

# Impact of Foreign Direct Investment in GDP Growth of Nepal

**Durga Prasad Gautam**

PhD Scholar, TU, Nepal

Email: [sanobhaigautam@gmail.com](mailto:sanobhaigautam@gmail.com)

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## Abstract

*The economic growth of a country relies significantly on foreign direct investment (FDI). FDI acts as a growth engine in a country like Nepal, where there is a lack of abundant investment capital. These capital gaps can be filled through foreign direct investment. This paper focuses on a theoretical and imperial investigation of how FDI affects Nepal's GDP growth. It explains the connection between Nepal's GDP growth and FDI. Analysis of the structure, trends, and effects of FDI on Nepal's GDP are the study's main goals. To evaluate the connection between FDI and Nepal's GDP growth, statistical approaches like Ordinary Least Squares (OLS), unit root, co-integration, and Granger causality test were utilized. The analysis is based on data from 1995–1996 to 2020–2022. OLS findings indicate a weekly positive correlation between FDI and Nepal's GDP growth. The results of the unit root test stop at the first difference rather than at the level. The co-integration test findings revealed that at the 55% significance level, no co-integration was rejected. This indicates that the variables are long-run co-integrated. The findings of the Granger causality test indicate that there is no causal connection between the variables.*

**Key Words:** Co-integration test, GDP, FDI, Granger causality test, Unit root test,

## Introduction

For the least developed countries like Nepal, with a large gap between savings and investment, a limited but growing ratio of income to gross domestic product, and a limited flow of foreign aid, FDI is considered a necessary element for financing development. Despite its small market size, Nepal has the potential to grow as a new location for foreign direct investment in South Asia. Nepal has a lot of benefits, including a stable demographic structure, enhanced business metrics, a prime location for investors, and superior regulatory frameworks. Although FDI is seen as foreign investment in the manufacturing and service sectors, which certainly contributes to job opportunities as well as economic growth, it is increasingly being attracted by host countries that respond to financing needs for large infrastructure projects. Nepal has 54 population engaged in economic activity and it tends to increase every year. First, the availability of low-cost labor can attract foreign direct investment (FDI); secondly, remittances increase disposable income, which spurs growth in economic activity and changes in spending patterns, opening up new product markets; third, Nepal ranks 105th globally in the World Bank's Doing Business 2022 report, just behind Bhutan in South Asia. For international investors, Nepal may be a desirable location. It is situated midway between the world's

two fastest rising economies, namely China to the north and India to the south. Nepal has greater potential due to its diverse environment, affordable human resources, natural resources, and land. In a variety of industries, including agriculture, tourism, manufacturing, hydropower, education, transportation, and communication, Nepal offers several investment opportunities. However, many of these have thus far mostly gone untapped. Nepal has been caught in a cycle of poverty, unemployment, low living standards, low human development index, outdated technology, low per capita income, widening wealth disparities, investment and saving gaps, slow economic growth rate, etc. The empirical finding demonstrates that FDI has a very small and inconsequential impact on Nepal's GDP growth rate. A lot of researches have been conducted regarding the composition, structure, and trends of FDI in Nepal. While some researches have been done on the issue and future of FDI in Nepal, this paper tries to look at the connection between GDP and FDI. Nepal's economic development, hence this study aims to clarify the relationship between FDI and Nepal's GDP growth.

In order to attract foreign direct investment (FDI), Nepal must manage and control the business environment. Political stability, a business-friendly regulatory environment, infrastructure, land accessibility, and a low tax rate are some of the factors that influence multinational companies' decisions in other countries. Hence, FDI benefits both the home country and the host country's economies through expansion, diversification, and growth of market share, as well as by influencing the home country's economy to the global economy (Pyakurel, 2074). For international investors, Nepal is now considered as an emerging economy. Numerous investment opportunities exist in a variety of industries, including hydropower, hospitality, medical tourism, and tourism. However, in order to draw foreign investment, the Nepali government has to recognize and address any current weaknesses in the system's general administration. Although there are inherent issues with foreign direct investment (FDI) in Nepal, such as over corruption, occasional political violence, inefficient bureaucracy, poor infrastructure, unskilled work force, and reduced transparency in its legal and regulatory system works as investment deterrents. In addition, climatic hazards potentially represent a danger to FDI flows. By FDI Flows, the top three countries investing in Nepal are China, India, and the United States. It be promptly handled with appropriate approaches (Pyakurel 2074).

The distinctive aspect of FDI is that investment brings in a bundle of resources capital, technology, skills, managerial know how and marketing capabilities- along with production activities to a host nation. In addition to producing goods for export or domestic use, income, and jobs, foreign direct investment can also create connections and spillovers that improve the capabilities of local businesses and human resources, promoting capacity building and faster economic growth in the host nation. Additionally, foreign direct investment (FDI) positively affects GDP, as demonstrated by the findings of Okang's 2018 study.

Despite being one of the liberalizing economies in South Asia, Nepal has struggled to grow at the anticipated rates and has only received a small amount of FDI. Empirical

studies have shown that stock markets in host countries can be affected by institutional problems, the relationship and impact between GDP and regulatory reform, listing requirements, and disclosure and ethical business practices (Yartey, 2008). Further study on the relationship between FDI and stock market development is crucial in this context, both from a policy viewpoint and to add to the body of knowledge already available on the least developed nations. The current analysis differs significantly from many others in that it additionally looks at the connection between FDI and GDP growth.

After financial liberalization, foreign direct investment (FDI) inflows into Nepal tended to be fairly consistent, although the amount of investment rose significantly only after the conflict years of 2002 to 2007 (Adhikari, 2013). Although the government has made attempts to boost FDI inflows into the Nepalese state, these measures have not yet had a detectable effect. Globalization has spread due to increased global liberalization, and emerging nations are not exempt from its effects (Stallings, 2001). Due to the severe rivalry for FDI among developing nations, this has made it more challenging for Nepal to attract new investment flows (Adhikari, 2013). As a result, one of Nepal's biggest development challenges is to draw in and maintain FDI in a sustainable manner (Pant, 2010). Most countries have acknowledged FDI as an economic engine.

According to Basnett et al.'s (2014) analysis of foreign direct investment, Nepal's resource economy is growing. For many years, Nepal's GDP growth rate has not been consistent. The highest growth rate for Nepal was 8.2% in 1994, while the lowest was 0.12% in 2002 (Acharya, 2013). However, recent growth performance has been incredibly poor. A closer examination of the relationship between foreign direct investment and economic development in this setting is crucial from a political standpoint (Kundan & Gu, 2010). Regarding Nepal, FDI inflows are estimated to be still somewhat modest compared to other developing nations considering the considerable economic potential of nearby markets, the pleasant environment, the affordability of labor, and the abundance of natural resources (Bhattarai, 2009). There haven't been any studies on how FDI inflows by sector affect GDP in Nepal, despite the few studies looking at the connection between FDI and economic growth in the country. Given the frequency of these circumstances, this article aims to answer the question of; is there a significant relationship between FDI in different industries and the economic growth brought about by these industries?

Along with changes in donor development assistance strategies, Nepal began implementing a new economic policy regime in the mid-1980s. Over the past decade, the country has implemented many structures economic reform policy, including tax, trade and FDI policies. Quantitative import restrictions have been completely abolished. Customs duties have been streamlined and greatly reduced. Reforms have also been made on the foreign exchange front. However, political instability has put reform and business ambitions on hold.

### **Literature review:**

Istoneman (1975) examined how FDI affects emerging economies' economic expansion. He discovered through his research that FDI enhances the balance of payments while also

raising productivity levels because of a larger capital stock. Different regions are taken into account when analyzing how FDI affects economic growth. The information presented demonstrates that FDI has boosted economic growth only in Africa. Estimates for other regions, which show a link, are significant, but they are not for this region.

Fry (1993) conducted a study on 16 developing countries to examine the impact of FDI on macroeconomic growth performance. He classified 16 countries into different groups. Of these sixteen countries, five have been classified as peaceful and therefore do not show favorable results for the balance of payments. In the case of the group of 11 countries, evidence suggests that FDI has improved the current account positions of these countries.

Empirical studies with various conclusions still do not clearly show how FDI affects economic growth. While some studies demonstrate a favorable correlation between FDI and economic growth, other research finds a negative one. While some research may not discover an independent impact of FDI on the economic growth of the host country, many studies demonstrate a sizable beneficial effect. Additionally, the majority of recent studies have explored how FDI affects host country economic growth. For instance, De Mello (1999) contends that the quantity of trained workers in the host nation affects how much FDI contributes to economic growth. In general, FDI inflows into the primary sector tend to have a negative influence on growth, while FDI inflows into the industrial sector have a positive spillover effect, according to Alfaro's 2003 research.

To demonstrate the importance of FDI in economic growth and future prospects of Kazakhstan, Aizhan and Makaevna (2011) investigated "the impact of foreign direct investment on economic growth in Kazakhstan". With Kazakhstan attracting 58% of all FDI into the developing nation, it is one of the CIS and Central Asian nations with the fastest growing economies. 2009 saw the seashore. UNCTAD claims that while Kazakhstan draws foreign direct investment, it also depends heavily on the energy industry. The Kazakh economy can suffer from a high reliance on the energy industry. They contend that in order to assure long-term growth, it could be preferable to divert FDI to other sectors.

Pegkas (2015) analyzes time series data from 2002 through 2012 to examine the impact of FDI on the economic development of euro area nations using completely transformed OLS and dynamic OLS approaches. The findings indicate a long-term favorable association between economic progress and foreign direct investment. The creation of total fixed capital and knowledge stock is thought to be one way that foreign direct investment (FDI) influences economic growth both directly and indirectly. According to the traditional paradigm, FDI should directly affect economic growth because it is designed to supplement domestic investment and fill a critical gap left by a lack of capital and investment. The economic progress of transition countries is positively impacted by foreign direct investment, according to more studies.

A relationship exists between foreign direct investment, trade, and GDP per capita growth in Bangladesh, according to Hussain and Haque's (2016) empirical analysis. Additionally, the findings indicate that factors relating to international trade and investment have a

considerable impact on the pace of GDP per capita growth. As of 2016, Hussain and Haque. Volume 11 Issue 1 of the Balkumari College Journal (2022) FDI inflows into India actually boost TFP growth due to the spillover effect (Choi & Baek, 2017). Sakyi and Egyir (2017) tested Bhagwati's theory for 45 African nations between 1990 and 2014 using the Generalized Timeline Method (GMM). According to their research, these countries' economic growth is significantly influenced by FDI inflows and commerce (exports). However, trade openness in sub-Saharan African nations is strongly and favorably correlated with economic growth, according to Zahanogo (2017). The economic and social environment of the host economy, on the other hand, heavily influences the rate at which FDI can accelerate a nation's growth (Osabohien et al., 2020). Similarly, some empirical studies show that FDI increases economic growth (Nuzhat, 2009). Foreign investment inflows, according to Nuzhat (2009), can directly impact economic growth in emerging nations by promoting local capital formation, bolstering domestic savings, and facilitating knowledge transfer. Osabohien et al. (2020), who used the fully modified ordinary least squares approach (FMOLS), claim that FDI has a positive impact on employment and economic growth. Using random and fixed effects regression analysis, Osabohien et al. (2020) discovered that poor governance and ACC difficulties have a detrimental effect on FDI inflows and economic growth in Nigeria. Studies have indicated that foreign capital inflows have an effect on economic growth in emerging countries in addition to the positive association between foreign capital inflows and economic growth.

#### **Data sources and methods:**

Gross domestic product (annual GDP growth) and total net inflows of foreign direct investment are two of the variables that were combined into a single annual time series at constant prices for the study. For the years 1999/2000 through 2021/2022, 24 pairs of observations were used to calculate FDI as a proportion of GDP (FDI ratio). The International Monetary Fund, the Annual Information Book, the World Economic Outlook and World Investment Report, the Ministry of Industry, and Econ-stat are used to gather data. To examine the effect of FDI on Nepal's GDP growth for this very unique study, two statistical approaches are used. OLS and Granger causality tests are the statistical techniques that are employed. We conducted the co-integration test and the unit squared test.

#### **4. Results and Discussion:**

##### **Ordinary Least Square Method:**

The outcome of the ordinary least squares analysis demonstrates a modest and weakly positive link between FDI and economic growth in Nepal. The following table reveals the actual link between FDI and GDP.

##### **Table No. 1: Ordinary Least Square**

Dependent Variable: LNGDP

Method: least square

Sample 1999 2022

Included observations: 24

Variable	Coefficient	Std. Error	t-statistic	Prob.
LNFI	0.686168	0.076176	9.207519	0.000
C	6.424436	0.661282	11.22734	0.000
R-squared	0.753814	Mean dependent var		12.80829
Adjusted R-squared	0,742624	S.D. dependent var		0.808092
S.E of Regression	0,409963	Akaike info criterion		1.134157
Sum squared resid	3.697539	Schwarz criterion		1.232328
Log likelihood	-11.609899	Hannan – Quinn criter		1.160202
F- statistic	67.36336	Durbin- Watson sta		1.453093
Prob(F- statistic)	0.000000			

LNFGDP +GDP taken at nominal price (taking log)

**Table No .2 Ordinary Least Square (After Adjustment)**

Dependent Variable: DLNGDP

Method: least square

Sample (adjusted) 2000 2022

Included observations: 23

Variable	Coefficient	Std. Error	t-statistic	Prob.
DLNFI	0.009671	0.014545	0.664899	0.5134
C	0.124891	0.010148	12.30643	0.0000
R-squared	0.02618	Mean dependent var		0.126054
Adjusted R-squared	-0.026019	S.D. dependent var		0.047330
S.E of Regression	0.047942	Akaike info criterion		-3.154702
Sum squared resid	0.048267	Schwarz criterion		-3.055946
Log likelihood	38.27908	Hannan – Quinn criter		-3.129870
F- statistic	0.442090	Durbin- Watson sta		1.180951
Prob(F- statistic)	0.513352			

DLNGDP +GDP at nominal price taking log)

**Table No .3 Ordinary Least Square (After Adjustment)**

Dependent Variable: DLNGDP

Method: least square

Sample (adjusted) 2001 2022

Included observations: 22

Variable	Coefficient	Std. Error	t-statistic	Prob.
DLNFI(-1)	0.008926	0.014994	0.595324	0.5583
C	0.123713	0.010641	11.62641	0.0000

R-squared	0.017412	Mean dependent var	0.124974
Adjusted R-squared	-0.031717	S.D. dependent var	0.048153
S.E of Regression	0.048911	Akaike info criterion	-3.111117
Sum squared resid	0.047846	Schwarz criterion	-3.011931
Log likelihood	36.22229	Hannan – Quinn criter	-3.087752
F- statistic	0.354411	Durbin- Watson sta	1.155748
Prob(F- statistic)	0.558304		

DLNGDP +GDP at nominal price taking log difference one after adjustment

**Ganger Causality test :**

Using maximal order of integration ( $d_{max} = 1$ ) and optional lag (k= 1, 2, 3,) in the equations

$$\ln GDPGR_t = \gamma_0 + \sum_{i=1}^{k+d} \alpha_{1i} \ln GDPGR_{t-i} + \sum_{j=1}^{k+d} \beta_{1j} \ln FDI_{t-1} + \epsilon_{1t}$$

$$\ln FDI_t = \gamma_0 + \sum_{i=1}^{k+d} \alpha_{2i} \ln FDI_{t-1} + \sum_{j=1}^{k+d} \beta_{2j} \ln GDPGR_{t-1} + \epsilon_{2t}$$

Here we study search analysis with time lag values of 1, 2 and 3 using Granger, we did not find any causal relationship described in the table mentioned below.

**Table No. 4: Granger causality Test (lag1)**

Pairwise Granger causality Tests

Date: 01/25/22 Time: 13:30

Sample : 1999 2022

Lags:1

Null Hypothesis	Obs	F-Statistic	Prob
DLNGDP does not Granger cause DLNFI	22	0.03778	0.8479
DLNFI does not cause Granger DLNGDP		0.11634	0.7368

**Table No. 5 : Granger causality Test (lag2)**

Pairwise Granger causality Tests

Date: 01/25/22 Time: 13:31

Sample: 1999 2022

Lags: 2

Null Hypothesis	Obs	F-Statistic	Prob
DLNGDP does not Granger cause DLNFI	21	0.033634	0.7193
DLNFI does not cause Granger DLNGDP		1.00178	0.3891

**Table No. 6: Granger causality Test (lag2)**

Pairwise Granger causality Tests

Date: 01/25/22 Time: 13:32

Sample: 1999 2022

Lags: 3

Null Hypothesis	Obs	F-Statistic	Prob
DLNGDP does not Granger cause DLNFI	20	1.15547	0.3640
DLNFI does not cause Granger DLNGDP		4.89104	0.0122

The result above indicates that GDPGR does not Granger cause FDI at all whereas FDI also does not cause Granger GDPGR for up to lag value 3. This means for the data there is no causal effect between the variables taken for analysis.

### Co-integration Test

Co- integration test is used to find out the long-term relation between the variables. The results of the test exhibits only the long run relationship between the variables.

### Conclusions:

The relationship between FDI and GDP has not yet been established directly and clearly due to the lack of necessary data on this area. To date, it has been difficult to collect the official data required for the study. In addition, it is also a difficult task to get quick feedback from those involved in FDI activities, so research based mainly on secondary data will not be able to give a representative picture of the situation. This study leads to the conclusion that the gross domestic product of Nepal depends not only on FDI but also on the other factors such as agricultural inputs, industrial inputs and remittances, which can be key elements of future research studies.

The results showed a clear correlation between foreign direct investment inflow and economic development. This suggests that strong economic growth is a hint that foreign direct investment is about to enter the country. Because we have one of the lowest tax slabs and a decent business environment, Nepal is attracting foreign direct investment. In summary, foreign direct investment is a major contributor to economic expansion. Thus, the country's key infrastructure, degree of security, and political and economic climate all need to be stabilized. The foundation of a good governance system should be openness, accountability, and effective and efficient resource management. New technology, managerial strategies, funding, and market access for the manufacturing and transportation of goods and services are all included in FDI.

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