EXPORT NEXUS OF PAKISTAN

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ABSTRACT

Trade is a fundamental part of all economic and development efforts, national economic growth, industrialization and technological knowledge. This Paper estimated the export performance of Pakistan and find out the major determining factors of Pakistan's (Pak) export by applying the augmented gravity model. We inferred that most important variable that significantly impact the export flows of Pakistan are foreign GDP which is used as a substitute for economic size of a country and absorption capacity. Distance between Islamabad and its trading partners is also considered very crucial as it defines the trade hindrance and transportation cost. Absolute difference in per capita income between Pakistan and its trading countries is yet another variable impacting trade flows which indicates (a proxy) the development level, taste structure and factor abundance of a country. The export volume of Pak might be enhanced with the countries having larger economic size; same development level and taste, and last but not least is closer proximity.

Keywords; Gravity Model, Export performance, Distance, common colony, Linder Effect

INTRODUCTION

Until recently, Trade is playing a critical role in total development effort and national growth of an economy. It is a vital instrument for industrialization and source for the dissemination of the technological knowledge, ideas, skills, managerial talents and entrepreneurship. International trade get good reward due to many benefits it has presented to different economies across the world .It accounts for increasing gross domestic products ,investment and one of vital source of revenue. With the help of modern production techniques, transportation system and rapid industrialization trade is growing and spreading swiftly.

Asian countries have been enduring a transformation since last few decades owing to acclimatize the outward looking development strategies of trade. Asians are becoming more open to foreign trade and investment chasing each other. The twenty first century has now come to be labeled as "Asian Century". Overall Share of Asians in world GDP had risen from 22 percent in the early1960s to 35percent by 2007 and share in world non-oil trade has risen from 8 percent to 33 percent. The region reported almost half of the total addition in world exports over this period. China alone accounted for 13 percent of total world non-oil exports in 2007.During these years 2000-2007 china become the second largest beneficiary of foreign direct investment in the world after the USA, accounting for the 7 percent of total world gross inflows (world investment database). The probability of prosperity through investment and mutually beneficial trade for this region has been increased. Nonetheless undesirably, South Asia is lagging behind the East Asia and among them performance of Pakistan is rather disappointing.

Pakistan's trade has observed rapid expansion during initial years of 2000s, as it increased from US$ 18.8 billion (25.5 percent of GDP) in FY00 to US$ 47.5 billion (33.1 percent of GDP) in FY07 due to better trade & tariff reforms. The rise in the overall trade seems to be more prominent in imports rather than export. Exports lean towards traditional markets and concentrated in traditional products. As a result, Pak's share in the world exports not only remained low (0.14 percent) in FY06 but also turn down over the period. This compares unfavorably with India (1.02 percent), China (8.22 percent) and overall Asian regional counterparts (27.8 percent)[1].

 The total percentage share of Pakistan export is less with countries having a common border and other valuable feature such as closer proximity, lower transportation costs, cultural and language similarities; etc. It shows greater trade potential for Pakistan at regional and global level and an opportunity to get rid of poverty circle and other deprivations by mounting their trade volumes. In order to understand the basic concept of trade, we propose this study, that trade is not a mere exchange of goods and services across borders it is in reality interchange of different ideas, norms, concepts, customs, and life styles. We use gravity model in our study, because gravity models have been used in empirical studies of changes in international trade pattern and integration of economies since Tinbergen (1962). It provide useful multivariate framework to analyze the patterns of international trade. We estimate here the export performance of Pakistan with its 150 trade partner by applying gravity model using cross-section-OLS estimation technique over the time span of 1970-2009, making segments of five year averages. This has been done first time in literature that cross-section OLS estimation is applied for series of years taking their averages. Previous studies either consider Cross-Section OLS estimation only for a specific year or they rely on panel data estimation they both have their own shortfalls.

Numerous studies originating from Tinbergen (1962) and Linneman (1966), showed that trade flows follow the physical

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[1] All above data information is collected from State bank Survey Reports different Issues.

principles of gravity: two opposite forces find out the volume of bilateral trade between countries. Gravity equation has been used widely in the empirical literature on international trade. There are various categories of empirical application of gravity equation, that are estimating the cost of a border (Anderson and van Wincoop (2003), explaining trade patterns (Bergstrand (1989), Hummels and Levinsohn(1993), identifying effects related to regionalism and calculating the trade potentials (Wang and Winters (1991),Baldwin(1993), Gros and Gorciarz(1995).

Anderson (1979) makes the first formal attempt by assuming a model of product differentiation for the derivation of Gravity model. Bergstrand (1985,1989) in a series of papers links gravity equation with simple monopolistic competition models. A differentiated product framework with increasing returns to scales is used by Helpman (1987) to give good reason for the gravity equation. Deardorf (1995) has shown that gravity model is derivable from standard trade theories. CES expenditure system is maneuvered in the derivation of gravity model by Anderson and Wincoop (2003). Eaton and Kortum (1997) derive gravity equation from Ricardian framework, while Deardorff (1997) derives it from H-O viewpoint. It is shown by Eventt and Keller (1998) that gravity equation can be obtained from the H-O model with both perfect and imperfect product specialization. While Transaction costs into the gravity model was introduced by Gould (1994). A measure of linguistic similarity, based on the proportion of a population, that speaks a particular language as a first language is constructed by Boisso and Ferantino (1997).

The volume and direction of trade for Iran in a 76 country sample is analyzed by Kalbasi (2001).The groups of countries are divided into developing and industrial countries and trade flows are examined to determine the impact of the stage of development on bilateral trade flows of Iran. Rehman (2003) estimates trade potential for Bangladesh using panel data approach with economic factors like openness, exchange rates etc rather than natural factors. Sohn (2005) applied the gravity model to explain South Korea's trade flows and to extract the practical trade policy applications. Christos (2006) applied gravity equation to bilateral trade flows among EU member's states and their main trading partners. There are so many different categories of empirical applications of the gravity equation which can be mentioned to investigating issues in international trade.

The main contributions of this paper are: it reaffirms a theoretical justification for using the gravity model in applied research of bilateral trade; it applies, for the first time, cross section-OLS estimation for a series of 5-Year Averages in a gravity model framework to identify the determinants of Pakistan's Export.

METHODOLOGY

Modeling and predicting foreign trade flows has long been an important task in international economics. One of the most fruitful ways to formalize this has been through the use of gravity models. The gravity model has been tested both for the aggregate bilateral trade and also for product level trade. Aggregate model has been estimated using different data set by [Wang and Winters (1991), Hamilton and Winter (1992), Baldwin (1994), Breuss and Egger (1999)] etc. The correct econometric representation of gravity model takes the form of a triple-indexed model. Matyas (1997) argues that the proper specification of gravity model takes the following representation:

$$T_{ijt} = \alpha_i + \gamma_j + \lambda_t + \beta' x_{ijt} + \delta' z_{ij} + u_{ijt} \tag{1}$$

where α_i, γ_j and λ_t are well- known specific effects attributed to the panel data modeling approach. If only cross section data are used, $\lambda_t = 0$ and when only time series data are used then $\alpha_i, \gamma_j = 0$. Finally when panel data are used, there are no restrictions. From an econometric point of view, $\alpha_i, \gamma_j = 0$ and λ_t specific effects can be treated as random variables. Matyas is not specific about fixed and random effect model estimation in case of above mentioned model. It is observed that gravity model works well at product or sectoral levels.Model (1) should be viewed as the generic form of all gravity models and is a direct generalization. When cross-section data are used then T=1 and implicitly restriction $\lambda_t = 0$ is imposed on the model [(e.g.; Aitken (1973), Bergstrand (1985), Brad (1994), Oguledo and Macphee (1994), and Frankel *et al*, (1995))].

We used cross-section OLS for our analysis to estimate gravity models. Classical gravity models generally use cross-section data to estimate trade effects and trade relationships for a particular time period.

The generalized gravity model of trade states that the volume of trade / exports / imports between pairs of countries, T_{ij} is a function of their incomes (GNPs or GDPs), their populations, their distance (proxy of transportation costs) and a set of dummy variables either facilitating or restricting trade between pairs of countries. That is,

$$T_{ij} = \beta_\circ Y_i^{\beta_1} Y_j^{\beta_2} N_i^{\beta_3} N_j^{\beta_4} D_{ij}^{\beta 5} e^{\beta_m A_{IJ}} U_{ij} \tag{2}$$

Where $Y_i(Y_j)$ indicates the GDP or GNP of the country 'i' and 'j', $N_i(N_j)$ are populations of the country 'i' and 'j', D_{ij} measures the distance between the two countries' capitals (or economic centeres.) A_{ij} represents dummy variables, U_{ij} is the error term and β's are parameters of the model. 'i' is used for home country and 'j' for target country.

Using per capita income instead of population, an alternative formulation of equation (2) can be written as

$$T_{ij} = \beta_s Y_i^{\beta_1} Y_j^{\beta_2} y_i^{\beta_3} y_j^{\beta_4} D_{ij}^{\beta_5} e^{\beta_m A_{ij}} U_{ij}$$

(3)

Where $y_i(y_j)$ are per capita incomes of country 'i' and 'j'. As the gravity model is originally formulated in multiplicative form, we can linearize the model by taking the natural logarithm of all variables. The log form of general gravity model is as follow.

$$\ln T_{ij} = \beta^* + \beta_1 \ln Y_i + \beta_2 \ln Y_j + \beta_3 \ln y_i + \beta_4 \ln y_j + \beta_5 \ln D_{ij} + \sum_{m=1}^{M} \beta_m A_{ij} + u_{ij}$$

(4)

Where

$$\beta^* = \ln \beta_0$$

Where "ln" denotes natural logs. A_{ij} is the sum of (trade) dummy variables. Dummy variables take the value of one when a certain condition is satisfied and zero otherwise.

Using our data set, we estimate gravity models for Pakistan Export. For our models we have followed Frankel (1993), Hassan (2000) and Rehman (2003).

The Gravity Model of Exports in our study is:

$$\ln X = \beta_1 + \beta_2 \ln Y_f + \beta_3 \ln(P_f) + \beta_4 \ln(Ay) + \beta_5 \ln(TOF) + \beta_6 \ln(FCR) +$$

$$\beta_7 \ln(RER) + \beta_8 \ln(Dis) + \beta_9 D_1 + \beta_{10} D_2 + \beta_{11} D_3 + \beta_{12} D_4 + \beta_{13} D_5 + \beta_{14} D_6 +$$

$$\beta_{15} OIC + \beta_{16} SAARC + \beta_{17} OECD + \beta_{18} ECO + \beta_{19} ASEAN + \beta_{20} CMEA$$

(5)

(Definition of variables is given in Appendix-A)

Whichever specification of the augmented gravity model is used, the main purpose of this specification is to allow for non-homothetic preferences in the importing country and to proxy for the capital/labor ratio in the exporting country (Bergstrand, 1989).

DATA

Pakistan's exports are considered on Annual basis from 1970-2009. This data was obtained from the Direction of Trade Statistics yearbook (various issues) published by the International Monetary Fund (IMF). Data on GDP, GDP per capita, exchange rates, and total exports were obtained from the World Development Indicators (2010) database. Likewise, data on the consumer price index (CPI) was obtained from the International Financial Statistics database.CPI data was used in construction of Real Exchange rate variable. Data on distance (km) between Islamabad (the capital of Pakistan) and the capital cities of other countries were obtained from The World fact Book (CIA, 2010). Construction of variables and Unit of measurement with other details are presented in Appendix-A.

RESULTS AND DISCUSSIONS

Our analysis based on cross-section data for the sample of 150 countries. For each cross-section, periods from 1970-2009 are considered.

In order to have a precise idea that how trade flows have been affected over the course of time, data on Pakistan's export flows, covering the period from 1970-2009, from IMF Direction of Trade Statistics have been collected and Gravity model for exports have been estimated. From early 1980s Pakistan has taken various measures such as delinking Rupee form US Dollar in 1982 and thereafter a series of structural reforms. As a result of these reforms the economy has become more open and moved from inward looking to outward looking economy. Similarly, tariffs have been reduced considerably. Keeping in view the fact that in different time periods different policy initiatives have been implemented, we divided the sample size into eight segments of distinct time periods for which a separate gravity model is estimated. This method of estimating gravity model will give us the deeper insights about the trade dynamics. To test the Heteroskedasticity in the models we have run our regressions corrected for white Heteroskedasticity. The results obtained are given in Table 1.1(a).

The model estimated for export flows for sample 1970-89 suggest that target countries GDP are significant and positive and our exports have elastic response with respect to the GDP of trade partner. It depicts that target country GDP is a measure of the extent that exports are "sucked in" as the foreign economy grows. It also shows that a one percent increase in foreign GDP will lead to about on average 1.0-3.2 percent increase in our export demand implies that Pak export follow a GDP pattern relying more on its trading partners overall economic size, its per capita income level and level of development.

As expected distance variable has the correct negative sign and is significant as well, showing that geographical distance is an important resistance factor for Pak bilateral trade flows. The coefficient of the log of the distance turns out to be very similar to those estimated in other previous studies (Frankel, 1997; Wall, 1999). The distance coefficient reflects not only a simple elasticity of absolute distance on trade volume, but also the effect of relative distances. Relative distance means all type of transaction cost that an exporter has to face during the transportation of commodity from home country to a foreign country. The size of the distance coefficient is different in different models and regressions because of this relative cost differences.

Table (1.1a): Gravity Model for Export Flows(1970-89)

Years		Model-1		Model-2		Model-3		Model-4	
		1970-74		1975-1979		1980-84		1985-89	
Variables		Coefficient	T-value	C-efficient	T-value	Coefficient	T-value	Coefficient	T-value
Foreign GDP		3.217077	1.434284	1.349298	2.715911	1.05092	1.120291	3.091617	4.238673
Distance		-2.98234	-1.20868	-2.49834	-4.18068	-2.75283	-2.23901	-2.06819	-2.25948
Foreign population		-1.85669	-0.81892	-0.97843	-1.8042	-1.12898	-1.21563	-2.25822	-3.07408
Absolute GDP Differential		-2.38581	-2.70347	-0.5529	-1.67582	-0.98868	-1.98242	-1.3116	-2.73462
Trade-Openess		-1.01	2.341303	-2.12214	-1.17005	-1.21432	-3.78358	-1.31108	-1.26867
Real Exchange Rate		0.214183	1.288946	-0.0459	-1.05658	-0.08344	-0.78958	-0.03406	-0.59486
Foreign Currency Reserves		0.466346	0.437543	0.254788	1.161731	0.75938	1.400211	-0.37257	-0.92249
Adjacency		-1.22306	-0.14764	-3.99974	-1.50915	-5.24482	-0.99135	-5.48529	-1.32178
Common Language		-4.85885	-2.85954	1.279336	2.125648	-0.75625	-0.60292	1.067428	1.072739
Colony		-5.843421	1.640741	-1.352208	2.625426	-3.14499	2.684198	-1.489242	3.406957
Common Colony		-0.42132	-1.14977	0.29429	2.447677	0.2293	2.166258	0.969931	1.883294
Religion		-1.10212	-0.3431	1.279082	1.821827	-0.21552	-0.15827	0.267929	0.26294
Land-locked		0.68995	0.254487	-0.33874	-0.52038	-0.73118	-0.56715	0.018852	0.01942
OIC		2.267283	0.410822	-0.87695	-0.69681	0.04852	0.019604	0.294252	0.153073
SAARC		-0.47819	-0.09408	0.088212	0.073746	1.00706	0.400403	1.936522	0.9585
OECD		-2.33431	-0.55328	-0.31736	-0.31642	0.20445	0.097889	-0.2881	-0.17398
ECO		2.503106	0.322382	-1.88615	-0.90203	-1.567	-0.34978	0.873179	0.248108
ASEAN		-1.86307	-0.25681	-0.6003	-0.34826	-0.741	-0.22447	1.33663	0.528455
CMEA		0.335	0.002	1.16799	0.566384	1.8422	0.420621	1.132056	0.327524
R-squared			0.302682		0.642052		0.342515		0.447177
Adjusted R-squared			0.123371		0.540545		0.180278		0.317502

The population of trading countries carries the negative sign. It implies that a foreign population variable has the trade inhibiting affect on our export flows. It entails a larger population size as large resource endowments and thus an indication of self sufficiency and thereby less reliance on international trade. On the other hand it also indicates that Pakistan's export are not competitive when it has to trade with larger economies it loses its bargaining power. We can also put an argument here for negative relationship that might be larger economies by population size have more attraction (for other economies) for foreign direct investment (FDI) because of the possibility of lower cost production structure and access to economies of scale which leads to the hindrance of export from outer world. The optimum theory of population also assists our result that an increase in population will permit a fuller utilization of the natural resources and capital equipment ,that is if the population increases and more laborers become available to be combine with the given stock of natural resources and capital equipment ,output per worker will rise. Another fact due to which production increases as population expands is an advantage of economies of large scale production. As a matter of fact, literature on gravity model provides support that the effect of population is indeterminate. It could be positive; in which case it is considered as trade enhancing affect and it is equally possible that population has the trade inhibiting affect when it is negative.

Among other variables colony and trade openness of trading countries are significant but carries perverse signs. It shows that these variables played negative role in enhancing the export demand during this time period. Though during the 1980s, there was a shift in trade policies globally from ISI (Import substituting) to export led growth (ELG). The success of ELG adopted by South Korea and Taiwan set an example for other developing countries. Taking the lesson from the experience of developing countries, Pakistan maintained its liberalization policies towards more export oriented industries. These policies includéd the conversion of fixed into flexible exchange rate, duty free imports of essential machinery and raw material to certain export-industries, and the export rebates, yet Pakistan is not able to produce at lower cost as there were other economies like South Korea and Taiwan. The trade openness could not be proved helpful to enhance the export level for Pak. This can be attributed to the weak inherited base of industry since the time of independence and weak Trade policies. Until now Pak is unable to compete with other economies and have seen the negative effect of trade-openness on export demand.

Table-(1.2a) estimated for period 1990-2009 validates that income of the trading partners has positive and significant impact on Pakistan's export flows and that distance variable has the correct sign once again emphasizing the fact that long distance between trading partners leads to higher costs thus lower profit margin to exporters. Dummy variable for common colony has the expected positive sign and is significant as well. In our gravity models, the dependant variable is in log form but the dummy variables are not, therefore to interpret the impact of dummy variable we have followed Halvorsen and Palmquist (1980)[2]. Thus the coefficient of dummy for common colony implies that Pakistan's export flows [exp {1.259824-1}*100] are higher by 252 percent with the economies having common colony than with the rest of the world.

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[2] Halvorsen, R. and Raymond Palmquist (1980), "The Interpretation of Dummy Variables in Semi logarithmic Equations", *The American Economic Review*, Vol. 70, No. 3, pp 474-475.

Export function can be better explained by the Cob Webb phenomenon (lagged years function) for the reason that policies which are going to be implemented at present will have their affects in the subsequent years usually. Thus the polices measure taken at the start of 1980's and 1990's by the government of Pak for the growth of export led industries, in the form of compensatory rebates scheme, export credit guarantee scheme, and concessionary credit for exporters, has shown their significant impacts in the successive years of our data analysis period. Consequently, few variables which were insignificant become significant afterward in our analysis.

Foreign exchange reserves of the trading partner shows the strength of an economy, has also been included, however, it is only significant in model-4, model-7 and model-8. It demonstrates the countries having more reserves will demand more exports from Pakistan.

According to Linder (1961), economies with similar demand structure tends to trade more than otherwise. The Linder effect has been captured by introducing a variable that is defined as the differential in absolute per capita of Pakistan with trading countries. If the coefficient associated with this variable turns out to be negative, it may be treated as an empirical support for Linder hypothesis and a positive sign indicates that trade flows are following Heckscher-Ohlin (H-O) hypothesis. In Model-2, the results support the Linder hypothesis and the coefficient is significant at 10% level of significance. The results of the Model-3, Model-4, Model-5, Model-6 and Model-7 again support the Linder hypothesis and the coefficient is significant as well. It relates to the trade in real world. It depicts that the presence of increasing return in production causes the production of each good to be located in either of the countries but not in both of them. It also suggests that demand structure will be similar for the similarities of per capita income. The coefficient value is elastic which imply that export with specific foreign country decreases as the per capita GDP differential between Pakistan and that country increases.

Table (1.2a): Gravity model for Export Flows 1990-2009

	Model-5		Model-6		Model-7		Model-8
Years	1990-94		1995-99		2000-04		2005-09
Variables	Co-efficient	T-value	Co-efficient	T-value	Co-efficient	T-value	Co-efficient
Foreign GDP	2.086768	2.308393	1.656191	3.926006	0.421211	0.754163	0.37401
Distance	-0.99116	-0.88361	-0.81076	-1.95419	-1.08163	-1.87486	-0.78588
Foreign population	-2.2707	-2.77518	-0.85339	-2.11975	-0.43061	-0.85656	0.08863
Absolute GDP Diff	-1.50191	-2.49008	-0.6975	-2.21383	0.051385	0.142042	-0.2341
Trade-Openess	-1.74248	-1.26659	-0.64078	-1.17034	-1.21414	-1.71526	-0.18944
Real Exchange Rat	0.059936	0.541621	0.014384	0.355207	-0.03018	-0.45998	0.015223
Foreign Currency I	0.643386	1.141562	0.025297	0.105268	0.6516	2.102742	1.515186
Adjacency	-2.3421	-0.55329	-1.5963	-0.90428	-0.04339	-0.01739	-2.73405
Common Language	0.5814	-1.46045	0.108943	1.194475	1.023585	1.256885	0.316693
Colony	2.855608	0.612177	1.97701	0.887147	1.53166	0.472419	2.208434
Common Colony	2.650926	1.953643	1.126991	1.850572	1.745341	1.832159	1.570516
Religion	0.396349	0.310677	0.504689	0.946315	0.977063	1.292028	0.395682
Land-locked	0.561445	0.48082	0.009193	0.018436	-0.32581	-0.475	-0.09154
OIC	0.811919	0.358256	0.648466	0.651435	-0.47597	-0.32381	-0.04899
SAARC	2.348933	0.917574	0.761823	0.651959	0.958811	0.556453	-0.90527
OECD	0.808382	0.398172	-0.49933	-0.53653	-0.18013	-0.13293	0.420254
ECO	2.204232	0.481393	0.60069	0.280903	-0.52602	-0.16949	-0.01923
ASEAN	-0.01487	-0.00535	0.183325	0.169278	0.254195	0.161063	-0.06866
CMEA	0.264324	0.112754	-0.36728	-0.37213	-0.38478	-0.2674	-1.57751
R-squared		0.318606		0.568492		0.393005	
Adjusted R-squared		0.179396		0.49529		0.291839	

Among the class of dummy variable, adjacency is used to see the trade relations of Pakistan with its neighbors sharing same border. The prescribed coefficient in the study illustrate a negative relations between Pak and its neighbors .The significant negative effect of adjacency in models estimated are due to unfavorable relations of Pakistan with its neighbors in different time periods due to several reasons. Pakistan's trade with India is guided by temporary exportable surpluses or is used to counter temporary shortages. Political difficulties created artificial barriers to trade between them, which helps no one but the smugglers.

On other side Iran and Pakistan has had close geo-political and cultural-religion linkages but the conflict strains appeared since the Iranian revolution started. Pakistan and Iran supported different factions in the Afghan conflicts. One of our adjacent countries is Afghanistan; she has had to face the Soviet invasion since 1979 to 1989. In all these circumstances it is obvious to have negative trade relations with neighbors.

A careful inspection of the results obtained from gravity models for exports indicate that dummy for Regional Trade Agreements (RTAs) such as SAARC, OIC, ECO, ASEAN and CMEA remain insignificant throughout in all the models. It points out the fact that these trade agreements have not contributed significantly in enhancing Pak's export flows during the period of estimation because of structural instability and conflicts within the region. The main reason for this is that, unlike many East Asian countries, Pakistan has not adopted an effective trade liberalization regime.

Inclusion of dummy for common language in an export measurement models indicates a possibility that exports flow may perhaps tend towards countries having common official language. Nevertheless, in this study insignificance of the fallout support the view that export flows are not necessarily be always affected because of language. Goodness of fit Value for a cross-section data is satisfactory overall.

CONCLUSION AND POLICY IMPLICATIONS
At the end of 20th century and the start of new Millennium, world economy had faced the radical changes. Status of Pakistan also changed because of its presentation as a front-line-state on war and terror against Afghanistan. It affected Pak economy in many ways; first, the slower pace of economic activity in Pakistan's major trading partner countries (the United States and European Union, in particular) reduced their demands for Pakistani products, and as a result Pakistan's exports remained lower than targeted. Furthermore, increases in freight rates and imposition of war risk insurance increased the cost of imports and it made Pakistani exports more expensive. Second, cancellation of air cargo flights by foreign airlines disrupted the trade flows. Third, manufacturing units had to maintain higher inventories because of the risk of instability. Fourth, the departure of expatriates from the country and the suspension of visits by foreign buyers did not allow the country to maintain normal trade relations. The contentious results of trade determining factors in this study are owing to the larger instability during the selected estimation time span.

After analyzing and synthesizing all the gravity models of export, estimated in this study , it can be inferred that most important variable that significantly impact the trade flows is foreign GDP which confirms that International trade is strongly affected by the trading partners' income. It represents production capacity and size of markets. The propensity of all partners to export must be taken into account adequately when a trade policy is to be set. There is need to explore the new markets with competitive quality products provided at a lower cost.

Distance between Pakistan and its trading partners is another crucial variable. It indicates the trade barriers impact of transportation costs. Costs increasing the trade friction and reduce the amount of trade observed. The greater the friction the higher will be the proportion of given expenditure that goes on costs rather than the good itself, and smaller will be the incentives for trade. One of the main reasons of the trivial share of Pak export in world is the inadequacy of the transportation and infrastructure network. An improvement in infrastructure is a prerequisite for successful trade scope enrichment. Second, main reason is political instability chaos and traditional enmity among neighboring countries. Absolute difference in per capita income between Pakistan and its trading countries is yet another variable impacting the trade flows. It measures the difference in term of relative factor endowments between two countries and takes a minimum value of zero when there is equality in relative factor endowments. The larger is the difference, the higher will be the volume of inter-industry trade (H-O-H hypothesis) and lower will be the share of intra-industry trade (Linder Hypothesis). Favorable results are obtained in supports of the Linder hypothesis in present study.

Foreign currency reserves of trading countries has also significant impact on trade flows as increase in reserves level of trading economies resulted in increasing the demand for export flows. It depicts the economic strength of a country. The higher the level of a country's reserves, the easier it can pay for its trade deficits.

Common colony appears to be the only variable in the class of qualitative variables that has significant and positive influence on Pak export flows. It is meant to capture the cultural and historical similarities between trading pairs, which are thought to increase the volume of trade. Dummy for regional trade agreement in almost all the models is insignificant implying that such trade arrangements are not always very effective in enhancing the trade. Countries often enter into trading agreement with the intension of facilitating bilateral trade. However, this depends on the behavior of trading partners. Regional trade is inhibited by restrictive rules, regulations and uncoordinated efforts, in addition the existing political tensions between India and Pakistan, China and India; etc who are major players. All these factors are currently the main cause of RTA's failures, it threaten to limit the trade potential of Pakistan within South Asia. One of the reasons behind insignificance of RTA's behavior is that we measured it for a single country in this study; it is different when measured for a complete bloc of countries.
Overall gravity model seems to be a better tool in explaining out trade flows and it also shows that the gravity model is applicable to the single country case.

POLICY IMPLICATIONS
The trade relations with the larger economies would be very rewarding for growing economy because larger countries by economic size tend to have bilateral trade surpluses with smaller ones. A high level of income in the exporting country indicates a high level of production, which increases availability of goods for exports and more likely to achieve economies of scale. Larger economies account for a larger share of world income and consumption. There is dire need of time to make good friendly

relations with larger economies like India. Pakistan will have to improve the quality of its exports and reduce the cost of production to facilitate it to combating in the international market.

Pakistan would do better if it trades more with its neighbors as it is evident from the results of distance variable. The distance variable is a trade resistance factor that represents trade barriers such as delivery time, cultural unfamiliarity and market access barriers. The lower are the resistance factors the higher will be the supply of goods to other markets.

For boosting exports, policies would be more tilting towards the countries with similar income per capita or similar characteristics and development level in general. In this way specialization occurs within the sectors and consumers get benefits from the resulting increased range of products available. The more similar the demand structure of two countries, the more incentives will be there for the potential trade between them. Moreover, in order to take benefits from the Regional trade arrangements Pakistan would need to give special preference to their regional countries.

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APPENDIX-A

VARIABLES EXPLANATION

Appendix-A

DATA SOURCE AND MANIPULATION

Variables	Exact definition	Notations	Source	Unit	Expected Sign
Volume of Exports	Total volume of exports from Pakistan to "j" trading partner in a specific year.	X_j	IMF Direction of Trade Statistics	Current US dollar Million	--------------
Gross Domestic Product	GDP of "j" trading partner in a specific year	y_f	World Development Indicators	Current US dollar Billions	Positive
Population	Population of "j" trading partner in a specific year.	p_f	World Development Indicators	Million of inhabitants	Ambiguous
Relative absolute difference	Relative absolute difference=difference of per capita GDP of Pakistan and its "j" trading partner in a specific year	AY	World Development indicators	Current US dollar	Positive(HO theory) Negative(Linder theory)
Real Exchange Rate	Real exchange rate for Pakistan is defined as RER[3]=NER/NERj* CPIj/CPI	RER	IMF International Financial Statistics.	LCU/US dollar constant at	Positive

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[3] RER is calculated by the formula given above in which NER of Pakistan is divided by NER of specific trading partner and then this ratio is multiplied with the ratio of CPI of specific trading partner divided by CPI of Pakistan.

	Where NER is Nominal Exchange rate and CPI is Consumer Price Index.			2000	
Distance	It is great circle distance between geographic centers of Pakistan and its "j" trading partner.	DIS	Coordinates from the CIA (The World Fact Book)	Kilometers	Negative
Trade Openness	It is trade / GDP ratio of "j" trading partner in a specific year.	TOF	World Development Indicators	Local units	Positive
Foreign Currency Reserves	It is total currency reserves minus gold for "j" trading partner in a specific year.	FCR	IMF International Financial Statistics .	Current US dollar	Positive

Note: "j" is used to shows the specific foreign country

Common Language	It is a dummy for common official language, it is equal to 1 if "j" trading partner share a common official language with Pakistan. English in our study	D2	The CIA(The World Fact Book 2010)	----------	Positive
Contingency	It is a Border dummy, it takes the value of"1" if the border of "j" trading partner is adjacent with Pakistan	D1	The CIA(The World Fact Book)	----------	Positive
Religion	It is a Religion dummy; it takes the value of 1 if "j" trading partner is Muslin country	D5	The CIA	--------------	Positive
Common Colony	This dummy takes the value of 1 if "j" trading partner country remained the colony of British.	D4	----------	-------------- -	Positive.
Landlocked	Landlocked dummy takes the value of "1" if "j"trading partner is landlocked having no access to water	D6	------------------	--------------	Negative

	transport.				
OIC (Regional Trade Agreement)	This dummy takes the value of "1" for the countries who are member of OIC[4], and 0 otherwise.	OIC	----------------	------------	Positive
OECD(Regional Trade Agreement)	This dummy takes the value of "1" for the countries who are member of OECD[5], and 0 otherwise.	OECD	---------------------	-----------	Positive
ECO(Regional Trade Agreement)	This dummy takes the value of "1" for the countries who are member of ECO[6], and 0 otherwise.	ECO	---------------------	-------------	Positive

Continued------

SAARC(Regional Trade Agreement)	This dummy takes the value of "1" for the countries who are member of SAARC[7], and 0 otherwise.	SAARC	The CIA (The World Fact Book)	-------------	Positive
CMEA(Regional Trade agreement)	This dummy takes the value of "1" for the countries who are member of CMEA[8], and 0 otherwise.	CMEA	The CIA (The World Fact Book)	-------------	Positive
ASEAN(Regional Trade Agreement)	It takes the value of "1" for the countries who are member of ASEAN[9], and 0 otherwise	ASEAN	The CIA (The World Fact Book)	-------------	Positive

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[4] Organization of Islamic countries (OIC). Countries included are followings.Algeria,Bahrain,Iraq,Jordan,Kuwait,Lebanon,libya,Oman,Qatar,Saudi Arabia, Somalia, UAE, South Yemen, Syria.
[5] Organization of Economic Cooperation (ECO).Iran, Turkey
[6] Organization of Economic cooperation and development (OECD). Countries included are followings. USA, Canada, Belgium, France, West Germany, Italy, Netherlands, U.K, Norway, Sweden, Japan.
[7] SAARC. Countries included are followings .Bangladesh, India, Maldives, Nepal, and Sri-Lanka.
[8] Council of Mutual Economic Assistance (CMEA) Countries included are followings .USSR, Bulgaria, Czechoslovakia, Hungry, Poland, Romania.
[9] Association of South East Asian Countries (ASEAN). Countries included are followings. Malaysia, Singapore. Indonesia, Thailand, Philippines.