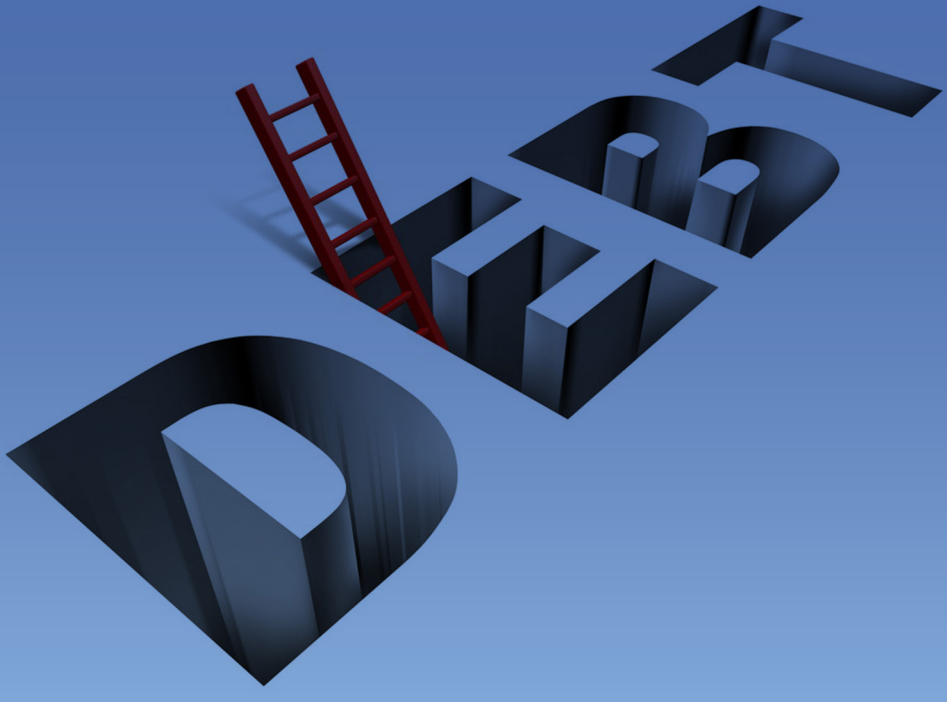
Legislative and Empirical Analysis of

PUBLIC DEBT IN NEPAL



SAMRIDDHI
FOUNDATION

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Ashesh Shrestha
Prience Shrestha

Abbreviations and Acronyms

ADF	Augmented Dickey- Fuller
AIC	Akaike Information Criterion
ARDL	Auto- regressive Distributed Lag
ECM	Error Correction Model
FCGO	Financial Comptroller General's Office
FPE	Final Prediction Error
GDP	Gross Domestic Product
IGFA	Inter-governmental Fiscal Arrangement Act
LGOA	Local Government Operations Act
MoEAP	Ministry of Economic Affairs and Planning
MoF	Ministry of Finance
NNRFC	National Natural Resources and Fiscal Commission
NPR	Nepalese Rupee
NRB	Nepal Rastra Bank
PDMO	Public Debt Management Office
RDB	Real Domestic Borrowing
RFB	Real Foreign Borrowing
RGDP	Real Gross Domestic Product
SC	Schwarz Information Criterion
SoE	State-Owned Enterprise
VAR	Vector Auto regression

Table of Contents

List of Tables and Figures

Executive Summary

There is a general tendency of government expenditure to move in an upward direction. Most of the countries of the world have seen positive progression in state activities. Deficit financing has become an increasingly popular tool favored by governments around the world to finance their state activities. Thus, with the rise in government expenditure, there has been a subsequent rise in budgetary deficit. As these deficits are generally financed by borrowing, the government is obligated to service or to repay its debt under agreed terms. As public debt is generally serviced through taxes and for taxes to increase while tax rates remain constant, the national income of the country must increase with rise in expenditure made through borrowing. In other words, debt-financed expenditure should have a positive effect on the Gross Domestic Product (GDP) of a country.

In this paper, we attempt to analyze effects of domestic and foreign borrowing on the GDP of Nepal through regression analysis. The result showed that there is a very small negative effect of domestic borrowing on the GDP of Nepal. However, the result is statistically insignificant. Therefore, we should be cautious while interpreting the result as the study is subject to various limitations such as limited data, use of limited explanatory variables and lack of consideration of various external shocks. Therefore, the result should be taken as indicative only.

The study has also analyzed various laws which guide arrangement and management of public borrowings in Nepal. The Inter-Governmental

Fiscal Arrangement Act, 2017 specifies that all three levels of government can run on deficit. However, no government can run on deficit for financing administrative expenses, which means that they have to bear the administrative cost through revenue generated from various sources.

In order to finance their deficit, sub-national governments can borrow from domestic sources; however, they must take permission from the federal government prior to taking loans. The Act gives authorization to only federal and state governments to issue domestic debt instruments, from which we can infer that local governments cannot issue debt instruments such as municipal bonds. This means that the only source of borrowing for the local governments is the federal government.

The local and state governments can bid for the loans by making a proposal to federal government specifying the use of the loan, maturity period and repayment plan. The federal government can accept or reject the loan proposal sent by sub-national governments. In case the loan is granted and if a particular sub-national government is unable to repay its debt to the federal government within pre-determined time frame, the federal government can recoup the amount by deducting it from the grants to be distributed to the sub-national government in question.

Regarding the management of public debt, the federal government has registered a Bill in the House of Representatives of the Parliament. The Bill has introduced Public Debt Management Office (PDMO) as a separate body which will be handling all matters related to management of public debt including estimation of borrowing required for a fiscal year, identification of the sectors for mobilization of public loans, issuance and auctioning of debt instruments, among others; all of which used to be jointly handled by the central bank and the Financial Comptroller General's Office (FCGO) previously. This federal body has been given the sole authority to manage matters related to debt of all three levels of government.

The Bill complements the Intergovernmental Fiscal Arrangement Act in areas of raising and managing public debt at all levels of the government. The Intergovernmental Fiscal Arrangement Act grants federal, state, and local governments the right to raise loans in order to finance their fiscal deficits. In addition, the Public Debt Management Bill briefs upon the nature of the loans that can be raised by different levels of the governments, debt issuance mechanism, the terms and condition governing interest and principle repayment, ultimate liability, and the process for recouping loans if defaulted by the subnational governments. The Bill also assigns Public Debt Management Office the function of administering debts for all governments.

The Bill allows the federal government, on behalf of itself or other sub-national governments, to raise external loan of no more than NRs 1.2 Trillion at once or during multiple occasions. This decision to assign external debt ceiling appears rational in terms of preventing external debt crisis that can seriously jeopardize the macroeconomic condition of the country. However, the rationale behind rigidly placing the external debt ceiling at a certain amount may not be sufficiently scientific.

According to the Bill, only federal government will have the authority to raise external loans. In the event of acquiring external loans for sub-national governments, the related sub-national government/s will be held responsible for servicing the principal and interest amount.

Public Debt Management Bill also has a provision whereby the federal government can preside as a guarantor on internal/external loans raised by/for sub-national governments. As such, the statute that recognizes the ability of the federal government to guarantee loans raised by/ for sub-national governments still validates the assumption that not all debts raised by the subnational governments are federally guaranteed.

In case of debts that are federally guaranteed, the federal government shall ultimately be held liable in case of default. And, the default is likely to be recognized as a default by the nation itself. However, in order to prevent subnational defaults from affecting the national debt status, the Bill allows the federal government to recoup the principal and interest payment of the loan raised by sub-national governments by holding up the exact amount of revenue to be shared by the federal government with the defaulting sub-national governments. However, in case of default of federally-uninsured debt by the sub-national governments, it is unclear if it will merely be considered as default by that defaulting sub-national government or shall have ramifications at national-level as well. Subsequently, the resolution mechanism after such default is also unclear.

Regarding the authority to the PDMO to single-handedly manage and oversee debt of all three levels of governments, it is highly doubtful if it is practical for a single federal agency to administer debts for 761 units of governments at federal, state and local level.

The Bill does not discuss any hedging mechanism to address exchange rate risk when foreign loan is raised in foreign currency. Nepali currency's exchange rate has remained unstable over the past several decades. More recently, the Nepalese Rupee (NPR) has been constantly depreciating compared to the US dollar. As such, it is highly likely that in case of foreign loan, Nepalese side will pay-back a higher sum in NPR terms than what was raised initially. It would be prudent therefore to consider suitable hedging mechanisms as the federal government works on building a legal framework guiding public debt in federal Nepal.

On the basis of our analysis and discussions of various issues throughout the paper, we have come up with recommendations.

1. **Proper maintenance of statistics**
   In order to prioritize expenditure financed through domestic borrowing into various sector such as education, health, infrastructure to name a few, we require data related to expenditure

made on various sectors financed through borrowing in the past. With the availability of these data, we can better study the effect of debt financed expenditure on various sectors and on the GDP.

2. Clarity of federal legislations

The Inter-governmental Fiscal Arrangement Act, 2017 provides authority to local governments to raise domestic loans. However, the Act does not mention the sources from where the local governments can obtain the loans. Hence, the sources of domestic borrowing for local governments should be clearly mentioned in the Act.

3. Scientific basis for fixing debt ceiling

While one can sense the rationality behind setting ceilings on external debt, the process does not appear to be sufficiently scientific. External debt ceilings, if any, should be relative to size of the national economy, and should not compromise secure development aspirations.

4. Need of a hedging mechanism

In order to eliminate or minimize the substantial amount of exchange risk affecting the foreign debt payment, the Public Debt Management Bill should provide a legislative framework for an effective hedging mechanism to address exchange rate risk in debt contracts that are of long-term nature. For such purpose, the Bill should recognize methods of leveraging financial derivatives such as future contracts and options available on global financial market in order to effectively hedge the risk.

5. Clear resolution in case of default of federally-uninsured debt

In case of default of federally-uninsured debt raised by the sub-national governments, it is unclear if it will merely be considered as default by that defaulting sub-national government or shall have ramifications at national-level as well. Subsequently, a clear resolution mechanism is also missing in the Public Debt

Management Bill. A clear resolution mechanism should be devised and included in the Bill.

6. Coordination in managing sub-national debt

The PDMO has been given the authority to administer and manage sub-national governments' debts until they are deposited in the consolidated funds of the respective sub-national governments. The sub-national governments do not have any role in managing their debt. Assigning full authority regarding administration and management of sub-national debt to the PDMO rejects the spirit of Fiscal Federalism, and represents centralization in this crucial aspect of public finance. Additionally, it is also doubtful if it is practical for a single federal agency to administer debts of 761 governments. Hence, it would be more practical if sub-national governments are also involved in managing their debt while PDMO works as a co-ordination agency.

7. Provision of credit rating

Considering the low marketability of federal government's debt instruments and nascent stage the sub-national governments are in, the credibility of the sub-national debt instruments will be obscure to the creditors. Therefore, to provide more information about the credibility of the debt instruments, provision of credit rating can play a crucial role on improving the marketability of government securities.

Chapter 1:
Introduction

There is a general tendency of government expenditure to move in an upward direction. Most of the countries of the world have seen positive progression in state activities. Economists, upon studying the trend of public expenditure, have come to the conclusion that government expenditure seldom remains stagnant and almost never moves in the reverse direction.

German economist Adolf Wagner was one of the earlier economists who theorized the idea as 'Law of Increasing State Activities'. Wagner (1883) offered three reasons to support his hypothesis. Firstly, as the economy grows, the legal complexities of the relationship between economic actors are intensified. The diversification of industries and labor force requires different set of rules depending upon their nature. Because of this, Wagner envisaged enlarged role for the state in the form of regulatory and protective institution. Moreover, population growth requires a need for increased public services, including law and order, giving rise to additional public expenditure. Wagner also asserted that as the size of private activities increases and nations become more advanced, there are high chances of market failure, which the state has to prevent or cure inevitably causing a rise in expenditure.

Secondly, demand for social and cultural goods increases with growth of population and rise in income. The rise in demand for education, health and other public services pressures the government to fulfill this demand causing an upward thrust in public expenditure.

According to Wagner, public services have income elasticity of demand greater than unity, which means that the demand for public services rises in greater proportion than rise in income. Hence, as the size of economy grows, more than proportional rise in demand for public goods augments public expenditure concomitantly.

Lastly, Wagner argues that advancement of technology and high economies of scale along with huge sunk cost in production of certain private goods and services could lead to formation of monopolies. Also, some production activities require huge investments and in some of these cases, states might be better positioned to conduct the function efficiently. To prevent market failures which are the result of private monopolies and in some circumstances, to produce goods more efficiently, government could have to incur huge expenditure.
Peacock and Wiseman (1961) offered an alternative viewpoint on the nature and cause of rise in public expenditure. Their study of Britain's public expenditure trend has shown that government's expenditure has a propensity to rise suddenly in steps and does not follow a smooth pattern. Their explanation is based on what is called the 'displacement effect'.

During normal times when societies are not subjected to unusual pressures, the rate of taxes tend to be stable. Any attempt to increase the tax rates would be unwelcomed by the voters as people are reluctant to make a tradeoff between higher taxes and increased government services, and hence would be unlikely. Therefore, the size of government expenditure grows steadily with the rise in real output of the economy and a sudden escalation of government expenditure is highly improbable. A sudden shock, such as war, however creates a displacement effect shifting public revenue and expenditures to new levels. After such a shock is over, new ideas of tolerable tax levels emerge, and a new plateau of expenditure may be reached with public expenditure again taking a broadly constant share of gross national income, though a higher share from the former one.

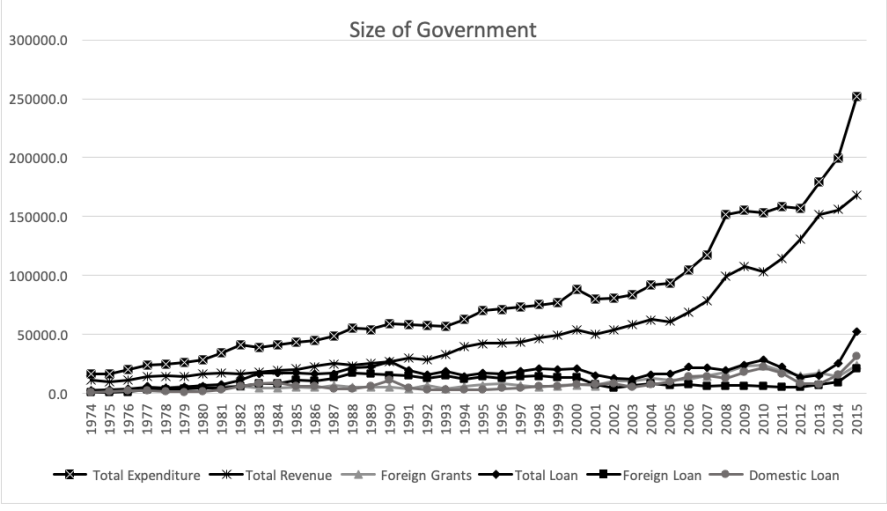
Such displacement of public expenditure is generally caused by some social disturbance. While Peacock and Wiseman saw war as such disturbance in their study, disturbances are not limited to war but also include economic crisis, natural calamities and others. Such disturbances cause drastic shift in public expenditure and revenue to higher levels. People's idea about tolerable burden of taxes changes after such disturbances and increased burden of taxes becomes the new normal.

The COVID-19 pandemic is a case of such social disturbance which could lead to displacement of the current level of public expenditure to a higher plateau. In order to contain the contagion and to address subsequent post economic and social impact, the government needs to undertake unprecedented expenditure which cannot be financed by existing level of revenue. Thus, we can expect sweeping changes in public expenditure and tax rates. Taking reference from Wiseman and Peacock's hypothesis we can anticipate the continuation of the increased government expenditure post the crisis due to probable change in people's tolerable tax burden.

1.1 Trend of government expenditure and sources of finances in Nepal

Both hypotheses have assumed that the rise in public expenditure is financed by increased level of taxation. Debt financing, which has been very popular in modern times has been neglected by these theories. Thus, we now consider these theories to provide explanation for rise in public expenditure in Nepal. Additionally, we will also focus on the method by which rising expenditure is being financed in Nepal.

Figure 1: Size of Government in Nepal



Source: A Handbook of Government Finance Statistics 2017, Nepal Rastra Bank

The figure shows the size of government in Nepal over the period of 41 years from 1974 to 2015. The government expenditure depicts a rising trend in general, surging from 16,915.9 million rupees in 1974 to 251,592.9 in 2015 adjusting for inflation with exceptions during some years. This rise in public expenditure can be attributed to the increase in role of state in the form of regulatory activity with advancement of the economy, rising demand for public goods and services as a result of population growth, and prevention of private monopolies as theorized by Wagner.

Similarly, displacement effect hypothesis could also explain the rise in public expenditure in Nepalese economy. The end of the Maoist insurgency with abolition of Monarchy and the change in political system in 2006 necessitated a rise in the government expenditure. The government had to rebuild the infrastructure destroyed during the Maoist armed revolution. In a similar manner, the earthquake of 2015 also caused displacement of previous level of government

expenditure. As we can see in Figure 1, the government expenditure spiked sharply in the fiscal year 2015/16 following the massive earthquake. Government's relief packages and reconstruction program required unparalleled expenditure requirement causing the government budget to bloat.

Even though public expenditure in Nepal has seen an upward trend in general, there have been exceptions during some years. We can see visible decrease in the government expenditure after 1990 which took 5 years to move back to the 1990 level. The fall in government expenditure in this period could be accredited to the liberalization and privatization policies of the period. The privatization of various loss incurring State-owned Enterprises (SoE) freed up government's budget as the government was released from having to finance their losses. Similarly, private production of several goods and services substituted the government production, raising the share of private sector in the economy and successive decline in the size of government. Similarly, we can also see reduction in government expenditure starting at 2001 which did not increase significantly up until 2006. This was the period when Maoists' armed revolution was at its peak. During insurgency, development initiatives took a back seat. Moreover, the country lost private sector confidence and the economy faced a major brunt as a result of which growth rate declined to as low as 0.12 percent in 2002. All these caused an adverse effect on government revenue and expenditure.

While the primary source for meeting the rising expenditure needs, which is revenue, has followed the trend similar to that of expenditure, total expenditure also constitutes borrowing which has become an essential source of financing government expenditure in Nepal. According to the Economic Survey of the fiscal year 2018/19, the total outstanding debt until mid-march 2018/19 stood at Rs. 978.45 billion, out of which the share of internal and external debt was Rs.383.59 billion and Rs. 594.86 billion respectively. The outstanding public debt to Gross Domestic Product (GDP) ratio remains 28.2 percent till the mid-march of the fiscal year 2018/19.

1.2 Digging Deeper on Debt Financing

There are varying schools of thought on both support and disapproval of debt financing. Classical economists who believe in anti-interventionist approach advocate for balanced budget and argue that state should have very limited role in the economy and the role it takes should be financed by tax revenue. When government finances its expenditure through borrowing, it absorbs financial resources available to private sector, nullifying any effect of debt-financed expenditure. Additionally, JB Say has questioned the productivity of expenditures which are debt financed. He was of the view that even though the money generated though borrowing is invested on accumulation of capital, the capital is consumed and lost. Moreover, the nation is burdened by obligation to pay interest.

Such a viewpoint should also be taken seriously specifically in case of a country like Nepal for the fact that it scores very low on accountability index and indices of corruption are high. This means that if Nepal cannot maintain necessary discipline to service these debts on time, then the burden on repayment will fall on the future generation. Where it becomes even more problematic is if the burden falls in the future generation, then the current leaders have even lesser of an incentive to employ necessary mechanisms to ensure that the debts are used efficiently and paid on time.

Keynesians, on the other hand, support deficit financing and public debt. They hold the view that government, by raising loans, brings into use the financial resources of the nation which were left unutilized by the private sector. Debt-financed expenditure drives economy towards full-employment equilibrium and therefore deficit finance is not only desired but encouraged. They do not make any demarcation between productive and unproductive spending. Government consumption spending plays the role of a catalyst which induces investment from the private sector. Hence, the nature of spending bears almost no relationship with its impact in economy. Deficit spending below full employment equilibrium always has positive effect on national income and employment and thus is fully

justified. Keynesians view government spending as a stabilization tool. If the economy moves above full employment equilibrium, it causes an inflationary pressure in the economy. In such circumstance, government expenditure should be contained and government should run on surplus budget.

Government borrowing brings forward future government expenditure and postpones tax payment. Expenditure financed through borrowing basically gives flexibility to the government to bring financial resources from future to finance expenditure of the present. Therefore, the deficit spending shifts burden of tax from the present tax payers to the future tax payers. As future generation has to repay the principal and interest of the money whose benefits were largely consumed by the older generation, there are high chances that they will not agree to bear the consequences of the decision in which they were not involved at all. The future generation will want their tax to be used to finance their expenditure requirements rather than for repayment of debt incurred by past generations. The government then faces the challenge of having to service public debt while being obliged to provide this new generation with public goods and services.

In such case the government has two alternatives by which it can fulfill its debt obligation without altering the supply of public goods and services for the upcoming generation. First is to increase tax rates aiming to increase total revenue which would be sufficient for financing debt without compromising people's demand for public goods. Second, financing its debt obligation using tax-payer's money and borrowing again to finance its expenditure responsibilities or using taxpayers' money to provide them with public goods and services and servicing the debt through further borrowing.

The first alternative comes with a risk of reduced tax revenue as explained by Arthur Laffer through his famous Laffer curve. The Laffer curve is an inverse U-shaped curve depicting the relationship between tax rates and total public revenue. At a very low level of tax rates, government's revenue generation is very low as the government

only receives a small percentage of national output in its coffer. As the tax rates increase, the revenue in government's treasury shows a waxing trend up to a certain level which then reaches its maximum. If tax rates are further increased beyond maximum revenue- tax rates combination, revenue starts to decline, waning further if tax rates are further increased. The optimal combination of tax rates and revenue cannot be known with certainty and differs for different countries. Hence, increasing tax rates can cause revenue to move in either direction.

On the other hand, opting for the second alternative might cripple the economy into the debt trap situation where the government will have to continue its borrowing to service its debt obligation.

To prevent both the kinds of situation and to ensure effective debt sustainability, a prudent expenditure policy and strategy are required whereby expenditure financed through borrowing will have significant positive impact on GDP. A significant contribution to GDP will help to generate higher tax revenue with certainty and without having to increase tax rates, thus will ensure sustainability of the government borrowings.

Chapter 2:
Nepal's Experience of Borrowing vis-à-vis its impact on GDP

In order to see the effectiveness of deficit financing, we need to analyze the relationship between deficit financing and GDP. In order to see the effects of deficit financing on GDP, we have conducted a time series regression analysis. For this purpose, we have broken down public borrowing into domestic and foreign borrowing to see the effects of both types of borrowing on GDP. The econometric specification of the model has been presented below.

$$RGDP = a1 + a2RDB + a3RFB + e \ldots\ldots\ldots\ldots\ldots (1)$$

Where,
ai (1,2 and 3) are the parameters to be estimated
RGDP indicated Real Gross Domestic Product
RDB is Real Domestic Borrowing
RFB means Real Foreign Borrowing
e is the error term

2.1 Data Analysis and Empirical Findings

2.1.1 Augmented Dickey-Fuller (ADF) Unit Root Test

In order to test stationarity[1] of the relevant variables, we conducted Augmented Dickey-Fuller (ADF) test. Table 1 shows the result of the Augmented Dickey-Fuller (ADF) test[2]. From the table, we can observe that all variables taken into consideration (Real GDP, Real Domestic Loan and Real Foreign Loan) are non-stationary and have a unit root. But, testing for the unit root of these variables in their first difference, the unit roots in each variable are non-existent. This means that in their first difference these variables are stationary. In other words, Real GDP, Real Domestic loan and Real Foreign loan are integrated of order one I (1).

Table 1: ADF Unit Root Test Results

Variables	ADF Test	P-Value	Critical Values			Remarks
			1%	5%	10%	
Real GDP	4.87	1.00	-3.61	-2.93	-2.60	
Δ Real GDP	-3.82	0.005	-3.61	-2.94	-2.60	I (1)
Real Domestic Loan	-1.23	0.65	-3.62	-2.94	-2.61	
Δ Real Domestic Loan	-6.18	0.00	-3.62	-2.94	-2.61	I (1)
Real Foreign Loan	-1.99	0.28	-3.61	-2.93	-2.60	
Δ Real Foreign Loan	-6.22	0.00	-3.61	-2.94	-2.60	I (1)

Source: Researcher's Calculation based on A Handbook of Government Finance Statistics 2017, Nepal Rastra Bank and World Bank's country data of Nepal.

1 A time series data is said to be stationary if its value tends to revert to its long-run average value and properties of data series are not affected by the change in time only. On the contrary, the non-stationary time series does not tend to return to its long-run average value, hence, its mean, variance and co-variance also change over time. If the time series is non-stationary, it is said to have a unit root. Therefore, in econometrics, the stationarity of a time series is examined by conducting unit root test. Stationarity or non-stationarity of the underlying time series may have a strong influence on series behavior and properties. The use of non-stationary data might result into spurious regression which refers to the phenomenon of getting a regression relationship between two variables despite them being independent. Thereby, if one conducts a regression on non-stationary data s/he may obtain useless results. If a time series is stationary in its original form, it is said to be integrated of order 0 or I (0). If the time series is stationary at its first difference i.e Yt – Yt-1, it is said to be integrated to be order of order 1 or I (1) and so on.

2 If P-value of the time series is less than 0.05, it is stationary and does not possess unit root.

2.1.2 Auto-regressive Distributed Lag (ARDL) Model Test

As all the variables are integrated of order one I (1), we can either employ Johannsen Co-integration test or ARDL model test to check the long-run association between these variables as prescribed by Shrestha & Bhatta (2017). Here, we have employed ARDL model. In order to determine the effect of domestic and foreign loan on GDP, a multivariate regression was conducted with Real GDP as dependent variable and Real domestic loan and Real foreign loan as dependent variables. Before conducting ARDL model, we need to determine optimal lag length. In order to determine optimal lag length, Vector Auto Regression (VAR) estimation was run.

2.1.3 Vector Auto Regression (VAR) Lag Length Selection

Table 2: VAR Lag Length Selection Criteria

Lag	Log L	LR	FPE	AIC	SC
0	-1008.107	NA	6.63e+18	51.85164	51.97960
1	-848.0266	287.3237*	2.87e+15*	44.10393*	44.61579*

*Note: * indicates lag length[3] selection by the criterion*
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final Prediction Error
AIC: Akaike Information Criterion
SC: Schwarz Information Criterion

All criteria like Akaike Information Criterion (AIC), Final Prediction Error (FPE), and Schwarz Information Criteria (SC) showed optimal lag to be 1[4].

3 An autoregressive process of lag length of p refers to a time series in which its current value is dependent on its first p lagged values. The optimal lag length p is always unknown and therefore has to be estimated via various lag length selection criteria.

4 AIC, FPE and SC are the criteria based on which we determine the optimal lag length. The optimal lag length is the one in which these (AIC, FPE and SC) are lowest.

2.1.4 Bound Test Results

In order to see rise if public loans have any effect on GDP or not, we test the co-integrating relationship between GDP and Real domestic loan and foreign loan using ARDL model. We have applied Bound Test (F-statistics) to explain the existence of the co-integration or long run relationship among the variables in the model.

Table 3: F- Bound Test Table of ARDL (1,0,0) Model

F- Bounds Test		Null Hypothesis: No levels relationship		
Test statistic	Value	Significance	I (0)	I (1)
F- statistic	36.35621	10 %	2.63	3.35
k	2	5 %	3.1	3.87
		2.5 %	3.55	4.38
		1%	4.13	5

Since the F-statistic value of 36.35621 is greater than the upper bound critical value of 3.87 at 5% level of significance, the result suggests that there is a long run relationship between the regressors and GDP in the ARDL Model.

2.1.5 Long Run Coefficient Test Results

Table 4: Long-Run Coefficients of ARDL (1,0,0) Model

Variables	Coefficients	t-stat	P-value
Real Domestic Loan	-0.002495	-0.2333705	0.8166
Real Foreign Loan	-0.010761	-1.232404	0.2260
C	111.6669	1.0665860	0.2935

The table shows long run results of ARDL Model. The result shows that a 1 rupee increment in domestic loan reduces GDP by 0.002 rupees. Similarly, a 1 rupee increment in foreign loans causes a reduction in GDP by 0.01 rupee.

However, the result is statistically insignificant as P value for both explanatory variables is greater than 0.05. Here, we should be cautious while interpreting the result as the study is subject to various limitations such as limited data set, use of limited explanatory variables and lack of consideration of various external shocks. Therefore, the result should be taken as indicative only.

2.1.6 Short-run Dynamics Results of ARDL Process

Table 5: ECM Representation of ARDL (1,0,0) Model

Variables	Coefficient	Std. error	t- stat	P-value
CointEq(-1)*	-0.413110	0.126598	-3.263404	0.0025

R- squared=0.207722, Adjusted R- squared= 0.20722, DW Stat= 1.500379

The Error Correction Model (ECM) model shows that the coefficient of error correction term (0.41) is negative and is highly significant which shows that there exists a long run co-integrating relationship. The negative and statistically significant coefficient of the error correction term further reinforces the existence of long-run relationship among the variables with the speed of adjustment equal to 41 percent. In other words, when there is a disequilibrium caused by a shock in particular year, the system converges back to the equilibrium in an annual rate of 41 percent. Hence, the short run disequilibrium is corrected in two and a half years.

Chapter 3:
Existing Legal Framework Governing Public Debt in Nepal

3.1 Inter-Governmental Fiscal Arrangement Act (IGFA), 2019

Section 23 of the Inter-governmental Fiscal Arrangement Act (IGFA), 2017 has a provision whereby all three levels of government have the right to run on deficit budget. However, sub- section 3 of the same article specifies that they have to clearly specify the means of financing the deficit. Similarly, no government can run on deficit for financing administrative expenses, which means that they have to bear the administrative cost through revenue generated from various internal sources.

As borrowing is the only source of financing deficits, section 14 and 15 of the Act outlines provisions related to public borrowing. Section 14 of the Act specifically talks about domestic borrowing. According to this provision, all three levels of government can raise domestic loans within the limits as recommended by National Natural Resources and Fiscal Commission (NNRFC). However, the provision puts a condition for sub-national governments (local and states) that they have to mandatorily take permission from the federal government prior to taking loans. Similarly, while seeking the permission, state and local governments have to submit a comprehensive proposal detailing the project, intended benefits, and plan for debt servicing.

Sub-section 2 of the same section gives authorization to only federal and state governments to issue domestic debt instruments,

from which we can infer that local governments cannot issue debt instruments such as municipal bonds.

Apart from these, federal government can also provide loans to sub-national governments on the basis of section 15 of the Act. Sub-national governments can bid for loans by making a proposal to federal government specifying the use of the loan, maturity period and the method of repayment. In case the loan is granted and if a particular sub-national government is unable to repay its debt within pre-determined time frame, the federal government can recoup the amount by deducting it from the grants to be distributed to the particular sub-national government.

Regarding domestic borrowing, federal and state governments have the power to issue bonds whereas the local governments are restricted from issuing bonds. Even though the local governments have been given power to raise domestic loans, there is no way they can autonomously borrow as their only source of domestic loans is the federal government. This means that an important part of local public finance is completely in the hands of federal government which goes against the spirit of federalism.

The loans raised by sub-national governments from federal government are federally guaranteed in the sense that in case of defaults there is a mechanism to recover the loans by deducting the bad debts from the grant amount which sub-national governments would otherwise receive. However, state governments can issue domestic debt instruments with consent from federal government. The Act remains silent whether loans obtained through such mechanism will be federally guaranteed or not. Hence, if the state governments are unable to pay back their debt, the subsequent actions to be taken remain obscure.

3.2 Public Debt Management (PDM) Bill, 2020

Regarding the management of public debt, the federal government has registered a Bill in the House of Representatives of the Parliament. The Bill lays down its objective as to properly manage public finance by maintaining co-ordination between fiscal and monetary policy, and by managing domestic and foreign loans as per the needs of the changed context. The Bill has introduced Public Debt Management Office (PDMO) as a separate body which will be handling all matters related to management of public debt including estimation of borrowing required for a fiscal year, identification of the sectors for mobilization of the borrowing, issuance and auctioning of the debt instruments, among others; all of which used to be jointly handled by the central bank and Financial Comptroller General's Office (FCGO) previously. This federal body has been given sole authority to manage matters related to the debt of all three levels of government. All in all, the Bill complements the Intergovernmental Fiscal Arrangement Act in areas of raising and managing public debt at all levels of government.

Sub-section 2 of the Section 5 allows Nepal Government[5], on behalf of itself or other sub-national governments, to raise external loan of no more than NRs 1.2 Trillion at once or during multiple occasions. This decision to assign external debt ceiling appears rational in terms of preventing external debt crisis that can seriously jeopardize the macroeconomic condition of the country. However, the rationale behind rigidly placing the external debt ceiling at a certain amount may not be sufficiently scientific.

Instead, the external debt ceiling could be relative to the changing size of the national economy or foreign reserve value. It would also have to factor in secure development aspirations of the federal government as well as sub-national governments. As such, debt limit in terms of not surpassing certain percentage of the Gross Domestic Production could appear more relevant as it addresses changes in

5 Nepal Government or Government of Nepal refers to federal government of Nepal in the case of Public Debt Management Bill, 2020

the macroeconomic condition of the country. Besides, Debt-to-GDP ratio is also a proven and popular method of gauging the soundness of an economy.

In the same context, setting external debt limit based on the proportion to GDP is not without its own challenges. Before setting the external borrowing limit against any macroeconomic indicator, the rigorousness in calculation of the very macroeconomic indicator (i.e., GDP in this case) is pivotal. Besides, recognizing the exact borrowing capacity of the country is also crucial before setting the external borrowing limit as a prerequisite.

Section 14 of the Public Debt Management Bill, through its eleven sub-sections, enlists the provisions for federal government to guarantee the loans raised by sub-national governments. And, sub-section 4 specifically provides the provision for the federal government, at its discretion, to take guarantee of the internal or external debts raised by/for the sub-national governments. As such, the federal government shall ultimately be liable for the default of the debt taken by/for the sub-national governments. And, the default is likely to be recognized as the default by the nation itself. However, the Bill allows the federal government to recoup equivalent liability from the sub-national government in question by holding up revenue that is to be shared with it by the federal government in subsequent years.

Having said that, in case of default of debts by the sub-national governments not guaranteed by the federal government, it is unclear if such an event will merely be considered as default by the defaulting sub-national government or shall have ramifications at national-level as well. Consequently, the mechanism on repaying or dealing with debt defaulted by sub-national government but not guaranteed by the federal government is unclear. Again, since sub-national governments would only be borrowing at the approval of the federal government, it can be assumed that the federal government will ultimately be held liable on all kinds of defaults by sub-national governments. As such, it would be prudent if the Bill clarified on this matter.

Likewise, it is not clear how the local government shall be raising their public debts. So far, we only know from the Inter-governmental Fiscal Arrangement Act that unlike federal and state governments, local governments are not allowed to issue their own debt instruments. One alternative mechanism here could be that local governments establish local government funds of trust or corporate nature to assess the viability of the project. The fund could act as the fiscally responsible mediator or facilitator of credit for local governments.

Section 4 of the Bill also mentions management of internal debts raised by sub-national governments as a function of the PDMO. As such, the PDMO shall be expected to administer and manage all aspects of sub-national debts until they are finally deposited in the consolidated funds of the respective sub-national governments. Such a provision rejects the spirit of fiscal federalism, and reflects the federal government's power centralization tendency.

Besides, it is also doubtful if it is practical for a single federal agency to administer debt financing for 761 governments. As such, there is no guaranteeing that the agency would not be overburdened and be rendered ineffective if a significant number of governments choose to issue debt-instruments in the same fiscal year.

The PDM Bill does not discuss any hedging mechanism to address exchange rate risk when foreign loan is raised in foreign currency. Exchange rate risk has been an issue that has generated substantial loss for Nepal over the past few decades as a result of exchange rate fluctuation. Especially when the debts mature over a period of multiple decades, which has been a case in Nepal, the effects are more pronounced.

3.3 Local Government Operations Act, 2017

The Local Government Operations Act (LGOA), 2017 has also made provisions related to local government borrowing. Section 68 of the Act states that local governments can raise loans to make capital investment in productive and employment generating sectors without exceeding the limit set by the NNRFC. The maturity of the loan should, however, not exceed a period of 25 years. Loans raised either from the federal government or insured by the federal governments, if defaulted, can be recouped by deducting equivalent amount from grants.

Figure 2: Functions[6] of Public Debt Management Office (PDMO)

Functions of Public Debt Management Office (PDMO)

Estimate required public loan for a fiscal year by coordinating with Ministry of Finance (MoF), Nepal Rastra Bank (NRB), and State Ministry of Economic Affairs and Planning (MoEAP)

▼

Formulate short-term, mid-term, and long-term policy for management of estimated public debt by gathering relevant data and information

▼

Identify areas for utilization of public loans and make recommendation to MoF accordingly

▼

Perform necessary budget projection for payment of estimated debt amount

Manage loans to be raised by/for Federal, state, and local governments

- **Authorize issues of internal bonds** by scheduling auctions in coordination with MoF and NRB
- **Deposit funds raised** following the issue of bonds in respective government accounts
- **Keep records of issued bonds and guarantees** provided by the federal government for such bonds raised by/for state, local governments, and other organizations
- **Raise fees for such guarantees** provided

Keep records and accounts of foreign loans, and track of payment schedule

Identify and analyze the risk of guarantees provided, and make recommendation to MoF accordingly

Chapter 4:
Recommendations

1. Proper maintenance of statistics

In order to prioritize expenditure financed through domestic borrowing into various sector such as education, health, infrastructure to name a few, we require data related to expenditure made on various sectors financed through borrowing in the past. With the availability of these data, we can better study the effect of debt financed expenditure on various sectors and on the GDP. This would help identify the sectors which yield higher return on debt-financed expenditure. Additionally, this will help all governments at all levels to allocate borrowings into various sectors in the most effective manner.

2. Clarity of federal legislations

The Inter-governmental Fiscal Arrangement Act, 2017 provides authority to local governments to raise domestic debt. However, the Act does not mention the sources from where the local governments can obtain loans. Hence, the sources of domestic borrowing for local governments should be clearly mentioned in the Act.

3. Scientific basis for fixing debt ceiling

According to the Public Debt Management Bill, the federal government, on behalf of itself or other governments, can raise external loan of no more than NRs 1.2 Trillion at once or during multiple occasions. While one can sense the rationality behind setting ceilings on external debt, the process does not appear to be sufficiently scientific. External debt ceilings, if any, should be relative to size of the national economy, and should not compromise secure

development aspirations.

Additionally, the Debt-to-GDP ratio is also a proven and popular method of gauging the soundness of an economy. This is another indicator that can be used to guide the level of public debt.

4. Need of a hedging mechanism

In order to eliminate or minimize the substantial amount of exchange risk affecting the foreign debt payment, the Public Debt Management Bill should provide a legislative framework for an effective hedging mechanism to address exchange rate risk in debt contracts that are of long-term nature. For such purpose, the Bill should recognize methods on leveraging upon financial derivatives as future contracts and options available on global financial market in order to effectively hedge the exchange rate risk present in each instalment of foreign loan raised.

It is understood that derivative instruments available in global financial market mostly address short-term contracts and that there is a dearth of instruments that address long-term structure of bilateral and multilateral loan packages. Amid such, the government can always coordinate with International multilateral agencies or bilateral partners to develop a specialized contract that address such risks.

5. Clear resolution in case of default of federally-uninsured debt

In case of default of federally-uninsured debt raised by the sub-national governments, it is unclear if it will merely be considered as default by that defaulting sub-national government or shall have ramifications at national-level as well. Subsequently, a clear resolution mechanism is also missing in the Public Debt Management Bill. A clear resolution mechanism should be devised and included in the Bill.

6. Coordination in managing sub-national debt

The PDMO has been given the authority to administer and manage sub-national governments' debts until they are deposited in the consolidated funds of the respective sub-national governments. The sub-national governments do not have any role in managing their debt. Assigning full authority regarding administration and management of sub-national debt to the PDMO rejects the spirit of Fiscal Federalism, and represents centralization in this crucial aspect of public finance. Additionally, it is also doubtful if it is practical for a single federal agency to administer debts of 761 governments. Hence, it would be more practical if sub-national governments are also involved in managing their debt while PDMO works as a co-ordination agency.

7. Provision of credit rating

Considering the low marketability of federal government's debt instruments and nascent stage the sub-national governments are in, the credibility of the sub-national debt instruments will be obscure to the creditors. Therefore, to provide more information about the credibility of the debt instruments, provision of credit rating can play a crucial role on improving the marketability of government securities.

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Annexes

VAR Result

VAR Lag Order Selection Criteria
Endogenous variables: REAL_GDP REAL_FOREIGN_LOAN REAL...
Exogenous variables: C
Date: 01/05/20 Time: 15:22
Sample: 1975 2014
Included observations: 39

Lag	LogL	LR	FPE	AIC	SC
0	-1008.107	NA	6.63e+18	51.85164	51.97960
1	-848.0266	287.3237*	2.87e+15*	44.10393*	44.61579*

* indicates lag order selected by the criterion
LR: sequential modified LR test statistic (each test at 5% level)
FPE: Final prediction error
AIC: Akaike information criterion
SC: Schwarz information criterion
HQ: Hannan-Quinn information criterion

ARDL Test Result

Dependent Variable: REAL_GDP
Method: ARDL
Date: 01/05/20 Time: 16:42
Sample (adjusted): 1976 2014
Included observations: 39 after adjustments
Maximum dependent lags: 1 (Automatic selection)
Model selection method: Akaike info criterion (AIC)
Dynamic regressors (1 lag, automatic): REAL_DOMESTIC_LOAN REAL_FOREIGN_LOAN
Fixed regressors: C
Number of models evalulated: 4
Selected Model: ARDL(1, 0, 0)

Variable	Coefficient	Std. Error	t-Statistic	Prob.*
REAL_GDP(-1)	1.039930	0.012400	83.86526	0.0000
REAL_DOMESTIC_LOAN	9.96E-05	0.000403	0.247091	0.8063
REAL_FOREIGN_LOAN	0.000430	0.000317	1.356391	0.1837
C	-4.458889	4.644311	-0.960075	0.3436

R-squared	0.997704	Mean dependent var	376.3310
Adjusted R-squared	0.997507	S.D. dependent var	168.3920
S.E. of regression	8.408149	Akaike info criterion	7.193194
Sum squared resid	2474.394	Schwarz criterion	7.363816
Log likelihood	-136.2673	Hannan-Quinn criter.	7.254412
F-statistic	5068.808	Durbin-Watson stat	2.144495
Prob(F-statistic)	0.000000		

*Note: p-values and any subsequent tests do not account for model selection.

Long-run Test

ARDL Long Run Form and Bounds Test
Dependent Variable: D(REAL_GDP)
Selected Model: ARDL(1, 0, 0)
Case 2: Restricted Constant and No Trend
Date: 01/05/20 Time: 16:44
Sample: 1975 2014
Included observations: 39

Conditional Error Correction Regression

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4.458889	4.644311	-0.960075	0.3436
REAL_GDP(-1)*	0.039930	0.012400	3.220179	0.0028
REAL_DOMESTIC_L...	9.96E-05	0.000403	0.247091	0.8063
REAL_FOREIGN_LO...	0.000430	0.000317	1.356391	0.1837

* p-value incompatible with t-Bounds distribution.
** Variable interpreted as Z = Z(-1) + D(Z).

Levels Equation
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
REAL_DOMESTIC_L...	-0.002495	0.010677	-0.233705	0.8166
REAL_FOREIGN_LOAN	-0.010761	0.008732	-1.232404	0.2260
C	111.6669	104.6956	1.066586	0.2935

EC = REAL_GDP - (-0.0025*REAL_DOMESTIC_LOAN -0.0108
*REAL_FOREIGN_LOAN + 111.6669)

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
		Asymptotic: n=1000		
F-statistic	36.35621	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5
Actual Sample Size	39	Finite Sample: n=40		
		10%	2.835	3.585
		5%	3.435	4.26
		1%	4.77	5.855
		Finite Sample: n=35		
		10%	2.845	3.623
		5%	3.478	4.335
		1%	4.948	6.028

ECM Test

ARDL Error Correction Regression
Dependent Variable: D(REAL DOMESTIC LOAN)
Selected Model: ARDL(1, 0, 0)
Case 2: Restricted Constant and No Trend
Date: 01/06/20 Time: 13:20
Sample: 1975 2014
Included observations: 39

ECM Regression
Case 2: Restricted Constant and No Trend

Variable	Coefficient	Std. Error	t-Statistic	Prob.
CointEq(-1)*	-0.413110	0.126589	-3.263404	0.0025

R-squared	0.207722	Mean dependent var	364.1333
Adjusted R-squared	0.207722	S.D. dependent var	3082.701
S.E. of regression	2743.911	Akaike info criterion	18.69746
Sum squared resid	2.86E+08	Schwarz criterion	18.74012
Log likelihood	-363.6005	Hannan-Quinn criter.	18.71277
Durbin-Watson stat	1.500397		

* p-value incompatible with t-Bounds distribution.

F-Bounds Test — Null Hypothesis: No levels relationship

Test Statistic	Value	Signif.	I(0)	I(1)
F-statistic	2.452258	10%	2.63	3.35
k	2	5%	3.1	3.87
		2.5%	3.55	4.38
		1%	4.13	5

The paper titled **"Legislative and empirical analysis of Public Debt in Nepal"** attempt to analyze the effects of domestic and foreign borrowing on the national economy of Nepal through quantitative analyses. For this purpose, the paper conducts a time series regression analysis.by constituting the domestic and foreign borrowing figures of last four decades to see the effects of both types of borrowing on the economic growth pattern of Nepal.

The paper also analyzes the quality of the recently enacted or proposed laws that guide arrangement and management of public borrowings in federalized governance system of Nepal. For such purpose, the paper looks into Intergovernmental Fiscal Arrangement Act, 2019, Public Debt Management bill, 2020 and Local Government Operation Act, 2017 that were proposed or enacted after the promulgation of Constitution of Nepal in 2015.

Following the analysis of the public borrowing figures in relation to the national economy and the current legal arrangements governing public debt management in Nepal, the paper maintains certain conclusive remarks and provides recommendation that is believed to create robust public debt scenario in Nepal conducive to the nation's economic sustainability and growth.

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