Trade Potential of Afghanistan against SAARC: An application of Gravity Model Approach

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Abstract

This study attempts to estimate the trade potential of Afghanistan by applying the gravity model of trade and analyzing the panel data for the period of (2006-2017) across the selected 4 countries of the SAARC (Afghanistan, Bangladesh, India and Pakistan) and the coefficients obtained from the model have been used for predicting the country's trade potential within the specific trading countries. The results revealed that Afghanistan's trade potential is highest with Pakistan, followed by the India and Bangladesh. Therefore, Afghanistan should explore the ways and means to further improve its trade relations with the countries and make concentration on improvement of its market share as for as possible. Currently, the volume of trade between the Afghanistan and its trading partners in the SAARC member countries, specifically with the Pakistan and India is quiet high but still in case of Bangladesh, there is a chance to further escalate the trade potential. The study proposed that Afghanistan should use trade as a means of economic development to flourish in the region and capture the markets for realizing its maximum trade potential.

JEL Classification: *F19, 016*

Key words: *Afghanistan, Trade potential, Gravity Model, SAARC.*

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Introduction

Trade is an imperative part of the economy and coupled with the idea of globalization it reaches to the international level (Salvatore, 2012). In the preview of this changing atmosphere, Afghanistan- a land locked country has shown interest in geopolitical and economic environment by becoming the eighth member of South Asian Association of Regional Cooperation (SAARC) in the 14th Summit conference in April, 2007. Afghanistan is considered as a natural and indispensable member of the SAARC community and thus South Asia's regional identity has completed. These economies have achieved and still have to play fundamental part in the global economy as principal producers and of goods and services. The surfacing of SAARC economies reflects an enduring alteration in the international economic array. These changes in the world economy have established clearly that no country can segregate itself completely from the world and survive for long (Agarwal, 2002). This unparalleled trend is proved by the emergence of SAARC economies. These economies are undeniably acquiring a principal role as both political and economic actors. The economic escalation story is surely apparent in SAARC economies. The eight economies namely (Afghanistan, Bangladesh, Bhutan, India, Nepal, Maldives, Pakistan and Sri Lanka) altogether account about 2.96 per cent of the earth's landmass, and $2779 per capita (SAARC Report 2012-16).

To remain focused, these countries are doing the same and are shaping the new political disclosures by engaging in summits to discuss the agendas and concerns. So far nineteen summits have been held. The theme of these summits does reflect the growing intra-SAARC harmony and common purpose to contribute to global tranquility, solidity and collaboration. Hence, the present study is useful keeping in view their economic interaction in general and trade interaction in particular. Despite a huge and increasing body of text on the economies of the SAARC, no orderly and relative experiential analyses have been approved out on the nature of economic performance in trade structure of Afghanistan with SAARC economies.

This study is an effort to study the Afghanistan-SAARC trade specifying the countries where Afghanistan has the high trade potential because currently Afghanistan's exports are centralized in few products and transmitting to the specific countries where the country volume of revenue from exports goods are too much lower than its imports, and this situation lead to severe instability in balance of trade. For an economy to flourish in the global arena, trade is playing an important role in country's development and growth (Wani *et al 2016*). Therefore, it is important to identify and determine the countries or regions where Afghanistan has the trade potential and this is the primary objective of the current study.

1.1 Direction of Afghanistan Trade

In order to capture the picture of Afghanistan trading partners, the major export and import destinations are analyzed based on their percentage of share in exports and imports.

Table 1: Major Export Partners for Afghanistan, US $ Million (Percentage Share)

Country/ Year	2006	2010	2016	2017
Pakistan	77.6	47.3	39.7	47.4
India	5.9	18.8	33.0	35.2
Tajikistan	0	0	0.8	0.1
Germany	1.8	0.2	1.0	0.6
Iran	0.7	10.1	5.0	3.1
Iraq	0	0	2.9	1.8
Turkey	0	0	3.1	2.0
Russia	3.3	6.4	3.3	0.5
UAE	3.3	1.7	4.2	1.5
China	0	0	1.7	0.8
Sub Total	95.1	89.6	95.3	97.4
Other Countries	4.9	10.4	4.7	2.6
Total Exports	100.0	100.0	100.0	100.0

Source: Central Statistical Organization, 2018

Table 2: Major Import partners for Afghanistan, US $ Million (Percentage Share)

Country/ Year	2006	2010	2016	2017
Iran	7.8	5.3	19.5	19.3
Pakistan	15.9	9.2	17.1	18.3
UAE	2.4	1.4	6.6	3.0
Turkmenistan	1.2	2.2	6.0	5.4
Malaysia	0	0	3.0	4.0
Uzbekistan	8.2	26.2	9.3	6.1
Kazakhstan	1.9	8.7	5.0	9.5
Japan	16.7	10.1	3.3	3.8
Russia	9.18	5.9	3.3	2.1
China	12.8	10.7	13.4	16.7
Sub Total	89.8	91	98.5	98.7
Other Countries	10.2	9.0	1.5	1.3
Total Imports	100.0	100.0	100.0	100.0

Source: Central Statistical Organization, 2018

Between the years (2006 to 2017) Afghanistan enjoyed trade affinity with Pakistan as per the volume of trade. On the other hand, India was also present in the economic radar. Turkey, Germany, Tajikistan, Iraq, UAE, Russia and China are also part of the major export markets for the Afghani's products as before 2010 Afghanistan had limited export with these countries.

During 2006 the major import market for Afghanistan was Japan (17 percent) followed by Pakistan and China. With the passage of time in 2017 the trend reversed as Iran leads the market followed by Pakistan and China.

Table 3: Macroeconomic indicators of SAARC Economies, 2017

Items	Afghanistan	Bangladesh	India	Pakistan
Real GDP Growth, Percentage	3.4	6.0	6.7	2.0
GDP per capita (current price in $ US)	419	522	1020	1022
GDP (PPP) of world total	0.03	0.3	4.7	0.6
CPI inflation, Average	26.7	7.7	8.4	12.6
Fiscal Balance, Percentage of GDP, FY Basis	-4.1	-4.7	-6.0	-7.4
Merchandise export, Percentage of Growth	18.9	17.4	13.7	18.2

Merchandise Import, Percentage of Growth	12.1	25.6	19.4	31.2
Current Account Balance (US $)	-0.2	1.9	-28.7	-13.9
Current Account Balance, Percentage of GDP	-1.6	-2.2	-2.4	-8.4
Debt Service Ratio, Percentage of Exports	1.2	3.2	4.4	12.2
Reserves (Excluding Gold), $ US Billion, End period	3.5	6.1	2.42	8.6

Source: World Economic outlook report, 2017

2. Literature Review

2.1: Trade potential studies

Sultan et al. (2015) applied the gravity model approach to determine the export, import and total trade potential of the Pakistan and the results found that Pakistan has high trade potential with the Hungry and Norway. On the other hand, this study also highlighted that Pakistan has the highest export potential with the Hungry and Switzerland and for imports with Norway followed by the Greece, Philippines and the Portugal. Gul and Yasin (2011) estimated the trade potential of Pakistan by using the gravity model. The results defined that Pakistan's trade within SAARC is low, specifically with the India and the highest trade potential is with the countries located in Asia Pacific region, European Union, the Middle East, Latin America and North America. Binh et al. (2011) has applied the gravity model in order to analyze the trade potential of Vietnam and the results were in favor of the assumptions of gravity model that the bilateral trade between the countries is highly related to the economic size, geographical size, culture and the market size.

2.2: Economic integration

Rehman (2015) have studied the economic integration of major SAARC countries based on the extended gravity model for the time period of 1991 to 2010. The variables included the GDP, GDP per capita, exchange rate volatility, common border and intra-regional trade and the result depicted that these variables have significant effect among the SAARC countries. However, this effect is poor which reflected through small magnitude of coefficient. Bhandari and Jogezai (2015)

focused on the status of Afghanistan in SAARC and find out some emerging opportunities in regional integration. Although South Asia spreads from Afghanistan to India and Maldives to Nepal, historically has carried an image of being an integrated cultural, economic and environmental space. The study revolves around the main theme to understand the role of Afghanistan for regional cooperation and stability in South Asia. The paper discussed the possible opportunities and challenges associated with Afghanistan's transition from war ravaged country to a progressive democratic state. Further the study justified the economic benefits resulting from Afghanistan's integration into SAARC nations particularly and generally for the whole South Asia region.

Dhungel (2008) suggested that more energy trade projects between the India, Pakistan and Bangladesh can help in contributing to integrate regional economies. There should be an effective mechanism that allows exporters in one country to obtain unique, less costly or better quality inputs from suppliers in neighboring countries and enhance global competitiveness. Boris and Vedran (2002) discuss the level of trade integration within the Southeast Europe (SEE) region, using simple tools such as the trade openness ratio and trade concentration indices. The authors conclude that the target trade potential for Croatia lies within the EU and Central Europe Free Trade Agreement (CEFTA) countries. Therefore, any further liberalization of trade with the SEE countries should be accompanied by similar considerations for EU and CEFTA countries.

2.3: Trade creation and Trade diversion effects

Rehman et al. (2006) applied the gravity model in order to identify the trade creation and trade diversion effects affects that is resulting from SAPTA and RTA by using the panel data approach and the result expressed that India, Bangladesh and Pakistan will gain more benefits from joining the RTA. The State Bank of Pakistan (2006) has estimated the gravity model at the sectorial level. The results indicate significant scope for expanding trade between Pakistan and India. According to the report, the true trade potential could have been far greater had both countries not engaged in conflicts, or had tariff and

nontariff barriers been kept low. The sectorial level analysis indicates the existence of high trade potential in textiles, leather products, chemicals, food, beverages, and tobacco products.

3. Methodology

a) Theoretical Foundation

In the economic world for the first time the gravity model of international trade was introduced by the Walter Isard in *1954*. This model in rudimentary form has been used to predict the bilateral trade flows of two countries (*i* and *j)* based on their economic sizes and also the distance between the two units (Taken from Wikipedia).

$$F_{ij} = G * M_i * M_j / D_{ij} \qquad (1)$$

According to the formula the F_{ij} is the gravitational attraction for trade flow, G is the constant, $M_i * M_j$ are the mass of two objects (economic dimension of the countries) and D stands for distance that are being measured. Also, this equation can be changed into a linear logarithm in order to go for econometric analysis.

The Concept of gravity model promoted for the use in international trade areas and this model is derived from the Newton's Law of universal gravitation and Bergen in the years of 1962 and the Poyhonen in *1963*.

The concept of gravity equation can be expressed in:

$$F = G\frac{m_1 m_2}{r^2} \Rightarrow \quad Trade = \alpha . \frac{GDP\ i\ .GDP\ j}{Distance\ i\ j} \qquad (2)$$

This equation is often transformed into linear form so that it conforms to the usual regression analysis:

$$Log\ (Trade_{ij}) = \alpha + \beta_1 log\ (GDP_{i.}\ GDP_j) + \beta_2\ log\ (Distance_{ij}) + u_{ij} \qquad (3)$$

Most of the economists like, Linnemann, Leamer, Anderson, Bergstrand, Krugman and Van Wincoop, have used this model to analyze the determinants of bilateral trade flows, based on the cultural affairs of the countries such as the common languages, common borders, the common legal systems, currencies and colonial legacies. On the other hand it has been used to examine the effectiveness of trade agreements such as the South Asian Association for Regional cooperation's (SAARC), World Trade Organization (WTO), North

American Free Trade agreement (NAFTA) etc. (Gul.N and Yasin. M 2011, Wani etal 2016).

b) Analytical Framework

As discussed in the above sections, the concept of gravity model has promoted for the usage in international trade areas and this model was derived from the Newton's Law of universal gravitation. Based on this concept, the volume of the trade between the two countries is directly dependent on their economic sizes and inversely depends on their Distance and Population. Also, for the first time in economic world the gravity model of international trade was introduced by the Walter Isard in 1954. In the years of 1962 and 1963s this concept was used in international trade (economic relationships) by the Bergen and Poyhonen. With regards to the above equations, the equation first is presented that value of bilateral trade is directly related to the product of the GDPs of the trading partners, and inversely related to the distances between the two countries and the second equation is common version of the model for the common analysis and has shown in logarithm linear. The basic form has been further augmented by the researchers to focus on other determinants of bilateral trade like, Income Per Capita, Adjacency, Language and Colonial Links and Border sharing etc.

c) The Augmented Gravity model

For estimating the augmented gravity model for Afghanistan, the study is identifying the impact of certain factors on bilateral trade and in this stage, the model is adding the per capita differential with the traditional variables. For instance, the basic model includes the GDP per capita in the partner countries as an additional argument and the more complicated models has contained the explanatory variables, such as the absolute value of per capita income differentials (PCGDP) etc. In addition to the traditional variables, several other conditioning variables like, Culture affairs, Common Language and Common socioeconomic Region and ... etc. can be added to the gravity model to account for other factors affecting bilateral trade.

The equation is as follow:

$$\text{Log (Trade}_{ij}) = \alpha + \beta_1 \text{Log (GDP}_i \text{ GDP}_j) + \beta_2 \text{Log (PCGDP}_i \text{. PCGDP}_j) + \beta_3 \text{Log (Distance}_{ij}) + \beta_4 \text{(PCGDPD)} + u_{ij} \quad (4)$$

The general model as Equation is shown in below:

$$\text{Log (Trade}_{it}) = \beta_0 + \beta_1 \log X_{1it} + \beta_2 \log X_{2it} + \beta_3 \log X_{3it} + \ldots\ldots + \omega_{it} \quad (5)$$

On the above formula, The X stands for quantitative or ordinary variable that contains the (Product of GDP, the distance and GDP differential) and for using the above equations or variant the analysis part will contain the further extensions.

d) Panel Data Framework

To estimate the trade flows between a pair of countries for a specific period of time on particular issue at the multiple sites with the periodical observations over a defined framework, traditionally the classical gravity models can be expressed as single equations by using the cross sectional data. However, the panel data framework will provide the useful information regarding single equation model Vis- à – Vis and also there will be used several techniques but particularly the fixed effect and random effect models are the most highlighted:

I. The Fixed Effect Model (FEM)

In order to recognize the fact and to make and have differed among the individual units, In FEM, intercept in regression and it is a must that each and every cross sectional unit might have the special characteristics of its own and the model can be written as follow:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2\,it} + \beta_3 X_{3\,it} + u_{it} \quad (6)$$

In the above formula the subscript *i* to the intercept term is presenting that intercepts across the individuals are variant, but each intercept does not alter over time. The FEM is suitable in a condition, if there is a correlation between individual effects and explanatory variables.

II. The Random Effect Model (REM)

The REM inspect the remaining of each entity in a condition where it is not correlated with explanatory variables and considers as a new explanatory variable and can estimate the invariant factors such as gender, distance... the REM assumes that the intercept of an individual unit is a random draw from a much larger population with a constant

mean (Guajarati, 2003) Then the individual intercept is expressed as a deviation from this constant mean value. REM is suitable when the random is intercept of the each cross sectional unit in uncorrelated with the regresses and the basic idea is to start with Equation as following however, instead of treating β_{1i} as a fixed, it is supposed to be a random variable with the mean value of β_1. After the value of intercept for the individual entity can be explained as: $\beta_{1i} = \beta_i + \varepsilon_1 + \ldots\ldots\ldots$ *Where i = 1, 2… n*

The random error term is assumed to be distributed with a zero mean and constant variance:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_i + u_{it} \quad (7)$$

$$= \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + w_{it} \quad (8)$$

The composite error term w_{it} consists of two components: ε_i is the cross-sectional or individual specific error component, and u_{it} is the combined time series and cross sectional error component, given that ~ (0, σ2ε), X_{it} ~ (0, σ2uiε), where ε_i is independent of X_{it}.

Generally, the FEM is held to be a robust method of estimating gravity equations, but it has the disadvantage of not being able to evaluate time-invariant effects, which are sometimes as important as time varying effects. Therefore, for the panel projection of potential bilateral trade, researchers have often concentrated on the REM, which requires that the explanatory variables be independent of the ε_i and u_{it} for all cross sections *(i, j)* and all time periods *(t)* (Egger, 2002). If the intention is to estimate the impact of both time variant and invariant variables in trade potential across different countries, then the REM is preferable to the FEM (Ozdeser & Ertac, 2010).

III. Endogeneity Issue

Commonly the gravity model can be criticized for the two ways of causation in order to measure the volume of trade between the countries as dependent variable and the GDPs of trading partners as explanatory variable (Nazia and Yasin, 2011). This is referred to as an Endogeneity issue that can lead to biased estimates (although the degree of bias is unknown). An admissible solution is to use an instrumental variable to proxy the size of the economy: population instead of GDP, for instance. However, the populations of trading

partners are often heterogeneous. Another solution is to use the trade-GDP ratio as the dependent variable, but this leaves no scope for the GDPs to be used as explanatory variable. Yet another possible remedy is to use a simultaneous equation framework, which, when reduced, will lead to separate equations for both mutually dependent variables, which can be estimated using the generalized method of moments (GMM) technique or some other technique. However, this might also suffer from identification problems. In general, it is easy to find appropriate instruments that should be independent of the target variable and, at the same time, closely associated with the variable being replaced. Therefore, it seems advisable to confine ourselves to the general specification employed by numerous researchers and to set aside the Endogeneity issue for the purposes of this paper.

e) Sample Size and Data

For estimating the trade potential of Afghanistan two steps of procedures have been done, at first, estimating the basic gravity model to determine the trade flows of Afghanistan with other countries. Then, specifying the augmented gravity model by inclusion of variables to evaluate their impacts on trade. In this methodology, at first selection of a sample of countries is done for which the trade is supposed to have reached its potential. Then, the gravity equation estimates the bilateral trade for the sample of selected counties. The estimated coefficient resulted from equation are used to predict the volume of trade between the countries and this estimation contains the GDP, Distance, GDP per capita etc. The simulated or predicted value of bilateral trade is then compared with the observed values to infer bilateral trade potential.

The study is considered the data regarding the economic sizes (GDPS), GDP per capita, total exports and imports from Afghanistan Central Statistical Organization for the annual period of (2006-2017) from all other trading partners based on the availability of the data and information. The selected three countries are from SAARC members: Bangladesh, India and Pakistan.

4. Results of the Gravity Model

On applying the gravity model by using the panel data estimation techniques regarding the Afghanistan bilateral trade relations with the partners, the results are discussed as follow:

4.1 The Basic Gravity Model

To estimate the Afghanistan bilateral trade with its trading partners the REM (Random Effect Model) is selected for the Time period of (t = 2006 – 2017) and cross-sections of 3 countries of the SAARC members namely (Bangladesh, India and Pakistan) with inclusion of the Afghanistan.

$$\text{Log (Trade}_{ij)_t} = \beta_1 + \beta_2 \log (\text{GDP}_{i.}\ \text{GDP}_{j})_t + \beta_3 \log (\text{Distance}_{ij)_t} + \omega_{ij)_t} \quad (9)$$

According to the results in (table 4), both of the traditional variables (Product of the GDP and the Distance) are highlighted significant because it has the magnitude reason and the expected signs. The attached results deduced that Afghanistan's bilateral trade with the selected countries will increase by 0.54 percent as the product of the GDPs increase by 1 percent. On the other hand, the coefficient of the distance variable depicts that, when the distance (as a proxy for the transportation cost) between the Afghanistan and the trading partners increases by 1 percent on average, the bilateral trade decreases by 2.35 percent. Hence, both of the variables are theoretically aligned with the hypothesis of gravity model in that Afghanistan's trade is directly related to the economic size of the partners and inversely related to the distance between them.

Table 4: The Basic Gravity Model

Explanatory variable	Co-efficient	Standard Error	t-Statistic*
Constant	-3.05	4.53	-0.91
Product of GDP	0.54	0.03	23.41
Distance	-2.35	0.76	-4.31
Adjusted R-squared	0.83	-	-

Source: Output generated through E-views V 8.0

4.2 The Augmented Gravity Model

For estimating the augmented gravity model for Afghanistan, the model is added per capita differential to count for the factors that has effect on bilateral trade. The below equation is presented as the general model:

$$\text{Log (Trade}_{it}) = \beta_0 + \beta_1 \log X_{1it} + \beta_2 \log X_{2it} + \beta_3 \log X_{3it} + \ldots\ldots + \omega_{it} \quad (10)$$

Where X stands for quantitative or ordinary variables (the Product of GDP, the GDP differential and the Distance).

Table 5: Augmented Gravity Model

Explanatory variable	Co-efficient	Standard Error	t-Statistic*
Constant	-0.89	7.07	-0.19
Product of GDP	0.87	0.03	-0.19
Distance	-2.31	0.81	-3.41
Per Capita GDP differential	0.31	0.07	2.42
Adjusted R-squared	0.75	-	-

Source: Output generated through E-views V8.0

From table 5, it is evident that coefficient of the product of GDP is statistically significant at 1 percent and carries the expected sign for Afghanistan's bilateral trade increases by 0.87 percent as the product of GDP increases by the 1percent. Also, the coefficient of distance variable is negative and statistically significant at 5 percent. The result implies that 1 percent increase in the distance will leads to 2.31percent decrease in trade between the Afghanistan and the trading partners.

In order to test the relative strength of the Linder hypothesis vis-à-vis the *Heckscher-Ohlin (HO)* hypothesis in addition of the two primary variables, inclusion of the GDP per capita differences is must and the coefficient of the variable concerned is positive and significant at 5 percent. The estimated value is 0.31 percent, which describes that bilateral trade increases as the difference between the GDP per capita of Afghanistan with its trading partner's increases, inversely less than proportionately. The revealed results are supporting the HO hypothesis (differences in factor endowment) in case of Afghanistan.

4.3. Trade Potential of Afghanistan

For evaluating the trade potential of Afghanistan, discussions of the gravity model are fairly reliable based on the revealed results.

4.3.1 . The Concept and Methodology

Extensively the trade potential concept has been used by the researchers for studying the international trade relations, specifically in the Eastern European countries. Through this methodology, the researchers are selecting a sample of countries for which the trade is assumed to reach its trade potential and then the gravity equation is estimated to measure the bilateral trade within the sample.

In order to predict the volume of trade between the pairs of countries (Afghanistan with Bangladesh, India and Pakistan), the estimated coefficients from equation used. The predicted value of the bilateral trade is then compared with the observed values to infer bilateral trade potential. Helmers *et al.* (2006) has noted that the model can be applied either at the industry level or at the aggregate. This study carries out the analysis at the aggregate level.

The study estimated the augmented gravity model for Afghanistan vis-à-vis 3 countries for a fairly long period (2006-2017). The study has used the ratio (P/A) of predicted trade (P), arrived at by the estimated value of the dependent variable to actual trade (A) of Afghanistan with the partner concerned to evaluate their trade potential, and to forecast the future trade direction. If the value of P/A exceeds unity, this implies that Afghanistan has the potential to expand trade with the respective country. Similarly, the absolute difference between the potential and actual level of trade (P-A) can equally be used for this purpose. A positive value implies the possibility of trade expansion in the future while a negative value shows that Afghanistan has exceeded its trade potential with a particular country. By using either the ratio or the difference indicators, the classification of countries is possible with which Afghanistan has potential for the expansion of trade or not.

4.4 Evaluation for the Trade Potential

In order to evaluate the trade potential of Afghanistan, it is necessary to estimate the coefficients and the simple way is division of the entire time period (2006-2017) into 2 sub-periods for calculating the average values of actual trade and also the predicted trade. The results of the trade potential for Afghanistan is based on the coefficients at aggregate model that are presented and discussed as follows in table 4.3.

There are two categories of trading partners for Afghanistan, the first category is those countries where Afghanistan has already reached to its trade potential but still needs the further expansion for its trade relation and the second is those countries where Afghanistan has chance of further exploration of trade, therefore, the researcher is using the value of (P–A) to classify the countries. Hence, if the result was a positive value means it indicates the future possibilities of trade expansion but if the result was a negative value shows Afghanistan has exceeded its trade potential with the particular partner country.

According to the estimation of table 4.3, Afghanistan has potential to explore its trade relation with the Pakistan, India and Bangladesh. However, the maximum of trade potential exists with the Pakistan and India since the Predicted /Actual (P/A) ratio is considerably high. The (P/A) ratio in the case of the Pakistan, which implies that Afghanistan's actual trade with these countries has reached its potential level. In contrast, Afghanistan's actual trade has exceeded the predicted level for many countries (P/A <1).

Table 6: Trade Potential of Afghanistan

Year	Indicator Country	P/A	Potential of Trade
2006	Pakistan	1.17	Yes
2006	India	0.08	No
2006	Bangladesh	0.03	No
2017	Pakistan	1.17	Yes
2017	India	1.03	Yes
2017	Bangladesh	0.65	Yes

Source: Output generated through E-views V 8.0

During 2006, the trade potential of Afghanistan against Pakistan is maximum as the P/A ratio is greater than 1 and for the rest of the countries the P/A ratio is less than 1. During 2006, Bangladesh and India were missing on the economic radar of Afghanistan, and as a prime reason that the P/A ratio is less than 1. With the passage of time, the structure of trade between the Afghanistan and rest SAARC economies changed as in 2017, Afghanistan enjoyed trade potential with India as well as Pakistan. The P/A ratios in case of India are 1.03 and in Pakistan case it is highest equaling to 1.17 but in case of Bangladesh, the trade association is minimal. As the P/A ratio is 0.65. The escalation in trade relation can be attributed to the SAFTA agreement and the countries have opened their free trade with one another.

5. Conclusion and Recommendations

The present study has measured the trade relationship of Afghanistan against 3 members of the SAARC countries (Bangladesh, India and Pakistan) and revealed that Afghanistan has the high trade potential with the Pakistan followed by India and also the figures regarding the Afghanistan trade is confirming that during the years of 2006 to 2017 the trade potential of Afghanistan against Pakistan and India was quiet high and the results of P/A ratios was greater than 1 versus for rest of the countries, it was less than 1 but still in case of Bangladesh, the trade association is minimal as the P/A ratio is 0.65 , it means the P/A ratio is less than 1 and for Afghanistan there is a chance to further escalate the trade potential and expand trade market.

The study confirmed that size of economies and distances of the countries are effecting the bilateral trade flows between the Afghanistan and its trading partners and the results deduced that Afghanistan's bilateral trade with the selected countries if increases by 0.54 percent as the product of the GDPs will increase by 1 percent. On the other hand, the coefficient of the distance variable depicts that, when the distance between the Afghanistan and the trading partners' increases by 1 percent on average, the bilateral trade will decrease by 2.35 percent. Hence, both of the variables are theoretically aligned

with the hypothesis of gravity model in that Afghanistan's trade is directly related to the economic size of the partners and inversely related to the distance between them.

In present study there was some limitations for collecting the required data and information because some other countries of the SAARC members have not been observed and included in the research but the present study is combined with authenticity and availability of the data and information regarding the Afghanistan trade and for having a prominent and highlighted result the study has applied the gravity model of trade with measurement of trade relationships between the countries based on (GDP, Distance, PGDP, PCGDPD) etc.

5.1 Recommendations

Based on the results and findings of the study, the following recommendations are proposed:

1. The study reveals that the highest trade potential for the Afghanistan exists with the Pakistan followed by the India and Bangladesh and they represent as the major sources for the export and import. Trade sector needs to be revitalized, prioritizing the markets, especially on those markets where the country is enjoying the comparative advantage.
2. Reducing the trade barriers is a need for the Afghanistan economy to flourish in the global arena and that is directly related to the stability in the political and security conditions.
3. For having a sustainable export growth, Afghanistan should have access to the better market opportunities instead of doing diversification.
4. There is a need for updating the technologies and upgrading the qualities and quantities of Afghani's products that should be based on the demands and country specific needs.
5. Cooperation of the Private sectors with the government is an obligation for attraction of more investment and increasing the international trade.

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