

IMPACT OF DISTANCE ON BANGLADESHI EXPORT

A CROSS SECTIONAL ANALYSIS

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Abstract

Aim of this paper is to find out the overall impact in the export trade sectors of Bangladesh due to weighted distances and time zone differences of its partner countries by using the Idea of Gravity Model. The paper also aims to describe the impact of intra or inter regional agreements, partner countries' GDP and population on Bangladeshi exports. Forty six (46) countries, which are trade partners of Bangladesh, have been chosen for this study. These countries represent all of the continents. Our study concludes with the finding that Bangladesh is doing relatively well with the partner countries which are geographically far, but failing to take the advantages from the neighboring partners. Bangladesh needs to expand its export to geographically adjacent countries which will enhance the country with higher export income. To increase export market Bangladesh needs to diversify its export items as need of the neighboring countries.

Keywords: International Trade, Impact of Distance, Bangladeshi Export, Cross Sectional Analysis, Idea of Gravity Model, Trade partners

INTRODUCTION

The country once which was labeled as “bottomless basket” by the westerns is now growing at an unbelievable higher rate. The economy is being matured day by day. It's well known to all that Bangladesh is an over populated small country and not endowed by any natural resource which can change the indicators of economy significantly. At the same time economically and

politically it is not in a position that foreign investors are highly interested. So it has always been depended on traditional way of economic development. Bangladesh tried to emphasize on expanding export around the world and obviously the economy's trade gap has always been supported by remittances sent by the Bangladeshi workers around the globe. The export growth of the country is relatively high than many other countries of the region, though export is concentrated on specific product. Now export is concentrated on apparel products some years ago which was depended on jute and jute products.

From the theoretical view point, we know that Bangladesh is a country with comparatively cheaper labor, and Bangladesh has the comparative advantage in production of labor oriented goods such as garment products, leather and leather goods, etc. Bangladesh has been doing it according to the theory for a long time. Bangladesh is now in the second position in terms of exporting garment products. In the book "Introduction to Heckscher-Ohlin" (1991), Flam and Flanders showed that according to Heckscher-Ohlin factor proportions Theory of Comparative Advantage international commerce compensates for the un-even geographic distribution of resources.

According to the global village theory, countries are getting closer day by day. After analyzing the influencing factors of Bangladeshi export around the globe, we've found that geographical location plays a very important role. From the very early of economic thinking economists were concerned about finding out the impact of geographical location on trade volume. The aim of the paper is to find out whether the distance has traditional impact on Bangladeshi export or it shows a completely different result.

LITERATURE REVIEW

Huge number of work has already been done in this topic of how geographical distance affects the trade volume of one country and most of them are obviously in the name of Gravity model. The gravity model is mainly originated from Newtonian physics now widely applied in economics. The micro-foundations approach also alleges that the crucial assumption of perfect product substitutability of the 'conventional' gravity model is unrealistic as evidence in recent times has shown that trade flows are differentiated by place of origin. Exclusion of price variables leads to misspecification of the gravity model. Anderson (1979), Bergstrand (1985, 1989), Thursby and Thursby (1987), Helpman & Krugman (1985) and so on share this view. Eaton and Kortum (1997) also derive the gravity equation from a Ricardian framework,

Deardoff (1997) derives it from an H-O perspective. Deardoff proves that, if trade is impeded and each good is produced by only one country, the H-O framework will result in the same bilateral trade pattern as the model with differentiated products. If there are transaction

costs of trade, distance should also be included in the gravity equation. It is shown by Evenett and Keller (1998) that the standard gravity equation can be obtained from the H-O model with both perfect and imperfect product specialization. Some assumptions different from increasing returns to scale, of course, are required for the empirical success of the model.

THE RECENT TRADE PATTERN OF BANGLADESH

In 2012, Bangladesh's export rose up to \$24.28 billion and its import of different goods and services was \$30 billion. Among the export items, raw jute, tea and jute goods (excluding carpets) are considered as traditional items. Other than traditional items, all products are considered as Non-Traditional items, i.e. woven garments, knitwear, frozen food, chemicals, leather, footwear, home textile, pharmaceuticals, handicrafts, cement, textile fabrics etc.

If we look at the export combination of exported goods now woven garments and knitwear provide about 80% percent of total export combination. From Bangladesh export statistics provided by export promotion bureau we can see that In the year 1972-1973 of total export from Bangladesh, 51.4% was jute and jute products where in 1981-82 it became 46.5 %. Interestingly in that year 1981-82 export of garment product was only 1.1%, in 1990-91 export of garment and garment product came to 50% of total export. In the year 2005-06 total export of garment and knitwear was 77% of total export, jute and jute good came down to 2.63% of total export!

If we look to the Export partners of Bangladesh, Instead of any Asian country it exports most to United States of America. In 2012, it exported about 20% of his total export in this country. The table shows that major trading partners are all from either from Europe or America. Question is did Bangladesh fail to satisfy the demand of Asian countries? Specially why the trading pattern is so concentrated in few countries?

Table 1. Major export partners in 2012

Export partners of BD	% of Total Export
USA	19.7%
GERMANY	16.1%
UK	9.5%
FRANCE	7.2%
NETHERLANDS	4.2%

Source: Export promotion bureau

OBJECTIVE OF THE STUDY

The main objective of the study is to find out the impact of global geography on Bangladeshi Export, specifically to see what happens to export volume of Bangladesh with weighted distances and time differences of countries. It also aims to see the impact of different countries GDP and population on Bangladeshi export volume-Additionally, this study will try to find out the impact of inter and intra regional trade agreements like SAFTA and ASEAN on Bangladeshi exports.

METHODOLOGY

First of all this paper is not testing Gravity model, but it is using the idea of Gravity model. The gravity model is being widely used for many years. The basic idea of gravity model is that trade decreases with the distance between two countries is intuitive and holds up well empirically. The application of the gravity model is particularly straightforward since the nature of the shock is directly to distance. Instead of analyzing with particular trade partner, this paper aims to test overall effect of distance on export volume of Bangladesh. It also aims to test whether it gets any advantage of regional benefit in case of export.

For simplicity 46 countries has been chosen around the world which are trade partners of Bangladesh. Sample covers from all the continents. In the sample all countries of SAARC are included; it also covers the ASEAN countries like Myanmar, Philippines, Thailand, and Vietnam etc. China and Japan are always important trade partners. Some Arabian countries are also in the data. Among the European country dataset covers countries like Germany, France, U.K, Switzerland etc. north American countries like USA, Canada, Mexico are taken into account. The countries from Oceania are Australia and New Zealand. The Countries from Africa are Kenya, Ghana and South Africa. It includes the South American countries Brazil, Argentina, Ecuador which are very far from Bangladesh.

The paper is using secondary data from Centre d'Etudes Prospectives et d'Informations Internationales or CEPIL, France. The dataset contains Data for 224 X 224 countries from 1948 to 2006. It is a gravity dataset made by CEPIL but it does not contain the export import data. The export data is taken from export promotion bureau. Data for only 2005 is kept and then combined with the export data. The exports were given in million taka, which has been converted to dollars by dividing the exchange rate of 2005 which was 67.63. The distance was given in km, for simplicity of interpretation km has been divided by 1000 and now it became in thousand kilometers.

ANALYSIS AND MODEL ESTIMATION

The simple form of the model is

$$\text{Log}(X_i) = \alpha + \beta_1 \log(\text{gdp}) + \beta_2 \log(\text{pop}) + \beta_3(\text{distw1}) + \beta_4(D_saarc) + \beta_5(D_asean) + \beta_6(\text{contig}) + \beta_7(\text{comcol}) + \beta_8(\text{tdiff}) + \beta_9(\text{distwsq1})$$

Here,

Log (Xi)-log of export from Bangladesh to the selected trade partners in 2005 (USD).

log(gdp) - gross domestic product of the selected trade partners of Bangladesh in 2005 (USD).

log(pop)-log of total population of the trade partners of Bangladesh in 2005.

distw1-weighted distances from Bangladesh (in1000km)-weights are calculated according to CEPII.

D_saarc-dummy- 1 if the country is of SAARC.

D_asean-dummy, 1 if the country is of ASEAN.

contig-if the country has common Border with Bangladesh.

comcol-if the country has common colonial origin with Bangladesh.

tdiff- time difference from Bangladesh.

distwsq1-squared of distance.

Now we can discuss about our expectations about the coefficients β_1, β_2 are expected to be positive as increase in population and total income will rise the demand for Bangladeshi product in foreign country. Weighted distance is expected to be negative, coefficient β_4 is expected to be positive, β_6 is expected to be positive.

Table 1: Regression Coefficient Estimation

Variable	Coefficient
log(gdp)-	.9172902 ***
log(pop)-	.2498308
distw1	.2538578
D_saarc-	-.1660849
D_asean-	.006427
Contig	-.6177793
Comcol	1.141382*
Tdiff	.3581967
distwsq1	-.0231516***

***1% level of significance **5% level of significance *10% level of significance

From the result we can see that, one percentage point increase in partners GDP raises Bangladeshi export by .92 percentage point. Which is significant at 1 % level. In case of population, expected sign is positive but not significant. Coefficients of distance and squared

distance showing the marginal impact of distance is decreasing at an increasing rate. Trade volume decreases if the country is among SAARC region and interestingly trade volume increases if the country is among ASEAN region, though both are insignificant. If the country has a common border with Bangladesh, it is showing negative sign. Interestingly, trade volume is positively significant with the countries which were also once under British colony.

CONCLUSION

From the above regression and descriptive analysis, it is clear that Bangladesh is doing relatively good with the partners which are geographically far from Bangladesh. Now it is high time for Bangladesh to concentrate on bilateral trade with regional countries like India, Pakistan, and China. Bangladeshi export basket is highly concentrated on particular product like garments which is not good for the economy. Government has to take initiative to overcome the drawbacks of trade sector and take the opportunity to boost up the economy. Especially in the case of India, trade gap is very disappointing. Bangladesh is exporting a huge amount of goods to USA, which is relatively a lot farther, but in the case of India the amount is way below than expectation. So it can be said that we have failed to take the advantages of geographical location. Export growth is higher only because of particular garment sector and we know that buyers are geographically far away from Bangladesh.

SHORTCOMINGS AND FUTURE SCOPE OF THE STUDY

It is unusual to infer any particular assumption from this analysis because we are working with only one year and 46 trade partners. The panel analysis is would be more acceptable but the problem with panel is it removes the fixed effect of some variables like distance and time. This study opens an opportunity of further working on distance analysis of Bangladeshi export. Any country struggling with enhancement of trade volume can find in which region it needs to export.

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ANNEXURE

The regression result

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. reg lnlexportusd lngdp_d lnpop_d Indistw D_saarc D_asean contig comcol tdiff distwsq
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Source	SS	df	MS		Number of obs = 43	
-----+-----					F(9, 33) = 13.29	
Model	251.299652	9	27.9221835		Prob > F = 0.0000	
Residual	69.3231305	33	2.10070092		R-squared = 0.7838	
-----+-----					Adj R-squared = 0.7248	
Total	320.622782	42	7.63387577		Root MSE = 1.4494	

lnlexportusd	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
-----+-----						
lngdp_d	.9172902	.2078529	4.41	0.000	.4944103	1.34017
lnpop_d	.2446662	.1975893	1.24	0.224	-.1573323	.6466646
Indistw	.2538577	.7020459	0.36	0.720	-1.174465	1.682181
D_saarc	-.166085	1.111374	-0.15	0.882	-2.427192	2.095022
D_asean	.0064269	.8402186	0.01	0.994	-1.703011	1.715864
contig	-.6177795	1.885536	-0.33	0.745	-4.453931	3.218372
comcol	1.141382	.6308998	1.81	0.080	-.1421934	2.424957
tdiff	.3581967	.2460817	1.46	0.155	-.1424603	.8588538
distwsq	-2.32e-08	8.40e-09	-2.76	0.009	-4.02e-08	-6.06e-09
_cons	-11.2334	5.869924	-1.91	0.064	-23.17585	.7090493
