

Nexus Between External Debt, Economic Growth, Inflation, Human Capital, and Tobacco Industry

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Abstract: The growing stock of external debt has increased concerns about whether external debt can help to enhance the economic growth or whether it possible to bear the burden of future generation. Tobacco industry also contributing a role in capital formation, It depends upon the situation that whether country is in position to repay the debt payment or country already trapped in debt overhang position. The objective of this study was to found that what the impact of external on economic growth in Pakistan. 37 years data was used in this study for Pakistan from 1981 to 2017 from World Development Indicators. Variables were stationary at first difference and were co-integrated to each other according Johansen Co-integrated test. Vector Error Correction Model was used in this study. Results showed that external debt has negative impact on economic growth in long run as well as in short run.

Keywords: External Debt, Economic Growth, Inflation, Human Capital, Tobacco Industry.

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Introduction

The growing stock of external debt has increased concerns about whether external debt can help to enhance the economic growth or whether it possible to bear the burden of future generation. It depends upon the situation that whether country is in position to repay the debt payment or country already trapped in debt overhang position. Because then it can be observed that what is the impact of external debt on the economic growth (Blumenschein, 2000; Habib, Mileva, & Stracca, 2017; Otani & Villanueva, 1989; Villanueva, 2005). Developing nations face many economic, socio, administrative and political problems because of mismanagement, lack of suitable technology, limited capital, low investment, low savings and as a result slow economic growth. Dual gap theory explains that the difference between saving and investment and difference between exports and imports (Chowdhury, 2004; Mohamed, 2005; Villanueva, 2005). This theory further indicates to need for external debt. If the country takes external debt and it utilizes on productive channels without crowding out, then debt could help to enhance the economy. On the other hand, if a country already faced adverse effect of external debt, then it will affect to the investor confidence, this leads to debt not contribute to economic growth but also becomes a burden. In this situation high level of external debt unable to generate further economic growth and fails to repay the payment.

Resources gap is also one of the major problems of any developing country like Pakistan for its growth stage. If a developing country wants to fill this gap by itself, it may take very large time lags. In Pakistan the exports are less than imports. Due to this, the balance of payments of Pakistan is in deficit (Felipe, McCombie, & Naqvi, 2010; Nawaz, Ahmed, Khoso, Palwishah, & Raza, 2014; Parkinson, 2010). To protect the economic environment from these economic problems and get quickly growth, countries including Pakistan take external debt as an outside source of funding to fill in saving and investment gap and fill the deficit of balance of payments from biggest lenders in the world, World Bank and International Monetary Fund (IMF). Debt also uses to decrease the mortality rate which showed in a study that the debt is decreasing the mortality rate in Sub Saharan Africa (Oryema, Gyimahbrempong, & Picone, 2017). According to environmental Kuznets Curve external debt had no effect on Economic growth of Turkey (Katircioglu & Celebi, 2018). Advance Dental Education in United States also showed that debt had become a major source of education (Formicola, 2017). In some studies debt also used for the improvement of deforestation (Zahawi, Oviobrenes, & Peterson, 2017). Financial instruments especially loan enhance the investment valium and this further helps to increase the circle of the economy (Perillo & Battiston, 2018).

One researcher also describes that the external debt may help for the growth but seems to be heavy burden on the economy (Sunkanmi & Abayomi, 2014). Foreign debt not use as per as a developing country receive. It was described that external debt has positive impact of investment if it utilizes on productive channel (Ali, 2014; Shahbaz, Shabbir, & Butt, 2011; Zameer, 2010). The state Bank of Pakistan and he described that external debt has long run implication on economic growth (Looney & Frederiksen, 1986). A study showed that the long-run relationship among the variables and external debt impacts negatively significant on output (Utomi, 2014). Another researcher explored that the over the years Pakistan has failed to collect enough revenues to finance its budget. The amount of exports are less than the amount of imports in Pakistan, that's why the balance of payments is in deficit because Pakistan is exporting primary products and importing manufactured products (Akram, 2011; Gabbay et al., 2017). In further study it is showed that financial instruments especially debt increase the volume of investment and this had become also a solution for health sector (Abolhallaj, Hosseini, Jafari, & Alaei, 2017). The external debt has less impact on economic growth as compare to domestic debt (Akram, 2011).

It is a fact that the foreign debt becomes a necessary factor for the growth of an economy at growing level of any developing country. It is showed that in Khyber News, recently in 2018 prime

minister of Pakistan Imran Khan firstly refuse to take debt from IMF due to their heavy conditions¹. On the other side China has offered to Pakistan to give debt on minimum conditions. But after economic instability Pakistan took debt from IMF and according to Trading Economics State Bank of Pakistan report 2019, the external debt has been crossed to 106 billion US dollars².

The above material of studies is showing that debt uses for almost all sectors. It depends that debt is effective or gives negative for sectors of the economy. Most of the countries at their early stages of progress have minimum stock of wealth and that's why they require external debt for the investment (Adegbite, Ayadi, & Ayadi, 2008). The budget of Pakistan is in deficit from many years. It seems to become necessary phenomena that debt is a big requirement of a developing country because incomes of developing countries are not enough to fulfill the financial requirement of that country.

Tobacco industry also contributing a role in relaxation of burden and people think that they reduce the stress by smoking. This phenomena also mentioned in many studies (Lenz, 2004; Torres & O'Dell, 2016)

In the Table 1 it is clear that external debt is not harmful for an economy. Even China's economy, which is one of the most powerful economies in the world, relies on external loan from IMF or World Bank. Then what is the issue? Issue is that is external debt utilizing on productive and development sectors or not? So these are the reasons induces researcher to examine the impact of external debt on economics growth of Pakistan.

Table 1. External Debt of Three Asian Nations (in US\$ Billions)

Years	Iran	Pakistan	India
2010	20.03	64.003	291.650
2011	17.34	65.520	336.845
2012	7.405	62.143	395.071
2013	7.006	60.045	429.742
2014	5.495	62.184	463.230
2015	5.233	66.457	475.871
2016	5.382	72.978	456.147

Source: World Development Indicators, World Bank

A number of studies explored to estimate the relation between external debt and the economic growth and some studies calculated the poverty and economic growth. They made the model of just three independent variables having impact on gross domestic product (GDP)(Akpan, 2009; Nallari & Griffith, 2011; Senadza, Fiagbe, & Quartey, 2017; Thieu, Hoang, & Oanh, 2017). It looks like miss specification in the model. This study explored the long run relationship between external debt and GDP growth with using many other independent variables like human capital and inflation. The main objective of current study is to find out the impact of foreign debt on economic growth and to find out the external debt is good for growth of the economy or not? This study also describes that many times economy get advantages by utilizing debt and sometimes how much economy have to sacrifice its main indicators.

Null Hypothesis of the Study (H₀)

¹ International Monetary Fund (IMF) is an international Organization who gives fund and monitors it by himself. IMF was willing to give debt to Pakistan but with heavy conditions such increase interest rate, decrease currency value, increase rate of utility bills. <https://www.globalvillagespace.com/pm-imran-contemplating-a-strategy-to-avoid-imf/>.

² Source: Trading Economics State Bank of Pakistan. <https://tradingeconomics.com/pakistan/external-debt>.

H₁: There is positive impact of External Debt increases on GDP growth.

H₂: There is negative impact of Inflation on GDP growth.

H₃: There is negative impact of Human Capital on GDP growth.

A Brief Review of the Literature

In a study researchers examined the link between economy growth and external debt and the contribution of that foreign debt in Pakistan's economic growth. Time series data is used from 1972 to 2010. The main independent variable was external debt and other independent variables were gross capital formation and gross domestic saving to save the model of miss-specification. Data analysis technique was Ordinary Least Square (OLS). The findings of statistical tool of the study was the external debt stock and gross capital formation had significantly direct effect on the GDP of the Pakistan, while gross domestic saving has no significant impact on the GDP of Pakistan (Zaman & Arslan, 2014). There is also a brief history of US debt limits before 1938 (Hall & Sargent, 2018). In some studies researchers explored the effect of domestic loan of under developing nations (Beery & Day, 2015; Berger & Houle, 2016; Romanus, 2014; Tahir & Azid, 2015). They concluded that the domestic debt and there is positive impact of gross fixed capital on the growth of the economy in Jordan, but furthermore he concluded that the foreign loan, labor and long term external loan had negatively insignificant relationship with economic growth in the Jordan. Recently in 2018 Harris did a study on Veterinary profession and researcher showed that the debt to starting salary ratio is reduced (Harris & Chaddock, 2018). In a study it was examined that the Total Reserves, External Debt and Economic Growth. This was a time series analysis of India. Researcher found that there was significantly positive impact of the total external debt, long-run external debt, short-run external debt and the total reserve on the economic growth (Pattillo, Poirson, & Ricci, 2011). A study explored link between economic growth and external loan (Stylianou, 2014). He also examined the causality between these two factors. Researcher used time series data for the year of 1980 to 2010 to check that was there structural breaks in economy or Greece. Dicky-Fuller technique used for check the stationarity and Granger causality tests to check structural breaks. Researcher found that there were constructional breaks exist in Greece economy therefore, there was causality was not existed between economy growth and debt. Researchers explored that the Causality between the two factors, Debt and Economic Growth with evidence of Jordan. Researchers used time series data from 1973 to 1996. They used Granger Causality test for check the causality with multiple regression. The results showed that there was causal relationship existing from GDP to debt, also that there was positively significant relation between economic growth and debt (Shan & Tian, 1998).

Materials and Methods

Data: This study is based on secondary data. This data has taken from World Development Indicators (World Bank), Pakistan Bureau of Statistic and Economics Survey of Pakistan. Sample size of all variables including Economic Growth, External Debt including Human Capital and Inflation is from 1981 to 2017 of Pakistan. The Sample size of the study is 37 years.

Method Applied: Hatemi described that how and VAR model can be used in proper way (Hacker & Hatemi-J, 2008). Lag selection criteria was described by Hatemi-J (1999). Stable and unstable VAR was checked by using multivariate tests (Hatemi-J, 2003). Vector Auto-Regression (VAR) is used as a in this study. Firstly the stationarity of the data is checked. Whether the variables are stationary or non-stationary we applied Augmented Dicky Fuller Test. ADF is based on following equation (Gujarati, 2003).

$$\Delta Y_t = \beta_1 + \beta_2 t + \delta Y_{t-1} + \sum \alpha_i \Delta Y_{t-1} + \epsilon_t \quad (1)$$

In equation 1 where: ϵ_t is a residual time; Y_t is the relevant time series.

The variables are not stationary at level but these are become stationary at first difference. The Co-integration is exists among the variables so Vector Error Correction Model/VECM model applied for data analysis. The first is to time lags selection, the second step is checking the co - integration or long - run association, and the third stage to apply Vector Error Correction Model (VECM).

In Figure 1, it can be observed that the dependent variable is Economic Growth and independent variables are external debt, human capital and Inflation. The main focus in the study is that how dependent variable changes due to change independent variables.

Figure 1. Dependent and Independents Variables

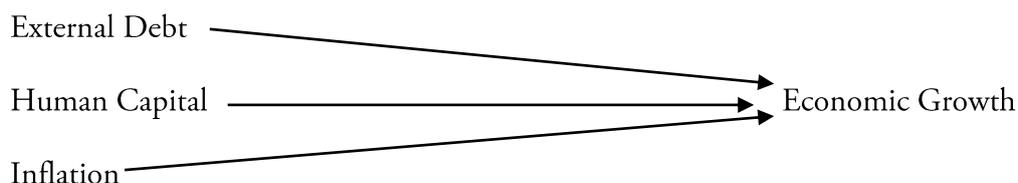
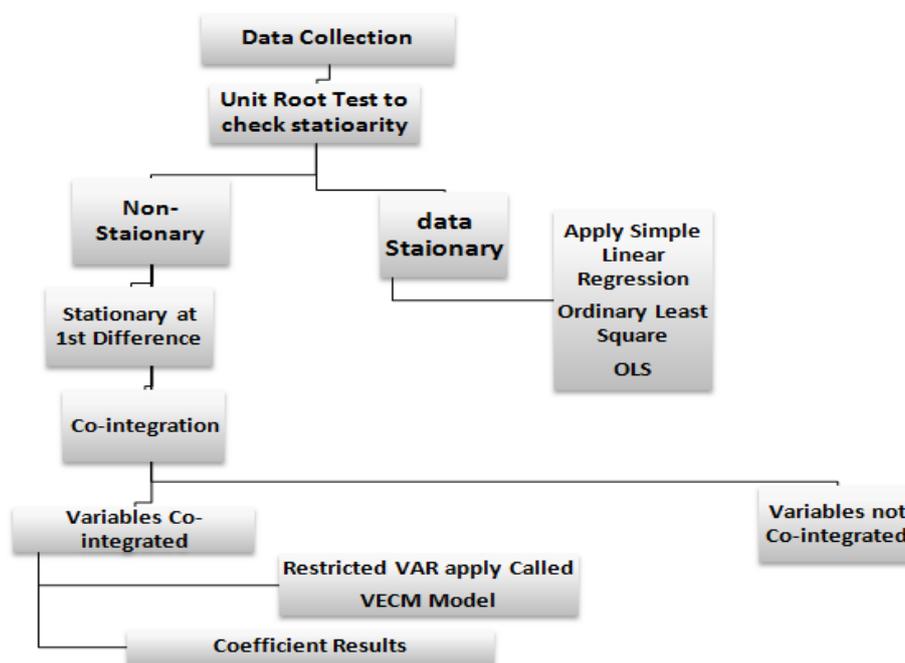


Figure 2. Model Sketch



In Figure 2, the model Sketch describes the problem which exists in the economy then second step is to collect the data. After collecting the data it is necessary to check the stationarity of the variables. If data becomes stationary at level then simple linear model or Ordinary Least Square (OLS) can easily use. But here data is become stationary at first difference. Here variables are Co-integrated or have long-run association-ship. So Vector Error Correction Model (VECM) is suitable for data analysis.

Model Specification with Operational Definitions of Variables by Using Vector Error Correction Model (VECM):

$$\Delta X_t = \alpha_0 + \sum_{i=1}^I a_i \Delta X_{t-i} + \sum_{j=1}^J b_j \Delta Y_{t-j} + \sum_{k=1}^K c_k \Delta Z_{t-k} + \sum_{h=1}^H d_h \Delta W_{t-h} + \Theta \mu_{t-1} + \epsilon_t \quad (2)$$

In general equation 2 Here “ΔX” is the change in “X” (dependent variable), α is constant or intercept of the equation, “a” is the coefficient of variable “X”, Σ means summation, t-1 shows that the taking the previous lag value from current year to nth years in columns of a matrix of variable X as an independent variable. Next “ΔY” means that change in Y variable and t-1 shows that the taking the previous lag value from current year to nth years in columns of a matrix of variable “Y” as an independent variable and same as ΔZ and ΔW. “Θμ_{t-1}” is shows the time lag previous value of the error terms of the equation. “ε_t” shows the current error terms.

$$\begin{aligned} \Delta GDPGRTH_t = & \alpha_0 \\ & + \sum_{i=1}^I a_i \Delta GDPGRTH_{t-i} + \sum_{j=1}^J b_j \Delta EXDBT_{t-j} + \sum_{k=1}^K c_k \Delta INF_{t-k} \\ & + \sum_{h=1}^H d_h \Delta HUMANCAPITAL_{t-h} + \Theta \mu_{t-1} + \epsilon_t \quad (3) \end{aligned}$$

In equation 3 “Δ” showed change is the variable. Further it can be noticed that it is a true equation of all variables with highlighting time. In this equation 3 Economic Growth is the dependent variable but with time lag Economic Growth also become independent variable and GDP growth is used as proxy of this variable. The main independent variable is external debt, external debt which measured in billions and used as a proxy. Human Capital and Inflation also included in the model.

The Basic Model is following:

$$GDPGRTH_{it} = \beta_0 + \beta_1 EXDBT_{it} + \beta_2 INF_{it} + \beta_3 HUMANCAPITAL_{it} + \mu_{it} \quad (4)$$

Meaning and theoretical explanation of these dependent and independent variables in equation 3 is as follows:

GDPGRTH_{it} – GDP Growth: Percentage increase of market value of all final goods and services produced in the country during one fiscal year (Kitov, 2006).

EXDBT_{it} – External Debt: it is the debt which is taken by home country from other countries or organization which is payable with interest (Pattillo et al., 2011)

INF_{it} – Inflation: Inflation means continually increasing the general price level or difference between current year’s price level and base year’s price level. Same it is defined by Kinda (2011) in his book the overall rising the price level is called inflation (Kinda, 2011).

HUMANCAPITAL_{it} – Human Capital: Physical or mental working based on knowledge and experience of an individual or population viewed on the basis of cost and value (Wang, 2001)

μ_{it} – Error term

Implication on Current Used Model

$$D(GDPGRTH) = C(1)*(GDPGRTH_{t-1} + EXDBT_{t-1} + INF_{t-1} + HUMANCAPITAL_{t-1}) + C(2)*D(GDPGRTH)_{t-2} + C(3)*D(EXDBT)_{t-1} + C(4)*D(EXDBT)_{t-2} + C(5)*D(INF)_{t-1} + C(6)*D(HUMANCAPITAL)_{t-1} + C(7)$$

Here “D” shows the variable is stationary at 1st difference so it is engaged with all variables. D(GDPGRTH) is the dependent variable and others are independent variables describes as below

- C(1)*(GDPGRTH_{t-1} + EXDBT_{t-1}+INF_{t-1}+HUMANCAPITAL_{t-1})= It is the Co-integrated equation of time lag one.
- C(2)*D(GDPGRTH)_{t-2}= It is the 1st difference stationary GDP Growth for the time lag two.
- C(3)*D(EXDBT)_{t-1} = It is 1st difference stationary External Debt for the time lag one
- C(4)*D(EXDBT)_{t-2}= It is 1st difference stationary External Debt for the time lag two
- C(5)*D(INF)_{t-1} = It is 1st difference stationary Inflation for the time lag one
- C(6)*D(HUMANCAPITAL)_{t-1} = It is 1st difference stationary
- C(7) = It is the Constant of equation

Estimation and Results

The model includes the following variables; Economic Growth as dependent variable, Economic Growth_{t-2}, External Debt_{t-1}, External Debt_{t-2}, Inflation_{t-1}and Human Capital_{t-1} as independent variables. All the required variables have been entered and Economic Growth_{t-1}, Annual Inflation Rate_{t-2} and Human Capital_{t-2} have been removed because these variables are statistically insignificant. Results and Discussion here based on following steps:

Check Stationarity, Lag Selection, Check Co-integration, Overall Significance by Wald Test, Normality Test, VECM Model

Please see the Table 2 that it can be notice that according to ADF test the calculated value (-3.589) is less than critical value (-3.733) and probability Value is greater than 5%, so the variable is non-stationary at level. Taking the absolute value here the T-statistic value of ADF is -7.622 which is greater than the critical value -3.7394 at first difference. And the P-value is .000. This means that Economic Growth is stationary at first difference.

Table 2. Unit Root Tests of the Variables

Variables	Critical Value	T-Statistics	Probability	Stationarity
Economic Growth at Level	-3.732	-3.589282	0.0582	Non Stationary
Economic Growth at 1 st Difference	-3.739	-7.625567	0.0000	Stationary
External Debt at Level	-3.639	0.119141	0.9626	Non Stationary
External Debt at 1 st Difference	-3.634	-3.703198	0.0085	Stationary
Human Capital at Level	-3.643	-0.385422	0.7007	Non Stationary
Human Capital at 1 st Difference	-3.643	-3.662900	0.0094	Stationary
Inflation at Level	-3.336	-3.296092	0.0327	Non Stationary
Inflation at 1 st Difference	-3.63	-9.057641	0.0000	Stationary

Table 2 shows that same is the case for external debt. It can be notice that according to ADF test shows that the variable is non-stationary at level because probability value is greater than 5%. Here the T-statistic value of ADF is -3.7032 which is greater than the critical value. The P-value is .008, this means that External Debt is stationary at 1st difference.

Here According to Human Capital the ADF test the calculated value (-0.358) is less than critical value and probability value is more than 5%. So variable is non-stationary at level. ADF shows that

Human Capital is stationary at 1st difference because P-value is less than 5%. Please see the Table 2 that ADF test shows that the Inflation is non-stationary at level because the probability value is greater than 5%. ADF shows that the P-value is .000, this means that there are 0.0%, this shows that inflation is stationary at 1st difference.

Please see the Table 3, the statistical value of “Jarque-Bera” test is .74 for Economic Growth and the value of probability of test is 0.69 (69%). So researcher can’t reject null hypothesis which shows that the variable is normally distributed. The statistical value of “Jarque-Bera” test is 4.84 for external Debt and the value of probability of test is 0.088 (8%), this means that there are 8% chances of error. So it is greater than 5%. The researcher can’t reject null hypothesis which shows that the variable is normally distributed. The null hypothesis is that the variable (Human Capital) is normally distributed. Here it can be seen that the value of probability of test is 0.19 (19%) and it is greater than 5%. So the researcher can’t reject null hypothesis which shows that the variable is normally distributed. The probability of test is 0.035 (3.5%) for Inflation. So the researcher can’t reject null hypothesis which shows that the variable is now normally distributed.

Table 3. Jarque-Bera Normality Test

Null-Hypothesis H₀: Variable is Normally Distributed
 Alt-Hypothesis H₁: Variable is not Normally Distributed

Variables	Jarque-Bera Statistics	Probability	Results
Economic Growth	0.7472	0.6882	Normally Distributed
External Debt	4.8453	0.0886	Normally Distributed
Human Capital	3.2560	0.1963	Normally Distributed
Inflation	2.1032	0.3493	Normally Distributed

Please see the Table 4 that P-value in the first row is less than 5%. It can also describe that there is long-run association among variables by description of Statistic Value and Critical Value. The calculated value of Trace Statistic is 52.21 which is greater than the Critical Value 47.86 so we have to be rejected null hypothesis that is there is no long-run association among variables

Table 4. Johansen Co-Integration Test

Hypothesized		Trace	0.05	
No. of CE(s)	Eigenvalue	Statistic	Critical Value	Prob.**
None *	0.558913	52.21857	47.85613	0.0184
At most 1	0.390140	24.38914	29.79707	0.1845
At most 2	0.193037	7.575236	15.49471	0.5119

Trace test indicates 1 co-integrating eqn(s) at the 0.05 level: * denotes rejection of the hypothesis at the 0.05 level: **MacKinnon-Haug-Michelis (1999) p-values

In the Table 5, the researcher combines all the variables to check overall significance of the model. The F-Statistics shows the overall significance of the model. Here the value of F-test is 105.67 which is very high and probability value of F-test is 0.000, this shows that there are 0.0% chances of error. So overall result of F-test shows that overall this model is significant.

Table 5. Overall Significance of the Model by Walt Test Wald Test

Equation: Untitled Null Hypothesis: C(1)=0, C(2)=0, C(3)=0, C(4)=0

Test Statistic	Value	Df	Probability
F-statistic	105.6785	(4, 32)	0.0000
Chi-square	422.7141	4	0.0000

Please see the Table 6 that External Debt, Here (Ext) coefficient value of this variable is -.5251 which shows that there is a negative relationship external debt and Economic Growth. Here is negative sign between the two variables. Many other studies also showed negative impact of external debt on GDP growth (Angahar, Ogwuche, & Olalere, 2015; Doğan & Bilgili, 2014; Khodaparasti & Mohammadpour, 2016). Here Prob. Value of this variable is 0.001, meaning that it is less than 5%, which show that this variable is significantly impact on dependent variable. Further in the Table 6 the “INF” is the independent variable, which indicates the impact of inflation on the Economic Growth. The coefficient value of this variable is 0.170, which shows that there is a positive relationship between inflation and Economic Growth. Here the Prob. Value of this variable is 0.0029, meaning that it is less than 5%. Perpetua (2014) also explored positive impact of inflation (Perpetua, 2014). Please again see the Table 6 that the “HUMANCAPITAL” is also another independent variable and it indicates the impact of human capital on the Economic Growth. The coefficient value of this variable is 0.0696 which shows that there is a positive relationship between human capital and Economic Growth. But this variable is not significant because its p-value is 0.482, which is more than 5%. Gebrehiwot (2014) explored same results between human capital and GDP growth (Gebrehiwot, 2014)

Table 6. Long Run Results: Dependent Variable: GDP: Method: Least Squares
 $GDP=C(1)+C(2)*EXT+C(3)*HK+C(4)*INF$

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C(1)	9.323721	1.722962	5.411448	0.0000
C(Log-Ext)	-0.525162	0.077529	-6.774178	0.0013
C(Log-HK)	0.069607	0.098051	0.709912	0.4829
C(Log-INF)	0.170607	0.052875	3.226607	0.0029
R-squared	0.716709	Mean dependent var		5.009229
Adjusted R-squared	0.661588	Durbin-Watson stat		1.546496

According to AIC, lower the value better the model, means that the time lag choose which has lowest value of Akaike Information Criterion (AIC) as compare to other lag value of AIC. In the Table 7, the lowest value of AIC is 16.50478 which is good at 2nd lag. So two lags are selected for data analysis according to AIC information criterion.

Table 7. Lag Order Selection Criteria

Lag	LogL	AIC
0	-367.1193	23.19496
1	-255.6943	17.23089

2	-212.0765	16.50478*
3	-196.0965	16.50603

AIC: Akaike information criterion

Please see the Table 8, the C(1) is the coefficient of co-integration equation. Here the value of C(1) is negative as well as significant which indicates that there is external debt, inflation and human capital have a long-run association-ship to Economic Growth. Economic Growth_{t-2}: in the Table 8 the *D(GDPGRTH)_{t-2} is the time lag independent variable which indicates the impact Economic Growth of previous two years on the Economic Growth of current year. The coefficient value of this variable is 1.2653 which shows that there is positive relationship between two previous years Economic Growth and Economic Growth of current year. Here Prob. Value of this variable is 0.0058, meaning that it is less than 5%, which show that there are .58% chances of error in the impact of independent variable to dependent variable. External Debt_{t-1}: Here *D(EXDBT)_{t-1} is the time lag independent variable which indicates the impact external debt of one previous year on the Economic Growth of current year. The coefficient value of this variable is -.3177 which shows that there is a negative relationship between one previous year external debt and Economic Growth of current year. Here Prob. Value of this variable is 0.003, meaning that it is less than 5%, which show that there are 0.3% chances of error in the impact of independent variable to dependent variable. External Debt_{t-2}: In the Table 8, the coefficient value of this variable is -1.1084 which shows that there is also a negative relationship between previous two years of external debt and Economic Growth of current year. Here Prob. Value of this variable is 0.0378, meaning that it is less than 5%, which show that there are 3.78% chances of error in the impact of independent variable to dependent variable. Inflation_{t-1}: In the Table 8, the Inflation_{t-1} coefficient value of this variable is 0.2704 which shows that there is a positive relationship between previous year of inflation and Economic Growth of current year. Here the Prob. Value of this variable is 0.0268, meaning that it is less than 5%, which show that there are 2.68% chances of error in the impact of independent variable to dependent variable. Human Capital_{t-1}: Please see the Table 8, the sixth independent variable is *D(HUMANCAPITAL)_{t-1} which is also the time lag independent variable and it indicates the impact of human capital of one previous year on the Economic Growth of current year. The coefficient value of this variable is 0.6945 which shows that there is a positive relationship between one previous year human capital and Economic Growth of current year. Here Prob. Value of this variable is 0.0094, meaning that it is less than 5%, which show that there are 0.94% chances of error in the impact of independent variable to dependent variable.

R² (R-Square): Again in the Table 8 the R² is shows the goodness and also called coefficient of determinant of the model, means that how much the model is fitted to describe the relationship among independent variables to dependent variable. Value of R-square is “0 ≤ R² ≤ 1”. This shows that value of R-Square lies between “0” to “1”. If value more close to “1” then model describes as more fitted but if value more close to “0” indicates that fitness of model is not good. Normally R² value is acceptable at 60% but here the value of R² is 0.744 which shows that this model is 74% fitted which is acceptable.

Table 8. Vector Error Correction Model (VECM)

Variables	Coefficient	Std. Error	t-Statistic	Prob.
C(1)Co-integrated	-1.290026	0.334759	-3.853600	0.0005
C(2) *D(GDPGRTH) _{t-2}	1.265351	0.379139	3.337263	0.0023
C(3) *D(EXDBT) _{t-1}	-0.317706	0.101750	-3.145578	0.0037
C(4) *D(EXDBT) _{t-2}	-1.108438	0.508742	-2.185549	0.0378
C(5) *D(INF) _{t-1}	0.270452	0.116239	2.327587	0.0268
C(6)*D(HUMANCAPITAL) _{t-1}	0.694565	0.250225	2.775762	0.0094

C(7) Constant	-11.21745	0.612974	-18.28702	0.0001
R-squared	0.744328	S.E. of regression		1.334483
Adjusted R-squared	0.639675	Sum squared resid		32.05522

Conclusion

The result shows that there is relationship between external debt and economic growth. Furthermore external debt is giving negative impact on Economic Growth during the time which is used in this study. The most important thing is that in short run results it shows that with the passage of time the intensity of negative impact increases. Tobacco industry also contributing a role in relaxation of burden and people think that they reduce the stress by smoking. This phenomena also mentioned in many studies (Lenz, 2004; Torres & O'Dell, 2016). There are many studies which also explored that external debt has negative impact on economic growth (Angahar et al., 2015; Doğan & Bilgili, 2014; Khodaparasti & Mohammadpour, 2016). So it is clear that when the economy is not growing at its productive then external debt is not a good source for improvement of Economic Growth. Due to previous years in which debt was not repaying, the country is in debt overhang situation. Overhang situation is explaining that country takes large debt and can't repay and further debt refuses to give this country. When country takes external debt and debt is not using on productivity because in this situation country have to pay high debt services, then it becomes burden on economy and can't leads to enhance the economic growth but also give the negative impact on the economy. Same this phenomenon also described in other studies (Gonzalez-Redin, Polhill, Dawson, Hill, & Gordon, 2018; Lee, Park, Seo, & Shin, 2017).

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