A STUDY ON THE CONTRIBUTION OF VALUE ADDED TAX ON ECONOMIC GROWTH OF NEPAL

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Abstract

Government of Nepal adopts this system since Nov. 16, 1997. After several year planning and preparation, VAT act was finally passed through parliament in December 1995. VAT became effective through the finance bill of 1997. VAT avoids the another tax such as sales tax, entertainment tax, hotel tax and contract tax, Nepal was introduced consumption types of VAT, base on the destination principle with single positive rate of thirteen percent. Nepal is a developing county; resource mobilization is one of the alternatives to develop. VAT is necessary to introduce for revenue collection, promote economic growth, for improving deteriorating macro economic performance, to establish an account based modern transparent tax system, to make the tax system more scientific, to get the confidence of donor, to make Nepalese tax system effective. Source of VAT revenue in Nepal are domestic VAT and imports VAT. Share of import VAT revenue is two third and share of domestic is one-third in total VAT revenue. It is expected that the share of import and domestic VAT revenue may be equal in near future. Source of domestic VAT revenue are production, distribution and service sectors.

Since value added tax (VAT) has recent approach, it has also much potentiality power to generate revenue than earlier sales tax because it covers broad coverage and all level of production, distribution and sales. Revenue is the crucial element for the government to accomplish operating and development activities. Tax is the major source of revenue. It contributes a significant share in total tax revenue and total revenue but a little share in GDP in Nepalese context. Revenue mobilization is one of the major concerns for Nepal.

1.1 Introduction

Taxation is as old as government and in ancient times practical considerations such as ease of collection and administration took precedence over the more abstract aims that dominate contemporary tax debates. The Egyptians imposed general sales taxes at major markets, while in the early Roman Republic Caligula was exalted for abolishing the general sales tax in AD 40. Excises and tariffs were the mainstay of tax systems during mercantilist times and it was not until the early 20th century that governments imposed more coherent and comprehensive sales and income taxes to fund their rapidly expanding activities (Adam, 1982).

The term 'Value Added Tax (VAT)' can be defined as a tax levied (on the value created) at each stage in the process of production and distribution of a good or service. These stages can be import, manufacturing, dealers, wholesalers and retailers etc.

The VAT concept is simple, transparent, and consistent in its form, content, structure and approach. It further ensures revenue neutrality and mechanism for self regulated. VAT is intended to tax every stage of sale where some value is added to raw materials, but taxpayers will receive credit for tax already paid on procurement stages. Thus, VAT will be without the problem of double taxation as prevalent in the earlier Sales tax laws.

The major aim of most governments in developing countries is to stimulate and guide their economic and social development. These governments continue to reach out for the goal of government promoted and directed development. The importance of government revenue in accelerating economic development. Whatever the prevailing ideology or political situation of a particular country, it must steadily expand a host of non-revenue yielding services such as education, health, infrastructure, and social security (Kaldor, 1964). The link between taxation and economic development is a link between a universal desire and a form of government action that is the major aim of most governments in developing countries is to stimulate and guide their economic and social development. These governments continue to reach out for the goal of government promoted and directed development (Toye, 1978).

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The tax levied on the value added by the registered taxpayers to their purchase and import is called value added tax (VAT). The basis for VAT is the value addition that takes place at each level in the production and distribution process of goods and services (Khadka, 2001). There are three variants of VAT, namely production-type VAT, income-type VAT, and consumption-type VAT. Production-type VAT is simply calculated on the sum of all expenditure on Gross Domestic Product (GDP) net of government wage expenditure (Zee, 1995). Under this variant, capital goods purchased by a firm from other firm are not deductible for the tax base in the year of purchase (Khadka, 1989). Income-type VAT relates with the sum of factor of income payments. Under this system, capital goods used for methods of production are not fully deductible but only a portion relevant to a particular period is allowed to deduct and the remaining portion is carried over for the next period" (Silwal, 2000). Consumption-type VAT basically relates with the domestic consumption irrespective of capital or consumable goods and services.

It is normally implemented under two principles; such as the origin and destination principles. Under the origin principle, goods and services are taxed at the place where they are produced or rendered whereas destination principle signifies that goods and services are taxed at the place where they are consumed irrespective of its place of production. Imports are exempted and exports are taxed under origin principle while imports are taxed and exports are exempted under destination principle. There are three methods of calculation, viz, addition method, subtraction method, and credit invoice method. Under the addition method, VAT is calculated on the value derived by adding all costs incurred to the factors of production like material, wages, overheads, profits etc. while VAT is calculated by deducting raw materials from the sales under the subtraction method. Under the credit invoice method, tax

paid on the purchase of inputs is allowed to deduct from the tax collected from the sale of goods and services. Moreover, some other important aspects of VAT design issues must be addressed. This comprises the numbers of tax rates, the scope of exemptions and zero-rating goods and services, level of exemption threshold, and administrative apparatus.

VAT is the recent innovation in the field of taxation in Nepal. Despite all the constraints and obstructions from the business communities, VAT was introduced in Nepal on 16 November, 1997 with the objectives of increasing revenue mobilization by broadening the tax base, and of instilling neutrality, efficiency, fairness, and transparency in tax administration. It was launched in place of the then four different taxes, namely, Sales Tax, Contract Tax, Entertainment Tax, and Hotel Tax. However, it could not be implemented fully until the Fiscal Year 1998/99 due to political instability and strong opposition of business community.

1.2 Statement of the problem

VAT has come of 16 years in Nepal, but it has completed 57 years in the international arena of taxation as it was firstly introduced in France in 1954. VAT in Nepal has witnessed many ups and downs and twists and turns so far. VAT has become important source of revenue to the Nepal. The Government of Nepal is intending to increase percentage of VAT imposed on goods and services because of its relevance to income base of the country. It is therefore appropriate to carry out a research to determine the impact of VAT on the country's economic development. The impact of VAT on the economic developments of the country seems not to be at par with claims of the Government thus there is the need to understand with empirical facts the impact of VAT on the economic development of the nation from 1998/1999 to 2013/14.

This paper investigated the empirical evidence on tax revenue contributions towards economic growth of Nepal using time series annual data from 1998/99 to 2013/14. This work is both descriptive and inferential in nature. It uses data on economic variables: gross domestic product (GDP), Value added tax (VAT), tax revenue (TR excluding VAT), non-tax revenue (NTR), Foreign direct investment (FDI) and foreign revenue (FR) sourced from Ministry of finance, Nepal rastra bank, central bureau of statistics.

1.3 Objective of the Study

The general objective of the study is to assess the contribution of value added tax to the economic growth of Nepalese economy and total tax revenue to achieve the major objectives following are some specific objectives:

- To assess the impact of VAT on economic growth of Nepal.
- To examine the contribution of VAT on Total tax revenue of Nepal.

1.4 Research Hypothesis

- H0: VAT has no significant contribution to economic growth of Nepal (GDP).
- H0: VAT has no significant contribution to total tax revenue (TTR)

1.5 Rational of the Study

Nepalese Government has already been implemented VAT for achieving ultimate objectives of economic development and accelerating growth rate of economy through expanding. During the last few years of VAT implementation, Government has made a great effort to make VAT more effective and productive. Nepal has adopted VAT since 16 November 1997 which has the fowling objectives:

- Expanding the base of tax i.e. bring more goods and services under the tax net.
- Export formation.
- Reducing economic inefficiencies.
- Acceleration of the development pace through more resource mobilization.
- Evolving a simple and transparent tax system.

1.6 Limitation of the Study

This Study has some limitations that are mentioned below:

- The study centers on achieving the broad objective which is to empirically evaluate the contribution of VAT for the development of Nepalese economy and Government revenue. Since VAT was launched in 16 November 1997, this study only covers the time period of sixteen years (1998/99 - 2013/14) the rational for choosing this period is mainly for simplicity of analysis.
- This study only uses secondary data from the MoF, NRB, CBS so that validity and reliability may depend on the goodness of these data.
- In model specification only few variables such as GDP, VAT, TR excluding VAT, NTR, FDI and FR are including many other variables are unable to include.
- This study has been done as macro perspectives.
- It is not a complete study of the whole tax system in Nepal.

1.7 Research Methodology

This study comprises both analytical and descriptive type. This study explores the current policy, trend and composition of value added tax in the Nepalese economy and believed that to carry out the impact of value added tax on GDP and Total tax revenue (TTR).

This study is combined both analytical and descriptive research. It used both the qualitative and quantitative techniques depending on the nature and source of data and information. Time series data covering sixteen years from 1998/99 to 2013/14 assess the impact on GDP and Total tax revenue. The secondary data were taken from Ministry of Finance (MOF), Nepal Rastra Bank (NRB), National Planning Commission (NPC), and Central Bureau of Statistics (CBS).

The study employed specific techniques of data collection and analysis methods in a way that seems pertinent to the study. The study was employed a documentary reviewing method. To address the objectives of the research and to analyze the data, descriptive statistics, simple and multiple regression

SPSS version 16 was employed and used for testing the hypotheses. These statistical computations were employed to explore the inherent relationships among the variables.

The Model Specification

This study used six macro-economic development indicators of GDP, VAT, TR, NTR, FDI and FR and established the link between the VAT and GDP. However, this study improved upon them by using the periods from 1998/99 to 2013/114, as such it update the analysis and it captures the link between VAT and its role on economic growth especially in the Nepalese context by including some necessary variables and adjusting them based on the objective of this study. Hence, the model of this paper was developed based on these variables selected above of GDP, VAT, TR, NTR, FDI and FR. guided by the perceived functional relationship between the matrix of economic growth (GDP) and VAT, the link forged between these six variables. From sub-macro and micro economic perspectives, the model for this work states that economic growth (GDP) depends on revenue collected from VAT, TR, NTR, FDI and FR. Accordingly, the purposeful relationships and resulting models is specified as below:

Measures of Value added tax Impact on GDP (Model 1)

$$GDP = f(VAT) \quad \ldots\ldots (1)$$

From the above functional relationships, the following stochastic model is specified below:

$$GDP = \beta_0 + \beta_1 (VAT) \quad \ldots\ldots (2)$$

Generally, the working model can be restated in its natural logarithm form as follows:

$$\ln GDP = \beta_0 + \beta_1 \ln (VAT) + \mu \quad \ldots\ldots (3)$$

Where,

GDP = Gross domestic product,

VAT =Value added tax

β_0 and β_1 are model parameters and μ is the stochastic error term.

Measures of Value added tax with other Variables Impact on GDP (Model 11)

$$GDP = f(VAT, TR, NTR, FDI \text{ and } FR) \quad \ldots\ldots (1)$$

From the above functional relationships, the following stochastic model is specified below:

$$GDP = \beta_0 + \beta_1 (VAT) + \beta_2 (TR) + \beta_3 (NTR) + \beta_4 (FDI) + \beta_5 (FR) + \mu \quad \ldots\ldots (2)$$

Generally, the working model can be restated in its natural logarithm form as follows:

$$\ln GDP = \beta_0 + \beta_1 \ln (VAT) + \beta_2 \ln (TR) + \beta_3 \ln (NTR) + \beta_4 \ln (FDI) + \beta_5 \ln (FR) + \mu \quad \ldots(3)$$

Where,

GDP = Gross domestic product,

VAT = Value added tax,

TR =Tax revenue which is summations of both direct and indirect tax and excluding VAT,

NTR = Non tax revenue which is the summations of charges and fees, penalties, escheats and, government investment income, miscellaneous revenue, extraordinary revenue, privatization proceeds and capital revenue,

FDI = Foreign direct investment

FR= Foreign revenue which is the summations of both external aid and loans and β_0, β_1, β_2, β_3, β_4 and β_5 are model parameters and μ is the stochastic error term. The 'priori' expectation is that the model parameter is expected to be positively signed. The implication is the real context as growth is expected even when VAT, TR, NTR, FDI and FR were collected. Natural logarithm was used to make the data under study to be normal and linear. This is because natural log is one of the transformations methods that make the data normal if they are not normal with their actual numbers.

Measures of Value added tax Impact on TTR (Model III)

$$TTR = f(VAT) \ldots\ldots\ldots\ldots\ldots\ldots 1$$

From the above functional relationships, the following stochastic model is specified below:

$$TTR = \beta_0 + \beta_1 (VAT) + \mu \ldots\ldots\ldots\ldots 2$$

Restated in its natural logarithm form as follows:

$$\ln TTR = \beta_0 + \beta_1 \ln (VAT) + \mu \ldots\ldots\ldots\ldots 3$$

Where,

TTR= Total tax revenue combine both tax and non tax revenue.

VAT = Value added tax

β_0, β_1 are the model parameters and μ is the stochastic error term.

1.8 Analysis of the Contribution of VAT on Economic Growth and Revenue Generation

Table 1.1 exhibits three equations with their result value fitted in the equations as well. Moreover, it puts T value, standard error, R^2 and adjusted R^2, F value and Durbin Watson values in each column of the set equations. In the table, different set of models have developed to cover the remittance effects to avoid theoretical and specification errors in the analysis.

In the table, model ? evaluates VAT effect to GDP. Model ?? observes value added tax, tax revenue, non tax revenue, foreign direct investment and foreign revenue and model ??? includes value added tax effect to total tax revenue

Critical Value of T, F and D-W Statistics

Critical T – value of Remittance

	Model I	Model II	Model III
	d.f.(14)	d.f.(10)	d.f.(14)
5% level of significance	2.145	2.228	2.145
1% level of significance	2.977	3.169	2.977

Critical F- value of Remittances

	Model I	Model II	Model III
	d.f.(1,14)	d.f.(5, 10)	d.f.(1, 14)
5% level of significance	4.60	3.33	4.60
1% level of significance	8.86	5.64	8.86

Critical value of D-W coefficients

	Model I	Model II	Model III
	d.f.(1,16)	d.f.(5, 16)	d.f.(1, 16)
d_L	0.844	0.437	0.844
d_U	1.086	1.900	1.086

Table 1.1 : Regression Results in Logged Value GDP and TTR

Models / Description	**I**	**II**	**III**
Variables/Equations	**VAT/GDP**	**VAT, TR., NTR. FDI. And FR./GDP**	**VAT/TTR**
Constant Coef.	(33.981)	(14.112)	(7.420)
VAT Coef.	.995(36.940)	.733(6.931)	.992 (29.778)
TR. Coef.		.040 (1.318)	
NTR. Coef.		.176 (2.380)	
FDI. Coef.		.071(1.582)	
FR. Coef.		.004 (.053)	
No of Observation	16	16	16
R^2	.990	.996	.984
Adjusted R^2	.989	.995	.983
F value	1364.549	544.545	886.749
SEE	.0582890	.0413999	.0944609
D-W	2.338	2.489	1.927

Source: calculation from table: 4.2

Where,

R2= Degree of explanation of the dependent variables
Adj. R2 = Proportion of variation adjusted to the degree of freedom
F = F statistics for the joint significance of all coefficients
D-W = Durbin - Watson statistics for the presence of autocorrelation and
SPSS version 16 has been applied to econometric analysis.

Decision:

T- Test

T- Value of value added tax in model ? is higher than critical t- value. Hence, it has rejected the null hypothesis. Value added tax has individually positive effects on GDP. In model ?? t-value of value added tax is higher than critical t- value. Hence, it has rejected the null hypothesis. T-value of FDI, FR, and TR except NTR are lower than critical value of t. hence they are insignificant on GDP. T- value of value added tax in model ??? is higher than critical t value. So, it has rejected the null hypothesis. Value added tax has individually positive effects on TTR.

F Test:

In model I, II and II Critical value F of is too low in comparison to calculated value of F. It means alternative hypothesis is accepted. Hence, there are significant effects on dependent variable (GDP) and total tax revenue (TTR). The models are overall fit.

DW Test:

d statistics of model I, II and III are higher than critical lower value of DW coefficient (dL). On the other hand, they are more and near to 2. So, there is evidence regarding the absence of positive autocorrelation (accept H0). Hence, it suggests no need to further test of autocorrelation.

VAT consistently seems to be a support to some extent, and hence it has been responsible to grow the GDP from the analysis of table 4.3. From empirical investigation, the econometric analysis does support the hypothesis on the ground of greater F values. On the other hand, other variables have positive coefficients too. In model ? VAT regression coefficient is 0.995. VAT contribution to GDP is high. In model IIVAT (0.733) contribution is higher in comparison to other variables. In model III remittance regression coefficient is 0.992. The contribution of VAT seems very much high to total tax revenue.

Model I is estimated as;

LnGDP = 0 +0 .995 VAT $R^2 = 0.990$

Since elasticity of VAT is 0 .995 which means other things remaining the same 1% change in VAT brings change 0 .995% changes in GDP in the same direction. Since, the value of R^2 is 0.990 it means 99 % variation in GDP is explained by the explanatory variable VAT.

Model II is estimated as;

lnGDP = 0 + 0.733VAT + 0.040 TR+ 0.176 NTR+0 .071 FDI +0.004 FR

$R^2 = 0.996$

Elasticity of VAT, TR, NTR, FDI and FR are 0.733, 0.040, 0.176, 0.071 and 0.004 respectively. It means if there is 1% change in respective variables brings change 0.733%, 0.040%, 0.176%, 0.071% and 0.004% change in GDP respectively. Since, the value of R^2 is 0.996 it means 99% variation in GDP is explained by the explanatory variables.

Model III is estimated as;

ln TTR= 0 + 0 .992VAT $R^2 = 0.984$

Since elasticity of VAT is 0.992, which means other things remaining the same 1% change in VAT brings change 0.992% change in TTR in the same direction. Since, the value of R^2 is 0.984 it means 98% variation in TTR is explained by the explanatory variable VAT.

Appendix 1

Gross Domestic Production (GDP), Value Added Tax (VAT), Tax Revenue(TR), Non Tax Revenue (NTR), Foreign Direct Investment (FDI), Foreign Revenue (FR) and Total Tax Revenue (TTR) in Nepal over sixteen years(Rs. in millions)

year	GDP	VAT	TR	NTR	FDI	FR	TTR
1998/99	342036	8765.9	19987.1	8498	2000	18353	37251
1999/00	379488	10259.7	22892.3	9742	1666	20448	42894
2000/01	441519	12382.4	26482.6	10029	1418	18797	48894
2001/02	459443	12267.3	27063.7	11116	3103	14385	50447
2002/03	492231	13459.7	27436.3	13643	1210	15886	54539
2003/04	536749	14478.9	333694.1	14158	1794	18912	62331
2004/05	589412	18885.4	35219.6	16018	2765	23657	70123
2005/06	654084	21610.7	35819.3	14852	1636	22042	72282
2006/07	727827	26095.6	45031.4	16585	2606	25854	87712
2007/08	815658	29815.7	55340.3	22467	3227	29301	107623
2008/09	988272	29700.9	87351.1	26423	9811	36352	143475
2009/10	1192774	54920.9	101374.1	23651	6245	49769	179946
2010/11	1366954	61663.6	115563.4	21149	9100	106097	198376
2011/12	1527344	70930.4	140791.6	32651	10051	98179	244373
2012/13	1692643	83418.4	175796.6	36806	7141	115157	296021
2013/14	1928517	103059.4	211580.6	39860	19936	113236	354500

Sources: Various issues of economic survey

Appendix 2

Natural Log Value of Gross Domestic Production (GDP), Value Added Tax(VAT), Tax Revenue (TR),Non Tax Revenue (NTR), Foreign Direct Investment (FDI), Foreign Revenue (FR) and Total Tax Revenue (TTR) in Nepal over sixteen years.

year	Ln GDP	Ln VAT	Ln TR	Ln NTR	Ln FDI	Ln FR	Ln TTR
1998/99	12.74267	9.078624	9.902842	9.047586	7.600902	9.817548	10.52543
1999/00	12.84658	9.235979	10.03856	9.184202	7.418181	9.92564	10.66649
2000/01	12.99798	9.424031	10.18424	9.213236	7.257003	9.841453	10.79741
2001/02	13.03777	9.414692	10.20595	9.316141	8.040125	9.573941	10.82868
2002/03	13.1067	9.507455	10.21962	9.520982	7.098376	9.673193	10.90667
2003/04	13.19329	9.580448	12.71798	9.558035	7.492203	9.847552	11.04021
2004/05	13.28688	9.846144	10.46936	9.681468	7.924796	10.07141	11.15801
2005/06	13.39099	9.980944	10.48624	9.60589	7.40001	10.00071	11.18833
2006/07	13.49782	10.16952	10.71512	9.716254	7.865572	10.16022	11.38181
2007/08	13.61175	10.30279	10.92126	10.0198	8.079308	10.28538	11.58639
2008/09	13.80371	10.29893	11.37769	10.18199	9.191259	10.501	11.87392
2009/10	13.99179	10.91365	11.52657	10.07116	8.739536	10.81515	12.10041
2010/11	14.1281	11.02945	11.65757	9.959348	9.11603	11.57211	12.19792
2011/12	14.23904	11.16945	11.85504	10.39363	9.215427	11.49455	12.40645
2012/13	14.3418	11.33162	12.07708	10.51342	8.873608	11.65405	12.59819
2013/14	14.47226	11.54306	12.26236	10.59313	9.900282	11.63723	12.77846

Source: based on table 1.1

References

Adams, C. (1982), *Fight, Flight and Fraud: The story of Taxation*, Curacao: Euro- Dutch Holdings.

Kaldor, N. (1964). *"Will Underdeveloped Countries Learn How to Tax?" Essays on Economic Policy,* Vol.1, and London: Gerald Duckworth & Company Limited, pp. 253 - 268.

Khadka, R. B. (1989). VAT in Asia and the Pacific Region. Amsterdam: International Bureau of Fiscal Documentation.

Khadka, R. B. (2001). V*alue added tax: The concept, international experiences and its application in Nepal, Value Added Tax Four Years of Implementation.* Kathmandu: Inland Revenue Department and Value Added Tax Project.

Khadka, R. B. (2001), *Value Added Tax in Nepal : Theory and Practice,* Patan Pustak Bhandar, Kathmandu.

Silwal, N. P. (2000), *Value added tax (VAT): A Nepalese experience.* Kathmandu: Mrs. Indu Silwal, Sheela Printer

Toye, J.F.J. (1978). (Ed.), *Taxation and Economic Development,* London, England: Frank Cass & Co. Ltd.

Zee, H. H. (1995). V*alue added tax: Tax policy handbook, edited by Parthasarathi Shome,* Washington DC: Fiscal Affairs Department, International Monetary Fund.