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SHORT NOTE

Exports Performance of Pakistan: A Constant Market Share Analysis

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1. Introduction

The Economic literature that mostly emerged after the East Asian Crisis of 1997-98 well established the fact that exports are one of the important drivers of sustainable economic growth for a country.[2] The primary reason for most of the emerging economies to consistently face balance of payments problem is the lack of enhancement or failure to grow their exports in comparison to imports. Pakistan, being a small open emerging economy, also faces such challenges while managing its external sector performance. To address these challenges overtime, the authorities put in placed incentives based policies to promote exports along with a move to market based exchange rate mechanism.[3]

However, over the last two decades, Pakistan's exports performance is consider as dismal when compared to that of its immediate neighboring economies, such as Bangladesh. Therefore, the aim of this study is to identify the underlying factors responsible for such dismal performance of Pakistan's exports by using the Constant Market Share (CMS) analysis.[4] The CMS analysis was first suggested by Tyszynski (1951) and was refined by Leamer and Stern (1970), Richardson (1971), Fagerberg and Sollie (1987), and Kapur (1991).

The CMS analysis essentially decomposes growth of actual exports during a specified period into four parts, viz. the world trade effect, the commodity composition effect, the market diversification effect (referred in the literature as market distribution effect), and a residual. Like any other methodology, the CMS analysis also carries some merits and demerits. While the obvious advantage is the decomposition of exports to indentify the underlying factor responsible for growth, the main disadvantage of the CMS analysis is that its rests on the assumption that a country's export share in the world market remains constant overtime.[5]

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[2] For example, see Weiss (2005), Tingvall and Ljungwall (2012) and Subasat (2002)
[3] This included export refinance and credit guarantee scheme, duty-free imports of machinery for textile industry, etc.
[4] This study only deals with the developments in merchandize exports.
[5] At times, it is also sensitive to the choice of base period and level of disaggregation in commodities and markets.

Previously, Hussain (1974), Mahmood (1981) and Mahmood and Akhtar (1996) have used CMS analysis to evaluate Pakistan's export performance. While the former two studies covered the period 1960-68 and 1972-76, the latter study covered the period 1984-93, respectively. Since then, particularly during 2000s, Pakistan's trade regime has become more liberalized, and also become more prone to external developments besides the internal ones.[6] Therefore, the CMS analysis of exports for the recent decade can provide useful insights for policy debate.

The rest of the paper is organized as follows. Section 2 briefly discusses some of the stylized facts about export performance of Pakistan and compares that with exports performance of Bangladesh. Section 3 describes the data and methodology behind the CMS analysis. Section 4 discusses the findings from the CMS analysis for Pakistan and Bangladesh. Section 5 makes the concluding remarks.

2. Exports performance of Pakistan and Bangladesh: stylized facts

Pakistan and Bangladesh, both South Asian economies have a population of around 170-190 million as per estimates for 2013. According to latest World Economic Outlook (WEO), per capita income of Pakistan was US$1275 compared to that of Bangladesh's US$1033 in 2013. On average, Pakistan's economy grew by 4.5 percent in the last ten years vis-a-vis 6.2 percent in case of Bangladesh. On account of trade, Bangladesh's merchandize trade-to-GDP ratio has reached to 54 percent in 2013 compared to 31 percent for Pakistan, according to World Development Indicators (WDI). To illustrate further, following are brief stylized facts related to the performance of both countries, specifically in the context of exports;

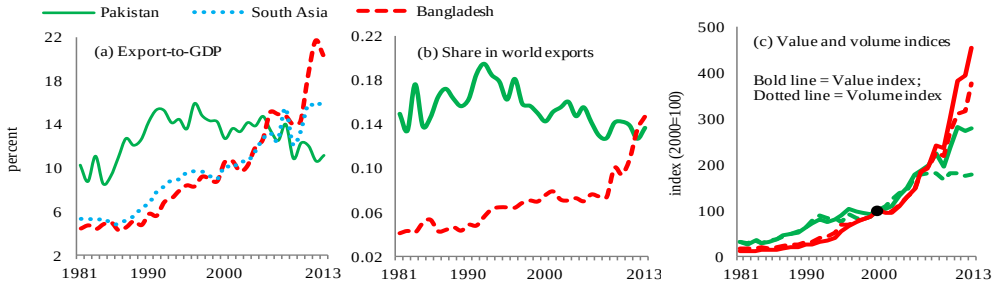
- On average, Pakistan's exports grew by just 8.0 percent compared to 12.0 percent growth of Bangladesh exports during the last three decades. Moreover, the latest statistics reveal that per capita exports of Pakistan stands at US$136 in 2013 compared to US$175 in case of Bangladesh. In value terms, Bangladesh exports more than Pakistan according to latest numbers.
- During the last three decades, the average share of exports in Pakistan's output had remained stagnant, while of Bangladesh's increased by 4 times or 360 percent (Figure 1a). Analyzing in different way, in 2013, Pakistan's merchandize exports stood at 11.0 percent of GDP, which is depicting a net drop of 2.0 percent compared to median ratio in last three decades. In absolute terms, this carries a loss of around US$5 billion. On the other hand, similar analysis for Bangladesh indicates a net gain of around US$15 billion up to 2013.
- The underperformance of Pakistan's export sector has kept its share in world exports unchanged during the last three decades. In contrast, Bangladesh has

[6] While emergence of global financial crisis of 2007-08, and afterwards sluggish recovery in global economy created challenges at the external front, the deteriorating law and order condition along with the escalating energy shortages caused domestic hurdles for healthy exports performance.

managed to increase its share in world exports from 0.04 percent in 1981 to 0.15 percent in 2013 (Figure 1b).

- During the last decade, growth in Pakistan exports in value terms is almost driven by price impact as the volume (or quantum) has remained unchanged. In Bangladesh's case, however, both price and volume impacts are driving the growth in exports in value terms (Figure 1c).
- According to the latest data available with International Trade Centre, a UN agency responsible for analyzing global trade activities, in terms of textile items, the major export of Pakistan and Bangladesh, Pakistan on average ranked 8 notches below that of Bangladesh in terms of specialization.

Figure 1: Exports Performance: Pakistan and Bangladesh



Source: UN Comtrade, author's calculations

3. Data and Methodology

Specifically, the following equation can be used to decompose the growth in exports for CMS analysis;

$$X^1 - X^0 = r\sum_i X_i^0 + \sum(r_i - r)X_i^0 + \sum_i\sum_j(r_{ij} - r_i)X_{ij}^0 + \sum_i\sum_j(X_{ij}^1 - X_{ij}^0 - r_{ij}X_{ij}^0) \quad \ldots\ldots \quad (1)$$

where;

X_{ij}^t = the value of country export of commodity i to market j at time t

r = the rate of growth of world exports

r_i = the rate of growth of world exports of commodity i

r_{ij} = the rate of growth of world exports of commodity i in market j

The first term in equation (1) is explained as 'the world trade effect,' which measures the impact of expanding global trade on selected country's exports. In an era of globalization, small open economy like Pakistan should have a large positive global trade effect. The second term in the equation is generally termed as 'the commodity composition effect,' which measures the contribution to country exports from individual commodities. A positive value indicates that country's merchandise exports are concentrated in products with higher than average growth rates and vice versa.

The third term in equation (1) is explained as 'the market distribution effect,' which reflects the contribution from export-partners' demand. A negative value indicates that the country's exports destined to countries where demand is slower than the global average growth and vice versa. The last term in the equation is generally interpreted as 'the residual,' which basically reflects the impact of other factors, including changes in relative prices, competitiveness effect, government policies, and non-price factors.

Using the CMS analysis to examine the export growth of Pakistan, sub sample period for 2004-13 has been used for this paper. As per UN Comtrade database, twenty four commodities according to 2-digits Harmonized System (HS) code have been chosen, which on average makes the 90 percent of Pakistan's merchandize exports during the sample period.[7] For the destination of exports, to keep the analysis simple by distinguishing between developed and emerging markets, four markets have been chosen. This includes EU-27, US, Japan and the rest of the world; comprises of mostly emerging markets.

For comparison purpose, exports growth of Bangladesh during 2004-2010 has also been analyzed, since its recent data is not yet available as per UN Comtrade format.[8] The choice of commodities is restricted to only five which almost makes 90 percent of Bangladesh's merchandize exports during the period under analysis. Moreover, similar destinations to that of Pakistan have also been used for Bangladesh's exports analysis.

4. Findings

The decomposition of exports for both Pakistan and Bangladesh during selected sub-sample periods is presented in Table 1 (next page). In case of Pakistan, it can be observed that in all selected periods, 'the world trade effect' found to be the dominating factor in driving the actual growth in exports in value terms. In fact, the overall impact of globalization in two periods found to be higher than the actual growth in exports. In other words, this trend highlights the weaknesses in domestic policies which couldn't able to capitalize the globalization effect more efficiently. Though contributed marginally, commodity composition effect suggests that in recent times, other than the major export items of Pakistan such as cotton and textile items, the all other exported products have higher growth rates than the average rates.

According to the market distribution effect, negative values in recent periods indicate the fact that 40 percent of Pakistan exports are concentrated in US and Euro area markets where demand growth was slower than the global average. The economies in these markets are consistently operating below their potential for half a decade. Importantly, the residual effect - capturing the impact of all other factors, including the changes in competitiveness - after remained negative in earlier periods turned to

[7] See annexure for details.
[8] As per UN Comtrade database, exports data for Bangladesh is available up to 2011.

positive in recent years. Since the real effective exchange rate (REER), an important indicator to measure the competiveness for exports, has remained appreciated during the whole sample period, the recent positive contribution hint towards the unprecedented increase in cotton prices by 170 percent in early 2011.[9]

Table 1: Decomposition Analysis of Exports: Pakistan and Bangladesh
value in million US$, share in percent

	2004-06		2007-10		2011-13	
	Value	**Share**	**Value**	**Share**	**Value**	**Share**
			Pakistan			
Change in exports (I+II+III+IV)	**5,003**	**100**	**4,480**	**100**	**3,708**	**100**
I. World trade effect	**7,569**	**151**	**4,654**	**104**	**2,676**	**72**
II. Commodity composition effect	**-2,233**	**-45**	**135**	**3**	**955**	**26**
Cotton [1]	-952	43	-367	-272	-32	-3
Textile items [2]	-771	35	-103	-76	160	17
Other items	-510	22	604	448	827	87
III. Market distribution effect	**38**	**1**	**-226**	**-5**	**-563**	**-15**
US	27	72	-663	293	-416	74
EU-27	-91	-240	-298	132	-305	54
Japan	-34	-89	-23	10	-10	2
Rest of the world	136	358	758	-335	167	-30
IV. Residual	**-371**	**-7**	**-83**	**-2**	**641**	**17**
			Bangladesh			
Change in exports (I+II+III+IV)	**5,293**	**100**	**7,534**	**100**	-	-
I. World trade effect	**4,063**	**77**	**3,215**	**43**	-	-
II. Commodity composition effect	**-1,167**	**-22**	**-773**	**-10**	-	-
Textile items [2]	-1,050	90	-757	98	-	-
Other items	-117	10	-16	2	-	-
III. Market distribution effect	**156**	**3**	**86**	**1**	-	-
US	74	48	-221	-256	-	-
EU-27	78	50	-107	-123	-	-
Japan	-6	-4	-22	-25	-	-
Rest of the world	9	6	436	504	-	-
IV. Residual	**2,242**	**42**	**5,006**	**66**	-	-

[1] HS Code 52 as per UN Comtrade database; [2] Aggregate of HS codes 61, 62 and 63
Note: As per UN Comtrade database, exports data for Bangladesh is available up to 2011
Source: Author's calculations

Similar to Pakistan, the world trade effect also have substantial positive impact for exports of Bangladesh during 2004-2010. Nevertheless, the impact remained on lower side in case of Bangladesh when compared to that for Pakistan. This trend highlight the fact that despite the better performance of Bangladesh exports during the sample period, in value terms, they were still lower when compared to Pakistan. Furthermore, for Bangladesh, the commodity composition effect remained negative due to lion's share of textile items in overall exports, having lower growth rates than the average rates.

[9] During 2004-13, Pak rupee REER had shown an average appreciation of 4.0 percent.

According to the market distribution effect, it is interesting to note that despite similar destinations to that of Pakistan, Bangladesh exports still managed to get positive impact, particularly during 2007-10 when the western markets were in deep level of recession. This highlights the underlying fact that Bangladesh is gradually diversifying its exports base from advance to emerging markets since the share of former declined from 90 percent to 70 percent in total exports during the period 2004-10. On the other hand, no tangible efforts can be observed in case of Pakistan to diversify its export markets overtime. Moreover, unlike Pakistan, the residual effect was not only found to be positive but also quite large in case of Bangladesh. The interpretation of the latter effect is not straight forward, particularly in absence of REER data for Bangladesh.[10]

5. Conclusion

This paper looked at the exports performance of Pakistan and Bangladesh using the Constant Market Share (CMS) analysis during the last decade. The results indicate that both small open economies have a significant effect of increase in globalization during the last decade. Notwithstanding, the significant gain in exports from globalization effect were largely offset by no real change in composition of commodities exported and also of no substantial change in exports destinations in case of both countries. In terms of gain from competiveness, government policies and non-price factors, however, Bangladesh exports performance was found to be far better than that of Pakistan's. This inference can also be validated by the fact that compared to dismal performance in case of Pakistan, exports contribution is consistently increasing in Bangladesh's output growth, and also in world exports.

To improve the exports performance of Pakistan, and hence balance of payments position, there is an inevitable need to devise such policies that lessen the share of exports of primary products overtime, while increase the share of manufactured products. There is also a need to diversify the exports destinations by increasing the share of emerging economies gradually. Finally, policy makers must ensure the stable economic and political environment in the country. This includes the effective governance system, availability of electricity, efficient and effective policies to address the small exporters need, and importantly, prudent management of the foreign exchange markets.

[10] It is to remember that Bangladesh got the Generalized System of Preferences (GSP) plus status for its exports from the EU almost decade ago, which Pakistan was managed to get in January 2014.

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Appendix: HS Code-wise Share of Selected Exports Items – Period Average

HS code	Description	Pakistan 2004-13	Bangladesh 2004-10
		% share in exports	
3	Fish and crustaceans, mollusks and other aquatic invertebrates	1.2	2.8
7	Edible vegetables and certain roots and tubers	0.7	-
8	Edible fruit and nuts; peel of citrus fruit or melons	1.2	-
10	Cereals	8.3	-
11	Products of the milling industry; malt; starches; inulin; wheat gluten	0.6	-
15	Animal or vegetable fats and oils and their cleavage products; prepared edible fats; animal or vegetable waxes	0.5	-
22	Beverages, spirits and vinegar	0.9	-
25	Salt; sulphur; earths and stone; plastering materials, lime and cement	1.8	-
27	Mineral fuels, mineral oils and products of their distillation; bituminous substances; mineral waxes	3.8	-
30	Pharmaceutical products	0.6	-
39	Plastics and articles thereof	1.6	-
41	Raw hides and skins (other than fur skins) and leather	2	4
42	Articles of leather; saddlery and harness; travel goods, handbags and similar containers; articles of animal gut (other than silk-worm gut)	3.3	-
52	Cotton	20.5	-
55	Man-made staple fibers	1.6	-
57	Carpets and other textile floor coverings	1	-
61	Articles of apparel and clothing accessories, knitted or crocheted	9.7	40.5
62	Articles of apparel and clothing accessories, not knitted or crocheted	7.6	36.7
63	Other made up textile articles; sets; worn clothing and worn textile articles; rags	16.7	6
71	Natural or cultured pearls, precious or semi-precious stones, precious metals, metals clad with precious metal, and articles	1.4	-
73	Articles of iron or steel	0.6	-
84	Nuclear reactors, boilers, machinery and mechanical appliances; parts thereof	0.8	-
90	Optical, photographic, cinematographic, measuring, checking, precision, medical or surgical instruments and apparatus; parts	1.2	-
95	Toys, games and sports requisites; parts and accessories thereof	1.3	-
-	Others	11	10
		100	**100**

Source: UN Comtrade