Aid or Trade Leads to Growth: Lesson for Developing Countries

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Abstract
The purpose of this study is to find the relationship between economic growth on aid and trade. This study was conducted on low income and low middle-income countries around the world for the period of 1995 to 2019. Trade brings foreign reserve with the economic activity and aid bring foreign reserve that can be used to stimulate economic activity. Both can be significant if used in an appropriate and purposeful manner. So we tested two equations of aid and trade with the economic growth by applying fixed-effect test and random effect test. Although both tests showed significant results that means if the foreign reserve that is key to economic activity and key of connectivity with the foreign world to earn more foreign reserve can help in increasing the economic growth.
Keywords: Trade, Aid, Growth

1. Introduction

Foreign aid is the flow of capital in form of financial aid most preferably to developing countries categorize as low income and middle-income countries from high and upper-middle-income countries. The countries attained economic development by technological advancement. During the power show of European countries on Africa, South Asia, and independence of these, the countries later could not make them free from European influence. After independence, these countries were categorized as least developed countries and this lead them to another occupation of occupied economies.

The developed countries occupied the less developed nations by the endowment of their natural resources and by putting them in the chain of loans with interest. The loan in form of aid was first given in the 19th century for development with the chains of loans. And it was termed as financial aid. The concept of financial aid was originated from Britain, Germany and France beyond to the development the main aim was the endowment of resources. Since now the developed nations are supposed to spend 0.7 per cent of their GDP reserve for the financial aid for less developed and least developed nations.

In literature, foreign aid or financial aid is the flow of capital voluntarily from a developed country to a developing country that lacks the technology and economic infrastructure. Financial aid or foreign aid can be distinguished into six categories. The Bilateral aid, multilateral aid, tied aid, project aid, military aid and voluntary aid. Bilateral aid and multilateral aid are the most inevitable kinds of aid.

The aid is useful for economic activity if is directed to some targets. To distinguish the trade can preferably be divided into two main terms, aid for trade and facilitation of aid for purpose of trade and secondly aid to introduce new policies and regulations. Aid for trade can be useful term if really works to develop economic activity by new development of new infrastructure, installation of industry and producing the goods to increase export capacity *(Cali and Te Velde, 2011)*. So aid for trade is main purposely for economic productive capacity and infrastructure development by applying new policies *(Aldasoro et al., 2010)*.

How much the foreign aid is helpful in attaining the economic growth and strong financial position? It is very clear that even with billions of aid loans for many years the developing countries are unable to attain economic development as bound in the chain of interest loans and huge amount of foreign currency outflow from country in form of payment of interest on these

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loans. So these countries if gain from trade by utilizing aid for trade, but after payment interest on loans gain nothing. Moreover, this entire scenario seems another business side of developed countries. In addition, this is gigantic block in attaining targeted economic growth.

The aid that is transferred from developed countries to developing countries is increased from 127 billion dollars 2010 to 145 billion dollar 2015. The aid when given to improve institutional quality of developing countries gives boost to aggregate growth of country. The developing countries suffer with lack of education, health issues and continuation of dogmatic agricultural skills. The developed countries aid to developing countries to improve health matters and reduction in serious diseases, Improve the health facilities *(Maruta et al., 2020)*.

Foreign aid specified based on country to show its effectiveness. There and mainly three main divisions of aid on basis of country. First of all foreign aid and aggregate growth of the country and its effectiveness on different institutions like education, health and agriculture. Secondly, foreign aid and its impact on policymaking and implementation. It helps in policy making for such institutions and for future development. The third is regional aid. This aid given based on regional or demographic location and traits of a country population. So if a country with good labor skills will get more aid in from of new technology installment or foreign direct investment *(Maruta et al., 2020)*.

The economic growth of country depends on various factors. The role of industry, education, agriculture, technical skills of labor, economic infrastructure, and trade in form of more exports and less imports and population. But if a country lack with the good governance and fails to show the industry development and institutional policy reform, trade deficit and with low GDP per capita is unable to survive in race of a country development path and requires the foreign aid to maintain a possible GDP. In that scenario the country is foreign aided by the nations who already attained this progress. Apparently, when a country is aided foreign capital inflow and can help in boosting its many sectors and reduce trade deficit. Aid in form of new technology like in Lucknow India, gave progress in services sector. The dark side of financial aid is the payment of interest yearly that is non-productive outflow of capital. But if trade brings new technology, new industry installment and infrastructure development then aid is very beneficial. Though most of countries take loans only for the stabilization of their currency with foreign exchange rate without any infrastructure development, Lebanon, Saudi Arabia, Qatar are examples.

2. Literature Review

Cali and Velde (2011) examined the study, does aid for trade really improve trade performance? The data was taking for the estimation of developing countries, from many sources .i.e. (Organization for economic corporation and development) OECD/DAC (development assistant committee) and CRS (credit reporting system). The study use two ways of assessing the effect of aid for trade (Aft), the first one aid for trade facilitation and the broader aid for trade policy and elasticity of the cost of trade. Secondly, estimate the AFT effect directly on exports by using an augmented export demand equation. The techniques used to check the data were dynamics specification and GMM-system estimator. The findings of the results was Aid for trade facilitation lessen the cost of trading. Trade also have important and positive impact on aid to economic infrastructure on Exports, while is does not seem to have much impact on productive capacity of exports.

Maruta et al., (2020) examined the effect of sectorial foreign aid and institutional quality on economic growth. The time of the data collection from 1980-2016 of 74 developing countries from Africa, Asia and South America. The study take two sides of aid in three sectors education, health and agriculture. The techniques used for the estimation was 2-stage least square (2SLS). The findings were different, as it provide various results. Education was effective in America, health was in Asia while Agriculture in Africa. As the policies

recommended that aid flows should be towards education, as if education system and institutions would be better, all other sectors would automatically be better.

Babalola et al., (2019) examined a study in which it investigate the inflow of foreign direct investment in Nigeria. It has been observe that foreign aid and trade increased in Nigerian for the time 1980-2015, so that the study investigates their relationship with foreign direct investment with economic growth in Nigeria. The data used to check the relationship among variables was time series and check its long run as well as short-run relationships among all variables, by using Autoregressive Distributed lag (ARDL) to check co-integration of all variables. It also utilizes the Error correction model (ECM) to check both short run and long run causal relationship of variables. The results were positive in long run of all variable and in short run, only foreign aid has positive impact. These variables enhance the economic growth in Nigeria, which means if we boost these economic variables, the economic growth will also increase in Nigeria.

Burnside and Dollar (2000) found the relationship among foreign aid, economic policies and growth per capita GDP. The method used to test the study was OLS and 2SLS. The source of data collection was WDI. The paper had study many questions, the first one was, Do aid had an impact on economic growth or not? The findings were that an average aid did not influence economic growth to an extent, while to enhance the aid have positive impact on economic growth. The second analysis of the study was do donor recommended the good policies i.e. fiscal, monetary and trade policies or not? The results were in favor of economic policies, that it have strong positive impact on economic growth. Due to systematically aid, the poor country would have more effect on economic growth rather than normal aid.

Ghimire et al., (2016), examined a study of 121 least developing countries to check aid for trade (AFT) and its impact on exports. The time period of data collection from 1995-2010. The study use many sources for data collection, which were WDI, OEDC and CRS, WDI and WGI. The export data collected from United Nation's Conference on trade and development. The indicators used for the study were aid income, exchange rate, exports, trade openness and money supply. The techniques used for the study were GMM. The results of AFT on exports were positive and significant.

Gnangnon (2018) found the multilateral trade liberalization and Aid for trade for productive capacity building on recipient's countries' export revenue instability. It was a panel data of about 119 countries for 12 years from 2002-2013. The result were mix that it have negative impact on economic growth, while these two variables were the main dependent variables of countries growth. Overall, study have the negative impact as we high the level of Aft; will also have high impact to lower the exports revenue.

Lee and Kim (2020) conducted a study of 113 countries for the period of 2002-2015. The indicators used for the study were level of globalization taken as dependent variables and aid for trade as an independent variable. The data obtained from OECD. The study used 12 proxies of aid for trade, which categorized into three groups, were policy and regulations, economic infrastructure and building productive capacity. The empirical impact of aid for trade (including all 12 categorized) variables does not have significant impact on overall globalization, while two of them, which were intangible elements, have positive and significant impact on globalization. The main purpose of the study was to check that how aid for trade affects the recipients' countries level of globalization. It does not deal with the consequences.

Tekin (2012) focused on the relationship of development aid, trade openness and economic growth in least developed countries. The period was 1970-2010. The techniques used to check the relationship was Granger causality test. The findings were that there was no significant casual relation in LDC among these variables.

Maizels and Nissanke (1984) examined for the allocation of aid and boost up the motivation of aid in both aid recipients and aid donor countries. The study used the two alternative models

of bilateral and multilaterals aids for 80 developing countries for different two periods 1969-70 and 1978-80. The findings were of model one was trade is just to give the shortfall of home trade and is applicable for multilateral trade not for the bilateral aid. The second model explains that all aid serve for donor interest and is best fitted for bilateral aid not for the multilateral aid. Vijil and Wagner (2012) analyzed that does aid for trade enhance the exports performance. Investigating the infrastructure channel, of developing countries for the period 2002-08. The techniques for estimate the data was panel discard OLS and 2SLS. The data obtained from WTI. The indicators used for the study were total exports, infrastructure, time, GDP. The findings were that aid for infrastructure aid have positive and significant effect on infrastructure.

3. Methodology
3.1 Data and Variables
This study will use two models and two equation for the results *(Burnside and Dollar, 2000)* and the research of this paper is based on the low-income countries and low middle income countries. These countries are chosen from South Asia, South Africa, Latin America & Caribbean, Europe and Central Asia, East Asia and Pacific and Sub Saharan Africa. The countries from *South Asia* are Pakistan, India, Bangladesh, Bhutan and Afghanistan. Angola, Burundi, Benin, Burkina Faso, Cameron, Congo, Comoros, Eritrea, Ethiopia, Ghana, Guinea, Gambia Republic, Kenya, Nigeria from *Sub-Saharan Africa*. Bolivia and Honduras from *Latin America & Caribbean*. Algeria from *Middle East & North Africa*. Haiti, Ukraine, and Tajikistan, from *Europe and central Asia.* Mongolia and Vietnam are from *East Asia and Pacific*. Data of 28 countries is collected from World Bank 2020 and the standard definitions from World Bank are used to describe all the variables in appropriate manner. Data for 28 countries is taken from 1995 to 2019.

Definitions of Variables
1. **Net Official Development Assistance (ODA) and official aid received current US$**
   Net official development is the grant that is received by developing countries from members of Development assistance committee (DAC) and non DAC. These countries provide development funds to such institutions that provide multilateral aid (such as UN, World Bank and IMF) with their own terms and conditions. It provide loans with grant element of 25 percent and discount rate 10 percent. Net official aid assistance refers to the loans from donor countries to the countries in list of receipts of ODA. (World Bank 2020)
2. **Net Bilateral Aid flow from DAC donors, current US$**
   This is named as aid Official Development Assistance (ODA) or official aid from the members of Development Assistance Committee (DAC). Bilateral aid is aid granted from one country government to the other country. Moreover, purpose of this aid is development and welfare for the people of granted country. Bilateral aid provided with 25% grant element and 10 percent discount rate. These are gross disbursement of aids and loans minus repayment of already taken loans. (World Bank 2020)
3. **Aid Effectiveness (Net ODA received per capita current US$)**
   This is net burden of aid on a country. The total official received by the government of country added with discount rate if distributed on each person of country is net aid burden per capita for that country. (World Bank 2020)
4. **GDP per capita**
   This is calculated as gross domestic product of the country divided by the total population of the country at the mid of year is called as GDP per capita. The gross domestic product calculated as sum of all goods produced withy in year in a country added by all the taxes

and minus all the subsidies, as subsidies are not included in GDP calculation (World Bank 2020)

5. **Trade Openness**
   The trade openness is exports of all goods and services with the constant 2010 US$. This is describe as exports of all goods and services provided by a country to rest of the world (World Bank 2020).

6. **Industry**
   Industry (including construction) value added (constant 2010 US$). It includes construction in all sectors of a country. That includes construction, mining, manufacturing, electricity, gas and water. (World Bank 2020)

7. **Population**
   The population of a country is the sum of all the residents of a country, even though they don't have the citizenship of that country or legal status to live in that country. (World Bank 2020)

For the model formation GDP per capita *(Burnside and Dollar, 2000)* that represents the real growth rate, multilateral trade *(Gnangnon, 2018)* and bilateral trade *(Burnside and Dollar, 2000, Babalola et al., 2019)* aid per capita received by receipt countries *(Tekin, 2012)* to find the effect of burden of loan on growth by applying fixed effect model *(Burnside and Dollar, 2000)*

In the second equation it is estimated whether the effect of trade openness*(Tekin, 2012)*, industry development and population *(Maizels and Nissanke, 1984)* can incorporate to accelerate the economic growth of country. Population, industry development in form of capital formation.

To find the effect of aid on economic growth of a country estimated by applying equation with the variables of bilateral and multilateral aid incorporated with the effect of net aid on per capita. In addition, if a country is consider as aid free and the effect of its industry and trade will lead to growth or not. This is estimate by applying fixed and random effect. For these two concept, only one concept should be support by applying all data. The meaning of aid is the entry of foreign reserves in that country without any effort so that that foreign reserve can be used for industry installment and that is leads to increase in production and that leads to increase in GDP of that country. If we suppose good governance prevail in country then this aid in term of bilateral and multilateral will lead to increase in GDP per capita, reduction in unemployment level a poverty reduction and a time will come when the country will be able to return its loans in time after talking all benefits of aid.

GDP= Net Official aid assistance (ODA) + Multilateral aid + Aid Effectiveness

(Equation 1)
GDP = Ltaid + Lbaid +Lcaid
$GDP = \alpha + \beta_{1it}ltaid + \beta_{2it}baid + \beta_{3it}caid + \varepsilon_{it}$

(Equation 2)
GDP= Trade Openness + Industry development + Population
GDP= Ltrade +L industry +Lpopulation
$GDP = \alpha + \beta_{1it}ltrade + \beta_{2it}lindustry + \beta_{3it}lpopulation + \varepsilon it$

Here *i* is number of countries and *t* represents the years, from 1995 to 2019. The stationary of all variables are tested by applying unit root test. Since we are using the data from 27

developing countries with low income and low middle income. So all the variables from equation 1 are stationary at first difference.

Results for Unit root test

The stationary of all the variables from both equations tested by Unit root test. In addition, all the variables from equations 1 are stationary at first difference, but the variables Industry and trade from second equation showed the stationary of data at second difference. However, the variable population was stationary at first difference. The Descriptive statistics also gave good results and probability of all variables was zero that is less than 0.05.

Table 1: Unit Root Test

Variables	P-S Wstat	ADF- Chi square	PP Chi-Square	Probability
GDP	-4.53523	119.744	210.901	0.000000
Ltaid	-14.1641	290.074	613.997	0.000000
Lbaid	-13.4950	275.107	480.335	0.000000
Lcaid	-12.4697	255.575	667.975	0.000000
Trade openness	-5.73562	151.077	402.173	0.000000
Industry	-3.70698	147.085	1117.68	0.000000
Population	8.10823	36.5565	23.0719	0.000000

Descriptive Statistics

Table 2 shows the results of descriptive statistics for equation 1. The standard deviation shows the scattered values of data and skewness is close to zero for all variables that shows the values are normally distributed that makes the good results of data.

Table 2 for equation 1

Variables	GDP	Taid	baid	caid
Mean	1312.124	9.71E+08	6.81E+08	46.41044
Median	993.1305	5.14E+08	3.44E+08	37.82873
Maximum	4830.197	1.14E+10	1.10E+10	290.4560
Minimum	183.5479	19309999	12800000	0.648570
Std. Deviation	981.6911	1.21E+09	9.67E+08	41.23878
Skewness	1.499415	2.740952	4.068298	1.817925
Kurtosis	4.937777	14.89880	29.85278	7.965944
Jarque-Bera	336.7588	4634.082	21256.46	958.0486
Probability	0.000000	0.000000	0.000000	0.000000
Sum	831886.4	6.29E+11	4.41E+11	28171.14
Sum sq. dev	6.10E+08	9.50E+20	6.05E+20	1030586.

Descriptive Statistics for equation 2
Table 3

Variables	GDP	Trade	industry	population
Mean	1311.093	3.08E+10	3.20E+10	79928425
Median	992.8781	5.94E+09	4.31E+09	17552717
Maximum	4830.197	5.91E+11	8.06E+11	1.35E+09
Minimum	183.5479	47726060	65107187	475394.0
Std. Deviation	982.1242	7.35E+10	9.31E+10	2.21E+08
Skewness	1.502490	4.820566	5.461345	4.617227
Kurtosis	4.942882	29.47517	35.95838	23.59792
Jarque-Bera	337.7239	17531.66	29335.29	13587.99
Probability	0.000000	0.000000	0.000000	0.000000
Sum	829921.9	1.63E+13	1.87E+13	5.12E+10
Sum sq. dev	6.10E+08	2.86E+24	5.05E+24	3.13E+19

Table 4: Cointegration Test for Equation 1

Variables	t-statistics	Coefficient	probability
LTAID	3.943188	455.3080	0.0001
LBAID	-2.584661	-260.5794	0.0100
CAID	0.451791	0.599492	0.6516

Johnson Co-integration Test

The results of unit root test indicated that Johnson co integration test can be applied on equation one, because all the variables when stationary at level or first difference then Johannsson Cointegration test is applied most preferably, although on Panel data Fixed effect and Random effect is more appropriate for testing the relationship of the variables of model. So here, after Johnson Cointegration test on equation 1, we tested both equations on fixed effect and random effect model.

The results shows the Cointegration relation exist among variables.

Table 5

	Statistics	Probability	w-statistics probability
V-Statistics	0.258305	0.3981	0.2758
PP- statistics	-2.689872	0.0036	0.0127
ADF statistics	-3.124123	0.0009	0.0991

Fixed effect

The equation 1 is then tested by fixed effect to check the relationship of aid does it cause increase in economic growth of country. So according to the results it shows the strong positive relationship between the variables of both sides. And we can say if the aid is used with honestly for welfare and development of countries then it can cause increase in economic growth of country. And the results from random effect model also supported the results of fixed effect model. The results of fixed effect are shown in table 6. And results of random effect are shown in table 7.

Table 6: Fixed effect Test for Equation 1

Variables	Co-efficient	t-statistics	Prob.
C	-2250.669	-3.584741	0.0004
LTAID	353.2305	4.898978	0.0000
LBAID	-179.3084	-2.823463	0.0049
CAID	0.154856	0.184610	0.8536

Table 7: Random Effect Test for equation 1

Variables	Co-efficient	t-Statistics	Prob.
C	-1923.814	-3.097518	0.0020
LTAID	324.2071	4.548958	0.0000
LBAID	-166.5027	-2.629818	0.0088
CAID	0.395721	0.490236	0.6241

Fixed Effect

The equation 2 is also tested on same pattern of equation. To find the relationship whether the trade and new industry development cause increase in economic growth of country. Although the results shows that the trade and new infrastructure development makes new job opportunity, that increase consumption of people and so by increase in circulation of money gives a boost to the economy of country. But this is only possible with good governance. The results shows the strong relationship between variables in both fixed effect and random effect model. The results of fixed effect for equation 2 is in table 8, and for random effect in table 9.

Table 8: Fixed effect test results for equation 2

Variables	Co-efficient	t-statistics	Prob.
C	-3944.569	-6.367704	0.0000
LTRADE	-82.27389	-1.873455	0.0616
LINDUSTRY	522.0883	7.047771	0.0000
LPOPULATION	-271.3168	-4.564150	0.0000

Table 9: Random Effect Test for equation 2

Variables	Co-efficient	t-statistics	Prob.
C	-3362.402	-6.316066	0.0000
LTRADE	-68.31069	-1.607174	0.1086
LINDUSTRY	614.3023	8.874559	0.0000
LPOPULATION	-445.5140	-8.445627	0.0000

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Housman test

Dependent Variable	Chi sq.	Prob.	Status
Model 1: GDP per Capita as dependent variable	143.863383	0.0000	Fixed effect model is appropriate
Model 2: GDP dep.	43.381365	0.0000	Random Effect is appropriate for this model

Housman test applied to check the appropriate of the fixed effect test and random effect test. The null hypothesis of the test random is appropriate while the alternative hypothesis is Fixed effect is Good. So our, results interpret fixed effect is appropriate for our data.

4. Results and Discussion

There are two equations taken for estimation. As we are going to check the effect of our study with two aspects, in both equations GDP taken as a Dependent variable. Firstly, we anaylyse unit root test, in which accept Null hypothesis means data is not stationary and on contrary Reject Null Hypothesis means data is stationary. As our equatoin One data is staionary at 1st difference, so we are Rejecting Null hypothesis. In this case we apply Descriptive anlysis In first equation, the GDP test with ODA, Bilateral aid and aid effectiveness. While, in the second equation GDP examine with trade openness, population and indusry. Panel data used for the estimation of low-income and middle-income countries for 1995-2018. The results were in favour. Firstly, there has been test the stationarity of all the variables, in which all the variables were stationar at first difference. The 2nd equation was stationary at 2nd difference. For further, estimation, there has been apply fixed and Random effect in the model. In equation 1, fixed effect test results shows that ODA and effectiveness of aid has strong positive realation with economic growth of the country while Bilateral aid have negative impact on it. The t-statistics vallue is -3.584741, the probability values is also statisfactory 0.0004. The second equation shows that trade openess and population have negative impact on economic growth while industry have postive relation with it. To check whether the fixed effect or Random effect is appropriate for the data, one more test has been applied which is housman test. The results shows that the fixed effect test is appropriate.

5. Conclusion

The results of all the variables and test shows that in developing countries the ODA and effectiveness of trade plays vital role to increase the growth of the country while bilateral aid have negative impact on it. It could be say, if the received trade will not use in appropriaet ways or systematically, it will effect the growth rate. in the same way, if population increase it will decrease the economic development. Trade openness also effect it badly, just because if things will export without any systmatic way, it will cause the shortage of the things and cause of inflation and we have to import that thing. This have the negative impact on economy. The government of the developing countries should have to impose such economic policies in which all the aid and trade should use in such a way that economic growth should be boost up.

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