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ANALYSIS OF POTENTIAL FOR FREE TRADE AGREEMENT AMONG ECO COUNTRIES

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Abstract

This study explores the potential for expansion of trade flows among Pakistan, Iran, Turkey and Kazakhstan in future, and a possibility of Free Trade Area (FTA) among these countries. We used the country-specific gravity trade model. Through the incorporation of several policy-related variables, our model goes beyond previous studies. The estimated model showed that in addition to the conventional variables of export value, import value, Gross Domestic Product (GDP), per capita GDP and distance, the Consumer Price Index, Common border and the membership in a Preferential Trade Agreement (PTA) influence bilateral trade. The findings of the estimated export and import gravity models support the hypothesis that there is a potential for increase in bilateral trade flows and that there is a potential for an FTA among the Economic Cooperation Organization (ECO) countries.

Keywords: Economic Cooperation Organization (ECO), Free Trade Agreement, Gravity Model

JEL Classification: F11, F15

Introduction:

It is said that the regional economic cooperation is one of the factors, which leads to economic growth and development of the nation. Generally, the rationale for the advancement of regional cooperation as a preferred policy is not merely economic but also political and socio-cultural. The economic factors such as the small size of domestic markets, economies of scale in production, specialization and utilization of the underutilized potential in terms of human, technological and natural resources explain why regional cooperation is necessary. Regional cooperation enables the developing countries not only to expand their existing industries but also to establish new ones based on dynamic comparative advantage, which helps them to broaden and diversify their industrial base.

In 1964, Pakistan, Iran and Turkey established a regional grouping called Regional Cooperation for Development (RCD). For fifteen years (1964 -79) since its establishment, intra-regional trade did not register any increase and never exceeded the pre-RCD level of less than 2 percent of their aggregate GDP. Iran, Pakistan and Turkey established the ECO, an inter-governmental regional organization, in 1985.The ECO is the successor organization of RCD, which remained functional from 1964 to 1979 and its basic charter is enshrined in the Treaty of Izmir originally signed in 1977. Its task was to promote economic, technical and cultural cooperation among the member

Vol. 2, No. 04; 2018

ISSN: 2456-7760

states. The ECO, which succeeded the RCD, also inherited all of its problems. 1992 was an important year for ECO, which saw the expansion of the organization with the inclusion of seven new members namely Afghanistan, Azerbaijan, Kazakhstan, Kyrgyzstan, Tajikistan, Turkmenistan and Uzbekistan.

The RCD/ECO failed to produce much of economic impact before its expansion in 1992 and even thereafter. The Treaty of (Izmir, 1977) lays down the following objectives of the ECO: Promotion of sustainable economic development of member states and raising the standard of living and quality of life of its people; Promotion of regional cooperation in economic, social, cultural, technical and scientific fields; Progressive removal of trade barriers and expansion of intra-regional trade; Development of transport and communication infrastructure among the member states; Human resource development; Development of the agricultural and industrial potential as well as human and natural resources of the region; Economic liberalization and privatization and Utilization of region‘s natural resources, in particular energy resources.

Several empirical studies have been conducted on the ECO member countries and their bilateral trade relations with each other, as well as, with the rest of the world see(Pomfret, 1997),(Pomfret, 1999), (Perez, 1974) and (Perez, 2004).However, there is a paucity of studies that analyze the potential for economic integration among the ECO countries in general and Pakistan, Iran, Turkey and Kazakhstan in particular. Even the studies referred to above fall short of providing an analysis through the use of proper economic indicators or modelling. ECO in its present shape is a new organization as compared to other regional groupings, and has attracted a very limited number of empirical studies.

This study attempts to contribute to the corpus of available literature in relation to trade among the major ECO countries i.e. Pakistan, Iran, Turkey and Kazakhstan. The study probes the potential for expansion of trade flows and the potential for an FTA among the ECO countries. For Econometric analysis, the study estimates gravity models of exports and imports. Furthermore, the study provides an up-to-date analysis of trade flows.

The structure of paper is as follows: section 2 cites some studies on ECO from the extant stock of literature, section 3 documents some details on the methodology, next section 4 covers the discussion on the issues on data and variables used in country-specific gravity model along with econometric technique for estimation. Section 5 presents results and is about discussion of the estimation results. The last section comprises of the conclusion with policy implications.

Review of Literature:

Several empirical studies have been conducted on the ECO member countries and their bilateral trade relations with each other, as well as, with the rest of the world. (Pomfret, 1997) (Pomfret, 1999) has discussed the prospect of regional integration within the Economic Cooperation Organization (ECO) focusing more on newly liberated central Asian States. He presented empirical evidence that the ECO region has good prospects for regional integration. The establishment of transport links would improve trade between the new landlocked ECO members and the three original members as previous distortions stand to be removed. The prospect of substantial intra-ECO trade is limited because of the similarity in the economies of seven new members of ECO.

Vol. 2, No. 04; 2018

ISSN: 2456-7760

In his 1997 study, *ECO: Current Status and Future Prospects*, (Pomfret, 1997) has discussed pre-ECO trade patterns and organizational history in the light of goals set by RCD and ECO for regional cooperation. He has also analyzed exports and imports among ECO member states and studied the growth and decline patterns in terms of percentages. The seven new members of ECO are the focus of his studies and not Pakistan, Iran and Turkey.

In his 1999 study, *Central Asia Turns South*, (Pomfret, 1999) reviewed the political and economic history of each member state and their trade links with each other.

(Perez, 1974) examined the available data on trade flows among RCD countries without applying any economic model. Much of his focus remains on the historical aspects of the organization and its member states. He has underlined the areas of mutual cooperation in the ECO region and the benefits that would accrue to the region from the enhanced trade.

In his 2004 Study, *Prospects of Economic Integration among ECO Countries*, (Pervez, 2004) concludes that there is no marked difference in the performance of the ECO region compared to pre- ECO period. If things remain the same, the fate of ECO will be no different from that of its predecessor organization i.e. RCD.

Methodology:

The traditional trade theories such as Riparian Model, HO Model and Increasing Returns to Scale models are the perfect specialization models, considered as limiting case for explaining the extent of trade between the countries rather the gravity model is successful in explaining the extent of trade between the countries. The most successful empirical tool that has been used to explain international trade flows is gravity model. Gravity model proposes that flow of goods from one country to another is a function of a positive product of the size of economies of the two trading countries and an inverse function of trade resistance factors. The application of the gravity model has been undertaken in case of a wide variety of goods trade and the factors across different regions and national borders. The models that specifically sought to explain the volume of trade were developed during 1960s. According to these models, the size and structure of the economy for trading partners determine the trade flows among them and the level and nature of trade impediments is also a critical factor in these flows.

Theoretical Foundation of the Gravity Model

It was in the later part of the 19th century that the use of the gravity model emerged to explain spatial interactions and flows. This model has successfully explained the trade flows from one center to another, such as exports and imports. The assumption of the model is that a hidden force is there to draw the flow, which is formed by the attraction of two centers. This attraction of two centers can be attributable to their size. The distance between two centers weakens the force. The formulation can be better understood by referring to the use of Newton‘s Law of universal Gravitation.

$$F = \frac{GM_1M_2}{r^2}$$

Where F is attraction force, M1 and M2 are masses of two objects, r is the distance between M1 and M2, and G is a constant proportion. Newton‘s theory of gravitation holds that the force of

Vol. 2, No. 04; 2018

ISSN: 2456-7760

attraction between the objects is proportionally interconnected to the size of their masses and inversely related to the square of the distance between them.

It was(Tinbergen, 1962) who derived the gravity model from the discipline of physics and intuitively used it to analyze international trade flows. He, however, did not provide firm theoretical justifications. Despite this, the gravity model applied by him was instrumental in empirically modeling trade flows. The difference between the gravity model used in physics and economics is that while the physics gravity model was invented to explain universal gravitation, the purpose of the economic gravity model is to explain international trade flows among countries.

Later on different economists tried to figure out the theoretical foundation of the gravity model. By using a Walrasian general equilibrium system,(Lineman, 1966) justified the theoretical foundation of the gravity trade model. He maintained that the gravity trade model was a reduced form of a four-equation partial equilibrium model of export supply and import demand (see also (Berg strand, 1985), (Aitken, 1973) and(Geraci and Prewo, 1977) used the same approach to examine the trade bloc effect, and to analyze bilateral trade flows respectively. A similar theory was developed and used by(Frankel et al., 1995)and(Le et al., 1996)to support their models.

Citing its "unidentified" properties as the reason, (Anderson, 1979)criticized the above-mentioned approach and dubbed it unhelpful for policy purposes. By using the property of the expenditure system, he offered a solution and also maintained the hypothesis of identical homothetic preferences across regions at the same time. By assuming Cobb-Douglas preferences of Constant Elasticity of Substitution (CES) with the Farmington assumption of product differentiation by place of origin, he formally derived the gravity model. However,(Deardorff, 1998) and Anderson (1979) preferred the modeled preferences to traded goods. Rather than eliciting easily interpretable theoretical implications, he sought to examine the econometric properties of the resulting equation as his primary concern. Anderson's model could make the best case for the aggregate. However, it failed to deliver on a commodity-specific gravity equation. Huckster-Ohlin-Vane presents trade prediction based on factor service, which is one of the most important results of trade flows(Everett and Keller, 2002).

Empirical application of the Gravity Model

In literature, the application of gravity model is in three popular approaches: general gravity trade model, commodity based gravity trade model and country specific gravity trade models.

(Berg strand, 1989) derivation was limited to a generalized gravity equation, which also included price index variables from partial equilibrium. This represents the general equilibrium model plus small market assumption and the assumptions of identical utility and production functions across countries. He explained that the gravity model is a reduced form of a partial equilibrium sub-system of a general equilibrium trade model with nationally differentiated products.

(Lamer, 1974)focused on how trade was affected by the tariffs, and used the gravity model for disaggregated commodity imports. Imports were indexed by i and k, i stands for country and k for commodity. A number of studies employed a technique that was similar to (Lamer, 1974) and focused on disaggregate commodities; for example the trade flow pattern of consumer goods between the U.S. and its immigrant home countries was studied by(Gould, 1994)and to analyze

Vol. 2, No. 04; 2018

ISSN: 2456-7760

the EU wine trade,(Dascal et al., 2002) made use of panel data. (Berg strand, 1989) modified the gravity model to explain international trade flows in differentiated products rather than for total trade of a country.

The purpose of using the Country specific gravity model is to explain trade and identify trade patterns between countries. The credit for using the country-specific models goes to(Thorsby and Thorsby, 1987). The study conducted by them sought to test the Linder hypothesis and the impact of exchange rate variability on trade flows.[1](Gould, 1994) employed a country specific gravity model aimed at one country's (the U.S.) trade with all trade partner countries in the same way as Thorsby and Thorsby's approach**.** To investigate Australian trade with its trade partners (Lung, 1998), (Dhar and Panagariya, 1999), and(Gunawardana, 2005)also used the country specific model. In the same way, for the purpose of analyzing Canadian trade with other countries,(Vida and Prentice, 2003) used the country specific model.

The Gravity Trade Models Used in this Analysis

The model used here focuses on trade of a single country with its trade partners. It is taken from the derivation of (Sharma and Chua, 2000). The modification of this model has been done by incorporation of dummy variables to suit this study. The model does not account for the total volume of trade among all the trading countries and this is its advantage for measuring the country specific model.

Export and Import country-specific gravity trade model equations, employed in this study are as follow:

$$\log X_{ijt} = \propto_0 + \propto_1 \log(GDP_i) + \propto_2 \log(GDP_j) + \propto_3 \log(PCGDP_i) + \propto_4 \log(PCGDP_j) + \propto_5 \log(Dis_{ij}) + \propto_6 \log(CPI_i) + \propto_7 \log(CPI_j) + \propto_8 \log(ONI_j) + \propto_9 CUL_{ij} + \propto_{10} Bor_{ij} + \propto_{11} PTA_{ij} + U_{ijt}$$

$$\log M_{ijt} = \beta_0 + \beta_1 \log(GDP_i) + \beta_2 \log(GDP_j) + \beta_3 \log(PCGDP_i) + \beta_4 \log(PCGDP_j) + \beta_5 \log(Dis_{ij}) + \beta_6 \log(CPI_i) + \beta_7 \log(CPI_j) + \beta_8 \log(ONI_j) + \beta_9 CUL_{ij} + \beta_{10} Bor_{ij} + \beta_{11} PTA_{ij} + U_{ijt}$$

Variables and Data Description

Variables

GDP as a proxy for economics size, distance as proxy for trade resistance and transportation cost and population as proxy for market sizes are the core variables of gravity model. Further different other variables are also used in the gravity models such as per capita GDP as proxy of average living standard.

In this study we use the following variables: GDPs of the countries, populations of the countries, distances between the countries, trade openness index and consumer price indices.

[1]Linder (l96l) hypothesized that trade of manufactured goods between two countries will be inversely related to the difference in their per capita incomes (Thorsby and Thorsby, 1987). That is, trading in manufactured goods will be higher among countries with similar taste and income levels (Salvatore, 1990, p.I5 1).

Vol. 2, No. 04; 2018

ISSN: 2456-7760

The study uses three dummy variables for preferential trade agreements, border effect and culture effect.

Data, Data sources, Procedure and Issues

In estimating the model, we use panel data (pooled cross-section and time-series) for eight countries in total. The selection of these countries is done on the basis of two factors (a) importance of trading partnership and (b) availability of required data. Four countries of ECO, Pakistan, Iran, Turkey and Kazakhstan are included in this study. Since there is not enough data available for most of the years for most of the ECO countries, we could not include the other six countries of ECO in our sample. The other four countries included in our sample are major trading partners of above-mentioned countries such as USA, UK, China and Germany. For the analysis of the potential for a Free Trade Area among ECO countries, our sample includes these eight countries, four ECO and four non-ECO countries in total.

The data used in this study cover a period of 1995 to 2014 (20 years), thus, making a sample of 560 observations. Since Kazakhstan came into being in 1992, it makes it impossible for us to go beyond this period and the data regarding this country are only available from 1995 onwards.

All the data used in this study are annual. COMMTRADE, the United Nation‘s Database is the major data source for collection of facts and figures on total Exports and Imports of each of the sample countries. UNSTATS, the United Nation‘s database has been used for obtaining data regarding GDP, GDP per capita and population. Data on CPI are obtained from the database of the World Bank.

The data on total Exports, total Imports and GDP were used to calculate the trade openness index (ONI) of each of the sample countries. The website (www.maprrow.info/distance) was used to obtain the data on the distance (in kilometers) between major trading ports of each of the sample countries (as the crow flies). The data on exports, imports, GDP, and GDP per capita were in nominal terms, to convert into the real values of those data, the respective Consumer Price Indices of the sample countries were used. World Bank Database was the source of data on the Consumer Price Index of each sample country. All the values were in million US dollars. Likewise, the population of all countries has also been measured in millions.

Estimation Technique:

The export and import models were estimated using the random effect model (REM) in which, its specification assumes that the corresponding are realizations of independent random variables with mean zero and finite variance. Most importantly, the random effects specification assumes that the effect is uncorrelated with the idiosyncratic residual. As we have used Eviews Swamy-Arora estimator, it handles the random effect models using feasible GLS techniques.

In selecting the Fixed Effect Model (FEM) or the Random Effect Model (REM), advice is provided by (Baltagi, 2008) and (Gujarati and Porter, 2009) among others. Some of these, which are relevant to our data set, are discussed below.

If the number of cross-sections in the data set is relatively larger than the number of time periods in the data set, the FEM will suffer a loss of a degree of freedom and the REM would be more efficient. But if the number of time periods in the data set is larger and the number of cross-

Vol. 2, No. 04; 2018

ISSN: 2456-7760

sections is small, it would not make much difference between FEM and the REM. In our data set, the number of the time periods is 20 and the number of cross-sections is 28, which makes the number of cross-sections substantially greater than the number of time periods. This has made us select the REM for this study, as it is more likely that REM will achieve efficient estimation of the models. When it came to the point where we had to decide which econometric procedure would be more beneficial to get most accurate results, we preferred Estimated Generalized Least Squares (EGLS) to Ordinary Least Squares (OLS) to estimate the random effect models (REM). The econometricians are of the opinion that the REM by ordinary Least Squares (OLS) will result in coefficients with poor statistical significance. On other hand, the Estimated Generalized Least Squares (EGLS, cross-section seemingly unrelated Regression or SUR) can achieve asymptotically efficient estimates (Baltagi, 2008 discusses the details of the procedure).
Next, we had to specify settings for EGLS weight. One may choose to estimate with no weight, or with cross-section weight, cross-section SUR, period weight, period SUR. We selected the option of period SUR weight, which allows for general correlation of residuals across periods for a specific cross section. As we are using two-way random effect with the option of balanced panel data, period SUR weights are the most appropriate option to be used in Views (see Baltagi, 2008, for more details).

Empirical Results & Discussion

Two gravity model equations i.e. for imports and exports have been estimated. These models, in addition to the traditional variables, consist of culture, PTA, border and several other dummies to capture the impact of certain important factors on bilateral trade. Reported below are the results and discussion for the estimated Export model for the time period t= 1995-2014 and cross-sections reaching 28 in number.

Export Model:

Table 5.1 presents estimation results of export model. Table 5.1 shows the results below. At 1% level, the traditional variable (GDP of Country i), which refers to an exporting country in our model, is found to be significant and carries the expected positive sign. Negative sign is associated with GDP of Country j, which refers to an Importer country in this model but that is not statistically significant.
The deduction from this result is that as the GDP of the said four countries increases, it would have positive impact on the exports of all four-sample countries namely Pakistan, Iran Turkey and Kazakhstan. The exports of the exporter country can be impacted negatively by decrease in the GDP of the importer country but not at a significant level.
Country if's per capita GDP (which is an Exporter country in our export model) is seen non-significantly positive. Per Capita GDP of the coefficient of County j is negative but statistically non-significant. The signs of both per capita GDP's are as per signs of GDP's but this time coefficients are not statistically significant. The implication we can draw from this is that weak economic position of the people belonging to Pakistan, Iran, Turkey and Kazakhstan, has a direct and a significant impact on the overall exports of these countries.

Vol. 2, No. 04; 2018

ISSN: 2456-7760

Table 5.1.

Dependent Variable: Log Exports				
Method: Panel EGLS (Two-way random effects)				
Sample: 1995 2014				
Periods included: 20				
Cross-sections included: 28				
Total panel (balanced) observations: 560				
Swami and Aurora estimator of component variances				
Period SUR (PCSE) standard errors & covariance (d.f. corrected)				
Explanatory Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-5.097661	6.610473	-0.771149	0.4410
Log (GDP i)	1.138050	0.569473	1.998426	0.0462
Log (GDP j)	-0.333549	0.665479	-0.501216	0.6164
Log (Per Capita GDP i)	0.581890	0.692226	0.840606	0.4009
Log (Per Capita GDP j)	-0.154921	0.521373	-0.297140	0.7665
Log (Distance)	-0.071532	0.766628	-0.093307	0.9257
Log (CPI i)	-0.845163	0.248394	-3.402511	0.0007
Log (CPI j)	1.112864	0.261192	4.260718	0.0000
Log (Openness Index j)	1.156711	0.491827	2.351864	0.0190
Culture	-0.317674	0.710340	-0.447214	0.6549
Border	0.984564	0.483852	2.034847	0.0423
PTA	1.200054	0.691323	1.735882	0.0831
Effects Specification			**S.D.**	**Rho**
Cross-section random			0.816592	0.8669
Period random			0.000000	0.0000
Idiosyncratic random			0.319987	0.1331
Weighted Statistics				
R-squared				0.406673
Adjusted R-squared				0.394764
S.E. of regression				0.324179
F-statistic				34.14601
Prob(F-statistic)				0.000000

The Distance coefficient though appearing negative is not statistically significant. It means that exports of the sample countries do not get affected by distance as per our results otherwise according to theory of gravity equation trade is negatively related with distance. More distance

Vol. 2, No. 04; 2018

ISSN: 2456-7760

between two countries causes less exports and lower distance between two countries causes more trade.

The estimated coefficient of Consumer Price Index (CPI) of country ibis negative and statistically significant with probability of 0.0007. The coefficient of CPI variable for country j is positive and significant. The results indicate that the price level of country i affects exports of country negatively and the price level of country j affects exports positively. We can deduce that as the commodities are expensively available in the country and become cheaper in foreign world, exports of the commodities are increased. These results are statistically significant with coefficients near to 1 indicating strong impact of price levels on exports.

Table 5.1shows that positive sign is associated with the openness index variable of the county j (importing country) with statistically significant impact. The result is consistent with the hypothesis, which is premised on the fact that the lower the tariff level of the importing country, the more trade between the trade partners is expected. The authenticity of this theory is proven in case of Pakistan, Iran, Turkey and Kazakhstan but their exports to the major trading partners are not impacted significantly as other variables influence their exports to their trade partners.

Negative sign (-0.3176) is associated with the coefficient of the culture dummy variable and it does not affect the exports of the four selected countries as the dummy variable is not statistically significant. Cultural affinity exits among the four sample countries (Pakistan, Iran, Turkey and Kazakhstan) and only three of the seven trading partners are involved in our analysis.

More than culture, other factors influence the exports of these countries with their trading partners. It explains why this model does not give much of importance to this variable.

The common border effect exists in our study as the border dummy is found theoretically and statistically significant in our estimations. The sign of the border is positive with coefficient of 0.9854 and significant at 5 % level of significance. The coefficient is closer to 1, indicates that strong border effect as the border of Pakistan is common with Iran, where Iran has a common border with Turkey. But none of Pakistan, Iran and Turkey shares its borders with Kazakhstan.

As is evident from Table 5.1, the PTA dummy variable carries positive sign as expected and is significant at 10% level. The coefficient of the PTA dummy variable is 1.2 showing Pakistan, Iran, Turkey and Kazakhstan have prospects of better trade with such countries with whom the former have struck Preferential Trade Agreement as compared to their other trade partners under analysis. Out of eight countries, which are part of analysis in this model, only Pakistan, Iran, Turkey and Kazakhstan are part of any PTA as they are members of ECO. However, it may be said at the same time that efforts at economic integration of the ECO region have not been successful for different reasons including lack of political will, political conflicts in the region and heavy involvement of the member countries in trade outside the ECO region. Despite this, exports of the sample countries still show positive outcome (World Bank, 2006).

Import model:

This section discusses and analyses the results from the estimation of our import model equation on the panel data (on Pakistan‘s, Iran‘s, Turkey‘s and Kazakhstan‘s bilateral trade relations with their major trade partners under reference). We estimated the import model for the time period t=

Vol. 2, No. 04; 2018

ISSN: 2456-7760

1995-2014 and cross-sections reaching 28 in number. Table 2 above reports the results of the import model.

Table 5.2

Dependent Variable: Log Imports				
Method: Panel EGLS (Two-way random effects)				
Sample: 1995 2014				
Periods included: 20				
Cross-sections included: 28				
Total panel (balanced) observations: 560				
Swamy and Arora estimator of component variances				
Period SUR (PCSE) standard errors & covariance (d.f. corrected)				
Explanatory Variables	**Coefficient**	**Std. Error**	**t-Statistic**	**Prob.**
C	-7.317375	4.007022	-1.826138	0.0684
Log (GDP i)	1.091115	0.336275	3.244708	0.0012
Log (GDP j)	-0.469456	0.369686	-1.269880	0.2047
Log (Per Capita GDP i)	1.016951	0.354408	2.869434	0.0043
Log (Per Capita GDP j)	-0.169042	0.309205	-0.546699	0.5848
Log (Distance)	1.002566	0.502917	1.993499	0.0467
Log (CPI i)	-0.483853	0.177548	-2.725196	0.0066
Log (CPI j)	0.772201	0.205247	3.762304	0.0002
Log (Openness Index j)	0.803735	0.325758	2.467274	0.0139
Culture	-0.255379	0.520991	-0.490180	0.6242
Border	0.679592	0.339139	2.003873	0.0456
PTA	1.095311	0.484885	2.258910	0.0243
Effects Specification			**S.D.**	**Rho**
Cross-section random			0.485195	0.8107
Period random			0.000000	0.0000
Idiosyncratic random			0.234443	0.1893
Weighted Statistics				
R-squared				0.535167
Adjusted R-squared				0.525837
S.E. of regression				0.252127
F-statistic				57.35621
Prob(F-statistic)				0.000000

Vol. 2, No. 04; 2018

ISSN: 2456-7760

The coefficient of GDP of Country i which is an importing country in this model, variable is 1.091 and statistically significant at 5% level of significance. The positive sign of GDP of country i shows increase in GDP of country i cause increase in imports of country i. On other hand the GDP variable of country j (which is exporting country in this model) carries negative sign and has no significance as well.

Per Capita GDP of country i is statistically significant with positive sign. The coefficient is 1.01 indicating a positive impact of per capita GDP of country i on the imports of the country. The per capita GDP variable of country j (which is exporting country in this model) is not statistically significant and carries expected negative sign.

Expectedly positive sign is carried by the coefficient of the Distance variable and it is significant at 5% level of significance. The implication from the coefficient of distance variable is that when the distance (as a proxy for transportation cost) among our sample countries and among them and their other trading partners, increases on average, it would lead to an increase in the imports of Country i from Country j. but this implication is not theoretically consistent and is not in accordance with the hypothesis of gravity model. Referral to Table 5.1 (in which results of our export model are described) made it clear that Distance variable carried negative sign as but not at significant level so this implies in simple words that the importing country has to bear a considerable cost as a result of increase in the cost of transportation.

Negative sign is carried by the variable of CPI for country i and which is highly significant whereas positive value is carried by the variable of CPI for country j in this model with high significance. These results are consistent with that of export model in Table 5.1 but not with theory. The deduction here is that since country i is an importing country in this model, imports from country j will face positive effect if the price levels become high. As the prices in country j are higher, more the imports of country i from j. This is theoretically doubtful.

Same as in the export model, culture dummy is found with negative sign and statistically insignificant. Our deduction drawn from this is that culture, despite being a shared featured of Pakistan, Iran, Turkey and Kazakhstan, has failed to produce any tangible impact on their bilateral trade either amongst them or with their other trading partners. In case of these countries, other factors affect their bilateral and multilateral trade.

Positive sign is carried by common border dummy variable in this model, which is significant at 5% level. This result is consistent with the results we found in our export model for the same variable. The figures contained in Table 2 make it evidently clear that the countries having this variable as is the case with sample countries under study such as Pakistan, Iran Turkey and Kazakhstan, have better trade relations with each other and other trading partners as the cost of transportation decreases. For example Pakistan shares borders with Iran and China whereas Iran shares it borders with Turkey and Kazakhstan shares its borders with China as well.

Positive sign is carried by the coefficient of the PTA dummy variable and which is significant at 10% level. We can imply that if a country joins the PTA of a country i, the exports of the latter will get a tremendous boost because of availability of new export destination having a strong population variable. Four countries in the present analysis namely Pakistan, Iran, Turkey and Kazakhstan are part of ECO (which is PTA), whereas the remaining four (which are USA, UK, China and Germany) are not part of any PTA.

Vol. 2, No. 04; 2018

ISSN: 2456-7760

Conclusion & Policy Implications

This research study executes the first quantitative study of bilateral and regional trade among ECO countries in general and Pakistan, Iran, Turkey and Kazakhstani particular. It presents the country Specific gravity model that incorporates conventional and non-conventional variables, which are culture, border and PTA variables. Data of 20 years (1995 – 2014) in respect of 8 countries including Pakistan, Iran, Turkey and Kazakhstan from ECO region and other 4 non-ECO countries including USA, UK, China and Germany has been presented in this chapter. In order to estimate the trade potential among these ECO countries in the prevailing policy context, and in the context of potential FTA among these ECO countries, Country Specific-Gravity Model has been employed to conduct some trade policy experiments.

Common culture, according to the analysis of the study does not seem to have a significant impact on intra-regional trade in the case of the ECO. Intraregional trade of the ECO, on the other hand, is influenced in a significant way by common border and PTA. Since Pakistan, Iran, Turkey and Kazakhstan are part of preferential trade agreement called ECOTA, there exists more potential for these countries to increase trade between them than their other non-ECO trade partners. It has been confirmed by the results of the gravity model analysis that the PTA has a positive and significant impact on intra-ECO trade. Other factors account for lack of realization of the full trade potential among the ECO members. However, it is not due to the lack of effectiveness of the ECO. Rather, it, on the other hand, strengthens the case for further trade liberalization in the ECO region, possibly in the context of Free Trade Area among these countries.

It may be concluded that there is still potential for greater regional integration among the ECO countries under focus as well as the entire region in the form of Free Trade Area though the present intra-regional trade flows are not very impressive. Greater regional integration of ECO, which is in accord with multilateral liberalization as well, could be instrumental in growth by increasing trade, allowing regional producers to benefit from economies of scale, encouraging foreign direct investment and the deepening of capital market. The initiatives such as in the form of (ECOTA) are to be welcomed, which will help reduce tariffs for the member countries to a maximum of 15 percent as a highest tariff slab in the next few years.

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Vol. 2, No. 04; 2018

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