Public debt of Nepal: It's effect on economic growth

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Abstract

Different economists have expressed different views on public debt from time to time. Different articles about public debt and economic development also have different concepts. But there is a great need for public debt in Nepal's economic development to date. It often seems impossible to sustain economic development of Nepal with our resources. The main objective of this article is to explain the trend of public debt and economic development from 1992/93 to 2018/19. It is also to study the impact of public debt on Nepal's economic development. For this, to study the relationship between the simple linear regression model and multiple regression model has used. The regression model is constructed four equations. The conclusion of the study, R^2 is more than 90% and P- value is almost zero of the entire regression model. This states that there is a positive relationship between public debt and economic development in Nepal. Despite such positive relations, our growth rate has not been uniform and public debt has been steadily increasing. But even today, Nepal's economic development needs internal and external debt. The main task today is to properly manage public debt for the economic growth of Nepal in coming days.

1. Introduction

Around the 18th century, the term "public debt" was often used. Classical economists were usually opposed to borrowing and believed that the government should play only a minor role in favoring constructive lending. However, after the Great Depression of the 1930s, increased government spending resulted in increased public debt as a result of the country's rapid economic growth and resource use (Taylor, 1961). J.M. Keynes is in favor of a government-controlled economy that increases the government's deficit. To achieve their deficit targets, governments must take on public debt, which does not always imply inefficiency, inflation, or burden (Nevin, 1962).

Public debt is based on the debt of the concerned government entity. In the current situation, public spending is increasing very rapidly relative to national income. Increasing public expenditure cannot be achieved by raising revenue alone. Public debt entails the obligation to repay the people (Samuelson, 1964).

Public debt is one of the important sources of generating income for the government of Nepal. It helps to achieve targeted economic growth and also helps to narrow down the gap between expenditure and revenue, saving, and investment required for a targeted growth rate. In Nepal, institutional backwardness makes the functioning of economic development a complicated business. In order to remove such obstacles in the economy, public debt can be used as an inevitable tool. Thus, public debt is the most important source of income for the economic development of Nepal (Acharya, 2015).

The role of public debt is increased significantly after the planned economic development. The process of economic development in Nepal was started with the implementation of the first five years plan in 1956. Since

then the volume of public expenditure has seen increasing because of the growing demand for funds (Adhikari, 1996).

Nepal remained almost a debt-free country till 1961/62. The accumulation of debt begins in 1963. Then Nepal has been receiving public debt from both internal as well as external sources. The internal source includes borrowing from individuals and from the financial sector. External debt is receiving from both bilateral and multilateral sources (Joshi, 1982).

In Nepal, the trend of borrowing external debt is much higher than the trend of borrowing internal debt. Thus, particularly after 1970, the budgetary deficit has also been increasing. So, Nepal is facing a serious problem of financial resource gap on one hand and increasing population growth and inflation on another (Khanal, 2000). But no doubt, if the trend of foreign debt goes on increasing like this recently, definitely, one day Nepal will be in the worse situation of the debt trap.

As a result, public debt has both favorable and unfavorable effects on a country's economic growth. On the one hand, it was an essential component of the development budget and assisted in the mobilization of additional financial capital, despite the fact that the nation was heavily in debt due to interest and principal payments. As a result, Nepal must make effective use of its public debt.

2. Review of public debt and economic development of Nepal

Government debt, according to Barik (2012), has made a major contribution to economic development both directly and indirectly. The paper's findings indicate that, all things being equal, public debt appears to induce investment over time.

According to Harris (1974), the individual, customer, and business firm all use resources more efficiently. According to Goode (1984), investment finance will stifle economic growth. In general, public debt refers to a loan taken out by a government, either within or outside of the country, according to Encyclopedia Britannica (2006).

Domar (1944) described debt burden as an increase or decrease in the amount owed. When either the ratio of deficit to income or the rate of interest paid on debt rises, the burden of debt rises with it, or the burden of debt rises with the ratio of deficit to income and the rate of interest paid on debt rises with it.

Chongo (2013) found that the findings of the study support the existence of a long-term relationship between public debt and economic development. Ozurumba and Kanu (2014) investigated and discovered that not all aspects of Nigeria's domestic debt profile contribute positively to the country's economic development, both short and long term. According to Isaac and Rosa Garca-Almada (2016), the findings verified that public debt is positively associated with public spending, which leads to economic growth.

The most inflationary nature of internal borrowing, according to Singh (1983), increases inflection in the economy. While foreign loans have softer terms for Nepal than India and China, Gurugharana (1996) claims that the very low rate of return and rising share of loan in foreign aid mean that aid is gradually moving Nepal toward a debt crisis in the coming years.

According to Nguyen, (2015) having a big public debt is similar to driving with the emergency brake on in the long run. Overdependence on external debt could result in debt repayment default and, eventually, the country's economic collapse. Government debt, according to Koirala (2002), has a clear relationship with the government deficit over a given year being equivalent to the budget deficit, or higher economic growth necessitates a higher level of spending that is not feasible solely through taxation, requiring the government to pursue public borrowing.

Nadim (1992) studied global inflation and the negative real interest rate. Lekhi (2001) said that he was opposed to the use of public debt. As Paniza (2008) pointed out, a country, like an entity, cannot keep adding to its liabilities indefinitely without exhausting its resources.

The government expenditure and revenue patterns, according to Pyakurel (2004), show that the economy has lost its productive capacity to respond to sustained growth. According to Thapa (2005), Nepal's debt burden and servicing should not be considered excessive in terms of growth, but it is rather burdensome. According to Neupane (2007), government borrowing has increased unlikely uncertainties.

According to Regmi (2008), the proportion of foreign debt relative to domestic debt is too large. For the period 1972-2009, Bista (2011) found that public external debt has a negative and substantial relationship with per capita GDP and investment in Pakistan, both in the short and long run.

According to Bhattarai (2013), the share of internal loans is substantially higher than the share of external loans. According to Sharma (2014), the rising pattern of borrowing creates a significant problem for debt management and has become a difficult issue for the country.

3. Research objectives & Methodology of the Study

Generally, the objectives of this article is to show the impact of Nepal's internal debt and external debt on economic development, but the following two main objectives are mentioned here:

    i.   To examine the overall pattern of Internal, External debt and GDP of Nepal

    ii.   To examine the impact of public debt in economic growth of Nepal

Both descriptive and analytical research designs were used in this study. The aim of this study is to examine the effect of foreign debt and internal debt on Nepal's economic growth. I created a regression model for this reason, and the variables used in the model are described in this methodology. The OLS Method was used to estimate the model.

Using only secondary data, this study's review attempts to obtain different empirical findings. The required data is gathered from a variety of sources, including the Economic Survey (2018/19), the Ministry of Finance (MOF), the World Bank (WB), the Nepal Government (NG), the Nepal Rastra Bank (NRB), and other bulletins and publications, such as the budget speech, the Human Development Report (HDR), the World Development Report (WDR), and various National Planning Commission (NPC) publications.

The simple regression model and a multiple regression model prepared for this article have been used for a total of 27 years from 1992/93 to 2018/2019. This includes Nepal's internal debt, external debt and total debt as well as the GDP growth which is required for Nepal's economic development. The following regression models have been prepared to study how the country's internal debt, external debt and total debt have affected the GDP growth.

Regression Equation

$$GDP_t = \beta_0 + \beta_1 ID_t + \varepsilon \quad \text{.............................(i)}$$

$$GDP_t = \beta_0 + \beta_2 ED_t + \varepsilon \quad \text{...........................(ii)}$$

$$GDP_t = \beta_0 + \beta_1 TD_t + \varepsilon \quad \text{...........................(iii)}$$

$$GDP_t = \beta_0 + \beta_1 ID_t + \beta_2 ED_t + \beta_3 TD_t + \varepsilon \quad \text{..........(iv)}$$

Where,

GDP = Gross Domestic Product, TD = Total Debt, ID = Internal Debt, ED = External Debt and $\beta_0, \beta_1, \beta_2$ and β_3 are the parameters.

The theoretical statement of this regression model is that Gross Domestic Product (GPD) is depends upon the Total Debt, Internal Debt and External Debt. This study has not attempted to examine the effect of public borrowing on macro-economic variables such as money supply, price level, employment, and etc.

4. Analysis of current situation of public debt in Nepal

The Nepal Rastra Bank (NRB, Nepal's central bank) borrowed money from the IMF under the Rapid Credit Facility and then re-loaned it to the government (5,861,100,000.00 NPR). The central bank's bond issuances were solely for the purpose of monetary policy. Since Nepal's state-owned enterprises (SOEs) borrow money

from abroad via the central government, they are covered by the central government's debt. The government has recently begun to guarantee debts owed by SOEs.

Table 1. Subsectors of the public sector

1.	Central government
2.	Province Government
3.	Local government
4.	Other elements in the general government
5.	Social security fund
6.	Extra budgetary funds
7.	Guarantees (to other entities in the public and private sector, including to SOEs) Central bank (borrowed on behalf of the government)
8.	Non-guaranteed SOE debt

Source: Debt Sustainability Analysis, IMF, 2020.

At the mid of 2019, Nepal's gross public debt was projected to be 30.1 percent of GDP. Nepal's public debt grew to 30.2 percent of GDP in mid-2018, after falling to 25 percent of GDP in mid-2015. The public debt stock in July 2019 was nearly unchanged from the previous fiscal year. In comparison to other low-income countries, Nepal's public debt remains low.

In mid-July 2019, the external public debt was 17 percent of GDP. Since mid-2018, the external debt-to-GDP ratio has decreased by 0.4 percentage point. Owing to the high degree of concessionality, the external debt's net present value (PV) is expected to be about 12.2 percent of GDP. Multilateral creditors, such as the World Bank's International Development Association (IDA) and the Asian Development Bank, accounted for the majority of Nepal's external debt (89 percent of total external debt). Their loans had low interest rates (on average 1%) and long repayment terms (26 years on average). Japan was the main bilateral borrower, led by China, India, and Korea in terms of bilateral loans.

Table 2. External Public Debt in FY2018/19

	Rs. in millions	In percent of GDP	In percent of external debt
Total external	629,013.25	17.0%	100%
Multilateral	557,976.72	15.1%	89%
ADB	214,047.37	5.8%	34%
IDA	325,994.38	8.8%	52%
Bilateral	71,036.53	1.9%	11%
Paris Club	37,393.82	1.0%	6%
Non-Paris Club	33,642.71	0.9%	5%

Source: Debt Sustainability Analysis, IMF, 2020.

At the end of July 2019, the domestic public debt stood at 13.1% of GDP. Treasury bills with a maturity of up to one year (28-day, 91-day, 182-day, and 364-day treasury bills) account for about 32% of domestic public debt, with 364-day bills accounting for about half of the total. The majority of medium- to long-term debt is made up of construction bonds with maturities ranging from 3 to 15 years and interest rates ranging from 3-6.5 percent per year. Since citizens kept all of the domestic public debt, the study is currency-based.

Table 3: Public Domestic Debt in FY2018/19

	Rs. in billions	GDP percent	Domestic Debt percent
Total domestic	453	13.1%	100%
Treasury bills	147	4.2%	32%
Treasury bonds	306	8.8%	68%
Development bonds	297	8.6%	66%
Others	9	0.3%	2%

Source: Debt Sustainability Analysis, IMF, 2020.

The government of Nepal has not released the stock of private external debt, but it is estimated to be very small. Although the government and the NRB encourage commercial banks to borrow from outside sources to relieve BOP pressures, bank external borrowing has been restricted due to limited access and high relative costs. Authorities' regulations, such as enforcing a maximum spread cap (6-month Libor + 4%) on banks' foreign loans, limit banks' ability to borrow internationally. The non-public sector has only borrowed a small amount of money from abroad (about 0.1 percent of GDP as of mid-July 2019). Private external debt is expected to rise to 1% of GDP in the long run, reflecting recent government measures to promote foreign loans.

Table 4. Public Debt Situation

1	The country's coverage of public debt	The central, state, and local governments plus extra budgetary funds, central bank, government-guaranteed debt, non-guaranteed SOE debt	
		Default	Used for the analysis
2	Other elements of the general government not captured in 1.	0 percent of GDP	0
3	SoE's debt (guaranteed and not guaranteed by the government)*	2 percent of GDP	2.0
4	PPP	35 percent of PPP stock	2.1**
5	Financial market (the default value of 5 percent of GDP is the minimum value)	5 percent of GDP	5
Total (2+3+4+5) (in percent of GDP)	7.0		
The default shock of 2% of GDP will be triggered for countries whose government-guaranteed debt is not fully captured under the country's public debt definition (1.). The Nepali government provided guarantee to the purchase of airline by SOE in FY 2018/19, which is 1% of GDP.			
**2.1 percent of GDP = 6.01 percent of GDP (PPP contracts as of 2017) 35 percent of shock (default setting).*			

Source: *Debt Sustainability Analysis, IMF, 2020.*

Contingent liabilities from SOE debt (2 percent of GDP), PPP ventures (2.1 percent of GDP), and financial sector debt are all included in the contingent liability stress test (5 percent of GDP). The government has not officially compiled PPP projects. As of 2017, Nepal's PPP contracts are projected to account for around 6% of GDP, according to the World Bank's PPI database. Nepal's big SOEs are the Nepal Oil Corporation (NOC) and the Nepal Electricity Authority (NEA). The debt of the NOC and NEA was 3.3 percent of GDP as of July 2019. Since their loans are all owed to the government, they are now counted in the debt of the government. In FY2018/19, the government issued a 1.0 percent of GDP guarantee to Nepal Airlines Corporations for the purchase of an airplane.

For the past couple of years, growth has performed admirably. Actual GDP growth increased to 7.1 percent in FY2018/19 from 6.7 percent the previous fiscal year, thanks to good performances in agriculture, reconstruction,

and tourism. It is expected to converge to 5.3 percent potential growth in the mid- to long-term. The annual inflation rate was 4.6 percent in FY2018/19 and jumped to 6.0 percent in mid-July 2019 due to a spike in food prices, but it is projected to settle at 5.3 percent in the medium term.

Due to continued strong import expansion, the current account deficit remained high at 7.7% of GDP in F/Y2018/19. Exports and foreign direct investment remained small, with remittances (which accounted for a quarter of GDP) helping to fund the high trade deficit. From Rs. 108 billion at the end of the previous fiscal year, gross official reserves fell to Rs. 99 billion in July 2019. Due to significant positive net errors and omissions in the balance of payments (2.7 percent of GDP in FY2018/19), the large current account deficit did not result in a commensurate rise in external debt or reduction in reserves in FY2018/19. With slowing import demand, the current account deficit is expected to narrow in the medium term. External debt will steadily decrease over time, reaching 18.5 percent of GDP by mid-2020.

The central government's primary fiscal deficit outturn fell to 4.0 percent of GDP in F/Y2018/19, down from 6.1 percent the previous year. Despite the fact that the FY2019/20 budget calls for a large rise in spending, the primary fiscal deficit is expected to be 3.9 percent of GDP in FY2019/20 due to spending capacity constraints. It is expected to fall to 3.2 percent of GDP in the medium term.

To cover its fiscal deficit, Nepal's government is expected to steadily increase domestic borrowing. Domestic borrowing is expected to cross 4% of GDP annually, and the domestic debt stock is expected to rise from 13 percent to 35.5 percent of GDP in the long run, while external debt is expected to fall to 11% of GDP over the forecast period.

5. Trends of Public Debt with GDP from 1992/93 to 2018/19

The figure 1 shows the total debt, internal debt and external debt as a percentage of GDP. Internal debt and external debt have been steadily increasing from 1992/93 to 2018/19 and the GDP percentage of external debt in 1997/98 was the lowest at 0.04 percent. The highest percentage is seen in 2018/19. It represents the percentage of internal and external debt by 0.5 percent and 0.93 percent, respectively. This means that the internal and external debt of Nepal seems to be steadily increasing at the GDP percentage. Thus, with the increase in debt, the economic development of the country also seems to have gradually increased, which can be taken positively. The total debt looks slightly different in 2016/17 and 2017/18. The highest is 0.93 percent in 2016/17 and the lowest is 0.14 percent in 2017/18.
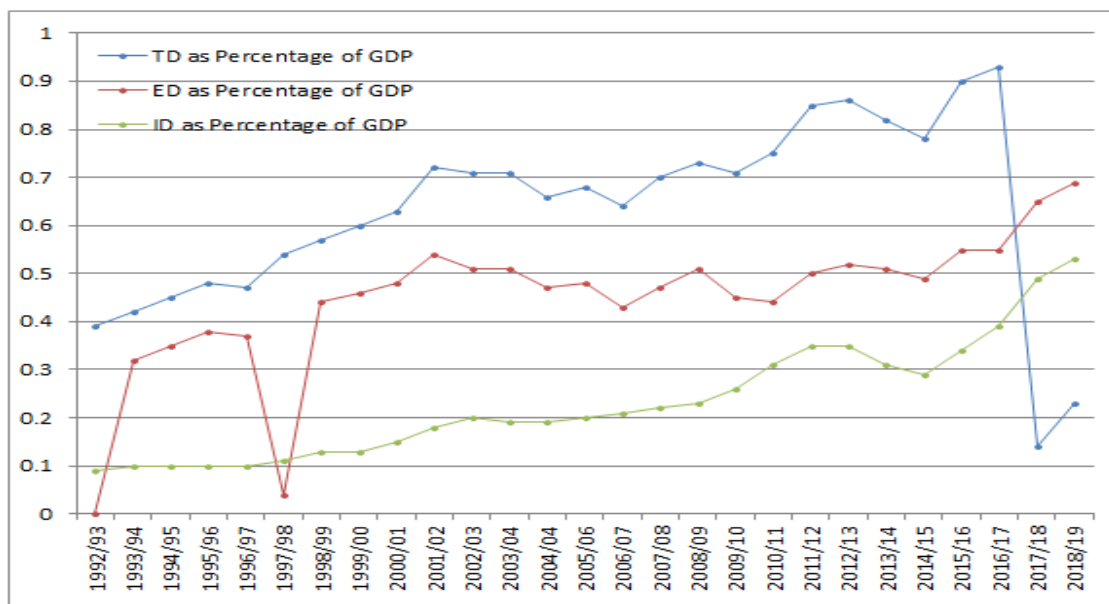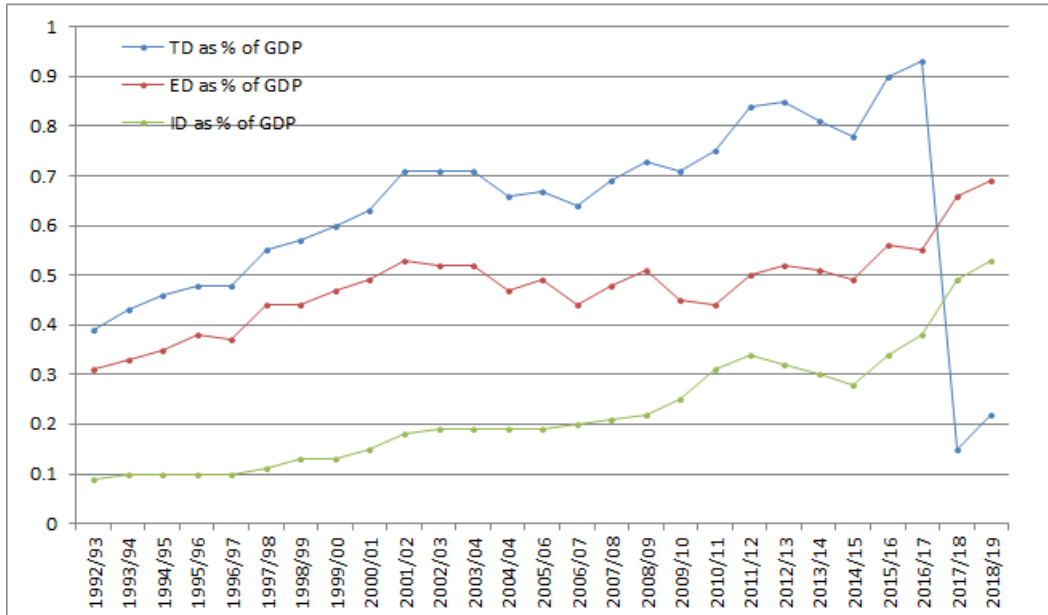

Figure 1. Trends of Public Debt with GDP from 1992/93 to 2018/19

Source: Drawing from Economic Survey, 20219/20

6. Trends of Outstanding Debt with GDP from 1992/93 to 2018/19

The figure 2 shows Nepal's outstanding debt so far which we have shown by the percentage of GDP. In this diagram also, the share of internal debt and external debt with GDP percentage has been increasing steadily since 1992/93. In 2018/19, both of them are in high percentage. That is, in 1992/93, the percentage of GDP in internal debt and external debt was 0.53 percent and 0.69 percent respectively. This means that as the outstanding debt increases and the GDP percentage also increases.

Figure 2. Trends of Outstanding Debt with GDP from 1992/93 to 2018/19

Source: Drawing from Economic Survey, 20219/20

The figures 1 and 2 show that GDP has not increased as expected as internal and external debt has increased. But even as our total debt burden is gradually increasing, are we falling into the debt trap ourselves? Questions can be analyzed.

7. Discussion from the Regression Model

Nepal's public debt and economic development is explained by the above two figures. In this part, we can explain the four equations of the regression model prepared in the research method with the help of Microsoft Excel 2016 by the following figures and equations on how public debt has affected the economic growth of Nepal.
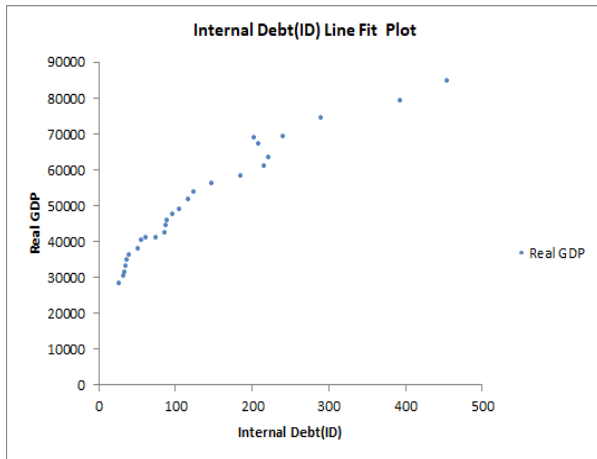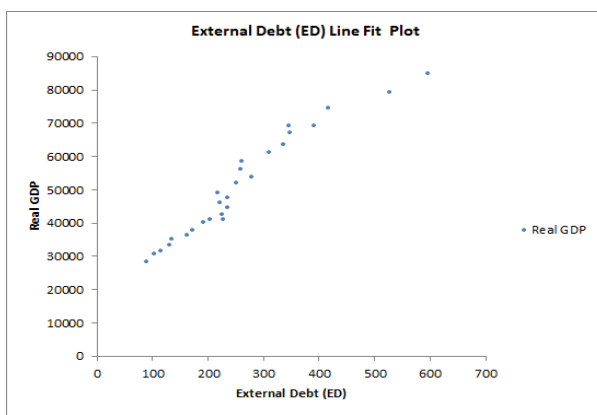
Figure 3. Internal Debt with GDP

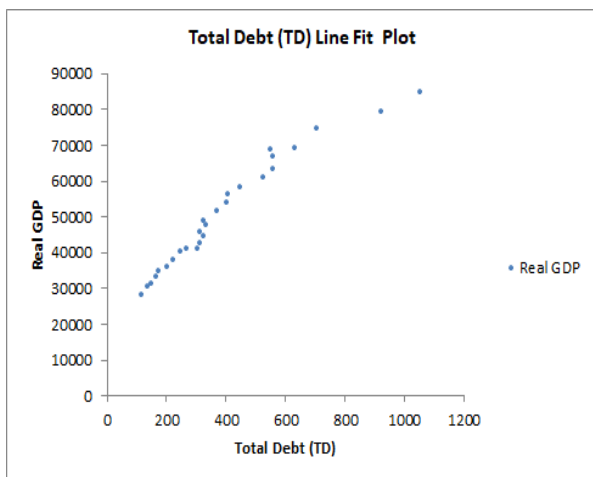**Figure 4.** External Debt with GDP

Figure 5. Total Debt with GDP

From the equation no. 1, $GDP_t = 32670.15 + 136.38ID_t + \varepsilon$.

P -Value = 1.80692E – 15 and R^2 = 0.92354

From the equation, there is positive relationship between GDP and ID which means when ID increases then GDP also increases. The intercept term β_0 is 32670.15which indicate that GDP would be 32670.15 if the ID is zero. The result shows that change β_1 of ID is 136.38 which explain that one unit increase in ID causes GDP would increase by 136.38. The coefficient of determination R^2 is 0.92354 which means that 92.35% of variation of GDP is determined by the explanatory variable i.e. internal debt. In other words, if we are trying to explain what may effect to GDP. There might be other factors that can explain this variation but this model which includes only internal debt can explain 92.35% of it. This means that 7.65% of the variation in GDP cannot be explained by internal debt alone. Therefore, there must be other variables that have an influence also. Similarly, the calculated P- value is 1.80692E-15 means almost zero of P- value which is less than the 0.05 which implies that the model is statistically significant. Hence, the study is statistically significant.

From the equation no. 2,

$$GDP_t = 19074.81 + 125.71\beta_2 ED_t + \varepsilon$$

P -Value = 1.59438E – 16 and R^2 = 0.93700

GDP and ED have a positive relationship, according to regression model equation no.2. Simply put, as the ED rises, so does the GDP raises. If the value of ED is zero, the GDP is 19074.81. This equals 19074.81 for intercept zero. Similarly, the change in ED is 125.17, implying that a one-unit change in the ED produces a 125.17 change in GDP. The coefficient of determination R^2 is 0.93700, indicating that the explanatory variable, foreign debt, is responsible for 93.7 percent of the difference in GDP. This means that external debt alone cannot account for 6.3 percent of GDP variance. As a result, there must be other factors that play a role. Similarly, the calculated P - value is 1.59438E-16 which is also almost zero and which is also less than the 0.05; this implies that the model is statistically significant.

From the equation no. 3,

$$GDP_t = 25299.03 + 65.986 TD_t + \varepsilon$$

P -Value = 7.32947E – 17 and R^2 = 0.94079

There is also a positive relationship between GDP and TD, as shown by regression model equation no. 3. 25299.03 is the value of β_0 and 65.986 is the value of β_1. The change in the TD is 65.986, which is equivalent to a change in one unit of GDP. The coefficient of determination R^2 is 0.94079, indicating that the TD is responsible for 94.07 percent of the difference in GDP; the remaining percentage cannot be explained solely by total debt. The regression model's P -value is also less than 0.05, which is almost zero 7.32947E-17. The regression model has a statistically significant coefficient of determination.

From the final equation no. 4,

$$GDP_t = 23389 - 37.32\beta_1 ID_t + 0 + 83.772 TD_t + \varepsilon$$

P -Value = 1.85966E – 16 and R^2 = 0.94162

From this equation, this is the multiple regression models, where β_0 is 23389 and value of β_1 is -37.32, β_1 is 83.772. The coefficient of determination R^2 is 0.94162 which means 94.16% of variation of GDP is determined by the public debt alone and remaining part of the other variables influences the 5.84% only. The P- value is 1.85966E-16, this value is also less than the 0.05 level of confident, and hence, this model is also the statistically significant.

8. Conclusion

The effect of the rising trend in government borrowing on economic growth was examined in this report. Because of the limited revenue resources, government spending has risen faster than government revenue. As a result, the government has taken out loans from both internal and external sources. Borrowing is on the rise,

posing a significant problem for debt management and posing a major challenge for the economy. Borrowing money is most likely funded by non-monetized and unproductive sectors of the economy, putting the nation at risk.

Owing to a lack of internal capital mobilization, a widening investment saving gap, export import gap, tax expenditure gap, and a high fiscal deficit, the external debt's degree of indebtedness has increased. As a result, there has been an overabundance of international loans to fill in the gaps. As a result, the debt burden and debt servicing obligations are increasingly rising each year, while the economy's debt servicing ability is not keeping up.

During study, it was discovered that government borrowing has risen unlikely and has been funded mostly on unproductive sectors such as uncertainties and high expenses, resulting in the government still lacking the money and having to take out new loans to pay off the old ones. As a result, the public debt and its interest are steadily rising, but the debt's repayment potential is not increasing at the same pace.

Nepal has been taking public debt for economic development since 1963. This process continues to date. This can be clearly seen from the figures we have described in the analysis, in the period from 1992/93 to 2018/19. This is also analyzed the current situation of Nepal's public debt and economic growth of 2018/19.

Thus, for almost 27 years, Nepal's public debt growth rate has been steadily increasing, albeit to a lesser extent. Total debt only looks slightly different in 2016/17 to 2017/18 while it has only increased steadily at other times.

The regression model is constructed from four equations of data. The same results are obtained in all the equations. The regression model constructed between economic growth and internal debt, external debt and total debt is statistically significant in all. Also P value is almost zero in the total equation. This means that the choice of independent variable and dependent variable seems to be correct. R^2 is more than 90% of the entire equation model. Not only in Nepal but also various other developing countries are taking public debt for the economic development of their country. Not only in Nepal but also in other countries there is a positive relationship between public debt and economic development. But they seem to have made a leap forward in the country's economic development from public debt. In the case of Nepal, it cannot be seen as such, but public debt seems to have increased the country's economic development. But it needs to be used properly.

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