Chapter 18

The Efficiency Performance of the Turkish Ceramic Sector in Terms of Revenue and Export: DEA Model

Füsun Yenilmez
Eskişehir Osmangazi University, Turkey

ABSTRACT

Turkey is one of the leading countries in the world in the field of tile production and exportation. The ceramic sector constitutes the main focus and scope of this chapter, which makes some suggestions and recommendations to the industrial companies which were ranked among the 1,000 largest companies in 2011 based on their performance in revenue and exportation. Data Envelopment Analysis (DEA) is used in the measurement of the ceramic companies' performances. Three inputs (net actives, number of workers, and equity) and one output (revenue) are used in the first analysis where nine companies are taken as decision-making units. This chapter shows that Eczacıbaşı and Vitra were efficient in revenue making in 2011. Likewise, three inputs and one output (export) are used in the second analysis where nine companies are taken as decision-making units. According to DEA model findings, only Vitra was efficient in exporting in 2011.

INTRODUCTION

In simplest form, ceramic means earth cooked on extremely high temperature (Sezer, 1994, p. 1). The Ceramic Sector is a branch of industry comprising the sub-sectors of Ceramic Tile, Ceramic Sanitary Ware, Ceramic Table and Decorative Ware, Ceramic Table and Kitchen Ware, Technical Ceramics, Refractories, Mortar and Bricks and Ceramic Raw Materials which provide significant inputs for the construction industry (Saatçioğlu, 2010, p. 52).

The sector has started becoming industrialized since 1960s. The sector has grown fast owing to the advancements in construction sector and the spread of use of ceramics to have a greater share in particularly developing countries (Bozdoğan, 2003, p. 118).

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All countries have focused on price competition in conventional ceramic products particularly because of Italy’s striking performance in high quality and branding and Spain’s impressive rise in technology-oriented production; China, Brazil, Spain and Italy have become leading actors in tiling sector. Main producers, in addition to Spain and Italy, are Turkey, China, Egypt and India; these rising markets are in a fierce competition on global scale. Due to extreme competition, these producers have moved their production activities to high quality and pricing interval. Italy and Spain show greater tendency to make exports in the sector. These two actors constitute more than half of the entire exports in the world. China is also developing its own production technology. The producers in countries that are not dependent externally in energy have growing advantage (T.C. Bilim, Sanayi ve Teknoloji Bakanlığı Sanayi Genel Müdürlüğü, 2012, p.13).

In 2012 world tile production reached 11,166 million square metres (sq.m) 5.4% up on 2011. Growth was reported in almost all areas of the planet and in all the leading producer countries. Asia produced 7,674 million sq.m (+6.4%), bringing its share of world production to 68.7%. Europe saw a slight rise in production, up from 1,667 to 1,700 million sq.m (+2%) and equivalent to 15.3% of world production. In greater detail, the European Union (EU-27) remained stable at 1,168 million sq.m (0.8% down on 2011), while non-EU Europe reached 532 million sq.m (+8.6%). In the American continent, total production reached 1,438 million sq.m (12.9% of world production). Central and South America produced 1,138 million sq.m (+3.6%), while North America reached 300 million sq.m (+4.2%). Africa also showed recovery following the downturn in 2011 with production reaching 349 million sq.m (+7.1%).

World tile consumption also rose by 4.6% to reach 10,912 million sq.m. The European Union was the only region to see a fall in demand, caused by a contraction in almost all countries in the area with the exception of Poland. This contrasted with the strong demand in non-EU Europe (+10.7%), in Africa (+18.7%), driven in particular by the recovery in Libya, in Asia (+4.4%), in Central and South America (+5.3%) and in North America (+5.7%).

Import-export flows were more buoyant in 2012, expanding to 2,358 million sq.m (+8.4%) and accounting for 21.6% of world consumption. Half of world exports originated from Asian countries (1,221 million sq.m, +10.8%), followed by the European Union at 32% (745 million sq.m, +4.9%).

China, Spain and Italy, the three largest exporter countries, accounted for 64% of world exports.

China, Brazil and India have remained the top three tile producer and consumer countries (Ceramic World Web, 2013).

According to Table 1, total export of ceramic-covered materials in the world increased from 1,714 square meters in 2010 to 1,908 million in 2011 (11.3 pct of increase). China’s production grew by 16.1 pct during this period; China, receiving 39 pct of share in exports in the world, is ranked first in this field. This country is followed by Italy, Spain, Turkey and Iran. Ukraine, ranked 14th in the standing, showed the best performance in terms of increase in exports (90.5 pct) in 2011, followed by Vietnam, ranked 8th, with 50 pct increase (Özbilgin, 2012, p. 5). Table reveals that amount of Turkish exports showed some decline tendency in the global crisis. The same also applies to the EU countries as well.

Table 2 shows that the total ceramic-covered product exports rose by 10.1 pct and reached 10,512 square meters in 2011. Export increase was observed in all parts of the world, but Africa which experienced a decline by 11.2 pct in 2011 where its exports were 326 million square meters. Asia assumed 68.3 pct of the total global exports; Asian countries increased their exports by 12.9 pct and reached
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