

# Export Performance of Emerging Market Economy during Global Crisis Period

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## **Abstract -**

*In terms of economic development, it makes a difference whether export increases at the extensive (new trade flows) or intensive margin (traditional, well-established trade flows). Global Economic Crisis, starting from US, then Europe, really started to showing its effect on 2008. Not only the GDP declines, but also world trade declines rapidly. There are two types of trade margins- 1) Extensive and 2) Intensive. This paper seeks to determine whether the recent decline in international trade has affected relatively more trade at the extensive margin or at the intensive margin. Time period is 2003-2012, from these, 2003-2007 is the pre crisis period and 2008-2012 is the crisis and post crisis period. The overall results indicate that the economic crisis of 2008 and 2009 has had more severe implications for those bilateral trade flows that did not exist before 2006. The analysis is done for Emerging Market Economies as EMEs are fastest growing economy.*

**JEL CLASSIFICATIONS-C1,F1.**

**Keywords: - Crisis, Intensive Margin, Extensive Margin, Bilateral Trade, Emerging Market Economy**

## **1. Introduction**

The world economy started slowing down since the third quarter of 2008 leading to an economic crises worldwide. GDP declined from an average growth of 3 per cent during 2003-2007 to 1.5 per cent during 2008-2012. 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.

During the crises since 2008, there is a change in trade pattern as well. While it is important to understand that there might have been loss of trading partners, trade intensity with respect to traditional trading partner fell substantially as well. Further, trade in new products might have been adversely affected during crises, trade in traditional products, even though survived, could have declined. The

adverse impact of crises could have been larger in Emerging Market Economies (EMEs), who have transformed through rapid increase in trade and capital flows during globalization. This dissertation investigates into the extent to which the recent global economic crises has impacted on trade in emerging market economies. The issues relating to global economic crises and its impact on emerging market economies trade can be arrived at from a review of the existing literature.

## **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,

Duttgupta 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 2007-2010 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 their 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 existing 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 India's exports lag 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 and export partner share etc. for these emerging market economies are collected from collected from the WITS ([wits.worldbank.org](http://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.

#### 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-crisis period. Table 3 presents the results. It can be observed from from Table 3 that there has been large decline in average annual export growth 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 observation, 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 pre-crisis 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-Crisis 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

## 5. Conclusion

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

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