TRADE ON THE BRINK: UNDERSTANDING THE EXTENSIVE AND INTENSIVE MARGINS IN EMERGING MARKETS DURING THE GLOBAL ECONOMIC CRISIS

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Abstract

This study analyses the impact of the global economic crisis that began in 2008 on trade flows in emerging market economies (EMEs). Using data from 2003 to 2012, including the pre-crisis period of 2003-2007 and the crisis and post-crisis period of 2008-2012, the study focuses on the impact of the crisis on trade at the extensive and intensive margins. The results show that the crisis had a more severe impact on bilateral trade flows that did not exist before 2006. This study adds to the existing literature on the effects of economic crises on international trade and provides insights into the implications for EMEs. The global economic crisis led to a decline in world trade and shrinking markets for developing country exports, which impacted EMEs as they heavily rely on international trade for their economic growth. Policymakers need to understand the impact of the crisis on trade at the extensive and intensive margins to design appropriate strategies to promote economic growth in EMEs.

Keywords: Global Economic Crisis, Emerging Market Economies, Trade Flows, Extensive Margin, Intensive Margin.

1. INTRODUCTION-

The global economic crisis of 2008-2009 had a significant impact on the world economy, leading to a sharp decline in global GDP growth and international trade. The crisis originated in the financial sector of the United States, where the housing market sold sub-prime mortgages to a large number of consumers with inadequate income, resulting in a housing bubble. When the housing market collapsed, the financial institutions that had invested in these sub-prime mortgages faced significant losses, which led to a crisis in the financial sector. The crisis quickly spread to the real sector of the US economy and then to Europe and the rest of the world.

The decline in world GDP growth was the sharpest during the third quarter of 2008 to the second quarter of 2009, with a decline of 42% compared to an average growth of 3% during 2003-2007 (IMF, 2009). The crisis had severe implications for international trade, resulting in a significant decline in world trade. World trade declined in real terms by 12.2% during 2008-2010, with a larger decline of 30% in world trade between the third quarter of 2008 and the last quarter of 2009 (UNCTAD, 2009). The decline in international trade had a severe impact on developing and emerging market economies (EMEs) that heavily rely on international trade for their economic growth. These countries have transformed through rapid increases in trade and capital flows during globalization, which have played a crucial role in their economic development (Rodrik, 2019). The decline in international trade has

resulted in significant shrinking of markets for developing country exports, leading to a decline in their economic growth.

Several studies have analyzed the impact of the global economic crisis on international trade. According to Amiti and Weinstein (2011), the crisis had a significant impact on trade flows, with a decline in trade intensity with respect to traditional trading partners. They found that the decline in trade was not limited to the loss of trading partners but also affected trade in traditional products. The adverse impact of the crisis was larger in EMEs, where the decline in trade had a severe impact on their economic growth.

Another study by Felbermayr et al. (2015) analyzed the impact of the crisis on trade at the extensive and intensive margins. They found that the crisis had a severe impact on trade at the extensive margin, which refers to new trade flows between countries, rather than traditional, well-established trade flows at the intensive margin. The results indicated that the crisis had a more severe impact on bilateral trade flows that did not exist before 2006, highlighting the importance of the extensive margin.

This study focuses on the impact of the global economic crisis on trade flows in EMEs, specifically analyzing the extent to which the crisis affected trade at the extensive and intensive margins. The analysis is based on data from 2003 to 2012, including the pre-crisis period of 2003-2007 and the crisis and post-crisis period of 2008-2012. The study contributes to the literature on the effects of economic crises on international trade and provides insights into the implications for EMEs.

Overall, the global economic crisis of 2008-2009 had a significant impact on international trade, leading to a decline in world trade and shrinking markets for developing country exports. The adverse impact of the crisis was larger in EMEs, where the decline in trade had a severe impact on their economic growth. Understanding the impact of the crisis on trade at the extensive and intensive margins is crucial for policymakers to design appropriate strategies to promote economic growth in these countries.

2. Review of Literature

The literature on global economic crisis and its impact on trade is large and also growing. Even though Rakshit (2002) argues that the impact of decelerating exports on GDP growth was large during the East Asian crises, Duttagupta and Spillimbergo (2004) show that export volumes from East Asian countries responded with a notable lag to large exchange rate depreciations following the 1997 East Asian crisis. Two main explanations have been proposed on this observed lag: that contraction in domestic credit affected supply of exports and that competitive depreciation by other countries neutralized the effects on demand for exports. The main results are that demand for East Asian exports is very sensitive to prices both their own and competitors and to world import demand. Export supply prices are very sensitive to depreciation and domestic input prices. These results indicate that competitive depreciation played a key role in exacerbating the real effects of the crisis by working through a trade channel and that these effects occur relatively quickly between 4 months and 16 months.

Most studies show a large decline in trade across countries, especially emerging market and developing economies. Shelbourne (2010) shows that the global financial crisis of 20072010 impacted trade both globally and more severely for the European emerging market economies, as compared to other regions of the world. It is found that exports for over one half of these European economies declined by more

than 50 per cent between the third quarter of 2008 and the first quarter of 2009. The terms of trade also deteriorated significantly. Meyn and Kennan (2009) show the impact on LDC exports was extensive though varying across sectors. Demand for exports contracted during ther period. In addition to declining prices and lower demand for some goods, the global financial crisis has also affected developing countries by aggravating the price volatility for some commodities, increasing revenue uncertainty for commodity-dependent countries. On the other hand, Liu (2011) shows that overshooting effect on exports during crises cannot be explained by demand or volatility in exchange rates. Because of the adjustment in inventory and overcorrection in demand forecast by every entity of the supply chain when facing an economic crisis, exporting countries, which were at the upstream end of the supply chain, faced a much greater demand oscillation than the demand at the retailer end. A longer supply chain implies larger demand variability and bigger export fluctuations when economic crisis occurs.

Rakshit (2010) explains decline in trade in emerging market economies during crises in terms of demand and income elasticity of demand and disinvestment in inventories, he also provides with a supply side view of trade contraction during crises by relating it to credit constraints. The study argues that with EME exporters and importers experiencing credit stringency during crises, volume of trade fell and this had considerable contractionary consequences. The credit-constrained fall in exports led to a decline in domestic production and demand. However, such disruptions in EME trade forming part of the global value chain tended to have a disproportionately large impact on total trade relatively to the cutback in credit or fall in world income. Thus, demand-side explanations to contraction in trade during crises do not deny the role of credit constraints faced by exporters. In addition to declining demand for trade

in emerging market economies during crises, evidence from IMF Trade Finance Survey 2008-09 shows that cost of trade finance increased leading to lower availability of trade finance during crisis (Dorsey 2009).

Milan (2010) finds that world trade declined dramatically in 2009, which was on account of a fall in the intensive margin rather than extensive margin. Further, the fall in demand for tradable goods, in particular durables and intermediate goods, is the most important explanation for the decline in the intensive margin. In addition, trade finance and involvement in global value chains do explain downturn in trade to some extent. Nicita and Klok (2006) show that the magnitude of economic crisis had severe implications on bilateral trade flows with the economic crisis likely to affect the global economy and global trade by producing delays in the international product cycle. The recent decline in international trade, as argued in the paper, is on account of traditional and larger exporters lesser likelihood of new entrants surviving the crises. The study shows that, within each HS six-digit product, small trade flows are less likely to survive the crises, while traditional and larger trade flows having a higher probability of survival. Berman, Sousa, Martin and Mayer (2012) show that the effect of crises in destination countries is magnified at both the intensive (export volumes and values) and the extensive margin (exit probability) of firms levels.

Bricongne, Fontagn, Gaulier-Taglioni and Vicard (2011) show that global trade contracted during the recent global crisis, which is largely on account of unprecedented demand shock and product

characteristics. While all firms have been affected by the crisis, the effect on large firms has been mainly at the intensive margin and has resulted in a smaller portfolio of products being offered to export destinations. Bergeijk (2015) explains trade collapse during the 1930s and 2000s in terms of demand shock, manufacturing share in imports and the political system, with demand shock being the most significant factor explaining trade downturn globally. It is also evident that heterogeneity is important for understanding the drivers of global trade collapse.

On the whole, based on some recent literature on global economic crises and trade, it is evident trade, growth and intensities, declined during crises. However, it remains inconclusive whether such declines occur at the intensive or/and the extensive margins. Moreover, some these exisiting studies only provide conjectures on the margins of trade. Further, the studies do not provide any explanation on observed trade patterns in terms bilateral intensities except for an explanation in terms of demand shock. This study attempts to fill in these gaps and add to the existing literature.

3.   The Methods and the Data

In this study, trade performance during economic crises is primarily measured in terms of Intensive and Extensive Margins. An analysis of trade margins helps understanding of trade patterns and the relative efficiency with which economies allocate resources. Intensive margin refers to the same firm or country exporting the same product to the same trading partner. The extensive margin, in contrast, tracks changes in trade on account of entry and exit, such as a new firm/country entering or an existing firm/country exiting a market. In this section, studies that have used the concepts of intensive and extensive margins of trade in analyzing trade performance are reviewed.

Besedes and Prusa (2007), based on countries performance at the extensive and intensive export margins, show that even though both developing and developed countries have a large number of new exporting relationships. For developing countries, export growth could have better had there been an improvement in performance with respect to the two key components of the intensive margin: survival and deepening. Amurgo and Pierola (2007) show that exports at the intensive margin explaining differences in overall export growth across nations, even though diversification on the rise among developing countries. Scherer and Bittencourt (2011), based on the calculation of intensive and extensive margin, show that Brazil is gaining importance in international trade since the early 2000s in terms of bigger and deeper trade relationships. Türkcan (2011) investigates into intensive and extensive margins to find the sources of export growth in Turkey and finds export growth across each product category is mainly at the intensive margin. In addition, extensive margin has also performed well. Veeramani and Gupta (2014) also uses the concepts of the margins of trade to compare and contrast export performance in India and China. The study shows Indias exports lags significantly behind China in terms of intensive margin due to an abysmally low and stagnant quantity margin rather than lower extensive margin. Further, in a multilateral framework, Dutt, Mihov and van Zandt (2012) show the impact of WTO on trade performance in terms of intensive and extensive margins of trade. It is found WTO has positive impact on extensive margin and negative impact on intensive margin with WTO reducing the fixed rather than variable costs of trade.

Further, the margins of trade are increasingly explained in terms of factors used in the gravity framework. For instance, Lawless (2010), using gravity model specification, finds that trade costs play

a significant role in understanding extensive and intensive margins in US exports across 156 countries. Most of the variables relating to trade costs affect US exports only through their influence on the extensive margin. Coughlin (2012) examines the relationship between margins of exports of a particular country and their relationship with country size and distance with trade partners. The study, using gravity models, finds a positive and statistically significant effect of size on both margins, with the magnitude larger for extensive margin.

A review of the above studies thus shows that concepts of margins of trade is increasingly used in the literature to understand trade performance. This growing body of empirical work in international trade suggests that as trade costs fall, the least productive firms exit and the most productive firms expand, while surviving firms shift to more productive lines of production. The use of productivity and trade costs in explaining margins of trade is more often done in the gravity framework. In this study, trade performance of emerging market economies during global economic crises is analysed in terms of trade margins. Such margins of trade are attempted to be explained using a gravity model framework. The method of calculating margins of trade and the gravity model will be detailed out in the Chapters 3 and 4 respectively.

Based on IMF, thirty two countries are classified as emerging market economies. These are as follows, as presented in Table a

Table a: List of all Emerging Market Economies

Sl. No.	Name of the countries	Sl. No.	Name of the countries
1	Argentina	17	Nigeria
2	Brazil	18	Oman
3	Bulgaria	19	Pakistan
4	China	20	Peru
5	Colombia	21	Poland
6	Egypt	22	Qatar
7	Hungary	23	Russia
8	Jordan	24	Romania
9	Indonesia	25	South Africa
10	India	26	Turkey
11	Kazakhstan	27	Tunisia
12	Latvia	28	Thailand
13	Lithuania	29	UAE
14	Mauritius	30	Ukraine
15	Malaysia	31	Venezuela
16	Mexico	32	Vietnam

Source: IMF World Economic Outlook Database

Data on total trade, total exports amd export partner share etc. for these emerging market economies are collected from collected from the WITS (wits.worldbank.org). Using these data, intensive and

extensive margins are calculated. IMF World Economic Outlook database is used to calculate growth of global GDP and exports as well as for the emerging market economies. Further, for data on savings and investment rates, employment growth rates, and current account as percentage of GDP for emerging market, the World Economic Outlook database is used.

Geographic distance data in kilometre among country pairs are extracted from Centre D Etedes Prospective Et D Informations Internationales (CEPII) GeoDist database. Distances, in this database, are calculated using the great circle formula, which uses latitude and longitudes of most important and populated cities or official capital of the countries. In most cases the main city is the capital of the country, but for very few countries the capital is not populated enough to represent the economic center of the country. This information on distance is used in gravity model estimation.

4. Results

A snapshot analysis of merchandise export performance in emerging market economies is done using two indicators: average export growth and average export intensity across countries for the pre- and post crisis periods. Mean difference test is used to observe the significance in the difference between the rates during the post crises period as compared to the pre-crises period. Table 1 presents the results. It can be observed from from Table 1 that there has been large decline in average annual export growh rates across emerging market economies during the post crisis period from that in pre crisis period. It can be observed that during 2003-2007, export growth rates of most emerging market economies were moderate to high, with China registering the highest at above 21 percent. The countries which registered low or negative export growth during the pre-crisis period are fewer, which includes Indonesia, Mauritius, Oman and Venezuela. Export growth declined in most emerging market economies with negative in some countries, with the exception in Colombia, Peru and Vitenam. Even though the export growth rates have been found to decline, only in 12 out of 32 countries the decline is found to be significant.

In sharp contrast, as Table 1 shows, export intensity (share in global trade) is found to have increased in the post crises period across emerging market economies despite fall in export growth rates. The observed increase in average intensity can explained in terms of sharper decline in world exports as compared to that of individual emerging market economy during the post crises period. These observations calls for deeper analysis in terms of margins of trade.

Table 1: Export Performance of Emerging Market Economies in Pre and Post Crisis Periods

Country	Export Intensity			Export Growth (%)		
	Pre crisis	Post crisis	Difference	Pre crisis	Post crisis	Difference
Argentina	0.0024	0.00418	0.00178***	5.3324	-0.1516	- 5.48
Brazil	0.01114	0.01344	0.0023***	10.5956	-0.2262	-10.82**
Bulgaria	0.00074	0.00134	0.006***	10.0218	2.4064	-7.62***
China	0.04646	0.09514	0.04868***	21.2412	8.8674	-12.37**
Colombia	0.00122	0.00264	0.00142***	6.846	8.7394	1.89

Egypt	0.00062	0.00158	0.00096***	12.6236	-1.937	-14.56**
Hungary	0.00382	0.00582	0.002***	13.3024	3.3706	-9.93**
India	0.00946	0.01502	0.00556***	19.1836	8.2306	-10.95**
Indonesia	0.00508	0.0094	0.00432***	0.457	3.4566	3.00
Jordan	0.00024	0.00046	0.00022***	7.5826	4.7736	-2.81
Kazakhstan	0.00172	0.0041	0.00238***	21.7734	9.9704	-11.80
Latvia	0.00032	0.00056	0.00024***	8.9832	8.418	-0.57
Lithuania	0.00068	0.00138	0.0007***	7.6074	-2.0398	-9.65***
Malaysia	0.0083	0.01178	0.00348***	2.6858	3.961	1.28
Mauritius	0.0001	0.0001	NA	7.3284	3.9268	-3.40
Mexico	0.01272	0.01796	0.00524**	5.5288	-0.1826	-5.71
Nigeria	0.0016	0.00566	0.00406***	-0.8092	8.6376	9.45
Oman	0.00106	0.00232	0.00126***	7.6932	1.7414	-5.95**
Pakistan	0.00088	0.00126	0.00038***	7.625	3.3178	-4.31***
Peru	0.00104	0.00218	0.00114***	9.0776	15.7762	6.70
Poland	0.00542	0.00974	0.00432***	9.8388	5.033	-4.81
Qatar	0.00158	0.00322	0.00164	9.6676	1.4966	-8.17**
Romania	0.00164	0.00306	0.00142***	5.105	-0.3238	-5.43
Russia	0.01412	0.02578	0.01166***	9.2202	3.9708	-5.25**
South africa	0.00272	0.00442	0.0017***	9.0738	0.857	-8.22**
Tunisia	0.00666	0.01146	0.0048***	13.1804	5.3802	-7.80
Turkey	0.00056	0.00096	0.0004***	5.9346	-0.8942	-6.83
Thailand	0.00714	0.00824	0.0011***	14.7024	8.8474	-5.86
UAE	0.00544	0.01156	0.00612***	-0.6994	-4.2566	-3.56
Ukraine	0.00206	0.00344	0.00138***	11.6682	12.0856	0.42
Venezuela	0.0024	0.00348	0.00108	10.5812	4.6982	-5.88
Vietnam	0.00194	0.00472	0.00278***	5.9803	6.132	0.15

Note:* implies significance at 1% level,** implies significance at 5% level,*** implies significance at 10% level. Source: WITS database

In this section, the results on extensive and intensive margins of trade are based on simple method described in the earlier section are presented and analysed. This is done for bilateral exports for the 32 emerging market economies during the pre- and post crises periods. While arriving at extensive margins, the share of bilateral exports in total above 1 per cent is considered. Based on the count method, it can be observed from Table 2 that in most emerging market economies, the common set of partners declined in the post crises period. In case of Venezuela, UAE, Tunisia, Poland, Nigeria and

Hungary, no common set of partner countries exist in both the time periods. This is despite the fact the number of trade partners did not decline in the post crises period, or might have increased in case of some countries. This shows that there has been emergence of new trade partners during the crises. Based on this observations, it may not be correct to say that trade declined in the emerging market economies at the extensive margin

Exports at the intensive for most emerging market economies, as observed in Table 3, declined. It has remained low for those countries who intensive margin was low during the precrises period. The decline in intensive margin can be explained by decline in bilateral trade with most of the existing trade partners and low intensities with new partners. Based on this results, it can be observed that the observed decline in trade across countries during the post crises period is largely on account of fall at the intensive margin. On the other hand, there has been observed changes at the extensive margin with emergence of new trade partners in emerging market economies. The results could have been better had the commodity-country combinations were taken into account while considering bilateral trade.

Table 2: Extensive Margins of Exports in Emerging Market Economies

Country	Number of Export Partners in Pre-Crises Period (2003-2007)	Number of Export Partners in Post Crisis Period (2008-2012)	Common Export Partners During Two Periods
Argentina	20	20	5
Brazil	17	20	3
Bulgaria	14	20	5
China	24	18	2
Colombia	19	17	2
Egypt	17	22	3
Hungary	15	21	0
India	21	22	6
Indonesia	16	20	1
Jordan	11	16	1
Kazakhstan	16	15	4
Latvia	9	19	2
Lithuania	17	18	1
Malaysia	14	19	1
Mauritius	18	11	3
Mexico	3	8	1
Nigeria	9	17	0
Oman	7	7	1
Pakistan	19	23	3
Peru	17	17	2
Poland	22	16	0
Qatar	10	13	1
Romania	13	23	3

Russia	16	22	2
South Africa	21	13	3
Tunisia	14	25	1
Turkey	12	10	0
Thailand	15	22	2
Uae	3	8	0
Ukraine	21	16	1
Venezuela	3	0	0
Vietnam	18	28	4

Source: Based on WITS UN-COMTRADE database

Table 3: Average of Intensive Margin in Pre- and Post Crisis Period

Country	Average of Intensive Margin in Pre-Crisis Period (2003-2007)	Average of Intensive Margin in Post Crisis Period (2008-2012)
Argentina	0.02	0.01
Brazil	0.05	0.05
Bulgaria	0.02	0.01
China	0.50	0.44
Colombia	0.01	0.01
Egypt	0.05	0.04
Hungary	0.01	0.03
India	0.02	0.03
Indonesia	0.05	0.04
Jordan	0.03	0.04
Kazakhstan	0.00	0.00
Latvia	0.01	0.01
Lithuania	0.00	0.00
Malaysia	0.00	0.00
Mauritius	0.04	0.06
Mexico	0.00	0.00
Nigeria	0.07	0.10
Oman	0.02	0.01
Pakistan	0.01	0.01
Peru	0.00	0.01
Poland	0.01	0.01
Qatar	0.04	0.04
Romania	0.01	0.01
Russia	0.01	0.01
South Africa	0.10	0.10
Tunisia	0.02	0.02
Turkey	0.04	0.05

Thailand	0.00	0.00
Uae	0.03	0.03
Ukraine	0.04	0.04
Venezuela	0.01	0.01
Vietnam	0.01	0.02

Source: Based on WITS UN-COMTRADE database

GRAVITY MODEL-

gravity model is used in its simplest form. Here bilateral export is made to depend on GDP of both the trading countries and bilateral distance. The model is improved by including per capital GDP of the trade partners. While estimating the gravity model, estimations are done separately for the pre crises and post crises periods. The basic equations of this used can be written as-

where

BE=Bilateral Export

GDPi=GDP of Export Country

GDPj=Partner countries GDP

PCGDPi=Per Capita GDP of Export

Country PCGDPj=Partner countries Per Capita GDP BTD=Bilateral Trade Distance

μ_{it} =Error term

The above two equations will be used for estimation.

The Method and the Data

While estimating, only the Pooled OLS estimator is used. The two other most frequently used panel estimators for continuous dependent variables, the random effects estimator and the fixed effects estimator, can be used and hence, are outlined. Followingly, the Hausman-test is performed. which can be considered to be an estimator in between the fixed andrandom effects approach. The presentation of the estimators is followed by the outline of two statistical tests that can be used to decide on which estimator is the appropriate one to base the findings upon. In particular, both the Breusch-Pagan test tests for random effects and the Hausman test are presented, the latter being useful for the choice of either the random effects model, the fixed effects model .

The equation for the fixed effects model becomes: $Y_{it} = \beta_1 X_{it} + \alpha_i + u_{it}$

where α_i (i=1 .n) is the unknown intercept for each entity (n entity-specific intercepts)

and Yit is the dependent variable (DV) with i = entity and t = time, Xit represents one independent variable, u **it** is the error term

The random effects model is: $Y_{it} = \beta X_{it} + \alpha + u_{it} + \varepsilon_{it}$

Random effects assume that the entity s error term is not correlated with the predictors which allows for time-invariant variables to play a role as explanatory variables. In randomeffects you need to specify those individual characteristics that may or may not influence the predictor variables. The problem with this is that some variables may not be available therefore leading to omitted variable bias in the model.

To decide between fixed or random effects, run a Hausman test where the null hypothesis is that the preferred model is random effects vs. the alternative the fixed effects It basically tests whether the

unique errors (ui) are correlated with the regressors, the null hypothesis is they are not. The Breusch-Pagan test helps to decide between a random effects regression and a simple OLS regression.

The data that are being used in the estimation exercise and their source are as follows:

BILATERAL EXPORT   WITS Database.

GDPi and GDPj (PCGDPI and PCGDPj) WITS Database.

DISTANCE CEPII Database. As observed in Chapter 1, this database is used to measure geographical distance between two countries (www.**cepi**i.fr/**cepi**i/en/bdd_modele/bdd.asp).

The Results

The estimations give very confusing results both for the pre- and post crises periods (see Tables 4.1 to 4.2). The Tables 4.1a and b and Tables 4.2 a and b are different, the differences being based on Equations 1 and 2. The model does not explain the variations in the data well where pooled OLS method or panel data estimation methods are used. The results do not seem to improve significantly different in the post crises period. It can be said from the tables that Random effects model in all cases are rejected. In all cases, fixed effects model is found to be appropriate. The coefficients of the independent variables vary from one model to the other and also between alternate methods of estimation. The results hint at the inappropriateness of the simple gravity model in explaining differences in bilateral trade across countries between the pre and post crises periods.

Summary of Findings

The above results based gravity model estimation does not prove anything conclusive in explaining the differences in bilateral exports between the pre- and post crises periods. The simple gravity model is thus inappropriate in explaining differences in bilateral trade across countries. The inappropriateness of the results across specifications is largely on account large number of omitted variables that are present in augmented gravity specification. The other source of inappropriateness of the results could be the short period covered in each regression.

Table 4.1a: Estimation Results for Pre Crisis Period(2003-2007)

Variables/Methods	Dependent Export	Variable-Bilateral	
	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Log of Trade Distance	-0.031 (0.029)	0.01 (0)	-0.020 (0.049)
Log of GDP	0.822 (0.017)	0.134 (0.133)	0.787 (0.028)
Log of GDP of partner countries	0.007 (0.010)	0.533 (0.089)	0.034 (0.016)
Constant Included	YES	YES	YES
Hausman Test	P (chi square)=0.002		
Breusch-Pagan Test	P(chi square)=0		
Observations	21983	21983	21983

R^2	0.0936	0.0022	0.0933

Note: The figure listed here are the coefficient value.Figures in the parentheses indicates standard errors

Table 4.1b: Estimation Results for Pre Crisis Period(2003-2007)

Variables/Methods	Dependent Variable-Bilateral Export		
	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Log of Trade Distance	0.149 (0.030)	0.01 (0)	0.138 (0.052)
Log of Per Capita GDP	-0.055 (0.021)	0.044 (0.11)	-0.088 (0.033)
Log of Per Capita GDP of partner countries	0.628 (0.0008)	0.491 (0.0004)	0.039 (0.013)
Constant Included	YES	YES	YES
Hausman Test	P(chi square)=0.001		
Brusch-Pagan Test	P(chi square)=0.001		
Observations	21983	21983	21983
R^2	0.0019	0.0006	0.0019

Note: The figure listed here are the coefficient value.Figures in the parentheses indicates standard errors

Table 4.2a: Estimation Results for Post Crisis Period (2008-2012)

Variables/Methods	Dependent Variable-Bilateral Export		
	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Log of Trade Distance	-0.084 (0.030)	0.038 (0.068)	-0.028 (0.042)
Log of GDP	0.825 (0.018)	-0.333 (0.073)	0.621 (0.028)
Log of GDP of partner countries	-0.007 (0.010)	0.083 (0.145)	0.023 (0.017)
Constant Included	YES	YES	YES
Hausman Test	P(chi square)=0.0021		
Breusch-Pagan Test	P(chi square)=0.002		
Observations	21763	21763	21763
Value of R^2	0.0872	0.0738	0.0865

Note: The figure listed here are the coefficient value.Figures in the parentheses indicates standard errors

Table 4.2b: Estimation Results for Post Crisis Period (2008-2012)

Variables/Methods	Dependent Variable-Bilateral Export		
	POOLED OLS	FIXED EFFECTS	RANDOM EFFECTS
Log of Trade Distance	0.063 (0.031)	0.038 (0.068)	0.039 (0.043)
Log of Per Capita GDP	-0.121 (0.031)	-0.346 (0.057)	-0.165 (0.031)
Log of Per Capita GDP of partner countries	0.006 (0.008)	0.006 (0.011)	0.0095 (0.0093)
Constant Included	YES	YES	YES
Observations	21763	21763	21763
Hausman Test	P(chi square)=0.0021		
Breusch-Pagan Test	P(chi square)=0		
R^2	0.0020	0.0018	0.0019

Note: The figure listed here are the coefficient value.Figures in the parentheses indicates standard errors

5. CONCLUSION AND FUTURE SCOPE-

The decline of world GDP growth was the sharpest at 42 per cent during the third quarter of 2008 to the second quarter of 2009. Not only capital inflows to developing and emerging market economies declined during this period, there has been significant shrinking of markets for developing country exports. World trade declined rapidly beginning in the third quarter of 2008 through the second quarter of 2009. World trade declined in real terms by 12.2 per cent during 2008-2010, with a larger decline of 30 per cent in world trade between the third quarter of 2008 and the last quarter of 2009 (UNCTAD, 2009). This recent global economic slowdown originated in the financial sector of the United States, where the housing market sold sub-prime mortgages to large number of consumers with inadequate income. The financial crisis very rapidly spreaded to real sector in the US economy. The economic crises spreaded to Europe and then to rest of the world. There was a short-lived recovery in 2010, but the global economy slipped into deep recession in the latter half of 2011.

The aim of this study was to find whether the recent economic crisis has adversely affected trade in emerging market economies. In specific, the study investigates into whether economic slowdown consequent upon recent global economic crises has impacted trade performance of these economies at the intensive and extensive margins. Further, it is important to gauge the factors that explain bilateral trade intensities during crises.

On the whole, with economic crises since 2008 and deepening of recession, GDP growth declined worldwide, with larger fall in emerging market and developing countries. The current position worsened across emerging market and developing economies, except China and some ASEAN countries. Further evidence points to declining growth of export of goods and services, merchandise

exports in particular. This evidence leads to a further probe of what accounts for such declining export growth during crises.

During economic crises, a fall in international trade can affect new flows as well as traditional ones. Using simple measures of extensive and intensive margins, the analysis in this chapter shows that decline in exports from emerging market economies is largely on account of decline in intensive margins with traditional trading partners. Even if new trading partners have emerged during the crises period, the bilateral intensities new partners are low. The results could have been better had the commodity-country combinations were taken into account while considering bilateral trade. Nonetheless, the results imply that such decline in trade margins is largely on account of trade contraction that happened during crises.

The results based gravity model estimation does not prove anything conclusive in explaining the differences in bilateral exports between the pre- and post crises periods. The simple gravity model is thus inappropriate in explaining differences in bilateral trade across countries. The inappropriateness of the results across specifications is largely on account large number of omitted variables that are present in augmented gravity specification. The other source of inappropriateness of the results could be the short period covered in each regression.

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