# Impact of Remittance on Gross Domestic Savings in Nepal

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**Abstract**

The Nepalese economy is receiving a steady stream of remittances, but the nation has struggled to reduce poverty, unemployment, and the problem of infrastructure development. Being an underdeveloped nation with a high level of consumption and low levels of capital formation, it is a severe issue that will cause imports to rise even more. This paper examines the impact of remittance on gross domestic savings in Nepal using the Autoregressive distributed lag model. As discovered through the study, remittances are insignificant to gross domestic savings both in the long as well as short run. This contradicts the studies that show a positive and negative relationship between remittance and gross domestic savings. The study also shows that other factor such as gross domestic product affects gross domestic saving positively. It is therefore recommended that the planners and decision-makers should take the high rate of remittance income consumption in the economy seriously and must implement the consumption reduction that leads to increased savings, which contributes to the nation's overall growth and development.

**Keywords:** Gross Domestic Product, Gross Domestic Saving, Remittance

# 1. Introduction

## 1.1 Background of the study

Remittances are one of the main international flows of financial resources in the global economy. An increasingly significant avenue for the transfer of resources from industrialized to developing nations is the remittances made by workers. After foreign direct investment, remittances are the second-largest source of outside funding for developing countries. In the current debate on the role of remittance on development, many researchers have pointed out the way in which migrants’ remittances have a significant impact on the economic development of the nations.  From the 1970s until the late 1980s, most of the economic literature has not found a positive relationship between remittances and development, arguing that remittances are mainly utilized for the consumption of food, clothing, investment in non-productive sectors, repayment of debts, and so on. Such expenditure patterns tend to have the least positive effect on the development of nations.

One of the most obvious connections between migration and development is remittances. They outweigh low and middle-income nations' official development assistance and foreign direct investment. Before the COVID-19 epidemic, the World Bank estimated that officially documented remittances in 2019 reached a record-high $714 billion, including $553 billion to low and middle-income nations. Despite initial worries that the numbers might decline in reaction to the pandemic, they remained constant in 2020. According to recent predictions, global remittances reached $773 billion in 2021, with $605 billion of that amount flowing to low- and middle-income nations.

Is remittance virtue or vice for domestic savings?  Among economists, policymakers, and decision-makers, this is a crucial query. It is still a contentious issue since economists are divided between those who support and oppose the role of remittances in the capital building of developing economies. Remittances in certain nations do not follow the path of capital generation, growth, and development, whereas in other countries they do. The Nepalese economy is receiving a steady stream of remittances, but the nation has struggled to reduce poverty, unemployment, and the problem of infrastructure development, causing the net import to rise every year as a result of the increase in remittances. Being an underdeveloped nation with a high level of consumption and low levels of capital formation, it is a severe issue that, if not fixed in a timely manner, will cause imports to rise even more. Therefore, the real issue is determining whether or not remittances are effective for the Nepalese economy in the long run. This study uses regression analysis method in order to address the effects of remittances to GDS on the Nepalese economy.

## Current knowledge

1. **International Context**

Research conducted for 11 countries in Central and Eastern Europe by Leon-Ledesma & Piracha (2004) showed that remittances contribute significantly to increasing the level of investment in migrants’ home countries. Balde (2011) conducted another similar study in 13 Caribbean countries and found that an increase of 1 percent in remittance leads to an increase in domestic private investment by 0.6 percent.

De Bruyn et al. (2005) studied the dynamics of remittance utilization in the context of Bangladesh’s economy. The finding of his research concluded that remittances allow families to meet their basic needs, open up opportunities for investing in education and health care, loosen up constraints in the family budget to invest in the business, save as emergency resources, provide social security for the elderly, and can boost the local economy.

In their investigation of the impact of international remittances on household spending in the Sylhet region of Bangladesh, Ahmed et al. (2019) discovered that 26.78 percent of remittance is spent on food, followed by 11.23 percent on health, 9.11 percent on family member marriages, 8.75 percent on education, 8.48 percent on home construction, 5.93 percent on bank savings, and 5.86 percent on the social festival celebration. Similar amounts were spent on fixing houses (5.85 percent), buying residential land (4.38 percent), buying mobile phones (4.03 percent), buying clothing and shoes (3.59 percent), investing in starting a business (2.18 percent), buying agricultural land (2 percent), and paying off debts (1.49 percent).

Osili (2007)investigated the implications of remittance flows for migrants and their origin households in their country of origin. The primary purpose of the research was to present disaggregated view of international remittance flow using a matched sample of international migrants and their origin families. It found that remittances have the potential to contribute to economic development by reducing poverty and providing savings for capital accumulation in the country of origin.

Paul and Das (2011) considered Bangladesh as one of the top remittance-recipient countries in the world which has drawn attention to the remittance-output relationship in recent years. The results of their study on this aspect were nevertheless inconclusive. Working on a relatively liberalized regime from 1979 to 2009, this study found a long-run positive relationship between remittances and GDP in Bangladesh. Researchers concluded that adjustment of this relation, however, goes against the traditional belief that GDP does not respond to the movements in remittances while correcting disequilibrium after a shock in the system, but the reverse is true. There is no evidence of remittance-led growth in the short.

Balde (2011) investigated the impact of remittance and Foreign aid on saving and Investment in sub-Saharan Africa. The major objective of the study was to investigate the impact of remittance on saving and investment based on the sample of 37 and 34 Sub-Saharan African countries over the time period of 1980-2004 through OLS and 2SLS methods. The study found that remittances have a more positive impact on savings and investment than foreign aid, as they are directly received by people in need and serve more households' interests. They are more effective in favoring economic development than foreign aid.

Barguellil (2013) made research on the effect of migration remittances on economic growth through education specially focusing on studying the effect of migrant remittances on economic growth. The result of their study indicated the direct effect of remittances on economic growth. The obtained results also indicated that the direct effect of remittances is negative while the indirect effect induced by the inclusion of education is positive.

Bett (2013) examined the impacts of remittance inflows on domestic savings in Kenya. The main objective of the study was to find the impacts of remittance on domestic Savings levels in Kenya for the time period of 1970-2011. The study was based on secondary data and Error Correction Model (ECM) was used for obtaining the result. An empirical study found that GDP per capita, exports, and investment affect domestic savings positively and significantly. The real interest rate does not have a significant effect on domestic savings. Remittance affects domestic savings positively and significantly.

Hossain (2014) studied the effects of Foreign Capital and Remittance inflows on domestic savings in 63 developing countries from 1971-2010. The study suggests that government should prioritize foreign capital flows considering the net benefits of each flow in terms of domestic savings, investment, and economic growth. The study also reveals that Continuous income growth needs to be ensured for a sustained increase in domestic savings. Interest rate is not a good policy instrument for savings mobilization.

Assaf (2015) studied workers’ remittances and economic growth in Jordan using regression analysis (OLS). The study also analyzed the effects of other traditional sources of economic growth, such as gross fixed capital formation, foreign direct investment, and labor force. The study showed that there is a positive effect of remittances, and traditional sources of economic growth, such as gross fixed capital formation on GDP whereas no significant effect of the labor force on GDP.

Tahir et al., (2015)found that external determinants such as foreign remittances, direct investment, and foreign imports have a positive role in Pakistan's economic growth, but foreign imports have adversely influenced it. Policymakers should take steps to increase the inflow of both to achieve long-term economic growth. However, it has been found that foreign imports have adversely influenced the economic growth of Pakistan. Their study recommended that policymakers should take appropriate steps to increase the inflow of both foreign remittances and foreign direct investment in order to achieve long-run economic growth.

Abbas (2019) explores the effect of workers’ remittances on domestic investment in four selected South Asian countries: Bangladesh, India, Pakistan, and Sri Lanka, using contemporary time series estimation techniques from 1980 to 2017. Long-run estimates showed a positive investment effect, except for Pakistan. Other capital inflows revealed a negative effect, while Net external debt inflows revealed a positive effect.

Sunny et al. (2020) examined the interlinkage between remittance receipts, household-level investment, and the changing emigration pattern in Kerala. They found that remittance has a role in improving per capita income, spending on non-food durable goods, and enabling individuals to save to invest in assets, land, and building. Households with a large share of spending on education and health also report a high share of skilled emigration.

Dash (2020)studied the impact of remittances on domestic investment in South Asia over 1991-2017. Advanced panel estimation methods were used to account for potential country-specific heterogeneity and the endogeneity problem. The results suggest that remittances are used for consumption and investment activities, with uni-directional causality running from remittances to domestic investment.

Benhamou and Cassin (2021) examined the impacts of remittances on saving, capital, and economic growth in small emerging countries. The study found that remittances increase investment in education or literacy rate at the expense of domestic savings, leading to a negative correlation between domestic savings and remittances and a U-shaped curve between remittances and economic growth.

1. **National Context**

Bhadra (2007)found that 79% of remittances are used for daily consumption and repayment of loans, leaving only 14% for capital formation, with 25% invested in children's education, 10% spent on clothing, 19% on food, 9% invested in land, 13% saved in the bank, 7% religious activities, 5% loan payment, 2% social activities, and 10% other activities. However, this shows that remittance is spent mainly on livelihoods and non-productive goods and services as well as dealing with eventualities such as catastrophic health expenditure including the death of the migrants themselves.

Dhungana (2012)carried out research to explore the relationship between remittance and the economic growth of Nepal during the period of three and half decades till 2010/11. He found that remittance income does not support economic growth unless it is used in productive sectors. Government agencies should formulate and implement a remittance utilization policy to enhance the national economy.

Bansak et al. (2015)conducted a study that examined how re­mittances affected household expenditures on human capital investment by using the 2010 Ne­pal Living Standards Survey III. The ordinary least squares (OLS) and instrumental variables (IV) analysis method was used for the empirical data analysis and they concluded that remit­tance enhanced household consumptions and contributed to the human capital invest­ment as education expenditure.

Ojha (2019) analyzed remittance status and contribution to Gross Domestic Product (GDP) in Nepal from the time period 1994/95 to 2016/17 using the linear multiple regression model. The Beta coefficients for total remittance inflow are positive with GDP. There was a positive impact of capital formation, import, foreign aid, and money supply on GDP. The study concluded that remittance was the most significant source of GDP and per capita income in Nepal.

Chaudhary (2022) used the ARDL bound test approach to evaluate the impact of remittances on Nepal's GDP and private gross fixed capital formation. The results showed that remittances had a positive impact on GDP, but a negative impact on private gross fixed capital formation.

## 1.3 Research Gap

In the past two decades, many developing nations have experienced tremendous growth in their remittance inflow. Manpower is exported from these countries in order to generate remittance. Foreign remittances have become a major source of poverty reduction, better health care facilities, and education. Remittances can be seen to have become a source of increasing investment and consumption in recipient countries. It also has become a major source of foreign exchange earnings. The Nepalese economy has been no exception to this. For the past few years remittance in Nepal has been growing rapidly. However, despite a constant rise in remittance earnings, the productive use of this income has been a matter of great concern.

Remittances and domestic savings have a complex relationship. For instance, some researchers discover a negative correlation between savings and remittance, whereas others find a positive correlation. Regarding macroeconomic growth, some studies discover that foreign remittances have a detrimental effect on GDS growth, but other studies uncover the exact opposite. Arguing fairly conclusively at this point, this analysis demonstrates the need for additional research to settle disputes on the effects of remittances in various fields. My research aims to reveal the precise influence of remittance on domestic savings in the context of Nepal. In the context of limited research relating to remittance and Gross domestic savings available in Nepal, the time-series analysis helps to identify the impact of remittance on GDS based on the recent data.

## 1.4 Research Objectives

The main objective of this study is to examine the relationship between remittance and Gross Domestic savings in Nepal.

* To analyze the impact of remittance on Gross Domestic Savings in Nepal

# Materials and methods

This study describes the relationship between remittance and Gross Domestic Savings in Nepal based on the data from 1978 to 2021, a time series data of forty-four years. So, the research design will be empirical research design. Since the study will rigorously use the quantitative nature of data in order to meet the stated objectives of the study, the nature of data used in the study will be a secondary one. The data of GDS, GDP, net import, and inflation are taken from World Bank and Remittance from Ministry of Finance (MOF), Government of Nepal (GON).

On the basis of past empirical studies and the study carried out by Bett (2013), Balde (2011), Sabra (2016), and Hossain (2014) the functional relationship between gross domestic savings (GDS), remittance, and economic growth in the specific econometric model for the objective can thus be explicitly expressed as follows:

lnGDSt = ß0 + ß1 lnREMt + ß2 lnGDPt + ß3lnNIMPt + ß4 lnINFt + Ut…….( 2.1)

Where;

ß1, ß2, ß3 to ß4 are coefficients of associated independent variables, and ß0 is the constant intercept of the equation.

ln is the natural logarithm.

And, Ut is the error term.

GDSt = Gross Domestic Savings at time ‘t’

GDPt = Real Gross Domestic Product at time‘t’

REMt = Remittance of time ‘t’

NIMPt = Net Imports (Imports- Exports) at time ‘t’

INFt = Inflation at time ‘t’

ADF test is simply the augmented version of Dickey-Fuller test which is used to check the presence or absence of unit root in the autoregressive (AR) model of the variables. The impact of remittances on gross domestic savings in Nepal has been investigated in this study using the Autoregressive Distributed Lag (ARDL) testing methodology. The ARDL modeling approach, which Pesaran and Shin first described in 1999 and Pesaran, Shin, and Smith subsequently developed in 2001, is based on the presumption that the time series under consideration are either mutually co-integrated or integrated of order one, I (1), or zero, I (0). The model is chosen using a variety of factors, including the Akaike Information Criterion (AIC), the Hannan-Quinn Criterion (HQC), and the Schwartz Bayesian Criteria (SBC).

The bound tests method created by Pesaran et al. (2001) has been used to examine whether there is a long-term relationship between the variables in the system. Regardless of whether the variables are merely I (0), I(1), or mutually cointegrated, the bound test is based on the Wald or F-statistic and follows a non-standard distribution under the null hypothesis of no cointegration relationship between the analyzed variables. Various diagnostic tests autocorrelation test, heteroskedasticity test, and normality test are used in the study. Besides, the CUSUM test is used to check for structural changes in the regression coefficients.

# Result and Discussion

## 3.1 Empirical results of the impact of remittance in Gross Domestic Saving

### Unit root test result

To check the stationarity of the available data, the Augmented Dickey-Fuller test was done at the level using Schwarz Info Criterion and taking the maximum lag length 9 and including trend and intercept. In case of the data not being stationary at the level were subjected to first difference through the same criterion. Some variables which are not even stationary at first difference were subjected to log transformation and followed the same procedure at the level and first difference. The result of the unit root test of the time series under consideration is shown in Table 3.1.

**Table 3.1**

*ADF Unit Root Test Result*

|  |  |  |  |
| --- | --- | --- | --- |
| **At level** | **with constant** | **with constant and trend** | **without constant and trend** |
| **Variables** | **t- Statistic** | **t- Statistic** | **t- Statistic** |
| Log of GDS | -0.69 | -4.73 \*\*\* | 2.23 |
| Log of GDP | -0.153 | -3.72 | 7.67 |
| Log of remittance | -0.64 | -1.81 | 5.52 |
| Log of net import | -1.06 | -3.49 | 4.08 |
| Log of inflation | -4.54 \*\*\* | -3.70\*\*\* | -0.75 |
| **At First Difference** | **with constant** | **with constant and trend** | **without constant and trend** |
| **Variables** | **t- Statistic** | **t- Statistic** | **t- Statistic** |
| Log of GDS | -3.64\*\* | -3.60 | -6.60\*\*\* |
| Log of GDP | -4.75\*\*\* | -4.63 \*\*\* | -0.008 |
| Log of remittance | -7.36\*\*\* | -7.28 \*\*\* | -2.36 \*\* |
| Log of net import | -9.32\*\*\* | -9.26\*\*\* | -7.06\*\*\* |
| Log of CPI | -8.24\*\*\* | -8.13\*\*\* | -8.33\*\*\* |

Note: \*\*\*, \*\* and \* indicate that the statistics are significant at 1%, 5% and 10% level of significance

*Source:* Researcher’s calculation using Eviews 10.

It is clear from Table 4.1 that the variable log of inflation is stationary at a 1 percent level of significance at the level with constant as well as with constant and trend. However, log of import and log of GDS log of export, and the log of remittance are not stationary at the level with constant but stationary with constant and trend, and without constant and trend except remittance. Variables log of GDS, log of GDP, log of net import, log of remittance and log of inflation are stationary at first difference with constant at 1 percent level of significance. With constant and trend log of GDS is stationary at a 5 percent level of significance whereas other variables were stationary at 1 percent level of significance. Some variables log of GDS, log of net import, log of remittance and log of inflation are stationary at first difference without constant and trend as well. The log of GDP is nonstationary up to a 10 percent level of significance even without constant and trend.

**Auto-regressive distributed lag model**

In order to find out the short-run relationship between remittance and GDS, the ARDL model has been run. This regression model gives the impact of the explanatory variables on the explained variable in the short run. The result of ARDL (3, 0, 1, 0, 1) estimation is based on the Akaike Information Criterion taking four maximum dependent lags having R-Squared 0.625 and adjusted R-squared 0.513 is high score indicates that the explanatory factors included in the model can account for 62.50 percent of the GDS. Additionally, the value of F-Statistics is 5.56 with a probability value of 0.0001 indicating that the whole model is statistically significant.

**Table 3.2**

*Result of auto-regressive distributed lag model*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Variable | Coefficient | Std. Error | t-Statistic | Probability |
| D Log of GDS (-1) | -0.63\*\*\* | 0.15 | -4.00 | 0.0004 |
| D (Log of GDS (-2)) | -0.39\*\* | 0.14 | -2.66 | 0.0124 |
| D (Log of GDS (-3)) | -0.28\* | 0.15 | -1.92 | 0.06 |
| D (Log of remittance) | -0.033 | 0.18 | -0.18 | 0.85 |
| D Log of GDP | 8.15\*\*\* | 1.86 | 4.36 | 0.0001 |
| D (Log of GDP (-1)) | 4.83\*\* | 2.27 | 2.12 | 0.04 |
| D (Log of net import) | 0.20 | 0.24 | 0.80 | 0.42 |
| Log of inflation | -0.09 | 0.08 | 1.10 | 0.33 |
| Log of inflation (-1) | 0.095 | 0.85 | 1.10 | 0.2724 |
| C | -0.50 | 0.247 | -2.04 | 0.049 |

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| R-squared | 0.625 |  | Adjusted R-squared | 0.513 |  |  |  |
| F-Statistic | 5.56\*\*\* |  | Prob (F-Statistic) | 0.0001 |  |  |  |

Note. \*\*\*, \*\* and \* indicate that the statistics are significant at 1%, 5% and 10% level of significance. Similarly (-1) indicates the first lag, (-2) indicates the second lag, and D represents the first difference

*Source:* Researcher’s calculation using Eviews 10.

From the above table, it shows that there is a significant relationship between the GDS and some explanatory variables. However, D(LNREM) is statistically insignificant at 5 percent. This result strongly rejects the existence of the short-run impact of remittance on the Gross Domestic Saving of Nepal in the study period. This finding suggests that remittances are being spent on consumption rather than creating domestic savings.

The coefficient of the first lag value of log of GDS is statistically significant at 1 percent level of significance. It indicates that the GDS of the current year decreases by 0.63 percent on average when GDS of the previous year increased by 1 percent. Similarly, the coefficient of the second lag value of log of GDS is statistically significant at a 5 percent level of significance. It shows that GDS of the current year decreases by 0.39 percent on an average when second lag of GDS of increased by 1 percent. the coefficient of third lag value of log of GDS is statistically significant at 10 percent level of significance. The coefficient shows that GDS of the current year decreases by 0.28 percent on average when third lag of GDS increased by 1 percent.

The first difference of log of GDP is statistically significant at a 1percent level of significance. This result accepts the existence of the short-run impact of GDP on the GDS of Nepal in the study period. This finding suggests that 1 percent increase in the GDP of the current year increases GDS of same year by 8.15 percent. The coefficient of the first difference of the first lag of GDP is 4.83, it indicates that GDS of the current year increases by 4.83 percent on average when GDP of the previous year increased by 1 percent. The first difference of the log of net import, the log of inflation and the first lag of log of inflation are statistically insignificant at a 10 percent level of significance since p values are greater than 0.05.

### ARDL long-run form and bounds tests

The long-run relationship between the variables has been found by employing Long Run Form and Bounds Test. The summarized result of the Bounds Test is given below in table 3.3.  
**Table 3.3**

*ARDL Bounds Test Result*

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Selected Model | Dependent variable | F-Bounds Test | | | | |
| F-statistics | K | Significance level | Lower bound | Upper bound |
| ARDL  (3, 0, 1, 0, 1) | D (Log of GDS) | |  | | --- | | 9.86 | | 4 | 1 % | 3.29 | 4.37 |

*Source:* Researcher's calculation using Eviews 10

From the above table 3.3 it has been found that there is a long-run relationship between dependent variable D(LNGDS) and independent variables since at 1 percent level of significance the F-statistics is greater than the upper bound of F Bound test. For the model used value of upper bound is 4.37 whereas the obtained value of F statistics is 9.86 which proves the existence of long-run relationship between dependent and independent variables in the model.

**Table 3.4**

*ARDL Long Run Form*

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  |  |  |  |  |
| Variable | Coefficient | Std. Error | t-Statistic | Prob. |
| D (Log of Remittance) | -0.014 | 1.52 | 3.68 | 0.85 |
| Log of GDP | 5.60 | 0.077 | -0.18 | 0.0009 |
| D (Log of net import) | 0.086 | 0.109 | 0.79 | 0.43 |
| Log of Inflation | 0.004 | 0.040 | 0.10 | 0.91 |
| C | -0.21 | 0.11 | -1.96 | 0.05 |

Note. D indicate first difference

*Source:* Researcher's calculation using Eviews 10

Table 3.4 shows that the coefficients of the first difference of remittance D(LNREM), the first difference of log of Net Import D(LNIMP), and the Log of Inflation (LNINF) are not statistically significant at a 5 percent level of significance. It shows that there does not exists long-run relationship between remittance, net import, and inflation with GDS. The coefficient of first difference of log of GDP show that GDS increases by 5.60 percent on average when GDP increases by 1 percent.

### Diagnostic test result

The reliability of the estimated ARDL model is further investigated through its diagnostic tests such as Regression Specification Error Test, serial correlation test, heteroscedasticity test, normality test, and stability test.

**Regression specification error test result**

To determine whether the supplied functional form is accurate or not, the Ramsey RESET test is applied. The probability value of the F-statistics and t-statistics are similar to 0.19 which is greater than 0.05, which exceeds the 5 percent significance level and accepts the null hypothesis that the model is in its right functional form. This means that the model has no evidence of any misspecification, according to the Ramsey RESET test.

**Table 3.5**

*RESET Test Result*

|  |  |  |  |
| --- | --- | --- | --- |
| Omitted Variables: Squares of fitted values | | | |
|  | Value | Df | Probablity |
| t- statistics | 1.33 | 29 | 0.19 |
| F-statistics | 1.78 | (1,29) | 0.19 |

*Source:* Researcher's calculation using Student lite version of Eviews 10

**Serial correlation test**

The autocorrelation test is carried out for the model used in the study through the residual diagnostics by applying the Breusch-Godfrey Serial Correlation LM test including 2 lags. The result of the autocorrelation test for the model is summarized in Table 3.6 below.

**Table 3.6**

*Serial Correlation Test Result*

|  |  |  |  |
| --- | --- | --- | --- |
| Breusch-Godfrey Serial Correlation LM Test: | | | |
| Null Hypothesis: no serial correlation | | | |
| F-statistic | 0.234 | Prob. F(2,32) | 0.792 |
| Obs\*R-squared | 0.659 | Prob. Chi-Square(2) | 0.719 |

*Source:* Researcher's calculation using Eviews 10

The null hypothesis of no serial correlation is accepted since the P-value for the table's data is 0.792 (79.2 percent), which is higher than 0.05 (5 percent). It shows that there is no serial correlation between the variables under the study.

**Heteroskedasticity test**

The heteroscedasticity problem refers to the disparities in the variance of each error term in the sample regression function since the disturbances observed in the population regression function are homoscedastic, or of the same variance. The result of the Heteroskedasticity test for the model is shown in Table 3.7 below.

**Table 3.7**

*Heteroskedasticity Test Result*

|  |  |  |  |
| --- | --- | --- | --- |
| Breusch-Pagan-Godfrey HeteroskedasticityTest: | | | |
| Null Hypothesis: no heteroscedasticity | | | |
| F-statistic | 0.635 | Prob. F(9,30) | 0.756 |
| Obs\*R-squared | 6.41 | Prob. Chi-Square(7) | 0.697 |
| Scaled explained SS | 3.70 | Prob. Chi-Square(7) | 0.929 |

*Source:* Researcher's calculation using Eviews 10

Based on the data in the table 3.7, the P value is 0.756 (75.6 percent) indicating that the null hypothesis is not rejected. Since The p-value for all LM stat is greater than 5 percent, The null hypothesis for the test cannot be rejected which shows that there is no heteroskedasticity between the variables in a model under the study.

**Normality test**

This study uses both graphical (Histogram) and mathematical (J-B test) ways to identify the normalcy test. The residual diagnostics of the models were conducted for the Normality test through the Jarque- Bera test. The results of Normality tests are summarized below.

**Table 3.8**

*Normality Test for Model*

*Source:* Researcher's calculation using Eviews 10

The normality of the data has been found on the basis of the Jarque-Bera (JB) test. It revealed the fact that the p-value of the JB test is more than 0.05 for the model i.e. 0.99 and has become unable to reject the null hypothesis. Thus, it can be concluded that the data taken for the study highly tend to be normal.

**Stability test result**

The CUSUM test assesses the stability of the coefficients in the regression model.The stability diagnostics of the models were conducted through the CUSUM test. The null hypothesis H0: The Coefficient that is stable is tested against alternative hypothesis H1: The coefficient is not stable in the CUSUM test. The results of the CUSUM test are plotted below.

**Figure 3.1**

*Graphical Plot of CUSUM Test*



*Source:* Researcher’s calculation using Eviews 10.

In the above graph, the dotted red line shows the 5 percent significance level or the critical region and the blue line shows the cumulative sum. The cumulative sum line of the coefficient lies within the critical region of red lines indicating that we do not reject the null hypothesis. Thus the coefficient is stable in the regression model.

**Discussion**

Any short-term impact that remittances had on Nepal's gross domestic savings during the research period is categorically refuted by the fact that the log of remittance is statistically insignificant to the log of GDS at the 5% level of significance level with T-statistics value of -0.033 and p-value of 0.85. This result suggests that remittances are more likely used for consumption than for capital formation. Thus, research findings are in line with Rempel and Lobdell (1978), Lipton (1980), and Massey et al. (1987) who found the impacts of remittance significant only with consumption and personal expenditure. Besides, Nepal Living Standard Survey 2010/11 stated that about 79 percent of the total remittances received by the household is used for daily consumption while 7 percent is used for loan repayment. Other uses are acquiring household property 5 percent and education 4 percent. Only a small percentage of the remittances i.e., 2 percent is used for capital formation and the remaining 3 percent for other purposes. The researchers are therefore free to conduct in-depth research in this area and draw additional conclusions.

## Conclusion and Recommendation

Remittances are generally categorized by economists into three categories: additional, substitute, and neutral to the receiving country's gross domestic savings. However, the study revealed that remittance has an insignificant impact on gross domestic savings which flatly refutes any short-term impact that remittances had on Nepal's gross domestic savings during the research period. It confirms the neutral theory and discovered negligible effects of remittance in Nepal's GDS.

In conclusion, planners and decision-makers should take the high rate of remittance income consumption in the economy seriously since it is necessary to fill the gap between income and consumption. Besides, Personal expenses significantly depend on remittance, hence managing remittance must be a priority. However, remittance does not always guarantee a nation's growth and development because it has its own drawbacks. According to global experience, its impact turns negative after a certain period of time, thus, it should be mitigated in the long run. Furthermore, the current flow of remittance must be utilized for capital formation that enhances the Gross Domestic Product and ultimately increases the Gross Domestic Savings of Nepal.

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