MS Research Thesis

Evaluating Trade Potential among D8 Countries :(The Gravity Model Analysis)

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Certificate

Certified that the research work entitled "Evaluating Trade Potential among D-8 Countries: The Gravity Model Analysis" has been conducted by Ms. Shamsa Kanwal. student of MS Economics at the International Islamic University. Islamabad vide Registration No. 368-FE/MS-Eco/F13 under my supervision. It is further certified that the student has modified the document and incorporated all the changes therein as advised by the examiners during the viva-voce examination held on 19th May, 2017. The document is now ready for final submission to the department and further processing.

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Declaration

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Shamsa Kanwal

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List of Abbreviations

PTA	Preferential Trade Agreement
FEM	Fixed Effects Model
GDP	Gross Domestic Product
APEC`	Asia Pacific Economic Cooperation
AFTA	Africans free Trade area
AMU	Arab Maghreb Union
GCC	Gulf Cooperation
EU	European Umion
REM or ECM	Random Effects Model or Error Component Model
RTA	Regional trade Agreement
OIC	Organization of Islamic Cooperation
WTO	World Trade Organization
NAFTA	North African Free Trade Area
PCSE	Panel
SADC	Universal Primary Education

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Dedication

This thesis is dedicated to my parents, my brother and my sisters. Also, this thesis is dedicated to my friends who have been a great source of motivation and inspiration.

Abstract

The main objective of the study is to estimate Pakistan's trade potential with other D8 countries, using the gravity model of trade. Panel data for the period 1997-2014 across 8 countries is employed in the analysis. Random Effect model is used for estimation. Study also estimates the bilateral trade between Pakistan and other D8 countries. Variables taken in the study are Economic size (GDP), Market Size (Population), Distance and language. The estimated results reveal that economic size (GDP), market size (Population) of foreign partners, distance have huge effects on bilateral trade flows between D8 countries. Financial Size (GDP) and market size (POP) have significantly positive impacts on trade. In order to estimate the trade potential we obtained coefficients from the model is then used to predict the country's trade potential of Pakistan and other D8 countries. Result indicates that the maximum trade potential exists with Indonesia since the (P/A) proportion is impressively high. In case of Egypt, Iran and Malaysia, the actual trade of Pakistan exceeds the potential level. However, there are certain constraints in promoting the trade and achievement of other associated goals. Serious efforts should be made to reduce the hurdles and impediments and to materialize the PTA in letter and spirit as signed by the leaders of D-8 countries.

Chapter 1

INTRODUCTION

1.1 Background of the Study

Taking into account the current world trends of economics which moves towards incorporation and globalization, provincial cooperation play a significant role in the advancement and growth of the countries concerned. These countries will be able to reduce tariff barriers in the region and enjoy the economies of scales and competiveness in international market. In this backdrop, a special group of eight developing countries has emerged within the organization of Islamic countries in 1997. It includes Malaysia, Iran, Turkey, Indonesia, Egypt, Bangladesh, Pakistan and Nigeria and hence carries the title of D-8 countries. This group is in the nature of an economic association for the cause of development and its objectives are to improve the overall position of member countries at international level to diversify the available potential and provide latest opportunities in trade dealings, to reduce trade barriers and to promote free trade among member countries, to provide better living standard to masses. According to the Bali announcement, which was marked on 13 May 2006, the forthcoming zones of joint effort consolidated the distinctive and renewable power resources, ICT, space gear, bio-innovation, microfinance, sea coordination and eco-based seeing the sights, other than exchange. The D-8 nations involve 961 million people groups (around 15% of the world's inhabitants), with a lively work constraint, having rich mineral, essentialness and plant resources, capable tourism slant and focused prepared expenses. A portion of the individuals are said in 25 high positioned stock exporters of the World.

Conversely, to the great eagerness shared by its organizers at the time of its formation, D-8 has since been failed to carry forth its promises and moving toward dimness. Despite all the

shortcomings and failures, the D-8 organization has started numerous teamwork through its effective groups on energy, industry, small and medium enterprises, finance and banking, and to bring out capacity-building work. D-8 Trade dealings and commerce meeting have provided a significant platform for the member countries to get together and begin business deals.

The materialization of Preferential Trade Agreement (PTA), already signed, will be a key step towards further development of intra-trade among these countries by means of both quantity and diversity (HLTO Meeting: 2010). It is hoped that intra-trade volume will increase with the passage of time and enforcement of PTA.

1.2 The Preferential Tariff Agreement (PTA) of D-8 Countries

The Group of Developing Eight (D-8) contains eight Islamic countries, specifically, Bangladesh, Indonesia, Iran, Malaysia, Egypt, Nigeria, Pakistan and Turkey. The D-8 Preferential Tariff Agreement (PTA) is proposed to steadily diminish charges and diverse impediments to trade on specific stock with a particular ultimate objective to progress intra-trade among D-8 people. All D8 part countries denoted the D-8 PTA at the Fifth D8 Summit on 13 May 2006 in Bali, Indonesia. Malaysia authorized the D-8 PTA on 20 July 2006.

The execution of D-8 PTA would enable Malaysian exporters to acknowledge specific obligation treatment for picked things in the market of the taking an interest individuals and empower exporters to increase upper hand over comparable items beginning from non-partaking nations.

1. D-8 governments have found a way to encourage advancement of trade. Other than the PTA, other critical systems, for example, Agreement on Visa Facilitation, Cooperation on Customs and Memorandum of Understanding (MoU) on Civil Aviation have been closed.

Gatherings have additionally been made to advance institutional linkages among the business groups of part states.

2. In 2006, exchange between the D-8 part states remained at US$35 billion, and it rose to around US$68 billion in 2010. Intra D-8 transactions account for 3.3 per cent of the world trade. During the Kuala Lumpur Summit of 2008, the member countries agreed to establish the "10-year (2008-2018) Roadmap" focusing on five priority areas of trade, industry, farming, transportation and vitality. By 2018, the intra-D-8 trade volume is ready to increment to 10-15 percent of the aggregate exchange with the world when contrasted with 7.5 percent in 2008.Since July 2010, the association has gained significant ground in various fields and territories. The slow however unfaltering advancement in the authoritative structures is reflected in the formal foundation of Secretariat. Similarly the Charter has been received that will additionally systematize the collaboration and help the D-8 picture as a model for financial participation.

3. The "Roadmap 2008-18" plots the extent of D-8 exercises amid the period. It is proposed to give the general vision, system and approach rules for the Organization and direct the procedure of definition and usage of projects and activities. In addition, it gives a line of activity to activating assets from legislative and non-administrative sources, and broadens the support for the D-8 group. The Roadmap likewise concentrates on advancement of the private division in future exercises of the Organization.

4. Since its establishment, D-8 has turned out to be both in expansion and activities, supported by the vitality and dynamism of the private part, which has built and associates together. Meanwhile, people to-people contact has extended, gathering trust and assurance and

confer an assumption bunch in the D-8 locale. There has been basic support in return, industry, wander, travel and tourism, and enhancements in physical activities.

1.3 Problem Statement

To the best of my knowledge, this is the first in depth study of evaluating the trade potential among D-8 countries. Some studies have been surely undertaken in this area but these are found to be very superficial and descriptive only. As discussed above, the D-8 countries comprise about 15% of the World Population and 69.83% of OIC by 2010, with their GDP (PPP) standing at 4975.40 billion USD comprising about 62.32% of OIC by 2010. Trade is considered as the backbone of economic cooperation and the D-8 leaders had set the target of increasing the intra-group trade volume up to USD 500 billion by 2018. However, the total trade volume of D-8 countries has reached to $1.15 trillion USD only by the year 2009 and their intra-trade volume to around $67 billion, which is only 5.7% of their total trade and far less than the expectations made by the leaders at the time of Bali Declaration. Therefore, it seems appropriate to have a critical look at the problem via a comprehensive study in order to explore the trade potential of D-8 countries on one hand and to pinpoint the problems and constraints on the other hand due to which the actual trade is restricted.

1.4 Objectives of the Study

The study is designed to attain the following objectives:

- To evaluate the trade potential of D-8 countries with special emphasis on Pakistan.
- To examine the gaps between potential and actual trade among member countries.
- To see the prospect and impediments to trade among D-8 countries.

1.5 Significance of the Study

The finding of this study will be helpful for the people involved in trade and business as well as for the policy makers to seek ways and means for promoting trade among D-8 member countries. By using trade as an instrument of promoting socio-economic and political relations among the brethren countries, the ultimate objective is attainment of higher level of growth in member countries. The study will try to explore the growth prospects of member countries in case the Requirements of PTA are fully achieved.

1.6 Organization of the study

The next chapter Reviews the relevant literature pertaining to different Regional Associates for development. Chapter-3 given an overview of the socio-Political and Economic profile of the D8 member countries that will help in highlighting the significance of the present study .Chapter-4 presents the modals, Estimation methodology and data consideration. Chapter-5 is central to this study when we discuss and analyze our results for estimator. Chapter -6 is devoted the summary, conclusion and policy implications usual.

Chapter 2

LITERATURE REVIEW

This chapter explores the important contributions from among the available literature related to trade potential of different countries within the concerned areas of economic cooperation and with specific focus on D-8 countries.

2.1 Bilateral Trade Studies

The literature is heavily populated with studies on bilateral trade using the Gravity model. Here we discuss only the important studies.

Chionis *et al.* (2002) examine the magnitude of potential trade flows between Greece and nine Balkan countries by using gravity model. A two stage approach is adopted by study. First is to estimate the coefficients of gravity model for Greece and Balkan countries using seemingly unrelated regression method. Second is to implement research exercise by incorporating estimated parameters to gravity model of Greece and Balkan countries Data is taken for the period of 1985 to 1998. The results reveal that GDP is significantly and positively related to trade potential of Greece; an increase in the GDP of partner countries leads to an increase in total trade. Distance is found to be significant with expected negative sign. However, exchange rate is not statistically significant. The results show that there is lot of potential in trade for Greece's with Balkan states.

Rehman (2003) examines bilateral trade of Bangladesh with its trading partners, using gravity model. The data used ranges from 1972 to 1999 for the panel of 28 countries. The variables include GNP per capita, Taxes, Distance, and Common Border etc. The results indicate that size of the economy of trading partner is positively related with total trade volume of Bangladesh,

whereas distance is found to be significant and having negative relationship between partners in bilateral trade. Likewise, the exchange rate and trade openness are also positively related to bilateral trade in case of Bangladesh.

Batra (2004) estimated the trade potential of India using Gravity model. OLS technique is used for estimation. Cross section data is utilized for the year 2000. The explanatory variables include the GNP and Population of trading partners as alternative proxies for size of the economies, Distance, Common border, Colonial Link, Language etc. The results show that GNP is positive and statistically significant and population of trade partners is also having positive impact on India's trade. On the other hand distance is negative and significant impact on trade. Likewise, the dummy variables like language, regional trade agreements (RTA), colonial links etc. have positive impacts on trade. In addition, it is shown that the magnitude of India's trade potential for Russian Federation is quite large. Among SAARC region, India has the maximum trade potential with Pakistan. Within the ASEAN group, trade potential is larger with Philippines and Cambodia.

Sohn (2005) explores Korea's bilateral trade flows with its major trading partners (30 countries) by using Gravity model. Cross-sectional data is taken for 1995. The important variables include the volume of bilateral trade (as dependent variable), GDP's of both home and partner countries, distance, dummies for adjacency, common language, colonial relationships etc. The results reveal that GDP is highly significant in determining the Korea's trade volume. Distance is statistically significant with the expected negative sign. Dummy of APEC (Asia-Pacific Economic Cooperation) is highly significant and has positive sign, which implies that if the trade partner belongs to APEC, Korea's bilateral flow with that country will be higher than other countries.

Yihong, T. and Weiwei, W. (2006) investigates the trade potential of china by taking exports in the account with Asian countries The study used the panel data of 15 countries and date ranging from1993-2003 for estimating the potential of trade of china in bilateral trade in major industrial market of Asian countries. The factors which affect the trade are taking into account like size, distance and integration etc. By applying gravity model to provide a bench mark for bilateral trade flow, relating them to GDP, distance and other characteristic of trading partner. The main finding shows that the trade volume between china and Asian members may even be considerably increasing.

Mortazavi and Thai (2006) study the bilateral trade between Vietnam and 23 European Countries using Gravity model. The panel data is taken from 1993 to 2004 and the Random Effects model is used. The variables used in the study include economic size (GDP), market size (pop) and real exchange rate. The results indicate that economic size, market size and real exchange rate play most important role in bilateral trade between Vietnam and its trading partners. Distance and Language, however, do not impact the bilateral trade significantly. Where GDP and Population of trade partners have significant and positive impact on bilateral trade, the Exchange rates have significant but negative impacts. The results of Gravity model are also used to estimate the trade potential of Vietnam with European countries. The results show that Vietnam's trade with its trade partners in Europe has considerable room for growth.

Binh *et al.* (2011) analyze bilateral trade between Vietnam and 60 other countries by using the data from 2000 to 2010 and employing the Gravity model. The Random effect model is used for estimation. Variables taken in the study are Economic size (GDP), Market Size (Population), Distance and Culture. The estimation shows that economic size of Vietnam, economic size and market size of trade partners, distance and culture have enormous effects on bilateral trade flows.

Economic Size (GDP) and market size (POP) have significantly positive impacts on trade of Vietnam whereas the Exchange rate has positive but insignificant impact. Distance is having significant but negative impact on trade as expected while the dummy for similar culture also shows a positive impact on mutual trade. By applying the technique of speed of convergence, the results indicate that Vietnam has trade potential especially for some new markets such as Africa and Western Asia.

Luzhentsob (2007) aimed to analyze the influence of economic integration in Ukraine on the cost of international trade by using gravity model. Data covers the time period from 1999 to 2006. Fixed effect regression model is used for estimation. Variables used in the study are trade flows from home (Ukraine) to partner country, Population of home and host country, GDP per Capita of home and partner country, Distance between home and host country. Dummies are used for Common border, Common Language. Results indicate that GDP per Capita of the home country negatively influences the costs of trade which implies that as GDP per capita increases, the objective of the home country is to reduce the costs of trade. Population also have negative influence on cost of trade means as there is expansion in country's inhabitants will lead to the reduction in trade cost. Distance is positively related means doubling the distance increase the trade cost. Ukraine can reduce the trade costs while integrating to highly developed countries.

Gencer (2009) aims at investigating whether the Gravity model still holds for Turkey today in the era of globalization and declining transportation cost (due to improvement in logistics and technology). Data is taken from 1993 to 2008 and OLS estimation technique is used for the purpose. The explanatory variables include the GDP of partner countries, Exports, and the distance between the two. Certain dummy variables like common language and culture are also included. The GDP is shown to be significant at 1 % level and having the expected positive

sign. Distance is also statistically significant at 1% level and having the expected negative sign. The Dummy variables that enhance trade are also shown to be positive and significant.

Rahman (2009) examines the trade potential of Australia with its partners by employing the Gravity model. A panel data of 50 countries are taken from 2001 to 2005 and the OLS technique is used for estimation. The volume of Australian trade is the dependent variable whereas the explanatory variables used in the study are Population (indicating economic size), per capita GDP (indicating the pace of development), Openness, common language and distance. The results show that economic size, per capita GDP, openness and language are positively related to the Australian trade whereas distance is negatively related to it. On the other hand Australia has a remarkable trade potential with Singapore, Argentina, the Russian Federation, Portugal, Greece, Chile, the Philippines, Norway, Brazil and Bangladesh.

Thapa (2010) tried to estimate the trade potential of Nepal using Gravity model. The study considers data on Nepal's foreign trade for the year 2009. The trade potential is calculated with the help of ratios of predicted trade to actual trade. Variables used in this study are the volumes of bilateral trade, GNP and Population of both home and host countries, and Distance between the two. Findings of the study show that GNP is positive and significant which reveals that size of the economies increases the trade value between the countries increases. Distance is significant and having the negative expected sign which reflects that as the cost of transportation increases, the trade volume between the countries concerned decreases. Nepal's trade potential with Bangladesh, Brazil, Denmark, France, Germany, Hong Kong, Italy, Japan and the Netherlands reveals that the potential for expansion of trade exist.

Hatab et *al.* (2010) analyze the main factors influencing the agricultural exports of Egypt to its major trading partners. The study employs the Gravity model for the purpose and uses data for the period 1994 to 2008. The Fixed effects model is used for estimation. The important explanatory variable are the GDP of Egypt and partner countries, per capita GDPs of Egypt and partners, openness of both countries, exchange rate, common border, common language etc. The results show that GDP of partners is significant for Egypt's agricultural export. Distance is positively related to Egypt's exports.

Sayed (2012) examines the effect of trade flows between Egypt and some economic blocs by using Gravity model (the log-linear form) to estimate bilateral import flows over average 2008-2010.Variables used in the study are the Flow of imports from the host to home country, GNP per Capita in trading partners, Distance between the capitals. Dummy variable are used to capture the effects of common borders, memberships of Economic Unions like GCC (Gulf Cooperation Council) and AMU (Arab Maghreb Union, Political relationships with trading partners etc. The results reveal that Egyptian bilateral trade with AFTA (members of African Free Trade Area) would increase by an equivalent ratio of increase in the GDPs' of partner countries. Likewise, the volume of Egyptian bilateral trade with COMESA (The Common Market for Eastern and Southern Africa) and EU (European Union) is estimated to increase by about 1.1% and 1% respectively, indicating the importance of EU as major trade partner for Egypt. Distance is statistically significant and keeps in touch with economy that put the impact on the volume of Egyptian trade in Free trade Agreement. However, result is not noteworthy in the case of the trade agreement with COMESA and European Union, which means that the territory, marine and air transportation set-up is more advanced, leading to the means of access of goods and declining in transportation expenses. Common Border is not statistically significant in this case.

Elshehawy (2014) investigates the factors affecting the bilateral flow of Egypt with its most important trading associates by using Gravity model. Annual Data is taken from 2000 to 2013. The Least Squares model with Fixed Effects is used for estimation. Variables used in the study are GDP's of Egypt and partner country, Population of partner countries, Openness to trade, Distance between home and partner country, Dummies for common language and border, and membership of RTA. The results indicate that product of GDPs are highly significant at 1 percent, whereas the importer's trade openness is not significant in clarify Egypt's exports. An increase in importer's population leads to an increment in Egypt's overall trade. Distance has the un-expected positive sign, however, it is insignificant. Common Border and RTA are significant and positively related to Egyptians exports.

Evgeniya (2011) incorporates the amendments and modifications to the conventional Gravity model to assess the gap between the actual and predicted volume of exports flows from the Republic of Belarus. Data covers the time period from 1998 to 2006 and OLS technique is used for estimation. Variables used in the study are traditional, i.e. GDP of home and host country, Distance between home and partner country (remoteness variable), etc. The results show that GDP has positive influence on the probability of export from all industries to different destinations; whereas Distance has the opposite influence on the choice of the firm to export. Coefficients of MRT (Marginal Rate of Transformation) are all positive and significant. As a result, outstanding distortions were found between volumes of trade.

Jordaan and Joel (2011) analyze the factors determining the exports of wood and furniture items in South Africa by estimating Gravity model. Data covering the time span from 1997 to 2004. The variables include exports of home and trade partners, GDP and Population of both sides, Distance between South Africa and trading partners, dummies for Common Language and

membership of NAFTA, SADC etc. The results indicate that due to an increase in the GDP of trading partner would lead to boost the exports of South Africa. The population size has a significant and positive impact on the exports of wooden products. This may be due to economies of scale since the manufacture of wooden goods is likely to be labour intensive. Distance has the expected negative sign but insignificant effect on wooden exports. The results show that South Africa has the unexploited trade potential with Canada, Comoros, Germany, Greece, Israel, Italy, Mauritius, New Zealand and USA, among others. It is therefore important to increase trade with these countries.

Dilanchiev (2012) investigates the trade performance in Georgia (both exports and imports) by using Gravity model. Data covers the period from 2000 to 2011. For this purpose, the large country sample, long time series and balanced data characteristics have been used. Variables used include the Georgia's trade with partner countries, GDP's, Population, Real exchange rates of Georgia and host countries, and dummy of common history. The findings reveal that GDP has positive influence on trade volume of Georgia. Distance is having negative impact as expected. The dummy for historical relationships is positively correlated with bilateral trade flows.

Nasiri, N., & Asl, S. (2013) examines Iran's trade potential with her 161 trading partners. The OLS technique is employed over a cross sectional data for the year 2011 to estimate the coefficients of both basic and augmented Gravity models and to examine the gaps between potential and actual trade among member countries. The variables include the trade flows, GDP per capita and population of trading partners, distance, and dummies for trade agreements with different economic unions. The results reveal that both the traditional variables (GDP per capita and distance) are found to be significant with expected signs. Furthermore population and trade

agreements with EU and EAEC (East African Economic Community) countries have statistically significant impact on Iran's bilateral trade flows. The results also show that the actual trade volume of Iran with 67 countries exceeds that of the estimated potential.

Fahim M. Fard (2013) also examines that trade potential of Iran with other OIC (Organization of Islamic Cooperation) countries and focuses on the question whether the economic size of trading partners within OIC members is important for the Iranian bilateral trade. The author uses the Gravity model and covers a data span from 2005 to 2011. The Fixed effect technique is used for estimation. The variables used are familiar; i.e. the Trade Flows from home country to partner countries, Economic size, Population of both home and partners, Distance between home and partner country, etc. The results indicate that coefficients of GDP's in all cases have positive signs and statistically significant. Likewise, the coefficients of Population are statistically significant and have positive signs. The coefficients of Distance between Iran and partner countries are also significant and have the expected negative signs.

Abidin *et al.* (2014) examine the Malaysian exports to OIC member countries, using the panel data from 1997 to 2009 and employing the Gravity model. Both the Fixed and Random effect models are used for estimation. The important variables used in the study include the GDP and Imports of Malaysia and partner countries, Distance between the trading partners, the Per capita GDP of countries concerned, Exchange rate, and Inflation. The results indicate that Malaysia's exports to partner countries increases as the per capita GDP in partner country increases. Exchange rate is significant but has a wrong sign. Inflation rate is not significant and also possess wrong sign. Malaysia exports for the year 1997, 1999, 2001, 2003, 2006, and 2009 indicate that in addition to Indonesia (which is closer to Malaysia), the major importers of

Malaysian goods in OIC are U.A.E, Saudi Arabia, Iran, Qatar (which are far away from Malaysia). Thus Distance is not that much significant.

Parasai (2014) examines the overall trade pattern of Nepal by using Gravity model. Data covers time period from 1981 to 2009. The Ordinary Least Square method is used for estimation. Variables include the bilateral imports and exports of Nepal with its trading partners, products of GDPs of Nepal and its trading partners, Distance between Nepal and its trading partner, Dummies for SAARC membership, and signatory of WTO etc. Results indicate that the coefficient of GDP is positive and significant, which is consistent with the theme of Gravity model. The negative coefficient of per capita GDP shows that Nepal's exports are mainly labor – intensive products and most of its imports are mostly consumer goods. The coefficient of distance is significant and has the expected negative sign. The coefficients of SAARC membership have positive and significant only for Nepal's imports. However, the coefficient of WTO membership is significant for both imports and exports.

Doumbe and Thierry 2015 empirically analyze the Cameroon's bilateral trade flows with twenty eight European Union countries using Gravity model for a data period from 2008 to 2012. The Random effect model is used for estimation. Variables taken in study include Economic size, per capita GDP and Distance. Findings reveal that economic size and per capita GDP are positively related to Cameroon's bilateral trade. Distance is negatively related to Cameroon's bilateral trade.

Waheed and Shujaat 2015 investigate export potential of Bahrain with its trading partners by using Gravity model. The generalized least square estimation (GLS) is used for the purpose and the data covers time period from 1994 to 2013. Variables are usual; i.e. the bilateral export flow of Bahrain and partner country, GDP of both home and trading partner, Distance between host

and home country, Population and Real exchange rates of countries concerned, Dummies for GCC membership, common language etc. The results show that GDPs of both countries has a significant positive impact on bilateral export flows of Bahrain to partners. The coefficient of distance is negative and significant as expected. The populations as well as the Exchange rates are found to be positive and significant. The results indicate that Bahrain go beyond its export potential with its Asian trading partners (Japan, Korea, India, and Pakistan) and with Oman and UAE along with the Gulf countries.

2.2 Studies on Pakistan

The researchers have also focused on evaluating the trade potential of Pakistan, making use of the Gravity model. Here we refer to a few important studies.

Sanvankulov and Wazir (2012) investigate the trend of bilateral trade of Pakistan with Turkey and evaluate the trade potential between Pakistan and Turkey, using the augmented Gravity model. Data is taken from 1996 to 2009. The variables considered in the study include the Per capita GDP's, distance, common border, population, Exchange rates, RTA (regional trade agreements) etc. Results show that population, Per capita GDP and exchange rate positively affect the trade flows. The dummies for border, language and culture also impact the trade flows positively whereas the distance impacts it negatively. Trade complementarily analysis indicates that the overall Turkish exports match better with Pakistan's import structure than Pakistan's exports with Turkish import structure.

Gul, N. and Yasin, M. (2011) estimate the trade potential of Pakistan, using the Gravity model and dynamic OLS technique. A panel data is taken for 42 countries including Pakistan and covering the time span of 1981-2005. Variables used in the study are GDP, Per Capita

differential, language, Exchange rate. The coefficients taken from the model are subsequently used to forecast the country's trade potential internationally as well as within specific trading groups. The results indicate that Pakistan has the highest trade potential with partners (ASEAN) and lower with SAARC, specifically with India despite a common border. This is because of unfavourable political relations.

Kaur and Parmjit (2011) explore the trade potential (particularly exports) of Pakistan to SAARC countries. The authors employ the Gravity model and use data for the period 1981 to 2005. The study uses the following variables: Export flows from Pakistan to SAARC countries, GDP, Population, Real Exchange Rate of trading partners, Distance between home and partner countries, Dummies for Common Border, Language. Results reveal that economic size (GDP) of exporter country (Pakistan) is insignificant but has positive sign, showing that Pakistan tends to export with larger economies of scales. On the other hand, the economic size of importer countries is not significant and has a negative impact on Pakistan's exports. An increase in GDP of SAARC members will cause to increase Pakistan's exports. In contrast, the Population of Pakistan has significant and positive impact on its exports, which implies that most of the Pakistani exports are labour intensive. The market size of SAARC members has insignificant and negative effects on Pakistan's exports. This may be due to the fact that SAARC countries also export more or less similar (agro-based) goods like Pakistan. Exchange rates have also insignificant impact. Likewise, the dummies for Distance, Common Border and Language are insignificant for Pakistan's exports. The results show that there exists export potential of Pakistan with Bangladesh and Sri Lanka, whereas for other SAARC members, the actual Pakistan's exports exceed the potential. Put differently, Pakistan is having Trade convergence

with four SAARC members (Bhutan, Nepal Maldives, India) and difference with two member (Bangladesh and Sri Lanka).

Malik, S., & Chaudhary, A. R. (2012) critically analyze Pakistan's import strategy during 1990s and investigate the determinants of bilateral import streams amongst Pakistan and selected Asian nations. A Gravity model of worldwide trade is observationally tested with the assistance of generalized least square (GLS) method for panel data (1994-2010) Variables included in the study are the income of trading countries (Y), Population size (N), exchange rate, openness to trade, lagged value of bilateral import flows etc. Empirical findings reveal that income, exchange rate and openness of chosen Asian nations economies are contributing components for Pakistan's import flows. There is persuading proof that present import flows are positively associated with earlier year while infrastructural bottlenecks have negative effect on import streams.

Khan et al. (2013) analyze the Pakistan bilateral trade flows with its significant trading accomplices. A Panel data is taken from 1999 to 2010 with OLS technique employed for estimation. The usual variables of Gravity model are used like GDP, Per capita GDP , Distance and dummy for cultural similarities. The results indicate that Gross domestic product and Per capita GDP positively influence trade volume while Distance and Cultural likenesses have huge effect on trade volume. The outcomes additionally demonstrate that Pakistan has a low trade potential with Japan, Turkey, Malaysia, India and Iran, which needs some rethinking and improvement in trade policies.

Mohammad *et al.* (2015) analyze the export environment of Pakistan by utilizing the Gravity model of trade. Data covers time period from 1995 to 2011. Variables taken in this paper are GDP of both home and partner countries, Distance between home and foreign country, dummies

for common Border, Religion, Language and membership of RTA (Regional trade agreement). The Findings indicate that GDP is significant and having positive sign. Distance appears with the expected negative sign but having insignificant impact. Border is inversely related with Pakistan's exports. The outcomes recommend that Pakistan still has the capability of expanding exports to 86 nations, which is a favorable indication.

2.3 Multilateral Trade studies

Dikkaya and Mehmet (2004) evaluate the existing and collective efforts to look up trade among BSEC members (Black Sea Economic Cooperation) The study also investigates the bilateral trades among BSEC countries by using Gravity model. The data covers the time period from 1999 to 2003 and the Ordinary Least Square technique is used for estimation. The important variables include the world output, volume of exports, price level, distance and language etc. Results reveal that all variables are significant at 5%. The output level of both home and partner countries are having expected positive sign means a countries produce more, exports and imports are also tend to high. World output is having expected negative sign. Distance is also having negative sign. Language is having positive sign for countries and highly significant.

Hosnijeh (2007) examines the success and failure of the existing preferential trade agreements and regional economic grouping among IOR-ARC (Indian Ocean Rim Association for Regional Co operation) by using Gravity model. Data is taken from 1999 to 2004. Fixed Effect model is used for estimation. Variables included in the study are GDP, Population, distance, Dummy for integration, language. The outcomes demonstrate that GDP is significant and positively affects the volume of trade. Population is statistically significant and has a positive sign, whereas Distance is also significant and carries a negative sign as per expectations.

Boughanmi, H. (2008) investigates the trade potential of the GCC nations inside the system of the old and the developing inclination trade arrangement in the region of MENA (Middle East and North African Countries). A Gravity model is assessed that depends on pooled time series-cross-sectional data for the period 1990 to 2004. The outcomes show that GCC trade intensity with other trdae gatherings is not direct. GCC Trade with the Eastern nations is more than anticipated, while it is lesser than anticipated with the Western nations in the MENA piece. The GCC trade with European Union and the US is observed to be very genuine in spite of the way that no formal exchange trade arrangements between the GCC and EU and US exist during the period of analysis.

Insel and Mahmut (2009) attempts to find whether the trade flows of GCC nations with their accomplices have changed overtime or otherwise. Time period is taken from 1997 to 2006 separately for developed and developing countries. The study uses static and dynamic (ARDL) fixed effect Gravity Model in order to exploit the short run and the long run trade practices of the GCC nations. Result of the study show that the coefficient of per capita income is between 1-2 for Kuwait, Saudi Arabia and UAE, affirming that these nations are wealthier than the other GCC nations and the volume of trade is more noteworthy than others. The coefficient of Distance is having positive sign, which can't be deciphered regarding costs. This is presumably an aftereffect of strong bilateral exercises.

Hassan et al (2010) examines the economic performance of OIC member countries by utilizing the Gravity model framework. The findings of research reveal that different sub-regional gathering inside the setting of gravity model and result demonstrate that comparing position of D-8 countries in OIC by creation of more of trade.OIC countries should check the forward and back ward links to increase the trade.

Simwaka, K. (2010) estimates the trade potential expected from the SADC (Southern African Development Community) Free Trade Area. With a specific end goal to survey the trade potential compared with its present level; a Gravity model is estimated through a data for the period 1998 to 2007. Variables used in the study are GDP, PC GDP, and POP, Transportation Cost for both importers and exporters, and dummies for common border and language outcomes demonstrate that the observed intra-regional trade is lower than its potential, which suggests that SADC could not show a significant role in the trade among its members.

Bengoa *et al.* (2013) analyze the FDI patterns among eleven Latin American countries over the period 1996-2012. The augmented Gravity Model is used for the purpose. Fixed or Random Effect model is used for estimation. The variables include GDP's and Population of both home and partner countries, the Distance between the countries and some dummies. Results show that GDP's of trading partners are significant and positive. Likewise, the Populations of home and host countries are also positive and significant, which implies that large number of potential consumer may attract FDI. The coefficient of Distance is negative and significant. Dummy for MERCOSUR and ALADI (Association Latino-Americana de Integration) are positive and significant

Antonio and Lorde (2014) examine the trade flows for CARICOM countries (Caribbean Community and Commons Market) by using the traditional Gravity model and considering the cross sectional data for the year 2005. The variables used in the study include the Per capita GDP differential between any two countries, the Trade to GDP ratio and Common Language, dummies for membership of regional trade agreement, geographical distance, exchange rate etc. The results show that Gross domestic product per capita, the populace size, the effect of being a signatory member from a regional trade agreement, are statistically

important and positive in effect. The language variable is evaluated with a positive coefficient of 0.236, and viewed as a powerful element to trade.

aimed to measure the most important determinants of trade flows among AMU (Arab Maghreb Union) group members by using Gravity model and considering the data from 1995 to 2011. Variable used include the GDP's, Exchange rates, Population of the exporter country, distance and common border etc. Results reveal that GDP is statistically significant and positively related to exports. Distance is negatively related to the elasticity of exports. In contrast, the exchange rates and tariff rates have no significant impact on export flows among AMU countries.

2.4 Studies on D-8 countries

Ostadi, H., & Shoaei, M. R (2015) examine the trade pattern between the industrials countries called G8 and the developing countries D8. The week countries like D8 need to trade with the highly industrialized countries so that their economics can grow in better way, get more financial strength, high level of technology, and get welfare in the states. This study incorporates the panel data of D8 and G8 countries for the time period 1990-2012. The study is designed to see the impact of different factors on the trade flows of countries included in D8 and G8 agreements and to exploit their trade potential. The main findings of the research indicate that GDP's of the countries concerned have significant and positive impact on the trade flows, the geographical distance has significant and negative impact.

Tash, S. and Jajri, D. I. B., M. (2010) explore the effect of international trade between Iran and D8 countries on the welfare of the economies concerned. The study also reviews the impact of trade liberalization policies (by reducing the tariff and expanding coverage). Data is taken from 1998 to 2008. Trade Intensity Index is used to clarify commodity compositions' consequences for

bilateral trade. Outcomes show that while D-8 nation's intra-trade is relied upon to increment generously, in any case, not all nations will encounter a welfare increase under a facilitated commerce game plan. The main objective of the research is to gain more benefits of trade and welfare for the economies by reducing the tariff barriers.

Jafari *et al.* (2011) identifies the factors affecting export flows among the D8 countries. Data is taken from 1990 to 2007. A Gravity model is used, which is estimated by Panel Correlated Standard Errors (PCSE) method. Findings of the study show that export flows among D8 members are positively determined by GDP's of trading accomplices, Populations and currency deprciation by exporting nations and common borders. However export flows among D8 members are negatively affected by transportation costs and importer's currency appreciation.

2.5 Gap in the Literature

The studies done by researches on bilateral and multilateral trade which is among different groups like G8 member groups, SAARC, SAFTA, D8 and some other regional groups. But to best of my knowledge this is the first in depth study of evaluating the trade potential among D-8 countries. Total trade volume of D-8 countries has reached to $1.15 trillion USD only by the year 2009 and their intra-trade volume to around $67 billion, which is only 5.7% of their total trade and far less than the expectations made by the leaders at the time of Bali Declaration. Therefore, it seems appropriate to have a critical look at the problem via a comprehensive study in order to explore the trade potential of D-8 countries some studies have been surely undertaken in this area but these are found to be very superficial and descriptive only.

Chapter 3

ECONOMIC PROFILE OF D-8 COUNTRIES

An Overview

3.1 Socio-political and economic profile of D-8 countries

3.1.1 Indonesia

Indonesia is one of the forthcoming world market and the biggest economy in South East Asia. It is also one of major economies of G-20. Indonesia has a market economy in which the legislature has a critical influence. In context of the results enveloping the money related and monetary emergency, which started in mid-1997, the administration took control of a noteworthy segment of private division belonging, participating in the buying of non performing bank advances and corporate resources through the obligation returning procedure (ACICIS, 2011). The country's economy was restricted and has passed through another period of rapid economic growth. Since 1988, exports have grown more than seven times in Indonesia attaining up to157.7 billion USD in 2010. The recent non-oil/gas export drive seems to be mainly due to the increase in the share of other main commodities including palm oil, coal and copper. Indonesia's intra-trade with D-8 members increased from 21% in 2005 to 25.4%, or 13.97 million USD in 2010, compared to Japan,12.4%, and China, 9%, as its major trading partners (Aral, 2005). The relatively low intra-trade volume with members of D-8 results in lower value in trade complementarities and intra industry volumes of trade. In the past five years, the income and services deficit has been compensated by the surplus from goods and remittances.

3.1.2 Malaysia

Malaysia's economy has improved greatly, from being relatively state determined to a newly developed market economy. Malaysia plays a important yet declining part in driving economic activity through the small scale monetary arrangements. Malaysia's economy was the third greatest in South East Asia in 2007 and 29th greatest economy on the planet, see as being purchasing power; its GDP in 2008 was 22.2 billion USD, with an advancement rate of 5% to 7% since 2007. Malaysia's GDP per capita in 2009 was USD 14,900. The ostensible GDP in 2009 was USD383.6 billion and ostensible per capita GDP was USD 8,100. South East Asian countries encountered a monetary blast and Malaysia experienced quick advancement amid the twentieth-century with a GDP for every capita of 14,800 USD and is viewed as a recently industrialized nation. Among the D-8 countries, Malaysia is the least populous with a population of about 27 million. Malaysia has received promising economic growth since the 1970s. The Muslim population is dominant in Malaysia at nearly 60% and the Malays are the major ethnic group identifying with Islam. As one of the countries that control the channel of Malacca, International trade accepts an indispensable part in the drive to the country's economy. Malaysia is the world's greatest Islamic sparing cash and budgetary focus. Malaysia would like to profit by an outlet for its general and aggressive modern fares while getting shabby crude materials and work from the D-8.

3.1.3 Bangladesh

Since their independence from Pakistan in 1971, Bangladesh has faced huge political and economic problems. It was still is among the world's poorest nations with a for each capita salary of around 260 USD in 1996. The market based economy of Bangladesh is quickly

creating. It was evaluated that the per capita wage for Bangladesh in 2010 was USD1.700 (balanced by equality with obtaining power). As indicated by reports from the International Monetary Fund (IMF), in 2010 Bangladesh was positioned 47th as world's biggest economy among the N-11 Goldman Sachs and D-8 economies with a total national output of USD 269 billion. As of late, financial development recorded 6-7% p.a. More than a half of the GDP is for the administration segment, an extensive number of the number of inhabitants in Bangladeshis utilized in the agrarian division with fish, calfskin, vegetables, materials, earthenware production among other real create. It is important to state that Bangladesh has been taking an active role at meetings between the least developed economies and the United Nations. As published by the Ministry of Foreign Affairs of Bangladesh, the starting principles of the foreign policy of Bangladesh at contrary to the D-8 destinations. "support crippled people groups all through the world" pursuing a simply battle against government expansionism or racialism and the State should endeavor to join together, secure and bolster relations among Muslim nations in view of Islamic agreement."

3.1.4 Pakistan

Pakistan is one of the foundation members of D-8 and has played a significant role in its socio economic development. Presently, the population of Pakistan stands at 173.5 million and it is the 6th most intensely populated nation on the planet. The main natural resources are land, water and natural gas. About 28% of the land area in Pakistan is under cultivation. The major crops are wheat, sugarcane, cotton, rice, millet, vegetables and fruits. In 2000, Pakistan experienced high unpredictable economic growth caused by external and internal shocks, from the peak level of 9% in 2004/05 to 2007/08 and 1.2% in 2009/10 to 41%. Although over the years Pakistan's external image has improved, the current account balance has been

pressured due to high energy prices and reconstruction following flooding. There has been a significant improvement in its current account deficit from the highest level of 8.7% of GDP in 2007/08 to 2.3% in 2009/10,which is expected to increase gradually to 4.4% of GDP by 2016 (IMF WEO April 2011) due to the improved demand for the import of basic commodities and construction materials. Goods exported as a percentage of GDP declined from 13.2% in 2004/05 to 11.0% in 2007/10 while imports increased from 17.1% in 2004/05 to the maximum level of 24.4% in 2007/08 and later declined to 19.8% in 2009/10 leaving a trade deficit of6.5% of GDP in 2009/10.

3.1.5 Iran

Since the Islamic revolution, Iran has suffered from the strangulatory policies imposed by the United States that target the country's economy and politics (Aral, 2005). The external strangulation led Iran to investigate all the opportunities through which the country could find new markets for its products and develop its technology.

Iran's economy is critically dependent on oil. Therefore, the government is doing its best to find other sectors to improve its investment revenue. Among the sectors in which the government is investing are the automobile industry, nuclear power, aerospace, petrochemicals, and consumer electronics. Moreover, Iran has great potential in the development of information and technology, mining, and tourism. In Iran farming, small workshops and services have set up private businesses (Ehteshami,2002).

Although at the moment Iran is the 18^{th} largest economy worldwide by purchasing power parity (PPP), by 2015 the country is probably moved to twelfth place (Ahmadi and Mohebb, 2012). The nature of the economy in Iran is transitional, consisting of a large public

sector with around half of the economy being centrally planned. The economy also enjoys a diversionary nature, which enriches Tehran Stock Exchange by more than forty industries. While sanction imposed by international forces because of its nuclear program, the country was among the few well-known countries with a positive growth even in the 2008 global financial crisis and its ensuing consequences.

3.1.6 Turkey

Turkey's financial advancement has awesome importance given its size, its vital part in the area and as the biggest economy in, and driving individual from, the Organization of Islamic Countries. In 2008, Turkey positioned as the seventeenth biggest economy on the planet with an ostensible GDP of US$734.9 billion. The World Bank characterizes Turkey, with a GDP for each capita of US$9,942 (in current US$) in 2008, as a high center income nation.

Turkey is known as a pioneer producer across the world in terms of textiles, construction materials, automotive and transportation equipment, agricultural products, consumer electronics, apparel, and home appliances.

Trade volume is a standout amongst the most critical elements empowering worldwide financial combination. Export and imports of Turkey achieved US$132 billion and US$202 billion, individually, in 2008. Turkey's exports, which fell by around 23% in 2009, and conviction are recovering; however there furthermore are stresses over extension. exports increment by 6.4% in the last quarter of 2009 yet so did imports, which climbed by 10.5% in a comparable period and 28.3% in February of 2010. In this way, the present record lack was 33.8% higher in February 2010 stood out from a year prior. The recovery is getting the chance to be unmistakably more broad based with buyer and money related expert sureness improving, unemployment settling (at

14.5% in February 2010 differentiated and 16.1% in mid-2009), outside inflows recovering, and cutting edge yield rising (Aral, 2005).

3.1.7 Egypt

The Formation of the Egyptian state is one of the most broaden and developed within the sub regions of Africa and the Middle East. It encompasses a large industrial sector with a fast evolving service sector. Even though the Egyptian economy conventionally hinged on agriculture, due to its rapid growth and industrialization; its share was decreased to 13.1% of GDP in 2010.According to the African Development Bank (2010), more than 90% of the Egyptian labor force was employed in the agricultural sector in the 1970s, while, currently, it can only boast 32% of the labor force. Round about 17% are employed in the industrial sector, which comprises 37% of GDP. Egyptian companies range from electricity, steel, oil exploration and refining, domestic goods, automobiles and chemicals. The IT industry has received substantial growth. The largest supplier to the Egyptian economy is the service sector, contributing in excess of 49%. This, however, offers employment to about 50% of the population. Construction, canal trade, tourism and the administrative sector are the major service sector areas. In the Middle East and North Africa, Egypt has the most stable economy with a growth that has averaged 4-5% in the last quarter century.

3.1.8 Nigeria

Nigeria is Africa's largest democracy with a population of well over 155 million. It has the second largest economy in Africa, and being an oil rich nation is known as the "place that is known for fresh chances to succeed" because of its huge monetary potential. In 1994, Nigeria made laws to liberalize its trade regime and to remove some of its barriers to foreign

investment. From the emergence of the military regime in Nigeria onwards, it was more or less cut off from the international community before the emergence of D-8 in 1997. D-8, however, gave some recognition to the Nigerian regime out of its respect for the Islamic world. Nigeria saw the D-8 as a useful.

3.2 Historical Background of D-8 Organization

Taking into account the current world trends of economics that are going towards combination and globalization, provincial coordinated effort can assume an imperative part in the advancement and development of the nations concerned. These countries will be able to reduce tariff barriers in the region and enjoy the economies of scales and competiveness in international market. In this backdrop, a special group name D8 within the organization of Islamic countries has been emerged. It incorporates eight developing nations, specifically Malaysia, Iran, Turkey, Indonesia, Egypt, Bangladesh, Pakistan and Nigeria and henceforth conveys the title of D8 nations. The foundation of D-was accounted for formally through the Istanbul Declaration in the Summit conference held on June 15, 1997. This group is in the nature of an economic association for the cause of development and its objectives are to improve the overall position of member countries at international level to diversify the available potential and develop new chances in trade relations, to reduce trade barriers and to promote free trade among member countries, to provide better living standard to masses. D-8 is a worldwide course of action for collaboration inside OIC as opposed to a local one, as the structure of its people reflects. Relationship for Economic Cooperation (D-8) is a social affair with no negative impact on two-sided and multi-sidelong obligations of the part's countries, transmitting from their enlistment to other worldwide or regional affiliations. The D-8 nations involve 961 million people groups (around 15% of the total populace), with a dynamic work drive, having rich mineral, vitality and farming assets,

skilled tourism limits and aggressive operational expenses. A portion of the individuals are specified in main 25 stock exporters of the World.

Trade is considered as the foundation of economic participation and the D-8 pioneers have set the objective of expanding the intra group trade up to USD 500 billion by 2018. This objective is achievable by the execution of D-8 primary instruments, for example, the Preferential Trade Agreement (PTA), Visa and Custom Agreements furthermore by enhanced linkages and effective systems administration among D-8 private divisions.

In 2006, trade between the D-8 part states stayed at $35 billion, and it was around $68 billion in 2010. All the D-8 nations are important political players in their particular regions. Around 45 % of the total exports of the 57 members of OIC are realized by the 8 countries of the organization. D8 countries, when taken together, comprise 55 % of the total GDP of the OIC countries (HLTO Meeting: 2010).

During the a long time since its introduction, D8 held five summits (Istanbul 1997, Dhaka 1999, Cairo 2001, Tehran 2004 and Bali 2006), nine meeting of the Council of Foreign Ministers, 18 commission social events, one excellent session of commission and around 50 get-togethers at specific level. The fifth D-8 Summit Declaration (Bali, 2006) incorporated the accompanying objectives are (1) Responsibility to work together to take care of the issue of economic variations inside our nations. (2) Reiterate promise to upgrade collaboration in the knoll of vitality to create elective and renewable energy assets. (3) Underline the noteworthiness of D-8 in adding to the monetary progression of its part countries and certification that it propels overall exchange.D-8 Member States represent around 70% of the OIC populace close by the GDP and exchange volume. D-8 gives a novel open door for close participation and collective organization with a

perspective to mixing dynamism, reinforcing common relations and improving cooperative energy and additionally compelling usage of advancement projects inside of the Islamic world. D-8 could be a one of a kind gathering in tending to monetary and social prospects and difficulties the Islamic Countries are confronting with.[Secretary-General Mousavi:2016]

3.3 Achievements of D-8 Agenda

In any case, as opposed to the great eagerness shared by its organizers at the season of its creation, D-8 has since been unsuccessful to convey its certifications and failed into uncertain quality. Notwithstanding the significant number of deficiencies and disillusionments, the D8 has made sense of how to contrast with these responses. It has begin imitated a couple participation plots through its working social affairs on imperativeness, industry, little and medium attempts, back and sparing cash and as far as possible building work. D-8 Trade Fairs and Business Forums have given a phase to the business circles of the part countries to get together and begin deals. Despite these little however critical strides, the D-8 (as association) continues guidance part nations on issues concerning noteworthiness for the whole affiliation. The Bali Declaration, which was set apart on 13 May 2006, centers to potential zones of cooperation, which are elective, and renewable essentialness resources, ICT, space advancement, bio-development, microfinance, maritime collaborations and eco-hased tourism. According to the most recent accessible measurements, total trade volume of D8 countries has reached to $1.15 trillion USD by the year 2009 and their intra trade volume to around $67 billion, which is 5.7% of their total trade volume and which is of course far behind the potential of these countries. The materialization of PTA will be a key stride towards advance improvement of intra-exchange among these nations by method for both amount and assorted qualities (HLTO Meeting: 2010). It is trusted that intra exchange volume will increment with the progression of time and requirement of PTA. The

guide at the season of foundation of D-8 gathering was focused at rising intra-exchange between part states from the 5 % to no less than 10 to 15 % of their aggregate exchange volume in this decade. The intra D-8 exchange has enhanced from $14.5 billion in 1999 to $60.5 billion in 2007 connoting an exceptional increment over a time of eight years.

3.3.1 The Preferential Tariff Agreement (PTA) of D-8 Countries

The Group of Developing Eight (D-8) contains eight Islamic countries, specifically, Bangladesh, Indonesia, Iran, Malaysia, Egypt, Nigeria, Pakistan and Turkey. The D-8 Preferential Tariff Agreement (PTA) is proposed to steadily diminish charges and diverse impediments to trade on specific stock with a particular ultimate objective to progress intra-trade among D-8 people. All D8 part countries denoted the D-8 PTA at the Fifth D8 Summit on 13 May 2006 in Bali, Indonesia. Malaysia authorized the D-8 PTA on 20 July 2006.

The execution of D-8 PTA would enable Malaysian exporters to acknowledge specific obligation treatment for picked things in the market of the taking an interest individuals and empower exporters to increase upper hand over comparable items beginning from non-partaking nations.

1. While looking the performance of D-8, we need to keep in mind the global. There are continuing difficulties faced by the global economy, particularly in the Euro zone. The economic slow-down continues to keep on beyond all expectations of an early recovery. The impact of economic and financial crisis is likely to continue to destroy the ability of the developing countries to achieve their growth potentials, for an indefinite period.

2. D-8 has not moved at the imaginry pace to finish its objectives. This is paying little mind to the way that the part states have correlative economies and can do a considerable measure to increase intra-assemble exchange and financial participation. Plainly, it is a direct result of

absence of duty with respect to its part states. But Bangladesh all part states marked PTA on May 14, 2006 at the fifth D-8 Summit at Bali, Indonesia. In this way, six individuals have sanctioned the understanding. Bangladesh and Egypt are not willing to s i g n the treaty. Egypt is demanding a 50 per cent value addition; while the "Bangladesh Tariff Commission" has advised the country not to ratify the treaty saying that it will not help boost the country's exports. During the eighth Summit in Islamabad, Chairman of the D-8 Federation of Chambers and Commerce and Industries, Dr Herbert Ademola of Nigeria, expressed his concern that "implementation of PTA is still pending."

3. In spite of the imperatives that be, the D-8 governments have found a way to encourage advancement of trade. Other than the PTA, other critical systems, for example, Agreement on Visa Facilitation, Cooperation on Customs and Memorandum of Understanding (MoU) on Civil Aviation have been closed. Gatherings have additionally been made to advance institutional linkages among the business groups of part states.

4. In 2006, exchange between the D-8 part states remained at US$35 billion, and it rose to around US$68 billion in 2010. Intra D-8 transactions account for 3.3 per cent of the world trade. During the Kuala Lumpur Summit of 2008, the member countries agreed to establish the "10-year (2008-2018) Roadmap" focusing on five priority areas of trade, industry, farming, transportation and vitality. By 2018, the intra-D-8 trade volume is ready to increment to 10-15 percent of the aggregate exchange with the world when contrasted with 7.5 percent in 2008.Since July 2010, the association has gained significant ground in various fields and territories. The slow however unfaltering advancement in the authoritative structures is reflected in the formal foundation of Secretariat. Similarly the Charter has been received that

will additionally systematize the collaboration and help the D-8 picture as a model for financial participation.

5. The "Roadmap 2008-18" plots the extent of D-8 exercises amid the period. It is proposed to give the general vision, system and approach rules for the Organization and direct the procedure of definition and usage of projects and activities. In addition, it gives a line of activity to activating assets from legislative and non-administrative sources, and broadens the support for the D-8 group. The Roadmap likewise concentrates on advancement of the private division in future exercises of the Organization.

6. Since its establishment, D-8 has turned out to be both in expansion and activities, supported by the vitality and dynamism of the private part, which has built and associates together. Meanwhile, people to-people contact has extended, gathering trust and assurance and confer an assumption bunch in the D-8 locale. There has been basic support in return, industry, wander, travel and tourism, and enhancements in physical activities.

.3.4 Trade between Pakistan and other D-8 countries: An Overview

Achieving sustainable improvement and decreasing poverty are the primary objectives of every developing country. International trade is one of the strategies open with creating nations to finish these targets. Developing countries can attempt to abatement destitution by bringing its share up on the world's total exports.

Pakistan being a less developed economy can similarly comprehend its targets of decreasing destitution and fulfilling improvement by growing its total exchange volume with whatever is left of the world. As needs be it is basic to explore the genuine determinants of Pakistan's two-

sided exchange volume. These revelations can then enable arrangement creators to define strategies focusing on developing Pakistan's trade volume.

3.4.0 Trade between Pakistan and other D-8 countries (Million US dollar)

Years / Countries	2004	2005	2006	2007	2008	2010
Bangladesh	242.7	302.47	223.1	266.84	355.9	457.33
Egypt	102.87	176.03	64	86.9	194.35	234.17
Indonesia	527.8	752.57	839.93	1071.65	1081.38	847.21
Iran	374.73	541.29	599.62	687.91	930.85	1618.56
Malaysia	698.72	798.34	981.11	1458.61	2021.39	2645.71
Nigeria	320.19	62.67	77.62	99.29	126.3	63.25
Turkey	308.65	486.16	486.95	656.17	703.51	954.72

3.4.1 Trade with Bangladesh

Bilateral trade between these two countries is little and in addition has been turning out to be step by step over the earlier years amid the ten-year time period between 1996-97 and 2005-06, Bangladesh's exports to Pakistan created at a yearly rate of 4.47 percent and imports from Pakistan created at the rate of 9.33 percent. The total estimation of trade (export notwithstanding import) between the two countries in 2005-06 was just about $200 million.

It is in like manner critical that Bangladesh has constantly had a lacking trade balance with Pakistan. Disregarding the way that the degree of the trade shortfall is nearly nothing, it has

been growing every year. The extent of imports to convey in Bangladesh's two-sided trade with Pakistan rose in the midst of this period.

Starting at now, trade between the two countries is centered on a couple of things. Rough jute, compost and tea constitute around 90 percent of Bangladesh's exports to Pakistan. As respect imports, cotton and manufactured strands alone records for more than 60 percent of Bangladesh's total imports from Pakistan. Cotton surfaces, device, plastic things, vehicles, vegetable things (chiefly grains) and organized foodstuff add another 21 percent to Bangladesh's total imports from that country.

3.4.2 Trade with Egypt

In 2003, Pakistan had an trade flow of US $ 5.54 million with its exchanging associate Egypt. Starting now and into the foreseeable future the exchange adjust is in support of Egypt and Pakistan is persisting with a standard exchange lack with Egypt from US $ 6.53 million in 2004, which is as of now extended to about US $ 44.78 million in 2009.

In spite of the way that Pakistan's exports extended similarly as regard from US $ 41 million in 2003 to US $ 100 million in 2009, yet this extension in export esteem is also low when appeared differently in relation to its imports from its trading assistant Egypt. Around 60% of Pakistan's fare to Egypt included Textile things.

Since 2003, Pakistan's imports from Egypt extended from US $ 35.53 million to most noteworthy measure of US $ 223.59 million in 2008; in any case everything of a sudden declined to US $ 145 million in 2009. In 2009, Pakistan's critical import thing from Egypt is compost (nitrogenous) of total US $ 47.74 million and accounted around 32.94% of Pakistan's total imports from Egypt.

3.4.3 Trade with Indonesia

Pakistan's total exports to Indonesia stayed at US $ 67 million in 2009 with Pakistan's imports from the country totaling US $653.5 million around a similar time leaving an enormus exchange shortage of US $586 million. Pakistan's export to Indonesia is moved in cotton which speaks to 61.4% of all exports to the country. The other critical thing class exchanged to Indonesia is rice which speaks to 5% of total exports. This was trailed by fake staple strands which had a share of 4.9%.

The structure of Pakistan's imports to Indonesia uncovers an advancing example; with palm oil as of now incorporating the greatest partake in imports. However 2008 onwards we see that petroleum things have the most astonishing offer of imports 28.4% and the share of palm oil dropping to 23%. Falling palm oil imports, from Indonesia, can be credited to rising imports from Malaysia with which Pakistan has denoted a FTA giving an edge of slant of 15% to palm oil.

3.4.4 Trade with Iran

The bilateral trade between the two nations has remained low. Iran is a nation rich in characteristic assets with the world's second biggest gas holds. Pakistan is a vitality inadequate nation that has not possessed the capacity to meet its common gas requests. Trouble between the two nations was principally due to the embargoes on Iran from the worldwide community.

Trade among Pakistan and Iran right now comprise of for the most part oil and gas from Iran and rice and meat from Pakistan. Pakistan has communicated the desire to improve export of meat, natural products, material, surgical things, sports merchandise, pearls and gems notwithstanding rice. In 2014 general exchange with Iran was USD 217 million out of which USD 53 million were fares from Pakistan. The key fare things of Iran to Pakistan include: press mineral, press scrap, dates, cleansers, transformers, chemicals, bitumen, polyethylene,

propylene, and so on while trade things of Pakistan to Iran incorporate rice, crisp organic products, meat fabric and mechanical hardware.

3.4.5 Trade with Malaysia

Pakistan and Malaysia denoted a FTA (PMFTA) which enter into constrain in 2008 with the entire liberalization obligations maintained by 2012. Rice spoke to the primary piece of Pakistan's exports to Malaysia and the share of rice in full scale exports to Malaysia has climbed from 24% to 38%. In 2003 Pakistan's export of rice to Malaysia was US $ 10 million ascending to US $ 25.1 million in 2009. Potato and onion fares to Malaysia developed with exports ascending from an estimation of just US $ 2 million in 2003 to US $ 12 million in 2009. Cotton once overwhelming Pakistan's aggregate exports to Malaysia saw a decrease in general export. It ought to be noticed that in spite of the fact that these items were incorporated into the Pak Malaysia FTA, they effectively confronted zero MFN duties so Pakistani shippers were not able to get advantage from any particular preferred standpoint.

3.4.6 Trade with Nigeria

Bilateral trade among Nigeria and Pakistan achieved US$56 million in 2010. Pakistan sent out $37million worth of products to Nigeria while it imported $19 million worth of merchandise from the Nigeria. Pakistan fundamental export item included material articles of clothing, home apparatuses, surgical equipment and rice.

3.4.7 Trade with Turkey

In order to increase money related and trade interfaces among Pakistan and Turkey; they assented to start a joint wander association on January 2004. The venture organization will

have a preliminary estimation of $25 million to be general by the two nations. Pakistan picked that the entire hypothesis would begin from the all inclusive community fragment while Turkey was to pick the whole should be from its open or private zone. Specific Trade Agreement (PTA) was set apart in 2004 among Pakistan and Turkey to amplify exchange ties and make exchange size to $1 billion in two years. The attestation was set apart between the two countries to progress advantaged trading and create intra-neighborhood financial joint exertion. On Oct 15, 2009, Pakistan and Turkey consented to incite the course to settle the Free Trade Agreement (FTA) as they assumed that both of these two states have the abilities to expand their two-sided trade up to $2 billion before the end of 2012.

Chapter 4

MODEL, METHODOLOGY AND DATA

4.1 The Basic Model

The classical and Hecksher-Ohlin trade theory can productively clarify the explanations behind nations to participate in world trade; however they can't answer the subject of the size of the trade steams. Another trade theory, the gravity model, which has been utilized to analyze patterns and execution of universal trade in recent years, can be applied to measure the trade streams empirically. The model receives the idea from Newton's Law of Gravitation in Physics, which expresses that the force of attraction between two items is straightforwardly corresponding to the result of their masses and contrarily relative to the square of distance between the two, where the constant of proportionality is denoted by 'G', called the gravitational constant. As indicated by the gravity concept, the volume of trade between two nations depends straightforwardly on the sizes of the nations (as a rule the economic size reflected by GDP is considered) and conversely on the distance between them (as an intermediary for transportation costs). Tin Bergen (1962) and Poyhonen (1963) were the pioneers in adopting the gravity idea in financial relationship. The primitive model was indicated for the purpose, which is replicated below for ready reference.

$$F = G.\ \frac{m_1 \,.\, m_2}{r^2} \quad \Rightarrow \quad Trade_{i,j} = f\{(GDP_i \,.\, GDP_j)^{+}, (Distance_{i,j})^{-}\} \qquad (4.1)$$

The variables used in the above relation carry their usual meaning:

$\mathbf{Trade_{i,j}}$ = Value of bilateral trade between country i and country j.

$\mathbf{GDP_iGDP_j}$ = Product of national incomes of country i and j.

Distance $_{i,j}$ = Measure of the distance between capital cities or economic centers of partners. The linear version of the model, which is commonly used in the analysis, is reproduced below.

$$\log(Trade_{i,j}) = \alpha + \beta_1(\log GDP_i + \log GDP_j) - \beta_2 \log(Distance_{i,j}) + u \qquad (4.2)$$

The model in its rudimentary structure states that the degree (value/quantum) of trade among two nations is relative to the product of their GDP and inversely to the geographical boundries between the two countries (ports/economic centers).

4.2 Theoretical Background

The classical application of the model is given in Linnemann (1966), who added an extra factor to the model to reflect the commodity composition of the trade streams. The model was adjusted by Leamer (1974) for two-digit Standard International Trade Classifications (SITC) for products, and incorporates isolate measures of relative element endowments as free factors to determine the effect of income and populace. Despite the fact that the Gravity model of trade has been an experimental achievement, its theoretical justification has been the subject of some debate. attempts have been made to investigate its associations with the key components of trade theory. These attempts are relatively recent, and a brief review is presented below.

Anderson (1979) was the first to apply utility functions (Cobb- Douglas and CES) to infer the Gravity model utilizing the properties of linear consumption frameworks (LES). It is an alternative strategy for doing cross-sectional budget studies and one with potentially imperative efficiency properties. However its utilization is constrained to nations where the preferences for traded products are comparable and where tax collection structures and transportation expenses are likewise practically identical. Bergstrand (1985) applied CES inclinations and generalized

Gravity model by introducing costs. In another attempt, Bergstrand (1989) applied the monopolistic competition model and assumed that products are differentiated among firms rather than nations. He offered an analytical framework for comprehension of the Gravity equations, which is consistent with present day speculations of between industry and intra-industry trade. A general equilibrium model of global trade was created to show how the Gravity equation consents to the Heckscher-Ohlin model of itra-industry trade or potentially the Helpman-Krugman-Markusen models of intra-industry exchange. It might be noticed that Helpman and Krugman (1985) inferred the Gravity model show under the supposition of increasing return scale in production. Bergstrand (1990) additionally expanded the microeconomic establishments for a generalized Gravity model to incorporated differences in the relative factor enrichment and non-homothetic preferences.

Anderson and van Wincoop (2001, 2003) have given a general comprehension of how border obstructions influence trade and welfare with regards to the simple Gravity model. They determine the Gravity condition, utilizing the properties of market leeway and the CES demand structure.

4.3 The Augmented Gravity Model

Researchers have augmented the original Gravity model by adding other conditioning variables that might have affected trade between the countries concerned. Instead of using GDP of trading partners as proxy for 'mass', some researchers use the populations as proxy for 'market size'. More difficult models may include other illustrative variables like the exchange rate, the absolute value of per capita income differentials, and dummies for common border, common language, and memberships of different economic associations etc. The model adopted in this

study is a modification of the Gravity model suggested by Krugman and Maurice (2005). The model is enlarged by adding populations of trading acomplices as additional mass for bilateral trade as well as dummy for common language. Some researchers have included a monetary variable, the 'exchange rate' in their models, as substitute for price; however, if all the data on trade and GDP is expressed in a common currency (dollars), there seems no rationale to incorporate it.

A representative equation may be as under:

$$\log(Trade_{ij}) = \beta_0 + \beta_1 \log(GDP_i.GDP_j) + \beta_2 \log(pop_i.pop_j) + \beta_3 \log(Distance_{ij}) + \beta_4 Languag$$

(4.3)

Trade: Trade in commodities and services, which is the summation of exports and imports among the trading partners (in value terms).

GDP: Product of GDP of country i, j as proxy for the economic size.

POP: POP of country i, j as proxy for market size.

Distance: Distance between capital cities of countries i, j used as proxy for transportation cost.

Language: Dummy variable for common language taking value = 1, if countries have a common language (proxy for common border and culture), and =0 otherwise.

The variables GDPs are likely to have positive impact on the trade promotion.

Populations of the countries concerned are used as proxy for market sizes, which may affect international trade positively.

Distance represents transportation cost, which plays an important role in the international trade. It is measured in kilometers between the capital cities of home and partner countries. This variable is likely to cause a negative impact on trade stream; i.e. the larger is the transportation cost, the smaller is likely to be the volume of trade.

The common border and sometimes the common language and culture between two countries have far reaching impacts on mutual relationships between the residents, which exert a positive impact on trade. The coefficient of this variable is likely to have a positive sign.

4.4 Methodology of Estimation

Traditionally, the classical Gravity models have been expressed in single equations over a cross-section data to gauge the trade streams between the pair of nations for a specific time period (one year). However, the recently developed panel data system gives more helpful information as compared to the single equation approach. It is turning out to be progressively well known since it makes conceivable the investigation of a specific issue at various sites with periodical observation over a defined time span.

4.4.1 The Panel Data Framework

A few estimation procedures have been utilized while utilizing the panel data approach. Specifically, the fixed effect and random effect models are generally prominent. A brief account is given below.

4.4.1.1 The Fixed Effect Model (FEM)

In FEM, the intercept in the regression is permitted to contrast among individual units in recognition of the way that every cross sectional unit may have some unique qualities of its own. For example, a model in the general format can be composed as under:

$$Y_{it} = \beta_{1i} + \beta_2 X_{2it} + \beta_3 X_{3it} + u_{it} \qquad (4.4.a)$$

The subscript i to the intercept term recommends that the intercept across the individuals are distinctive, yet every individual intercept does not fluctuate overtime. FEM is suitable in circumstances where the individual particular intercept might be related with atleast one regressors (Gujrati: 2003). To consider the different intercept, the use of dummy factors is the common practice and along these lines, the specification is known as the Least-Squares dummy variable (LSDV) model, which might be composed as under:

$$Y_{it} = \alpha_1 + \alpha_2 D_{2i} + \alpha_3 D_{3i} + \beta_2 X_{2it} + \beta_{3it} + u_{it} \qquad (4.4.b)$$

However, there is a disadvantage of LSDV in that it expends a great deal of degrees of freedom when the number of cross-sectional units is substantial, since one needs to present N dummies (however suppress the regular intercept).

4.4.1.2 The Random Effect Model (REM) or Error Components Model (ECM).

In contrast to FEM, this model expects that intercept of an individual unit is an random drawing from a much bigger population with a constant mean (Gujrati: 2003). The individual intercept is then expressed as deviation from this consistent mean esteem. The REM appreciates leeway over the FEM in that it is economical in the degrees of freedom, since we don't need to gauge N cross-sectional intercept. REM is suitable in circumstances where the random intercept of every cross-sectional unit is uncorrelated with the repressors. The basic thought is to begin with condition (3.a), However, rather than regarding β1i as fixed, it is assumed to be an random variable with a mean estimation of β1. At that point the value of the intercept for individual element can be expressed. as:

$$\beta_{1i} = \beta_1 + \varepsilon_i \quad \text{Where i = 1, 2, ..., n} \qquad (4.4.c)$$

The random error term is implicitly to be disseminated with zero mean and constant variance:

Substituting (3.c) into (3.a), the model can be written as:

$$\begin{aligned} Y_{it} &= \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + \varepsilon_i + u_{it} \\ &= \beta_1 + \beta_2 X_{2it} + \beta_3 X_{3it} + w_{it} \end{aligned} \qquad (4.4.d)$$

The composite error term ($w_{it} = \varepsilon_i + u_{it}$) comprises of two parts, is the cross-section or individual-particular error segment, and uit is the consolidated time arrangement and cross-section error segment, given that ~ (0, σ2ε), uit~ (0, σ2u), where are autonomous of the uit (Gujrati: 2003). For the panel projection of potential trade, the specialists have focused on the random effect model (REM), which requires that the informative factors must be autonomous of the and uit for all cross section (ij) and time span (t)(Egger: 2002).Generally, the FEM is captured to be a immense strategy for evaluating gravity model equations, however it has the disadvantage of not having the capacity to survey time-invariant impacts, which are now and then as imperative as time-fluctuating impacts. Therefore, for the board projection of potential bilateral trade, specialists have regularly focused on the REM, which requires that the informative factors be autonomous of the ε I and unit for all cross section(i, j) and unsurpassed periods (t) (Egger, 2002). if the intention is to appraise the effect of both time-variat and invariant factors in trade potential crosswise over various nations, then the REM is desirable over the FEM (Ozdeser and Ertac, 2010).

4.4.1.3 Estimating Trade Potential

Estimation of the trade potential is a line of research that has been used intensively within the Gravity model framework. The point estimates of the coefficients are applied to data on

explanatory variables to calculate the trade potential /predicted by the Gravity model. We will use the ratio (P/A) of forecasted trade (P)—comes from the estimated value of the dependent variable—to actual trade (A) of Pakistan with accomplice worried to assess their trade potential, and to forecast the future trade direction.

The average speed of convergence or trade potential is characterized as the average growth rate of potential/predicted trade by average growth of actual trade between the years of observation:

$$\textbf{\textit{Trade potential}} = \left(\frac{\textit{Average growth rate of Potential Trade}}{\textit{Average growth rate of Actual trade}} - 1\right) * 100 \qquad (4.5)$$

4.5 Data Considerations

The study uses time series data for the period 1997 to 2014. Dependent variable is annual trade (exports plus imports) of D-8 Countries. The data on imports and exports is taken from the Direction of Trade Statistics yearbook (different issues) published by the International Monetary Fund (IMF).Data on Population and GDP is obtained from World Development Indicator and statistics on Distance between Islamabad (capital of Pakistan) and capital cities of different nations are taken from www.indo.com/distance.

Chapter 5

Estimation and Analysis of Results

After discussing the model and methodology at length in Chapter-4, we are now in a position to discuss and analyze the results obtained from estimation exercises.

5.1 The Multi-lateral Trade of D-8 Countries

We have applied the Gravity model to the panel data of D-8 countries over the period 1997 to 2014 consisting of mutual trade among the countries concerned and the relevant explanatory variables. As such, there are total 144 observations (8x18). The model concerned (Equation 4.3) is reproduced below for ready reference:

$$\log(Trade_{ij}) = \beta_0 + \beta_1 \log(GDP_i.GDP_j) + \beta_2 \log(pop_i.pop_j) + \beta_3 \log(Distance_{ij}) + \beta_4 language + u$$

The estimation results of bilateral trade between D-8 countries, using the Random Effects technique to evaluate Gravity model are given in Table 5.1.

Table.5.1 The Multi-lateral Trade of D-8 Countries

Variables	Coefficient	P-values
Constant	- 16.34	0.0000
Log (GDPH*GDPP)	1.520	0.0000
Log (POPH* POPP)	1.0367	0.0029
Log (DS)	- 0.019	0.026
DB	0.0008	0.936
Adjusted R^2	0.67	

Note: GDPH stands for GDP of home country and GDPP for GDP of partner country.

Likewise, POPH stands for Population of home country and POPP for Population of partner country. The determinants of mutual trade among D-8 countries are: Economic size (product of GDPs), Market size (product of POPs), Distance (DS) and Common Border (DB). The coefficient for Economic size variable is significantly positive as related to the volume of trade, which means that due to increase in GDPs of home and partner countries, the trade volume among the trading partners will increase. An increase by 1% in the product of GDPs of D-8 countries will enhance trade among them by an average index of 1.52%. Market size of D-8 countries has significant effect on trade, i.e. as the market size increases by 1%, the mutual trade among the countries concerned will increase by 1.03% on average. As expected, the coefficient of variable 'Distance' is extremely important and carries a negative sign. However, the coefficient of common border is not significant, although carrying a positive sign. This is because only few countries in D-8 share a common border and common language. The findings of this study are not only appealing to the common sense but are also consistent with the results of other experimental work in amplifying multilateral trade using Gravity model as discussed in the literature review.

5.2 Trade of Pakistan with other D-8 Member Countries

The estimation results of bilateral trade among Pakistan and other D-8 countries using equation (4.3) above are given in Table 5.2. It shows the results following the Random effect technique.

Table 5.2 Trade of Pakistan with other D-8 Member Countries

Variables	Coefficients	P-Values
Constant	- 6.640	0.02
LOG(PH*PP)	- 0.36	0.04
LOG(GDPH*GDPP)	0.8817	0.0000
LOG(DS)	- 1.99	0.000
DI	0.53	0.05
Adjusted R^2	0.77	

The signs of all the coefficients of the Gravity variables are in line with the theoretical justification. The estimation results show that the coefficient of Economic size variable is significantly positive, which implies that 1% increase in GDPs of trading countries will enhance the trade volume of both countries by 0.88% on the average. On the other hand, the coefficient of 'Distance' is statistically important, although it carries the expected negative sign. Likewise, the coefficient of 'common language' is significantly positive.

The population of Pakistan and its trading partners has significant impact on bilateral trade. However, the coefficient has a negative sign. Increasing population leads to a rise in the domestic absorption, which results into decreasing exports and increasing imports.

5.3 The Bilateral Trade among D-8 Countries-Comparative Position

In this section, we confer the outcome of bilateral trade. We have confronted each country in the D-8 organization to the remaining seven (7) trading partners and applied the Random effect technique to the model given in equation 4.3. The comparative position is presented in Table 5.3 below. The p-values are indicated in parentheses with values of the coefficients.

Table 5.3 Bilateral Trade of D-8 Countries - Comparative Position

Model ↓ Variable →	Constant	Product of GDP	Product of Pop	Distance	Adj R-Square
Indonesia versus other D-8 Countries	-23.83 (0.00)	1.827 (0.00)	0.207 (0.70)	-0.18 (0.17)	0.64
Malaysia versus other D-8 Countries	-26.10 (0.00)	1.70 (0.00)	1.33 (0.12)	-0.02 (0.49)	0.83
Bangladesh versus other D-8 Countries	11.03 (0.00)	0.76 (0.00)	-0.07 (0.49)	-2.76 (0.00)	0.79
Pakistan versus other D-8 Countries	-7.98 (0.02)	1.07 (0.00)	0.39 (0.04)	-1.99 (0.00)	0.65
Iran versus other D-8 Countries	-38.28 (0.00)	1.16 (0.00)	1.85 (0.037)	-0.14 (0.53)	0.73
Turkey versus other D-8 Countries	11.35 (0.0013)	0.89 (0.00)	-0.47 (0.12)	-0.07 (0.80)	0.76
Egypt versus other D-8 Countries	-42.26 (0.00)	1.82 (0.00)	-0.01 (0.91)	-0.54 (0.00)	0.71
Nigeria versus other D-8 Countries	-17.67 (0.16)	0.52 (0.01)	1.10 (0.40)	-0.17 (0.83)	0.53

The results indicate that coefficients of the economic size variable (product of GDPs) have positive signs and significant for Pakistan as well as all other member countries of D-8. However, the impacts of market size (product of populations) on bilateral trade are mixed. The coefficients have negative signs for, Bangladesh (insignificant), Egypt (insignificant), and

Turkey (insignificant). On the other hand, this variable is positive for Indonesia (insignificant), Iran (significant), and Nigeria (insignificant) Pakistan (significant) and Malaysia (insignificant).

Likewise, the coefficients for distance variable are negative for Pakistan (significant), Bangladesh (significant), Indonesia (insignificant), Iran (insignificant), Nigeria (insignificant), Turkey (insignificant),Egypt (significant) and Malaysia (insignificant).

In sum total, the coefficients of economic size (GDPs) are positive and significant for all countries and consistent with theoretical expectations. In contrast, the coefficients of market size (populations) are positive in some cases and negative in other. Result of population is similar to the Oguledo and MacPhee (1994). Population in the exporting nation is also predictable to have encouraging effects on exports, it is predicted that it can create and provide more as the population grow up in size. On the other hand, a population variable can also signify that a country with a large population size has a least competent and has less enthusiasm in international trade, comparative to a small country.

However, these are insignificant in many cases. The coefficients for distance are negative but significant in some cases. Their significance levels are also varying in degrees. This means that even though longer distance reveal higher transportation costs, other aspe ct conscientious for expand bilateral trade can easily overcome the distance factor.

5.4 Evaluation of Trade Potential

Calculating adequate trade potential is a line of research that has been utilized seriously with the gravity display, particularly for Central and Eastern European nations, for example, investigation of Maurel and Cheikbossian (1998), Montanari (2005). They apply the point estimated coefficients to data on the explanatory variables to calculate the trade potential /anticipated by

the gravity show. We have evaluated the augmented gravity model for Pakistan with other D8 countries for the period 1997-2014. We will use the ratio (P/A) of forecasted trade (P)—comes from the estimated value of the dependent variable—to actual trade (A) of Pakistan with accomplice worried to assess their trade potential, and to forecast the future trade direction. A positive value infers the possibility of trade extension later on while a negative value demonstrates that Pakistan has surpassed its exchange potential with a specific nation. By utilizing either the proportion or the distinction markers, we can characterize those nations with which Pakistan has potential for the development of trade or something else. The average speed of convergence or trade potential is characterized as the average growth rate of potential/predicted trade by average growth of actual trade between the years of observation:

$$\textbf{Trade potential} = \left(\frac{\textit{Average growth rate of Potential Trade}}{\textit{Average growth rate of Actual trade}} - 1\right) * 100 \qquad \textbf{(Eq. 4.5)}$$

In estimating the trade potential, we utilize the outcome that obtained from regression model 4.3 and evaluate the trade potential of Pakistan with other D8 countries as given by equation 4.5 (reproduced above) .The results are reported in Table 5.4

Table 5.4 Trade Potential of Pakistan with D-8 Countries

Countries	Predicted Trade (growth rate)	Actual Trade (growth rate)	Trade Potential
Bangladesh	5.719	5.598	-2.16149
Egypt	4.79	4.859	1.420045
Iran	6.28	6.491	3.250655
Indonesia	6.556	6.373	-2.87149
Malaysia	6.889	6.994	1.501287
Nigeria	4.217	4.165	-1.2485
Turkey	5.965	5.938	-0.4547

According to our estimation, Pakistan average growth of actual trade is 5.598 and potential trade is 5.71 and estimating trade potential of Pakistan with Bangladesh is -2.168 which means Pakistan exceeds its trade potential with Bangladesh. For the Egypt, Malaysia and Iran still has a tendency to expand its trade. Pakistan has adequate potential (all things considered) to grow its exchange with Egypt, Iran, and Malaysia and Turkey since the ratios are positive and greater than unity. The maximum trade potential exists with Indonesia since the (P/A) proportion is impressively high. In case of Egypt, Iran and Malaysia, the actual trade of Pakistan exceeds the potential level.

Chapter 6

Summary and Conclusions

6.1 Summary and Conclusions of the Study

The present study has tried to explore the trade potential of D-8 countries by investigating through the Gravity model and Random Effects empirical technique. The data on their mutual trade, along with the relevant information on the important determinants like GDPs, populations, distance, and certain dummy variable has been considered for the period 1997 to 2014. The results reveal that the relevant parameters/coefficients carry more or less the expected signs and they are significant to the level of satisfaction. The exercise on evaluation of trade potential leads to the conclusion that Pakistan has yet un-exploited trade potential with Bangladesh, Indonesia, Nigeria and Turkey and there is need to seek ways and means to expkand trade as far as possible. The utmost trade potential exists with Indonesia since the (P/A) proportion is impressively high. On the other hand, the actual trade of Pakistan exceeds the potential level in case of Egypt, Iran and Malaysia. However, there are certain constraints in promoting the trade and achievement of other associated goals. Serious efforts should be made to reduce the hurdles and impediments and to materialize the PTA in letter and spirit as signed by the leaders of D-8 countries.

6.3 Policy Implications

The findings of this study are helpful for traders/businessmen as well as for the policy makers for the promotion of trade among D-8 members. As discussed in the very beginning, trade has been the most important instrument of promoting socio-economic and political relations throughout the history of nations. The ultimate objective of all these efforts is nothing but the attainment of higher level of growth and enhancement of the standard of living of masses. .

One of the main targets of D-8 organization is to address the low intra-regional trade problem and to reduce dependence on industrialized economies. The removal of tariff and non-tariff barriers through materialization of PTA will enable the D-8 members to explore the gains from intra-regional trade and to take advantage of the technology advancements of one another. Based on findings of this study, the following policy actions are suggested for the business community in general and for the policy makers in particular.

D-8 member countries should follow the strategies set by other prominent organizations meant for the same purpose like EU, ASEAN, APEC, and NAFTA by reducing the barriers to free trade, allowing free capital mobility and transfer of technology. They should strengthen both forward and backward linkages in the areas of investment and production and gain from the experiences of one another. They should minimize their political differences, if any, failing which the dream of successful regional integration will never materialize. In particular, the governments' of Pakistan, Iran and Turkey should fulfill their responsibilities and protect the D-8 organization from embracing the fortune faced by ECO and SAARC.

As discussed above, the treaty already signed by leaders of the D-8 member countries under the title of Preferential Trade Agreement (PTA) should be implemented seriously and efforts should be made to increase the intra-regional trade by liberalizing trade facilitation including preferential tariffs. In this context, follow up measures should be taken to achieve the benefits of regional economic integration. These include:

(a). Encouragement of joint ventures to gain from the economies of scale, to create new competitive opportunities, to fulfill not only the domesic needs and extend intra-regional trade but also to improve competitiveness in the world market.

(b). Structural economic reforms should be considered by the member countries by directing their investments to more diversification with special emphasis on value addition.

(c) The progress in achievement of the D-8 agenda has been somehow sluggish, which needs accelerated effects. Due to the heterogeneous nature of the economic, social and political conditions in D-8 member countries, the progress in setting the goals for economic cooperation is quite cumbersome. The members are therefore required to show collective strength towards achievement of the primary objective

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