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Impact of Foreign Aid and External Debt on Socio-economic Development of Pakistan

Meer Jan
Lecturer Department of Economic& PhD scholar, University of Turbat, Balochistan, Pakistan

Sana Ullah
Lecturer Department of Sociology, Lasbela University of Agriculture, Water and Marine Sciences Uthal, Balochistan, Pakistan.

Nazia
Lasbela University of Agriculture, Water and Marine Sciences Uthal, Balochistan, Pakistan

Mobeen Ahmed
Lecturer Department of Sociology Lasbela University of Agriculture, Water and Marine Sciences Uthal, Balochistan, Pakistan.

Dad Shah
Lasbela University of Agriculture, Water and Marine Sciences Uthal, Balochistan, Pakistan

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Abstract: Most of the developing countries rely on foreign aid and external debt but still they either have stuck with same level of per capita income or very slight increase. The study uses the annual data from 1990 to 2018 and applies autoregressive distributed lag (ARDL) Co-integration technique to check the impact of foreign aid and external debt on socio-economic development of Pakistan. The empirical finding of the study shows that foreign aid is positively related with economic development in short run while, external debt has a negative impact on economic development in long run. Moreover, GDP per capita used as control variables in this study and found to have a positive impact on economic development. Finally the coefficients in the model of this study are unbiased as there is no diagnostic issue.

Key Words: External debt, Foreign aid, Socio-Economic Development, ARDL

Introduction

The economists and policy makers are diverting their attention towards the economic development rather than economic growth, what could be the reason of underdevelopment and what are the barriers to progress? Most of the sub Saharan African countries and south Asian countries are underdeveloped, Sub Saharan Africa and other developing countries are getting a huge amount of foreign aid and external debt but still showing a very

less development. Foreign aid is the international development assistance to developing countries from developed countries (OECD, 2018), and it is given for different purposes such as emergency purposes, to meet the Millennium Development goals, like eradication of extreme poverty, to improve the health, attainment of basic education and to the military.

External debt is portion of a countries debt borrowed from foreign lenders which includes foreign banks, government and international financial institutions. Pakistan being a developing economy receive a high amount of foreign aid and borrowed a huge amount of external debt from different sources like International Monetary fund (IMF). After the war in Afghanistan majority of the aid came from United States to counter the terrorism which had now been stopped. Pakistan receiving foreign aid for many purposes like Education aid, Development aid, military aid and others. Despite the facts LCDs have been receiving a huge amount of foreign aid and borrowing a huge amount of external debt which are proved null impact to the economic progress for majority of the LCDs (Fasanya & Onakoya, 2012;Ullah 2020).

The effectiveness of foreign aid and external debt to the economic development and economic growth is heart of the debate since 1660's. Many studies revealed a positive and many of the other have revealed a negative linkage regarding the effectiveness of foreign to the economic performance but the mixture of empirical evidences are available for the effectiveness of foreign aid and external to the economic performances, yet the association between aid and economic development is debatable. In addition to this, the link between aid and income per capita in the long run is positive and significance in case of Pakistan Bangladesh and Sri Lanka, (Das &chaudary, 2015; Ullah, Khan, Usman, 2020).

Additionally, Foreign aid is seeming to be ineffective to develop the poor Africa, by getting aid for more than 35 years Africa is still stuck in poverty trap and living standard, health and education sector have not shown any positive improvement. Similarly, Mallik, (2008) also shows a found a negative influence of foreign aid on economic development in six poorest African countries. On the other hand, the negative or null effect of external debt to the economic development is linked with the political instability that is because the loan borrowed are not being invested in development sectors but to the no development projects.

External Debt in Pakistan

Table 1:External debt as % of GNI

Year	ED as % of GNI
2008-2009	27.1
2009-2010	31.1
2010-2011	34.7
2011-2012	31.1
2012-2013	29.1
2013-2014	26.3
2014-2015	26.6
2015-2016	24.1
2016-2017	26.5
2017-2018	27.3
2018-2019	30.2
2019-2020	37.5

Source: WDI, World Bank

The balance of payment deficit and budget deficit are major problems that Pakistan is facing since the independence. Due to which the country relies on external debt. In 2001 World Bank classified Pakistan one of the severely indebted south Asian county. For the external debt are about 50% of the GDP as shown in Table 1.1.

From 1973 to 2006 external debt of Pakistan rose form 4385 million US dollar to 29630 million US dollar as shown in table 1. From independence since now the data presented in figure 1 are showing a continuous increase in external debt of Pakistan. From 2011 to 2015 external debt as percentage of GDP has decreased from about 34 to 24. But start increasing since 2015 as shown in figure 1.1. Heavy budget and balance of payment deficit which leads to heavy reliance on external debt is causing the external debt to rise over time which is negatively contributing to economic growth and social wellbeing. The excess burden of external debt not only has adverse impact on current generation but also the excess burden on debt and interest payment on these debts will be born on future generation (Matthew & D, 2016).

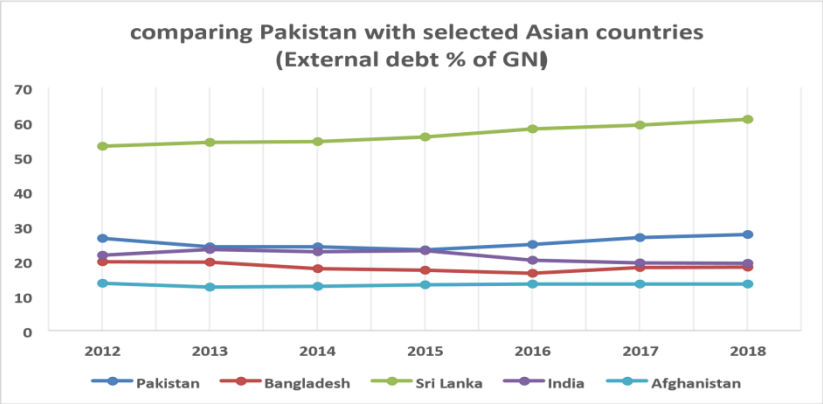

Figure 1: Comparison of Pakistan with selected Asian countries

Data source: WDI, World Bank

From last couple of years, Pakistan mostly rely on Public debt to fill the gap of budget and balance of payment deficit, as the amount of domestic and external debt have an increasing trend in figure 1. Figure 1 is showing an increase of public debt from 17381 billion rupees in 2015 to 22820 billion rupee in 2018. But the overall result of public debt on economic performance is not satisfactory, (Bilal, 2019). Most of the developing nations like Pakistan where government are borrowing billions of dollars to reduce their people from poverty but in most of the cases actually they are not able to do so. In Pakistan per capita income is less than per citizen debt where most of the government extra expenditure is no be financed by borrowing (SBP, 2017). According to Muhammad et al., (2018).

Pakistan spends about 65% of its total revenue to pay the debt, while the remaining 35% is left for other expenditures including infrastructure, health, education and defense. That is one of the reasons that Pakistan is facing poverty and low standard of living. This burden of debt is one of the barrier to progress and responsible for extreme poverty and low level of income per capita. Many steps have been taken to overcome the problem of external debt burden which includes, debt limitation law, write off debt but they were less effective. Improvement in industrial sector and agriculture sectors to boost up the export and decrease exports is a good solution (Muhammad et al., 2018). Pakistan is facing many social and economic issues, the public debt and its servicing are major and crucial issues among these problems.

Foreign Aid in Pakistan

According to OECD database for social and economic development Pakistan received 22.85 billion US dollar of foreign aid from all donors in all sectors since last five years. United States is the largest aid donor of Pakistan with nearly a third of total aids (OECD). Pakistan receives aids for different purpose, including higher education, Food, Health care, family planning, humanitarian aid and aid for peace etc. But aid received for different purpose in Pakistan such as higher education, health care and humanitarian decreased over time. From 2014 to 2017 Pakistan is third largest ODA receipt country in Asia after Syria and Afghanistan, receiving a total of four-year average of 2996 million US dollar which is 6% of overall aid received by Asian countries. (OECD).

In 2017, Pakistan received a total of 3519 million US dollar ODA, 2026 million $ for social purpose, 764 million $ for economic purpose, 123 million $ for production purpose, 264 and 261 million $ for multisector and humanitarian purpose and 81 million $ for other purposes. The aid received by poor countries including Pakistan have less impact on economic wellbeing and growth. In case of Pakistan the reason behind the failure of aid could be domestic conditions and politics (Anwar, 2014; Ullah, Khan, Usman, 2020).

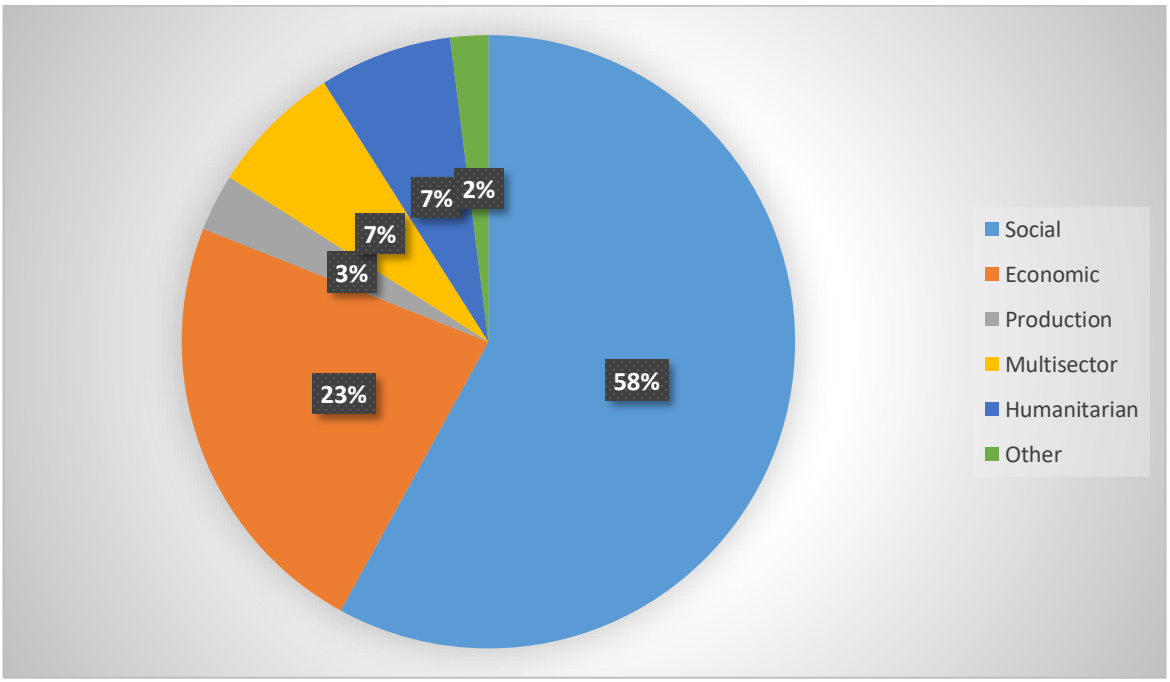

Figure 2: Purposes of Aid in Pakistan. Data source, OECD

From 2014 to 2018 the average aid received by Pakistan is shown in figure 2. 58% of the total aid received by Pakistan is for social purpose, 23% of the total aid is for economic purpose. 7% for multi sector and humanitarian respectively. 3% and 2% for production purpose and other purpose.

Problem of the statement

Since, there is rising income inequality and poverty with good economic growth. Developing countries experiencing less development as compare to economic growth. Foreign aid and external debt are to major sources of developing countries to progress. The finding of this study shows the impact of foreign aid and external debt on economic development of Pakistan.

Research Gap

The existing literature only discussed the influence of foreign aid and external debt on economic growth of Pakistan ignoring the economic development this study will fill the gap by empirically finding the effect of external debt and foreign aid on economic development of Pakistan. This study used HDI for development and per capita income growth to measure the economic development and economic growth of Pakistan. The existing literature used GDP growth to measure the economic development, which mislead the living standard.

Literature review

External debt and economic development/growth

However, the association between economic development and external debt is examined only in few studies in the literature but the influence of external debt on the indicators of economic development are widely discussed in the literature, The existing literature revealed a max link between external debt and economic development and its indicators, According to Loko et al., (2003) poverty has not only been affected by the negative impacts of foreign debt on economic development and public spending, but debt repayments appear to crowd out social expenditure. The government budget allocations on social security networks, schooling, health, water and sanitation are decreased by high debt servicing because it is relatively easy for the government to cope with.

Cordella et al., (2005) found existence of a negative connection between external debt and economic growth. Similarly, Kharusi & amp; Ada (2018) used the panel data from the time period of 1969 to 1998 to take a look at the effect of external debt on economic performance in case of developing economies empirically discovered that the external debt has a negative and significance influence on economic growth. Mehrizi, (2012) also found negative connection between foreign aid and external debt in case of Iran.

Atique and Malik, 2012; Ullah, Khan, Usman, (2020) investigate the influence of external debt on economic growth empirically found that there is adverse association between external debt and economic growth in Pakistan. Moreover, they have taken the data from 1980 to 2010. The study only used GDP growth in annual percentages leaving the development sides ignored. They also considered that extra burden of debt servicing in line with external debt is another reason to put pressure on economic growth in Pakistan.

Additionally, Cetin and Kalayer, (2012) Took the data from 1982 to 2010 in case of China and used external debt as main independent variable and FDI as control variable. The study used granger causality and ECM analysis determined that there is two-way causality between FDI and economic growth in case of China. Initially, higher FDI lead to higher economic growth and then greater financial increase similarly increasing the foreign direct investment. More importantly, study find out that external debt itself has a negative and statistically significance relationship with foreign direct investment and economic growth in China.

Sulaiman and Azeez, (2012) checked the impact of external debt on the economic development of Nigeria and used GDP to measure the economic development moreover, the study used FDI and debt servicing as control variables. The data has been taken from 1970-2010 and applied Ordinary least square method. The outcome indicated that external debt has contributed negatively to Nigeria economy. The same results were also found by (Gabdo and Aminu, 2013).

Aditionaly, Siddique, (2015) tried to check the influence of external debt on economic growth and economic development on high indebted developing countries. According to the author it is argued that during 1970s to 1980 the external debt level in many of the poor countries rose significantly due to price rises from OPEC countries. The findings of the paper revealed that due to high price of oil by OPEC increased external debt which leads to reduce economic growth in these countries. Moreover, during 1980s the oil price started decreasing and at the same time external debt by the indebted poor countries decreased which led a higher economic growth and improved the economic development indicators. In one of working papers of International Monetary Fund (IMF) Patillo et al., (2012) studied 94 developing countries took population, export and FDI as control variable found a negative and statistically significantly relationship between external debt and economic growth. Oke, (2012), Ogunmuyiwa, (2011)and Ayadi (2008) found same results in case of Nigeria.

Foreign aid and economic development/growth

Mavrotas and McGillivray (2005) look at patterns of foreign aid and economic development in selected African countries. The author generally stresses the massive decline in aid throughout the most recent decade which will affect African economy entirety. Because of the deficiency in leader, the MDGs will be a lot harder if not difficult to be accomplished. Similarly, Karras (2006) investigates the relationship between foreign aid and development in per capita GDP utilizing yearly information from the 1960 to 1997 for an example of 71 developing nations. This paper presumes that the influence of aid on economic development is positive, lasting.

Moreover, cheang, (2007) using the panel data from 1986 to 2005 by employing system generalized method of moment (GMM) studied the influence of aid and economic development of 67 developing countries revealed that there is mixed impact foreign aid on economic development in selected countries.

Similarly, Levy, (2008) studied the influence of foreign aid and economic development for selected sub Saharan African countries revealed a mix relationship. It is argued in the paper that foreign aid used in development projects and poverty reduction will contribute positively to economic growth and development while, if foreign aid used by some political and investors will increase the inequality and contribute negatively to economic development in short run and long run both. Finally, the relationship in some of these countries is found to be statistically insignificance.

Data and Methods

The dependent variable is Human Development Index (HDI), independent variables are foreign aid (FA), Official Development assistance (ODA) will be used as proxy for foreign aid, External Debt (ED) as % of (GNI) and GDP per capita. The data for the dependent and independent variables were

collected from World Bank indicators, the global economy indicators and Asian development bank (ADB) indicators from the time period of 1990 to 2019.

Econometric techniques used

Unit root test

ADF test is performed to check the stationary order of the variables. The variable is said to be stationary if it has a constant variance with zero mean and nonstationary otherwise. The variables are either stationary at level, at first difference or at second difference can be verified on the basis of t-statistics and probability values if t-statistics become greater than the t-critical than the null hypothesis is rejected which means variables has no unit root and stationary. Also the PP test is conducted to verify the series stationary, I also used PP unit root test because it has some benefits over ADF method like, a big benefit of the Philips-Peron test is that it is nonparametric, i.e. it does not need to pick the serial correlation level as in ADF.

Lag length criteria

Different methods are used for optimum lag selection criteria. When number of observations are less than 60, then (AIC) and (FPE) are most suitable methods to select the optimum lags for the model. On the other hand, if number of observation are greater than 60 then Hannan Quin (HQ) is better option to select optimum lag for the model. Since, in this study number of observations are less than 60 most of the criteria are indicating including.

ARDL bounds test

After conducting the unit root and optimum lag length, next is bound test. The approach of ARDL bound test is presented by (Pesaran & Shin, 2001). This technique is used to check whether long run association exists between the variables or not.

Autoregressive Distributed Lag (ARDL)

The method of ARDL co-integration was initially established by (Pesaran and Shin, 1999) and then by (Pesaran et al, 2003; Ullah, Khan, Usman, 2020).This method has some advantages over other techniques. Firstly, the data should not be integrated of same order, it also can be applied if the stationary order of the variable is mix. Secondly, ARDL approach separately estimate the short run and long run coefficients. As our sample size is less, (Ghattak and Siddiki, 2003) showed that incase of small sample size ARDL estimates are more efficient and appropriate. And finally, the long run coefficient using ARDL method are unbiased (Jan et al., 2021)

Diagnostic tests

Diagnostic tests are given as under:

1. **Serial Correlation test:**

If the error term of one-time period is correlated with other is known as serial correlation or auto correlation. In presence of serial correlation results obtained will not be unbiased.In this study Breusch-Godfrey LM is performed to check whether serial correlation exist or not.

2. Heteroscedasticity

If the variance of the error is not constant overtime or across the observation is termed as heteroscedasticity. For unbiased result errors are assumed to be homoscedastic. In this study, Breusch-Pagan Godfrey test is performed to check the problem of heteroscedasticity.

3. Ramsey's RESET test:

Ramsey (RESET) test is used to check whether the models are correctly specified or not. And finally Jarque-bera test is used to check whether the residuals are distributed normally or not. In classical linear regression model one the assumptions are that the data must be normally distributed otherwise the results obtained will not be efficient and consistence. The decision can be made by either looking at Jerque-Bera statistics or probability value.

Econometric Model specification

This model can be expressed using the following linear econometric model:

$$HDI_t = \alpha + \beta_1 FA_t + \beta_2 ED_t + \beta_3 DDPc_t + \mu_t \quad (1)$$

Where Economic development (HDI) is dependent variable, foreign aid (FA), external debt (ED) are independent variables and GDP per capita is used as control variable.

In addition to the long run, short run model can be expressed through error correction model as follow:

$$\Delta HDI_t = \beta_0 + \sum_{k=1}^{p} \beta_1 \Delta HDI_{t-k} + \sum_{k=1}^{p} \beta_2 \Delta ED_{t-k} + \sum_{k=1}^{p} \beta_3 \Delta GDP_{t-k} + \sum_{k=1}^{p} \beta_4 \Delta FA_{t-k} + \theta_1 FA_{t-1} + \theta_2 ED_{t-1} + \theta_3 GDPc_{t-1} + \vartheta ECT_{t-1} + \varepsilon_t$$

Where Δ is difference operator βs showing the short run coefficients, φs showing the long run coefficient, while, ϑECT showing the error correction term and ε_t is error terms. To establish the relationship between the variables Bound test of cointegration is performed. The null hypothesis is Ho: $\varphi_1 = \varphi_2 = \varphi_3 = 0$, and the alternative hypothesis is H1: $\varphi_1 \neq \varphi_2 \neq \varphi_3 \neq 0$.

Result and discussion

Result shown in table 1 are the different criteria to choose optimum lags. LR, FPE and HQ are suggesting two optimum lags to be selected as denoted by "*". Secondly, SC and AIC are suggesting 0 and 4 optimum lags respectively. Since majority of the criteria are suggesting 2 optimum lags to be selected. The study will use 2 lags.

Table 2: Lag length criteria

Lags	LogL	LR	FPE	AIC	SC	HQ
0	-4.6382	NA	2.28e-05	0.6644	0.8580*	0.7202
1	89.974	152.83	5.51e-08	-5.3826	-4.4148	-5.1039
2	111.20	27.764*	4.07e-08*	-5.7850	-4.0340	-5.2834*
3	127.28	16.078	5.33e-08	-5.7911	-3.2749	-5.0665
4	144.20	11.712	9.32e-08	-5.8617*	-2.5713	-4.9142

After selecting optimum lags, the next step is to check the stationary order of the variables. On the basis of stationary order the appropriate model is selected. Table 2 displays the unit root results. HDI and Foreign

aid are stationary at level using ADF and PP with and without including trend. While, External debt is non-stationary at level but become stationary at first difference. Moreover, GDPC is non-stationary at level with including trend using PP test and become stationary at first difference. So, it is concluded that stationary order of the variables is mixture of I (0) and I (1) with no I (2).

Table 3: Unit root test

Variables	Augmented DickeyFuller(ADF)			Philips Peron (PP)	
	Intercept & trend	Intercept		Intercept & trend	Intercept
At level					
External Debt	-2.4549	-0.8672		-2.1928	-0.8801
HDI	-6.4321***	-4.8762***		-3.6214**	-3.421**
GDPc	-3.6726**	-3.6938***		-3.0721	-3.1353**
Foreign Aid	-3.7431***	-3.9724***		-3.7636**	-3.1816**
At First difference					
External Debt	-4.2379**	-4.3230***		-4.1591**	-4.2553***
GDPC	-6.1925***	-6.2728***		-6.8757***	-6.6945***

** And *** showing the rejection of null hypothesis at 5% and at 10% respectively.

Since, some of the variables are non-stationary there might be long run association. ARDL bound test is used to check whether long run association exist among the variables or not. Null hypothesis assumes that there is no long run association. The decision can be made by comparing value of F-statistics by upper and lower bounds. In this case, F-statistics is 7.9883 which is greater than upper bound at 1%, 5% and 10% level. Null hypothesis is rejected meaning that there is long run association.

Table 4: ARDL bound test result

F-statistics	**7.9883*** **	K=3
Significance Level	Lower Bound	Upper Bound
10%	2.37	3.2
5%	2.79	3.67
1%	3.65	4.66

*** showing the rejection of null hypothesis at 1%.

Long and short run coefficients of ARDL are depicted in table 4. In long run foreign aid is found to be insignificance meaning that it has no impact on development in the long run in Pakistan. External debt has a adverse influence on development. The long run coefficient of external debt is showing that one unit increase in external debt reduce development by 0.1478 units on average in Pakistan. GDP is also found to be statistically insignificance. Moreover, the sign of ECM is negative and statistically significance as expected. The coefficient of ECM is indicating that any short run disequilibrium will move towards long run equilibrium at speed of 3% each period.

Table 5: ARDL results

Long run results: Dependent variable is HDI		
Variable	Coefficients	t-statistics
GDP	0.0358	0.9890
FA	-0.0100	-0.1883
ED	-0.1478**	-2.4767
ECM	-0.0336**	-2.6267
Short run results: Dependent variable is ΔHDI		
Constant	1.1331***	4.8572
ΔGDP	0.0006**	2.8500
ΔFA	0.0024**	3.3588
ΔED	0.0016	0.4227

** And *** showing the rejection of null hypothesis at 5% and at 10% respectively.

In addition to this, in the short run, GDP and foreign aid both have positive impact on development. Coefficient of FA is indicating that increase in foreign aid will increase development by 0.0024 unit in Pakistan. While, a one unit increase in GDP boost up the development by 0.0006 in short run in Pakistan.

Table 6: Diagnostic test results

Diagnostics	Test-statistic[probability]	Conclusion
Heteroscedasticity	0.7563[0.6665]	No diagnostic issue
Autocorrelation	1.9455[0.1797]	No diagnostic issue
Functional Form	1.3697[0.1909]	No diagnostic issue
Normality	1.0120[0.6028]	No diagnostic issue

Finally, to check the efficiency and unbiasedness of the result 4 different diagnostic test were used. Probability values are given in [] for all diagnostic test. Since all the probability values greater than level of significances. Showing that there is no diagnostic issue in the model used in this study. Finally, the result of CUSUM and CUSUM sum of square test of parameter stability are shown in figure 1. Since, the CUSUM and CUSUM square lines did not cross the 5% parameter stability line, it is concluded that parameters used in this study are therefore stable.

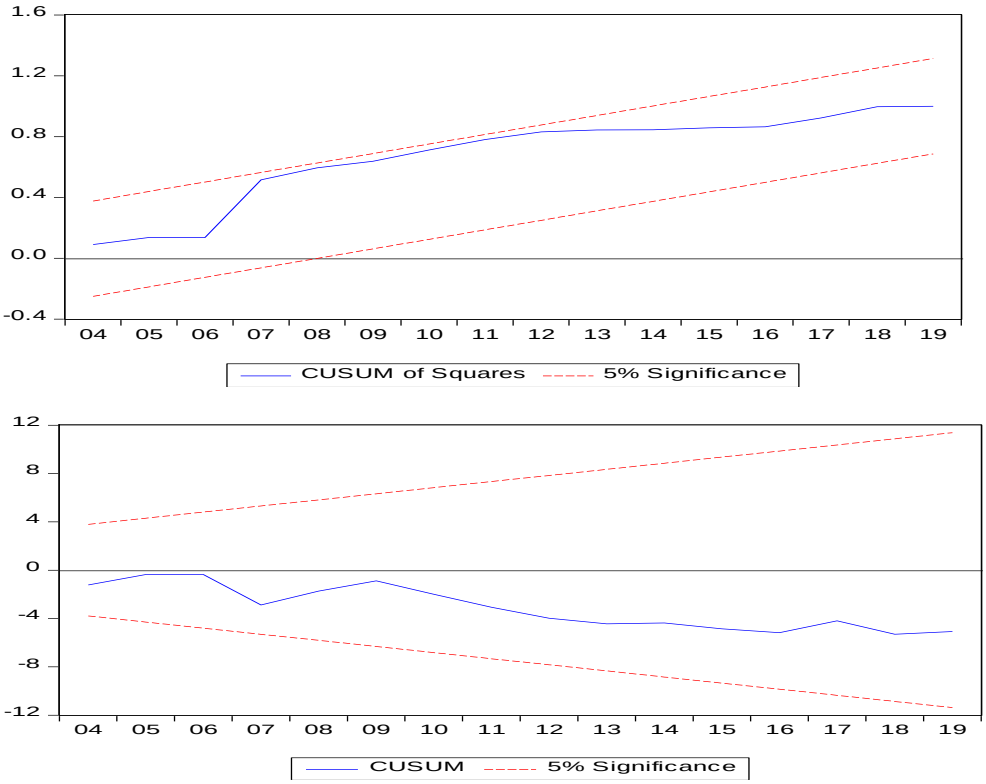

Figure 1: CUSUM and CUSUM of Square parameter stability test

Conclusion

Previously in case of Pakistan only the influences of aid and external debt is being studied ignoring the economic development. Thus this study examined the impact of foreign aid and external debt on economic development in Pakistan. To find this relationship the study took the data from 1990 to 2019 from WDI, World Bank and Global economy. Furthermore the study sued autoregressive distributed lag ARDL method. The finding of the revealed that external debts are negatively effecting economic development in Pakistan in the long run. While foreign aid has no long run impact on economic development but positively related with economic development in the short run. Moreover, GDP contribute positively on economic development of Pakistan in short run. Finally, the result of this study are efficient, accurate and unbiased as evidenced by different diagnostic tests used.

Policy recommendation

1. For sustainable economic growth and economic development based on this study it is suggested the government of Pakistan should reduce the external debt burden by implanting active management to promote investment and capital inflow in the country.
2. Relying on external debt is not a good option while, instead of relying in external debt government should use domestic debts.
3. The loan taken from either external or internal sources should be used on development projects rather than non-development projects.

4. Finally, Aid received from the foreign countries should also be used in development purpose must be distributed in a way to reduce poverty and improve equality.

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