Net External Liabilities and Economic Growth: A Case Study of Pakistan

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Abstract

By using ordinary least square (OLS) method this study is conducted to see the impact of net external liabilities on economic growth of Pakistan. Other statistical tools like unit root etc were applied to solve the data problem as we use time series data for the period 1973-2012. The result of the study found that net external liabilities, education enrolment, export and gross capital formation has positive significance association with GDP while debt service relation was found insignificance.

Keywords: Net External Liabilities, Gross Domestic product, Debt service

1. Introduction

In recent decades external debt got greater importance for developing nations. Debt has a greater importance in financing development expenditure and financial stability. The proportion of debt in these decades increased deeply for the growing countries while the nature of such debt is totally different from advanced nations. At the time of development of these nations mostly debt has a positive relationship with economic growth. By utilization of debt constructively has a growth boost impact which in future reduces demand for debt. On the other hand, debt creates a serious problem when expansion of debt increases as compare to the revenue growth, and the repayment of debt servicing become difficult (Safdari and Mehrizi 2011).

Commonly developing countries has faces the problem of current account deficit. So, theywere encouraged to borrow from developed countries as well as an international community to boost their economic growth. Gohar et al. (2012) recommended that countries take debt from the external sources for many reasons that are their income is low; with budget deficit or they are having low investments. In addition, Soludo (2003) declared that countries borrow for two broad categories; macroeconomic reasons or to finance the transitory balance of payments deficits aimed at boosting economic growth and reduce poverty. The relationship between external debt and economic growth is much concerned; a reasonable level of borrowing is likely to enhance economic growth, through capital accumulation and productivity growth.

External debt has increased steadily in developing countries in recent decades. The analysis of the role of external debt in financing the development process is important. Avramovic (1964) proposed a thesis, which was called the debt cycle thesis. In it, he confirmed that for an economy, external debt was considered as an important funding source. Based on predictions of the debt cycle, the country will be able to finance a higher investment proportion in the long run.

But there is a complicated relation between external debt and economic growth. To show whether external debt has a good or bad effect on economic growth, depends greatly on how we make use of it. External debt has played a great role in the promotion of economic development during the last 30 years for many East Asian economies have benefited from external debt greatly.

Pakistan has been making repayment to his loan enacted over many decades and has seen a external liabilities huge. Much of these repayments have been based upon increased borrowing, suggesting that a substantial proportion of new loan enacted each year do not come in to the country and are used to pay off old debt. This is important point to consider as this point is usually overlooked whenever a new loan is granted to Pakistan. The mostly previous papers ignore the reality that only a small amount of new loan is actually available to be made use in the country.

Pakistan's debt stock, at the time of independence of East Pakistan, stood at $3406 million. It grew at a rate of 10.7 percent in the next five years to $5,409 million. A sharp rise of 18 percent is witnessed in 1975 and the subsequent years. A somewhat higher proportion of debt accumulated during the period, however, was concessional.

The external debt increased at a somewhat moderate rate in the 90's. At the end of the decade it was $33.2 billion, equivalent to 45 percent of the GDP. The proportion of concessional loans (with long grace

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periods and low interest rates like IDA from the World Bank) fell further to 54 percent. It appears that the government resorted more to short-term borrowing in the beginning of decade as the rate with respect to GDP increased from 15 percent to over 17 percent from 1990-91 to 1991-92.

The new millennium saw a somewhat different trend as compared to the last decade. It started off with a debt stock of $32.2 billion in 2000 but in the next two years, 2001-02 and 2002-03, the debt stock experienced a negative growth and declined to $31.1 billion. However the very next year there was a jump with a growth of 6.7 percent. Pakistan, fortunately, had access to concessional debt in that period as is revealed by an increase in the proportion of concessional loans to over 71 percent by the middle of the decade. This was facilitated by Pakistan's participation in the war on terror. The trend changed towards the end of the decade with a more rapid accumulation of debt, and that also non concessional, which led to a decline in its proportion in total debt to about 59 percent. In 2010-11, total external debt stock stood at $ 58.5 billion.

In the 90s the major share, 51 percent, of total public debt was accounted by external debt. During the last decade the share has fallen somewhat to 44 percent by 2010-11. This is a reflection of limits to external borrowing.

In conclusion, Pakistan has been in a grip of high budget deficit over the last few decades. Consequently, the macroeconomic indicators show sign of stress. The overall debt burden is rapidly becoming unsustainable, debt servicing is pre-empting scarce resources resulting in inadequate investment in and maintenance of key economic and social infrastructure, the inflation rate is in double digits, interest rates are on the high side, adversely affecting investment and thereby the growth rate of the economy. The existing circular debt in the energy sector, which has already stressed economic activity, would further compound the problem. Additional complications would arise, especially for the poor and middle income classes, due to deterioration of public infrastructure and high food prices.

2. Objectives
1. The main objectives of the study are given below.
2. To observe the net external liabilities impact on economic growth.
3. To analyze the difference factors effecting economic growth.
4. To study the causation direction of variables.

This study also sees the significance of different variables effecting economic growth. This study will help in policy making process. We are excepted negative relationship of debt service with economic growth.

3. Literature Review
The phenomenon of debt and economic growth remain under discussion form the beginning. There are many papers who discuss this issue some of them are below.

Taiwo Adewale Muritala (2012) explored the relationship between external debt and economic growth for Nigeria by using OLS technique and for testing stationary of the variables he use Augmented Dickey Fuller test. By using secondary data for the year 1980-2010 he found negative relationship between external debt and economic growth while debt servicing has positive coefficient with economic growth. In this study only three variables has been used where GDP is dependent variables and external debt and debt servicing are independent variables.

For the economy of Tanzania Kasidi and Said (2013) used time series data for the period 1990-2010 to explore the growth and external debt link. They came to know that debt servicing has a negative impact on economics growth while external debt has a positive association with growth.

In Turkey study Zahoor and Ahmed (2005) found that sizeable rise in external debt impact investment negative and export positive while there is low impact on development of the economy.

Chenery and Strout (1966) observed that most countries before 1966 were able to achieve economic transformation by avoiding from foreign aid and foreign debt. To them, to achieve accelerated growth, countries must improve in the areas of skills, domestic savings and foreign exchange earnings. However, since in most developing countries, the savings rate is low, to overcome poor growth and development, they see foreign aid as the only source of their economic transformation.

Adesola (2009) examined the effect of external debt service payments on the economic growth in Nigeria by using ordinary least square multiple regression method for his analysis. It was found out that debt service payments have negative impact on economic growth.

Abu Baker and Hassan (2008) focused to analyze the impact of external debt on economic growth in Malaysia. The analysis was conducted both at aggregate and disaggregate level. The empirical results indicated that total external debt positively affect the economic growth at aggregate and disaggregate level. In the short run, total external debt had positive effects on economic growth. It also revealed that Malaysia had not suffered from debt overhang problem.

On a Similar line Cholifihani (2008) analyzed the short run and long run relationship between external

debt and income in Indonesia from 1980 to 2005. The findings showed that GDP, DSR, capital stock, labour force and human capital inputs have a long run equilibrium relationship. External debt servicing showed a significant negative relationship with GDP, which indicated that debt overhang phenomenon, has occurred in Indonesia in the long run. While labour force and human capital was main supporting variables of GDP in the long run; however capital stock is significant variable in boosting economic growth.

Philip Lane (2004) explored that external debt can boost initial level of initial output for low and middle income countries and Maureen Were (2001) seen inverse relationship between external debt and economic growth while debt services has not that much but have some investment crowding out.

For the economy of Bangladesh, Muhammad Shah and ShahidaPervin (2012) in long run found positive connection of external debt with GDP growth and no significance association in short run between two variables while debt service has inverse association both in short and long run. Simona (2011) also found that there is a positive relationship between external debt and economic growth.

Siddiqui and Malik (2002) estimated directly the impact of debt on GDP growth rate and argued that debt accumulation and growth had a non-linear relationship: up to a certain level the impact was positive and beyond the threshold level the relationship turned negative. The study exerted mixed evidence regarding the impact of debt burden on economic growth. While debt accumulation in other countries of south Asia so far has not had a negative impact on the growth rate, debt accumulation in the case of Pakistan in resulting in low growth.

Schclarek (2004) investigated the relationship between gross government debt and per capita GDP growth in developed countries. The results of the paper show that there is no strong evidence of a statistically significant relationship between gross government debt and per capita GDP growth for a sample of 24 industrial countries with data from 1970 to 2002.

Safia(2009) investigated the impact of external debt on economic growth in 24 developing countries from 1976 to 2003.The study applied random effect and fixed effect estimation. The results showed that debt servicing to GDP negatively affect the economic growth and may leave less funds available to finance private investment in these countries leading to a crowding out effect.

Hasan and Butt (2008) explored the association between external debt and economic growth in Pakistan for the period of 1975-2005 using Auto Regressive Distributed Lag (ARDL) approach to co integration. Results indicated that labor force and trade both in the long run and the short run mainly determined economic growth in Pakistan. Total debt was not to be an important determinant of economic growth either in the short-run or in long run mainly due to inefficient use of external debt.

Muhammad Ayyoub et al. (2012) explored for the economy of Pakistan that debt servicing repayment is cause of low production, unemployment and bad impact on manufacture sector while external debt and liabilities has positive relation with overall GDP level of the economy.

4. Materials and Methods
4.1 Dependent variable
A variable which is measure in the study and is affected and from independent or explanatory variable is called dependent variable. In our study economic growth is dependent variable which is represented by Gross Domestic Product (GDP) which is indicator of economic growth. GDP is the value of all final goods and services which is produced in the country in a specific time period.

The GDP is the one of most important indicator to show economic growth. With the rapid economic growth, stable economy in the world, creditor prefers to provide debt to this country. A high GDP is a good framework for economic growth as well as a good indicator of a significant market size.

4.2 Independent or Explanatory variables
The purpose of developing of economic model is to explore the association between outcome and explanatory variables. Explanatory variable is also called predictor variable means which explains dependent variable. Our study uses different explanatory variables which is required for correct model specification. The details of these variables are following.

4.3 Debt Service
The money which is needed for a specific period of time to repay principle and interest on a debt. We use this variable in model because it is important for our model specification and we hope that there is negative relationship of debt service with economic growth because huge amount of debt service hold block a country to invest in development activities.

4.4 Gross Capital Formation
Gross Capital Formation also called gross domestic investment consists of net change in inventory level and

fixed assets in the country. The value of it is measured by gross capital formation total, inventories changes less value disposal of a unit.

4.5 Net External Liabilities (External Debt)
The net money amount of one country obligated to another country. It is the difference between total reserve and external debt. Net external liabilities play an important role in the development process.

4.6 Education Enrolment
The enrolment of people for education. In this include all people enrolled for eduction in education institutions.

4.7 Export
Goods and service exported in a commercial land sales and anthers. In other words the demand for goods produced inside the country of foreign people.

4.8 Research Design
We want to see the impact of net external liabilities on economic growth, that way our research nature is numerical and quantitative. Due to this quantitative and secondary nature study we will see the role of net external liabilities on economic growth for the year 1973-2011. In order to see the impact of net external liabilities on economic growth will be seen in this study.

4.9 Research Model
On the basis of past literature studies we concluded that there is a strong relationship between external debt and economic growth some of them found negative relationship like Taiwo Adewale Muritala (2012), Zahoor H. J. and Ahmet S. (2005) while other explored positive relationship like Kasidi F and Said M.A (2013), Shabbir and Mahmood (1992) ,Rafaqit Ali and Usman Mustafa. We apply production function approach to capture the relation of external liabilities and debt with economic growth, the following is our model.

GDP = f (NEL, TDS, GCP, TEE, Ex, εi)

WhereGDP stand for gross domestic product,TDS shows Total Debt Service,GCF stand for Gross Capital Formation,TEE stand for Total Education Enrolment and EX represent Export while εi is the error terms.

4.10 Data Analysis
We have used OLS model for data analysis. We have also used GDP, DS, EE, EX and GCF variables in the model and all are in log form.

5. Result
To see whether the data is stationary or non-stationary unit root test is an important subject for time series regression. Stationary checking of the data is vital before running econometrics model. To achieve stationary of the data we use ADF test for all variables included in the model.

The test statistic result of the variables included in the model at level and first difference are represented in the following table.

Table.1 Unit Root test and stationary of data

Variables	ADF at Level		ADF at 1st Difference	
	t-ADF	P- value	t-ADF	P-value
L_i GDP	-2.308420	0.1745	-4.295875	0.0016
L_i NEL	-2.019366	0.2777	-4.541602	0.0008
L_i DS	-3.008460	0.0431	-7.740081	0.0000
L_i GCF	-3.745703	0.0070	-8.968199	0.0000
L_i EE	0.247491	0.9723	-6.561113	0.0000
L_i EX	-1.909072	0.3249	-5.721568	0.0000

The result of the mostly variables at level cannot exceed ADF statistics. Which express that our null hypothesis cannot be rejected at level of significance at 5%. To check the presence of stationary the unit root for all variables at first difference has been checked. The result explored that unit root hypothesis for all variables have been rejecting at first differences. The result achieved through unit root test give a confirmation of non-stationary at level and provide a stationary at first difference and all variables are integrated at degree one.

5.2. Ordinary least square estimation
Table.2

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	4.339808	0.446644	9.716491	0.0000
NEL	0.198815	0.050843	3.910327	0.0005
GCF	0.164438	0.051740	3.178149	0.0033
EE	0.080630	0.031780	2.537180	0.0164
DS	-0.00122	0.028082	-0.043450	0.9656
EX	0.238540	0.043856	5.439112	0.0000
R-squared	0.997289	Durbin-W	1.475036	

This table shows OLS estimation result of dependent variable GDP and independent variables Net External Liabilities, Gross Capital Formation, Debt service, Education Enrolment and Export. All of These variables are significant at 1% level of significance only Education Enrolment is significant at 5% level of significance while Debt Service is insignificant and has a negative sign. This means that Debt Service has no significant impact on GDP. All variables expect Debt Service have positive relationship with GDP. The value of R-square is 99% which shows that 99% change in dependent variable is occurred by explanatory variables. Durbin-Watson statistic value is also above 1.4 and below 2 which show that there is no autocorrelation.From the above table we can constrict the following model.

GDP_i = 4.339808 + 0.198815(NEL) + 0.164438(GCF) + 0.080630(EE) - 0.00122(DS) + 0.238540(EX)

All of the regression coefficients show the impact of explanatory variables on explained variable GDP. In the equation 4.339808 are the constant values which show that keeping all other variables constant the GDP will be 4.339808. The coefficient of NEL is 0.198815 which express that one percent change in NEL bring about a 0.19 percent positive change in GDP because the sign of coefficient of NEL is positive which give an indication of positive impact on GDP. This sign coefficient of NEL is significant at 1% level of significance because the p-value of NEL is 0.0000 which is less than 0.01. NEL has a positive relationship with GDP because due to increase in economic growth lead to rise in the trust of international donors and nations to provide a loan to this country. So NEL is one of the important variables for growing the economy upward.

The coefficient of Gross Capital Formation (GCF) is 0.164438 which explore that one percent increase in GCF lead to a 0.16% positive change in GDP while the coefficient of the GCF p-value is 0.0005 which is less than 0.01 and express that the coefficient of GCF is significant at 1% level of significance. The relationship between GCF and GDP is positive according to economic theory because when capital formation increases in the country as a result investment and productive activities rises in the country which lead to boost the activation of four factor of production consequently economic growth occurred in the country. Our next regression variable is Education Enrolment (EE) which has a positive sign of 0.080630. This show that one percent rises in EE lead to a 0.08% increase in GDP and p-value is 0.0164 is significant at 5% level of significance, which gives an indication that EE has a significant impact on GDP. The sign of value is positive because EE is one of the important factor of economic growth as it provide a skill labor force for industries and other institutions as a result of skill labor working activities economic growth occurs.

The coefficient of Debt Service (DS) is -0.00122 is negative but insignificant because the p-value is 0.9656 which is very high as compare to 0.05 significance level so we accept null hypothesis that there is no significant impact of debt service on GDP in reality it is negligible and not such a harmful for Pakistan economy if we compare it with GDP growth. The last and final variable of our regression model is Export (EX) which has also positive coefficient value is 0.238540 and the significant value is 0.0000 less than 0.01 expressing positive and significant impact on GDP at 1% level of significance. Export plays an important role in economic growth. Coefficient sign demonstrate that one percent increase in export direct to 0.23% increase in GDP. Growth in export is a sign of economic growth and is a source of foreign reserve earning.

5.3 Tests for Stationary of Error
The below table specified that the error term of our equation is stationary. We can find it with the help of unit root test. Here p-value value of ADF is less than 0.05 which is significant at 1% level of significance. So it is concluded that there is no problem of non-stationary in the residual of our model.

Table.3

Null Hypothesis: ERROR01 has a unit root

Exogenous: None

Lag Length: 0 (Automatic based on SIC, MAXLAG=9)

		t-Statistic	Prob.*
Augmented Dickey-Fuller test statistic		-4.727827	0.0000
Test critical values:	1% level	-2.627238	
	5% level	-1.949856	
	10% level	-1.611469	

6. Conclusion

The regression estimation point out that net external liability has positive significant impact on GDP, it means when net external liabilities grow GDP also grows at the same direction. The growth rate of GDP must be greater than debt service in order to get future loan and able to repay debt service. But in our estimation debt service association with GDP is insignificant means has no significance impact on GDP to create a hurdle for growth. This is, as our GDP growth rate is more than as compare to Debt Service repayment. In such situation when growth of GDP is more than debt service then it cannot create a problem for growth. Gross capital formation has positive sign, which indicate that capital formation is source of economic growth. Increase capital formation lead to increase production capacity, this means that economy produce more, as a result economy growth occurred. In our study of Pakistan the relation of export (EX) with GDP is positive which is according to economic theory because increase export is a sign of increase goods and service. The impact of education on GDP is also positive significance; it means that increase in education enrolment lead to rise GDP this is because production of skill labor play an important role in economic growth.

Our core conclusion of the study state that net external liabilities has a powerful and significant relationship with GPD. Other variables like gross capital formation, export and education enrolment have also positive association with GDP while debt service has a negative sign but is insignificant with GDP.

6.1 Policy Recommendations

On the basis of above study findings after applying different estimation tests us may suggest the following policy recommendation.

Net external liabilities have positive relations with GDP. It shows that net external liabilities are not a harmful for Pakistan economy. So it is recommended that government should make a serious analysis of foreign loan and identify factors which can alter for the economy better performance.

Government should design a policy which boost up GDP growth, gross capital accumulation and export and reduce cost of borrowing.

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