDP, it has no discernible and substantial effect on the economy's growth. However, between 2021 and 2022, the growth rate fell precipitously which may have been caused by the sloppy effect of banks

rushing into the capital market as a result of the increase in their capital bases. The graph also indicates an increase after the decline in 2023–2024.

Conclusion and Recommendations

The relationship between capital market development and sustainable economic development is difficult but active according to an analysis of Nepal's stock market development from 2014 to 2024. Stockholder attitudes, monetary strategies, worldwide economic patterns and national political instability all shaped the Nepal Stock Exchange (NEPSE) during this period. Now the market's total direction shows it's slowly maturing and getting more capital market contribution. Now a days weak but on positive link between stock market growth and broader financial expansion, realized in things like GDP growth, capital establishment and a rising financial sector. In this study highlights many important issues: inadequate financial knowledge, political instability, market volatility, limited change among publicly traded companies and weak regulatory enforcement. Contempt these challenges, Nepal's stock market could suggestively increase sustained economic growth with the correct improvements.

Long-term market expansion and investor confidence depend on stable government and consistent economic policy. Coordination of monetary, fiscal and capital market policies is necessary to establish an atmosphere that is conducive to investment. The short-term dynamics of the model are investigated by looking at how each variable responds or corrects itself to the residual or error from the integrating vector a procedure called the error correction mechanism. The error correction (EC) term quantifies the rate at which each variable adjusts to a deviation from the steady-state equilibrium. The VEC specification forces the long-term behavior of the endogenous variables to converge to their integrating link while permitting short-term dynamics.

The dynamic specification of the model suggests removing the unnecessary variables while retaining the error correction term. The development of the stock market is directly impacted by economic growth, yet interest rates harm both. The findings show that whereas other variables are stationary at level, the GDP was stationary at the first difference, according to the stationary test. Second, a long-term relationship between the variables is implied by the co-integration test, which shows that they are co-integrated.

In addition, only the LMCAP and TLE which are positively signed, have a favorable influence on economic growth. The other variables were negatively signed, suggesting a negligible or negative effect. However, according to the findings of the Economic Review (2014) and Arthic Newspaper (2015), the Nepalese capital market has the potential to

spur economic growth but hasn't done so much because of factors like low market capitalization, a small market size, a lack of listed companies, low transaction volume and illiquidity.

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