



Competitiveness of the Pakistan in Leather Export before and after Financial Crises: A Constant-Market-Share Analysis

Muhammad Shahid Maqbool^{1*}, Sofia Anwar², Hafeez-Ur-Rehman³ and Tahir Mahmood⁴

¹Department of Economics, Punjab University, Lahore, Pakistan

²Department of Economics, Government College University, Faisalabad, Pakistan

³Department of Economics, University of Management and Technology, Lahore, Pakistan

⁴Department of Economics and Business Management, University of Veterinary and Animal Sciences, Lahore, Pakistan

Abstract

The present study, utilizing the constant market share analysis, aims at measuring the competitiveness of the exports of Pakistani leather products. The constant market share analysis (CMSA) describes the development of competitiveness, market and product structure of the exports of any economy. Moreover, it decomposes the total change in exports at both the first and second level decomposition. The time series data of HS-4 digits for the time span ranging from 2003-2014 has been taken from the International Trade Centre (ITC). The findings of the study illustrate that average total effect, structural effect, commodity effect, general competitive effect, specific competitive effect were positive, while average competitive effect and market effect were negative from 2003-08. Furthermore, the results indicate that the total effect, structural effect and specific competitive effect were positive, whereas competitive effect, commodity effect and general competitive effect were negative from 2009-14. The findings of the analysis reveal that Pakistan has the potential to enhance its leather exports to the developed economies provided the diversification is adopted in product development as well as market.

Keywords: Competitiveness; Constant market share analysis; Leather; Exports; International Trade Centre

Introduction

Exports are believed to be the engine of economic growth that is indispensable for the prosperity and welfare of the masses. A nation can win friends through trade relations and ensure an optimal allocation of the available resources. Following the comparative advantage principle based on their factor endowments, each country is likely to export those goods which can be produced at relatively low costs [1]. The returns from trade depend on enhancing domestic production, ensuring international standards and exploring new markets for exports [2,3]. Exports of merchandise and services to the world markets empower a nation to build up a particular economic environment that increases demand and production of products [4]. Currently, due to the significance of exports at global level, nations are incorporating objectives of export growth in their foreign policy, signing the trade agreements with nations which are mutually advantageous to them [5]. In this manner, government policies in relation with exports are intended to support extension by utilizing different motivating forces such as tax holidays and export subsidies. Although promoting an export-oriented economy has a number promising features, yet it makes nations depend upon others on account of various determinants like a precarious decrease in demand on the world market, increase and fall in the exchange market, technical change, etc. [6]. Hence, it is essential for the exporting nations to enhance financial development through human capital and technical changes and to expand its items to new outside-business sectors to increase the exporting goods [7,8].

The present study focuses on measuring the competitiveness of leather and leather products which are the key to the development of Pakistan's economy. The leather industry is one of the major export-oriented industries as it has emerged as the second largest export sector after the textile sector in Pakistan [9]. The leather sector contributes a higher amount to the GDP of Pakistan and this sector has a potential to increase the volume of exports by improving the quality of products and introducing some diversifications in these products [10]. The leather sector is improving its productivity by utilizing a program

that was EU funded "Pakistan Leather Competitiveness Improvement Program (PLCIP)" under the EU Trade Related Technical Assistance Program. This Program has proved a catalyst in boosting the growth in the leather sector, which had been stagnant or declining for the past few years.

Table 1 indicates the export growth rate of leather and leather products in different product groups. In 2003, the value of leather

(Thousands US \$)				
Year	Product group 42	Product group 4202	Product group 4203	Product group 4205
2003				
2004	7.65	27.67	10.42	-82.28
2005	28.29	9.07	24.24	61.76
2006	-1.80	-17.74	-0.331	-185.29
2007	1.62	52.77	7.16	-111.38
2008	9.81	-5.09	10.28	-35.55
2009	-32.69	7.22	-34.56	12.09
2010	6.61	7.00	6.50	11.94
2011	9.17	9.12	9.04	-5.58
2012	-1.11	40.11	-2.56	-2.48
2013	9.37	17.72	9.10	-5.94
2014	-0.20	-38.94	0.97	-17.62

Table 1: Export growth of Leather and Leather products from Pakistan to world in different product group.

***Corresponding author:** Muhammad Shahid Maqbool, Department of Economics, Punjab University, Lahore, Pakistan, Tel: +924299231098; E-mail: shahidmakbool@gmail.com

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exports of Pakistan was 458684 thousand US dollars and this data indicates an increasing trend in leather exports till 2008. The leather exports experienced a huge decline in 2009 by 32% due to the decrease in the world demand for pure leather products. On the contrary, an immense increase in the demand of artificial leather products was seen in the same year. The exports of leather and leather products increased during 2008-14 due to the quality improvement in the products, in-time delivery to the purchaser and an increase in the demand for Leather products in the world [11]. The trade data indicated that over the period of twelve years (2003-2014) the world exports has increased from 7.46 trillion US\$ to 18.68 trillion US\$ with an increasing rate of 60%. This escalation of export depicts that in the 20th century the economies were focusing on their exports at the large scale. The average rate of growth of total world exports was 7.89%. The total exports of Pakistan were 1.193 trillion US\$ in 2003 and 2.47 trillion US\$ in 2014 with an increasing growth rate of 51.7% and the average growth rate was observed 5.8%. The leather and leather products, exports of the world were increased by 63% with an average growth rate of 8.76% and Pakistan leather and leather products were increased by 38% from 2003 to 2014 and the average growth rate was 3.33%. This showed that the demand of leather and leather products in the world has increased with the passage of time, but the export growth of Pakistan not followed the same trend and increased as per world demand (ITC COMTRADE, 2015). Therefore the purpose of present study is to investigate the export performance of Pakistan with the developed market economies during 2003-2014.

Review of Literature and Theoretical Framework

Previous literature shows a lot of studies conducted to measure the competitiveness of a country in the export of any good by applying various techniques, i.e. Revealed comparative advantage, Domestic Resource cost Analysis, CMSA etc. etc. This section mainly covers the studies based on CMSA technique.

Tyszynski was the first one who applied traditional CMSA to measure the competitiveness [12]. This traditional method was adopted by a large number of researchers irrespective of the problems associated with it [13-16]. For example, Drysdale and Lu used the traditional model of CMSA to explain the Australians export performance, and also employed the same traditional method to check the export performance of New Zealand [16-18]. An alternative method was explained by Jepma, which overcame the problems associated with the traditional method of CMSA. Jepma, Hoen and Wagener, Ahmadi-Esfahani and Ahmadi-Esfahani and Jensen employed Jepma's revised model to check out the Australian export performance [16,19-23]. Jepma's model had also the same shortcomings to interpret some components of this model.

Numerous studies have employed CMSA to measure the competitiveness and export performance of different economies of the world and even for export of various commodities. For assessing the export performance of Mediterranean countries in vegetable and fresh fruits from 1993 to 2003 CMSA was utilized [24]. The study utilized two different measures; the competitiveness in the markets of Europe and the competitiveness of these economies in world markets. The results of the study showed that the competitive effect gradually decreased during the said time period. Another study conducted by Amador and Cabral who investigate the evolution of market share of Portugal in the world market from 1968 to 2006 [25]. The study compared the results illustrating market share of Portugal with that of Ireland and Southern European countries. The result showed that the market share effect was negative due to low-technology and geographical composition of Portugal's economy. Among the reputed researchers who utilized

this method is Skriner who examined the specialization and the competitiveness of the export sector of the Austrian economy for the empirical analysis during 1990-2006 [26]. This investigation observed a high structural change in the foreign trade of the emerging economies. The findings of the study to examine the export performance of Euro Area especially through CMSA Cafiso illustrated that during the sample period ranging from 1996 to 2007, the Euro Area marginally lost export market share, while Italy and France experienced high losses in shares [27]. On the contrary, Germany was the only economy that succeeded in gaining the market share. The same technique was employed by Athanasoglou et al to examine the export performance, the pattern of specialization and the effect of price competitiveness on the export market shares of Greece from 1996 to 2001 [28]. The findings underlined a considerable change observed in the export structure specially the geographical structure with a positive impact on the market share.

In another study by Kaur and Nanda results of CMSA revealed that world trade growth had a positive impact on Indian exports, while the market distribution effect was negative [29]. In examining the factors which changed the export share of Turkey over the time period from 2003-2008 Sahan found that the firms and industries having low technology still had a positive effect on exports [30]. While the performance of Turkey exports stemmed from commodity composition effect and positive market share effect [31]. The CMSA is also utilized by Rahmaddi in Indonesia during 1987-2008 and the results of the study showed that the export performance decrease due to the commodity composition effect, competitiveness effect and market contribution effect [32]. The same method was also employed by De Munnik to examine the structural effect and the competitiveness effect during the time period from 1990 to 2010 [33]. The findings of the analysis illustrated that the Canadian exports declined due to the Canadian Lillian's strength and low productivity in comparison with other trade partners. Export performance of furniture industry of Malaysia during the time span of 2000 to 2011 was analyzed through CMSA, RCA and shift share analysis [34]. The results of RCA showed that Malaysia had a comparative advantage in the furniture products and the results of CMSA revealed that Malaysia had gained several advantages from trade. The findings of the study to measure the competitiveness of Lithuanian export in EU market by employing CMSA; showed that the competitiveness of Lithuanian export remained low in EU Market [35]. The application of CMSA can also be seen in the study conducted by Pandiella who examined the Spanish exports performance for the time span from 1996-2013 and the findings of the study indicated that the Spanish economy had experienced a pressure of competitiveness from other economies especially China [36]. Another economist who worked on the application of constant market share analysis was Bonanno who apart from explaining the significance, application and limitations of CMSA [37]. The study applied this method to check the competitiveness of the Italian economy in different time periods. Similarly, Tadesse and Brar examined the factors of Ethiopian export growth during the post-reform time period ranging from 1995-2014 and the findings of the study indicated that the improvements in the competitiveness of Ethiopia and the growth in the world trade were the two major factors of Ethiopia's export growth besides the geographic distribution of the economy's exports that had also been favourable [38]. To examine the export performance of major economies of 2004 European Union to the European Union 15 from 1990 to 2013; CMSA was utilized [39]. The findings threw light on the export performance of ten countries individually considered together with the significance of EU15 destination market.

In Pakistan also CMSA was applied to investigate the decomposition of the export growth of country to APEC countries by Wizarat and Ahmed during 2003-2012 [40]. The results of the study illustrated that the world trade effect and the competitiveness effect had a positive impact on the exports of Pakistan. The same technique was further practiced to examine the exports of Pakistan and particularly in the European economies (EU27) with respect to global economic conditions [40,41]. The findings of the analysis indicated that the World Trade Effect had a high positive impact on the export growth of Pakistan, while the Market Distribution Effect, Commodity Composition Effect were causing negative effects upon the export growth of Pakistan throughout the time span from 2003-12.

Data and Methodology

The data was obtained from the International Trade Center (ITC) UN-COMTRADE statistics for Pakistan for the time span 2003-14, which provided details about annual nominal export and import goods in relation with Pakistan and other countries of the world in terms of values expressed in US dollars. Analysis was conducted based on the constant market share analysis proposed earlier [42]. Furthermore, the first and the second level decomposition of CMSA have been employed to accomplish the task. The change in exports is divided into three major different particular effects like structural effect, competitiveness effect and second order effect. In addition, the second level decomposition is further divided into eight effects such as growth effect, market effect, commodity effect, interaction action effect, general competitive effect, specific commodity effect, Pure Second-order effect and dynamic structural effect.

The formula in the first level decomposition is as follows:

$$\Delta X = \sum_i \sum_j \sum_i \sum_j S_{ij}^0 \Delta Y_{ij} + \sum_i \sum_j Y_{ij}^0 \Delta s_{ij} + \sum_i \sum_j \Delta S_{ij} \Delta Y_{ij} \text{ Eq.1. Source [42]}$$

Where,

$$\Delta X = \text{Total effect (TE)}$$

$$\sum_i \sum_j S_{ij}^0 \Delta Y_{ij} = \text{Structural Effect (SE)}$$

$$\sum_i \sum_j Y_{ij}^0 \Delta s_{ij} = \text{Competitive Effect (CE)}$$

$$\sum_i \sum_j \Delta S_{ij} \Delta Y_{ij} = \text{Second-Order Effect (SOE)}$$

The Eq.1 can be further decomposed into the following components:

$$\begin{aligned} \Delta X = & s^0 \Delta Y + \left(\sum_i \sum_j S_{ij}^0 \Delta Y_{ij} - \sum_i S_i^0 \Delta Y_i \right) + \left(\sum_i \sum_j S_{ij}^0 \Delta Y_{ij} - \sum_j S_j^0 \Delta Y_j \right) \\ & + \left[\left(\sum_i S_i^0 \Delta Y_i - s^0 \Delta Y \right) - \left(\sum_i \sum_j S_{ij}^0 \Delta Y_{ij} - \sum_j S_j^0 \Delta Y_j \right) \right] + \Delta s Y^0 \\ & + \left(\sum_i \sum_j \Delta S_{ij} Y_{ij}^0 - \Delta s Y^0 \right) \\ & + (Y^1 / Y^0 - 1) \sum_i \sum_j \Delta S_{ij} Y_{ij}^0 + \left[\sum_i \sum_j \Delta S_{ij} \Delta Y_{ij} - (Y^1 / Y^0 - 1) \sum_i \sum_j \Delta S_{ij} Y_{ij}^0 \right] \end{aligned}$$

Where as;

$$S^0 \Delta Y = \text{Growth effect (GE)}$$

$$\left(\sum_i \sum_j S_{ij}^0 \Delta Y_{ij} - \sum_i S_i^0 \Delta Y_i \right) = \text{Market effect (ME)}$$

$$\left(\sum_i \sum_j S_{ij}^0 \Delta Y_{ij} - \sum_j S_j^0 \Delta Y_j \right) = \text{Commodity effect (COME)}$$

$$\left[\left(\sum_i S_i^0 \Delta Y_i - s^0 \Delta Y \right) - \left(\sum_i \sum_j S_{ij}^0 \Delta Y_{ij} - \sum_j S_j^0 \Delta Y_j \right) \right] = \text{Structural Interaction effect (SIE)}$$

$$\Delta s Y^0 = \text{General competitive effect (GCE)}$$

$$\left(\sum_i \sum_j \Delta S_{ij} Y_{ij}^0 - \Delta s Y^0 \right) = \text{Specific competitive effect (SCE)}$$

$$(Y^1 / Y^0 - 1) \sum_i \sum_j \Delta S_{ij} Y_{ij}^0 = \text{Pure second order effect (PSOE)}$$

$$\left[\sum_i \sum_j \Delta S_{ij} \Delta Y_{ij} - (Y^1 / Y^0 - 1) \sum_i \sum_j \Delta S_{ij} Y_{ij}^0 \right] = \text{Dynamic structural residual (DSR)}$$

In the above equations, X stands for Pakistan total exports of leather products to world, s represents Pakistan's market share of exports of leather in total world market, s_j is Pakistan's market share of leather exports in destination j, s_i is Pakistan's market share of leather export i in total world market, s_{ij} is Pakistan's market share of leather i in destination j, Y is total world imports of leather products, Y_j is total leather imports in destination j, Y_i is total world imports of commodity i, Y_{ij} is total imports of commodity i in destination j, Δ represents the change in the two periods, superscript 0 is the initial year, 1 is the terminal year and subscript i represents export commodities.

Results and Discussion

In this section, this study measures the competitiveness by applying decomposition of the first and second level of constant market share analysis on leather and leather products. To check the competitiveness these products, the time span from 2003-2014 has been divided into two time periods: 2003-2008 and 2009-2014. There are two major reasons for the division of this time period. First, from 2003-2007 Pakistan was under the military regime while from 2008-2014 the system of government was democratic. Secondly, 2008 is regarded as a year of financial crisis in the world. Hence, this study has examined the competitiveness before and after the year of financial crisis. The results of the analysis in Table 2 and Figure 1 show that the total effect is positive throughout the period ranging from 2003 to 2008 and indicate the expansion of the exports of leather products [43,44]. The exports of Pakistan to the international market are mainly affected by structural effect [45,46]. Furthermore, the second level decomposition reveals that, for Pakistan, the positive structural effect was mainly changed by the world growth effect. The high positive values of a structural effect illustrate that in the world markets, the demand for Pakistani leather products is increasing rapidly as Pakistan is attaining specialization in producing these leather products. The competitive effect was negative from 2003-2007 that shows a decline in the share of leather products

(US millions Dollar)												
Years	TE	SE	CE	SOE	GE	ME	COME	SIE	GCE	SCE	PSOE	DSR
2003	-	-	-	-	-	-	-	-	-	-	-	-
2004	4.12	46.91	-37.85	-4.95	25952.10	-2548.29	1.34	-1.34	-941.47	9036.18	-8.23	3.28
2005	22.87	34.04	-10.60	-0.56	18487.58	-1814.72	2.93	-2.93	722.58	-7331.86	-1.46	0.90
2006	5.411	39.54	-31.24	-2.88	24984.03	-2458.86	1.052	-1.05	-1398.10	13668.56	-4.86	1.98
2007	47.031	60.07	-11.35	-1.69	25789.39	-2518.87	7.76	-7.76	-1452.23	14408.80	-1.73	0.04
2008	99.27	38.24	56.41	4.62	28488.18	-2810.57	9.56	-9.56	-351.97	4083.79	9.00	-4.38
Avg.	35.74	43.76	-6.93	-1.09	24740.26	-2430.26	4.53	-4.53	-684.24	6773.09	-1.46	0.36

Table 2: Constant market share analysis of Pakistan's leather exports in world markets (product group 42) from 2003-2008.

in the other markets of the world. The competitiveness effect was positive in 2008 that highlighted Pakistan was competitive in leather products in that year, because the share of Pakistani exports increased during the same year [40]. High cost of doing business is one of the major determinants which made Pakistani exports un-competitive in global markets. Due to inefficient and unfriendly socio-economic environment, the cost of operating a business in Pakistan is significantly high. The major determinants of high cost of business are utilities and cost of finance, cost of raw material, human resource (mainly unskilled labour), infrastructure, technology and supporting institutions. The rank of Pakistan in "ease of doing business" was 60 in 2006 which deteriorated to 76 in 2008 (GOP). The residual effect was negative, indicating a decline in the exports on account of political situation of the country, law and order situation, crimes in country, energy crises and other factors. The average total effect was positive from 2003-2008 that showed the leather products expanded faster. The average structural effect was also positive that manifests the specialization in these products and the demand of these leather products were growing rapidly in the world markets. The average competitiveness effect was negative; indicating the average share of these products was declining in world markets. The residual effect had also average negative value in that time period. The market effect displays the impact of Pakistan's distribution of market on its performance of exports. The market effect was negative from 2003-2008 showing that Pakistan did not focus on the fast growing markets. The average market effect was also negative in the said time.

The commodity effect was significantly positive for 2003-2008 which indicates that Pakistan did lay emphasis on the leather exports to the world of fast growing commodities. The results of the general competitive effect and the specific competitive effect indicate that Pakistan was competitive in terms of specific competitive effect, but did not show any competitiveness in the general competitive effect. Pakistan was competitive in the product group 4203 (Articles of apparel & clothing access, of leather or composition leather). The negative general competitive effect implies that Pakistan was able to enhance the competitiveness of exports of specific products in specific destinations. The decrease in general competitive effect was mainly a result of the decline in the market shares of the leather products in the world market. The average general competitive effect is negative while the specific competitive effect is positive. These products are very essential for the economy of Pakistan, because the specific commodity effect is positive. The government of Pakistan should focus on these leather products (product group 4203) to enhance the export earnings for the country.

Figures 1-4 shows the trend of total effect, structural effect, competitiveness effect and second order effect respectively from 2003-2008.

The results of CMSA from 2009-2014 shown in Table 3 reveal that the total effect was positive in 2010, 2011, 2013 and 2014 while negative in 2012. The positive total effect illustrates that the exports of leather products were growing, whereas the negative value indicates that the exports were not expanding rapidly in 2012 [43,44]. The findings also indicate that the exports were mainly affected from the structural effect throughout the time span ranging from 2009-2014 except the year 2012 [45,46]. Furthermore, the results of second level decomposition illustrate that the positive structural effect underwent a change due the world growth effect. The positive structural effect describes that the demand of these leather products grew in world markets and it was seen that Pakistan had achieved specialization in these leather products

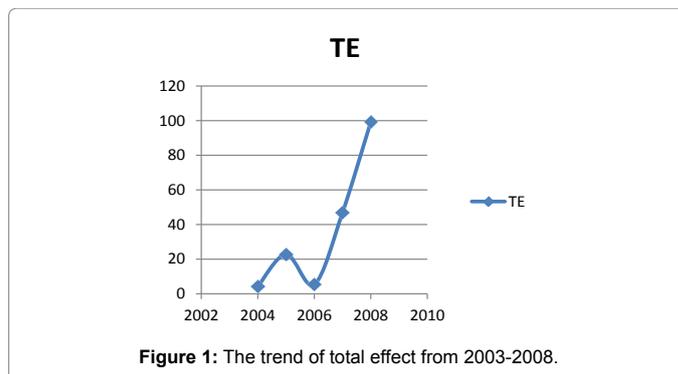


Figure 1: The trend of total effect from 2003-2008.

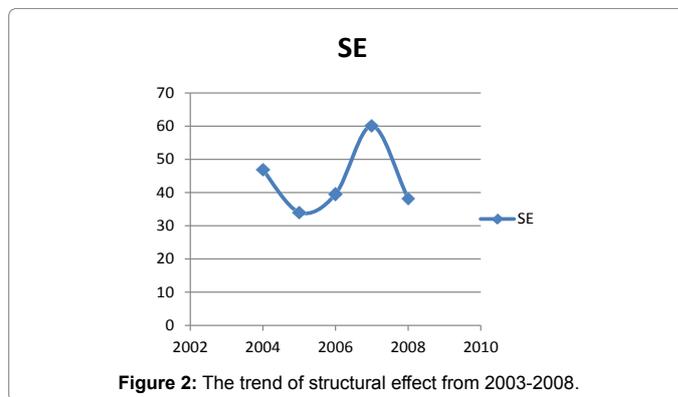


Figure 2: The trend of structural effect from 2003-2008.

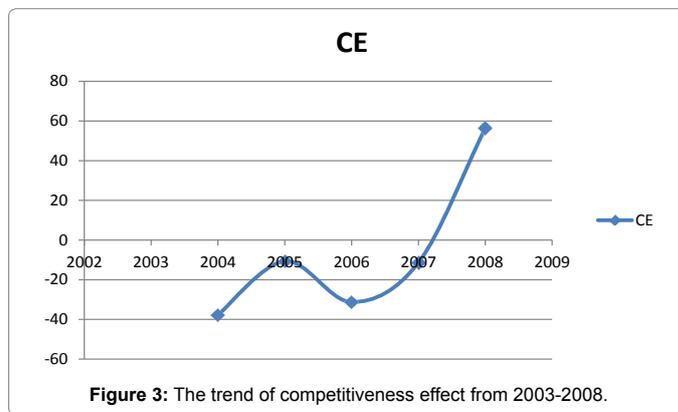


Figure 3: The trend of competitiveness effect from 2003-2008.

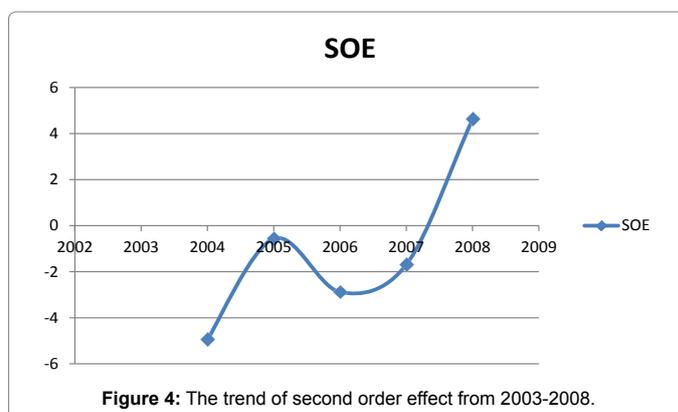


Figure 4: The trend of second order effect from 2003-2008.

during the analysis. The competitiveness effect was negative from 2010-2012, which shows that the share of these products declined in the

Years	(US millions Dollar)											
	TE	SE	CE	SOE	GE	ME	COME	SIE	GCE	SCE	PSOE	DSR
2009												
2010	20.604	51.66	-27.095	-3.96	39093.25	-3857.66	-3.946	3.946	-41.646	145.508	-6.034	2.074
2011	56.372	80.94	-20.84	-3.73	42797.59	-4198.82	8.131	-8.131	-290.94	2701.074	-4.164	0.436
2012	-33.25	-3.06	-30.73	0.54	1904.92	-193.554	-11.796	11.796	-913.72	8829.94	-0.231	0.767
2013	68.175	26.90	39.52	1.75	6519.87	-625.082	2.072	-2.072	-141.04	1805.63	1.047	0.704
2014	43.608	36.65	6.790	0.17	21.56	34.493	3.583	-3.583	-400.823	4076.13	0.001	0.168
Avg.	31.102	38.62	-6.469	-1.047	18067.439	-1768.126	-0.391	0.391	-357.64	3511.65	-1.876	0.830

Table 3: Constant market share analysis of Pakistan's leather exports (product group 42) in world markets from 2009-2014.

international market and the positive values during 2013-14 highlights that the share of these products increased in the world market [40]. High cost of doing business is one of the major determinants which made Pakistani exports un-competitive in global markets. Due to inefficient and unfriendly socio-economic environment, the cost of operating a business in Pakistan is significantly high. The major determinants of high cost of business are utilities and cost of finance, cost of raw material, human resource (mainly unskilled labour), infrastructure, technology and supporting institutions. The rank of Pakistan in "ease of doing business" was 77 in 2009 which deteriorated to 110 in 2014 (GOP). The second order effect also showed a positive and a negative trend during the analysis. The market effect was positive in 2014 which indicated that Pakistan did concentrate on the markets, which were boosted rapidly in that year, while negative market effect was observed during 2010-2013, and this negative effect made it clear that Pakistan did not lay any stress upon the fast-growing markets. Furthermore, the average market effect was also negative in that time span.

The commodity effect was positive in the years of 2011, 2013 and 2014, which illustrates that Pakistan paid higher attention to the exports of leather products to the rest of the world, while negative commodity effect in 2010 and 2012 showed that Pakistan did not make any serious effort in enhancing leather exports. The results of the general competitive effect and the specific competitive effect indicate that Pakistan was competitive in term of specific competitive effect from 2009-2014, but Pakistan did not show competitiveness in the general competitive effect. Pakistan was competitive from 2009-14 in the product group 4203 (Articles of apparel and clothing access, of leather or composition leather). The negative general competitive effect in Pakistan implies that Pakistan was capable enough to enhance the competitiveness of exports of specific products to specific destinations. The decrease in general competitive effect was the direct off-shoot of the decline in the market shares of the leather products in the international market. The average general competitive effect was negative while the specific competitive effect was positive.

The average total effect was 35.741 from 2003 to 2008 whereas 31.102 from 2009 to 2014. This result shows that both the total effect and structural effect decreased between these two time periods. Moreover, the competitive effect and residual effect were also negative in that span of time, which throws light on the decreasing trend of export share of Pakistan to the rest of the world. Figures 5-8 illustrate the trend of total effect, structural effect, competitiveness effect and second order effect respectively from 2009-2014.

Conclusion

The aim of this study was to measure the competitiveness of Pakistan in the exports of leather and leather products by employing CMSA for the time period 2003-2014. The findings of the analysis illustrated that average total effect, structural effect, commodity effect,

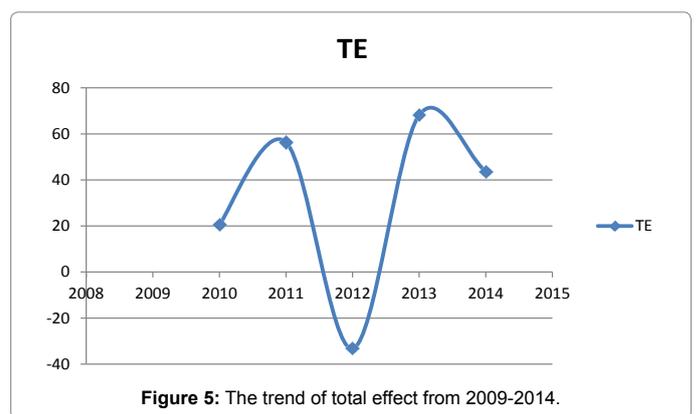


Figure 5: The trend of total effect from 2009-2014.

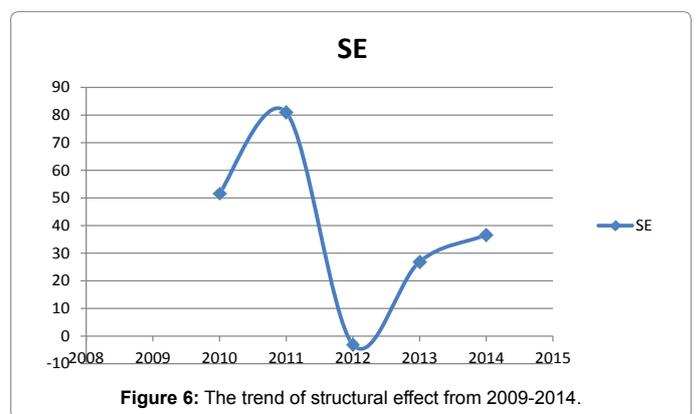


Figure 6: The trend of structural effect from 2009-2014.

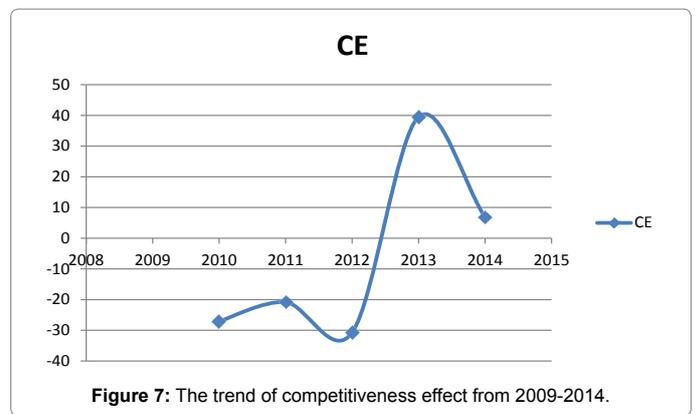


Figure 7: The trend of competitiveness effect from 2009-2014.

general competitive effect, specific competitive effect were positive while average competitive effect and market effect were negative for 2003-08 time period. Furthermore, for the period of 2009-14 the

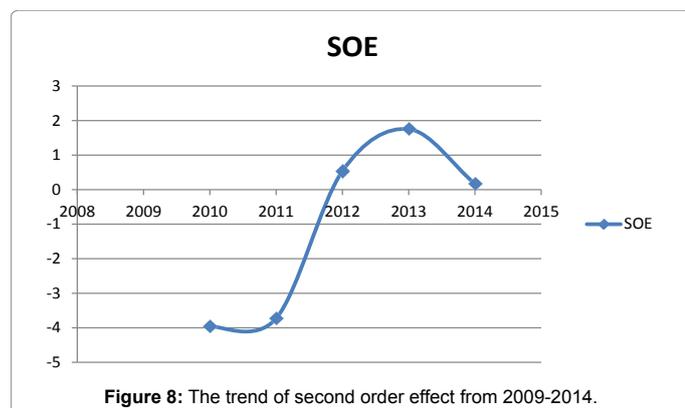


Figure 8: The trend of second order effect from 2009-2014.

total effect, structural effect, specific competitive effects were positive, whereas competitive effect, commodity effect and general competitive effect were negative. The negative competitive effect demands the formulation of an immediate yet comprehensive export policy on the part of the government of Pakistan to diversify its leather exports. The study recognized that through this diversification exports of Pakistan will shift from lower world demanded products to relatively faster growing products, which will stimulate export growth of Pakistan. Main finding of ME explains the intensification of leather exports in small number of markets and requires that for Pakistan it is imperative not only to explore the new markets but to retain competitiveness in leather exports, investment is needed in scientific research for technology development to produce quality and marketable surplus. Moreover, it is the need of the hour to devise productive international marketing strategies so that the leather products can make a significant contribution to reduce the overall negative trade balance of Pakistan.

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