Turkey's Textiles and Apparel Cluster

Microeconomics of Competitiveness

HBS / HKS | Michael Porter

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1. Overview of Turkey

1.1 Turkey at a Glance

Turkey is a vibrant emerging economy with a rich cultural heritage located at the crossroads of Europe and Asia. Turkey is a large country that has served as a key regional trade hub for centuries given its strategic location and maritime control of key waterways between the Black and Aegean Seas as shown in Figure 1 (CIA World Factbook, 2012). Though lacking in natural resources, Turkey benefits from large tracts of arable land, miles of coastline, and a young and growing population. Turkey consists of 79.7 million people who are primarily from the Turkish (75%) and Kurdish (18%) ethnic groups, and 99.8% of the population is Muslim (CIA World Factbook, 2012).

Figure 1: Turkey's Location at the Crossroads of Europe and Asia
Source: Image from ChoraTravel

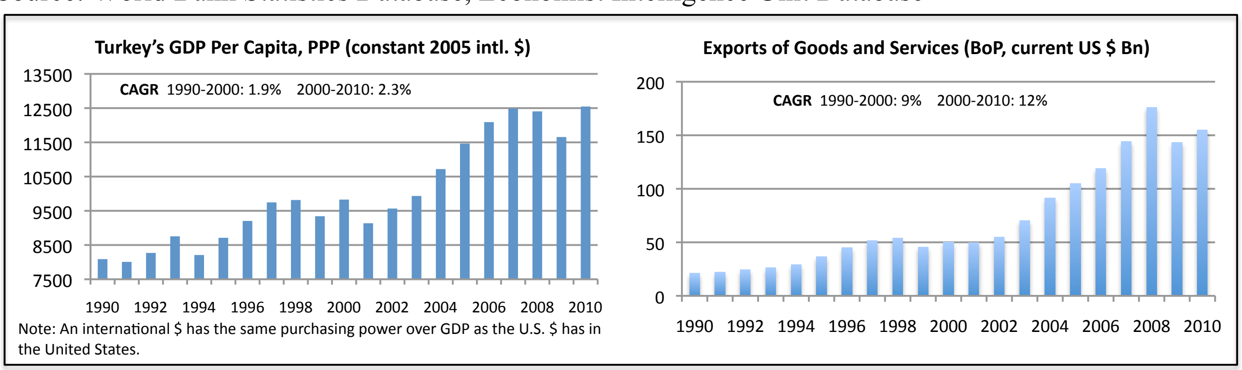
Modern Turkey was founded in 1923 by Mustafa Kemal upon the collapse of the Ottoman Empire (CIA World Factbook, 2012). Turkey became a republican parliamentary democracy led by a Prime Minister, with the large country organized politically into 7 regions, 81 provinces, and 923 districts (CIA World Factbook, 2012). Following its transition to a republic, Turkey became more active in regional and multilateral organizations, joining the UN in 1945 and NATO in 1953. Over the years, Turkey increased its engagement and integration with its European neighbors, becoming an associate member of the European Community (EC) in 1964 and initiating accession talks with the European Union (EU) in 2005 (CIA World Factbook, 2012).

1.2 Turkey's Economic Performance

The past three decades have been a time of great change for Turkey as the country introduced a series of fundamental economic reforms. In the early 1980s, Turkish leaders initiated a series of economic liberalization policies that shifted the country from a statist model to a market-based economy by abandoning protectionist import substitution policies and opening the economy to global trade. In doing so, Turkey began its transition from an agriculture- and manufacturing-based economy to a more diversified economy with a large global services sector (CIA World Factbook, 2012). Another key milestone in this transition occurred when the World Bank and IMF assisted Turkey with further structural reforms following a sharp recession in 2001. These structural reforms included liberalizing trade and investment, privatization of major industries, and tighter fiscal and monetary policies (European Commission, 2009).

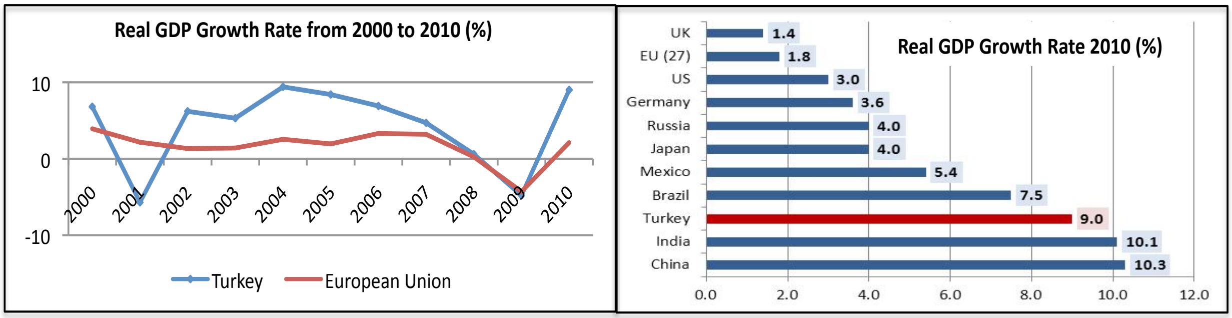
As many of these key reforms took effect during the past ten years, Turkey experienced a period of tremendous economic growth and prosperity, and the results have been staggering. Total exports have tripled during the past eight years, and GDP per capita has tripled in nominal U.S. dollars in the past eight years as shown in Figure 2 (Emre and Bryant, 2011):

Figure 2: Turkey's GDP per capita (1990-2010) and Exports of Goods and Services (1990-2010)
Source: World Bank Statistics Database, Economist Intelligence Unit Database



Turkey's growth following the recession of 2001 has been exceeded that of its EU neighbors, and following the global financial crisis, Turkey rebounded with the third highest growth rate in the world in 2010 as shown in Figure 3:

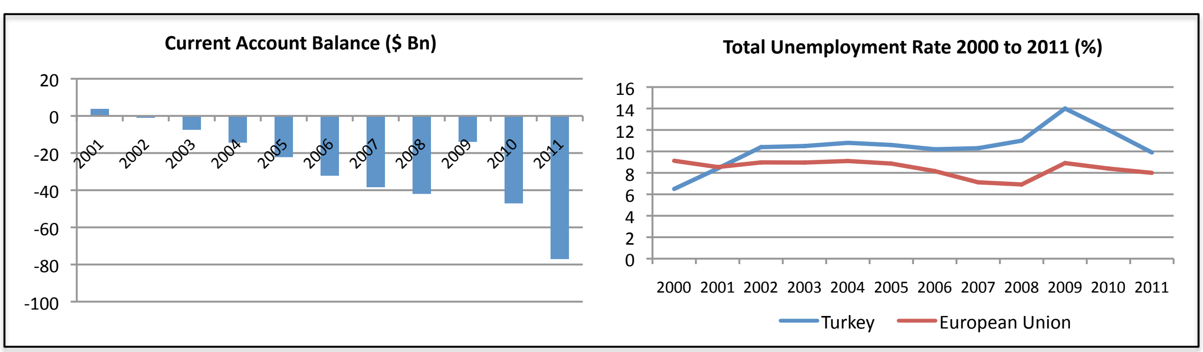
Figure 3: Turkey's Real GDP Growth Rate (2000-2010) and Real GDP Growth Rate (2010)
Source: World Bank Statistics Database, Turkish Ministry of Economy: Economic Outlook March 2012



Inward FDI has increased tenfold from the previous decade, with $94 billion in FDI in the past eight years (Emre and Bryant, 2011). Turkey continues to be viewed as an attractive spot for investment in the region, with the creation of investment promotion agency, Invest in Turkey, boosting investor confidence (Invest in Turkey, 2012). Due to the surge in trade and investment, Turkey has risen to become the 17th largest economy in the world with the 5th largest labor force among EU countries (Emre and Bryant, 2011). Clearly, Turkey's recent economic performance is a success story without precedent in its history. In fact, since taking office in 2003, current Prime Minister Recep Tayyip Erdogan has overseen the strongest period of economic expansion of any Turkish leader since the founding of the republic (Emre and Bryant, 2011).

Despite this period of tremendous growth, however, Turkey faces a number of key challenges. More specifically, Turkey's unemployment rate continues to be a challenge:

Figure 4: Turkey's Current Account Balance and Total Unemployment Rate (2000-2011)
Source: World Bank Statistics Database, Economist Intelligence Unit Database



Although the rate has declined from historical levels, the unemployment rate remains quite high relative to EU countries also shown in Figure 4. Turkey's economic growth has stimulated domestic demand for imports, and the Turkish government expanded credit rapidly to keep pace with this growing demand. As a result, Turkey's current account deficit continues to grow rapidly as shown in Figure 4. Additionally, Turkey's large capital inflows from FDI leave it vulnerable to destabilizing episodes of capital flight when investor confidence changes, and such episodes have occurred during the past ten years. Clearly, Turkey's economic growth in the past ten years is a remarkable success story, but in order to continue this economic growth, Turkey must address these key challenges and mitigate the risks of an overheating economy.

2. National Competitiveness Analysis

As of 2011, Turkey stands as the 47th most competitive country, ahead of some competitors in textiles such as Pakistan, Bangladesh and Vietnam but behind others such as China, India, South Korea, Italy and Spain (Institute for Strategy and Competitiveness, 2011). 2001 reforms increased the competitiveness of the country, but progress has not been stable.

2.1 Endowments

Turkey's natural endowments provide clear advantages that bolster the country's overall competitiveness. Most importantly, Turkey benefits from its strategic location at the crossroads of Europe, Asia, and the Middle East, enabling Turkey to act as a regional trade hub with easy access to the markets of its surrounding regions. Turkey also benefits from the large tracts of land available for agriculture and the long coastlines and sea access for trade. With 70% of the world's energy resources located to its south, Turkey serves as a vital energy corridor between Europe and the Middle East, given that Europe is the largest energy-consuming region in the world (Invest in Turkey, 2012). Lastly, Turkey's proximity to the EU provides tremendous benefits as rich EU countries have become Turkey's main trade partners, and these benefits from trade and affiliation are expected to increase further if Turkey successfully completes its bid to join the EU.

Despite these advantages, Turkey's natural endowments also pose certain limitations to the country's overall competitiveness. Most notably, Turkey lacks energy resources such as oil and gas deposits, and consequently, Turkey currently imports 70% of the total resources required to meet the country's energy needs (Turkish EU Accession Delegation, 2010, p. 1). This issue of energy dependence impacts Turkey's competitiveness in many industries, to include textiles and apparel, given that energy represents an important element of overall cost structure. Turkey's energy dependence and energy insecurity could become a binding constraint to the country's growth if not addressed. Turkey's proximity to the Middle East poses certain challenges given that the instability and violence of the region can affect investors' perceptions of Turkey. Additionally, Turkey is vulnerable to natural disasters such as earthquakes, particularly in the northern region of the country that falls along a major fault line.

2.2 Macroeconomic Competitiveness (#45[2])

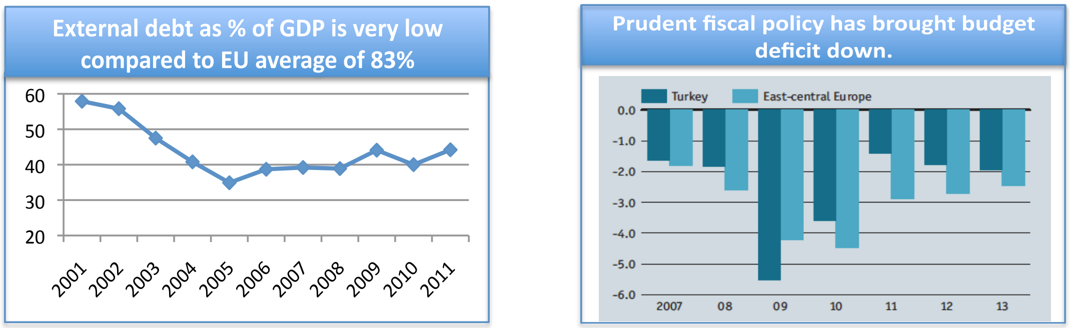
a) Macroeconomic Policy (#58)

Solid economic growth and a surge in privatization activity have brought down government debt to a sustainable 40% of GDP vs. 83% EU average (Figure 5). However, privatization activity has slowed down and FDI is increasingly used to decrease external debt position. Prudent fiscal policy has brought down budget deficit to 1.4% in 2011, below EU average of 4.4% (Figure 5). Fiscal policy is projected to stay tight out of concern for current account deficit and

[2] 2011 Global Competitiveness Index ranking

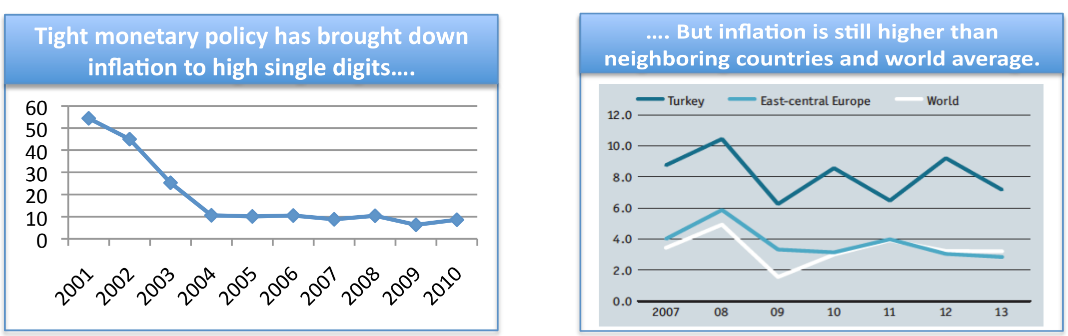
government's preference for private-sector-led growth but slow down in economy might put pressure on budget if public accounts are used to support growth.

Figure 5: Turkey's External Debt Balance and Government Budget
Source: World Bank Statistics Database, Economist Intelligence Unit Database



After the financial crisis of 2001, Turkey implemented a new monetary policy framework where exchange rate was set to float and price stability was declared as the primary goal. Even though inflation came down to high single digit numbers, it is still higher than in all Eastern European countries (Figure 6). Furthermore, the recent depreciation of the lira and indirect tax increases are putting strong upward pressure on consumer price inflation. However, moderately tighter monetary policy, slower economic growth, and lower global commodity prices should help to reverse the upward trend.

Figure 6: Consumer Price Index
Source: World Bank Statistics Database, Economist Intelligence Unit Database



b) Social Infrastructure and Political Institutions (#43)

Turkey's UN Human Development ranking of 92 is still below average for Europe and Central Asia (UN). Access to education has improved with high primary school completion

(87%) and literacy rate (91%), but due to perceived low returns to education and limited access in rural areas, higher education enrollment is lower - 60% at secondary and only 27% at tertiary levels (World Bank). With only 4.5% of GDP spent on education, quality remains an issue (TCMB).

By increasing the public expenditure on health to 10% of GDP and tripling the per capita expenditure from 2002-09, Turkey has made significant progress on key health indicators: Life expectancy is high at 73 years; infant mortality rate has come down (36 in 2002 vs. 17 in 2010) and is lower than average for upper middle income countries (World Bank). However, rural access to healthcare is still limited.

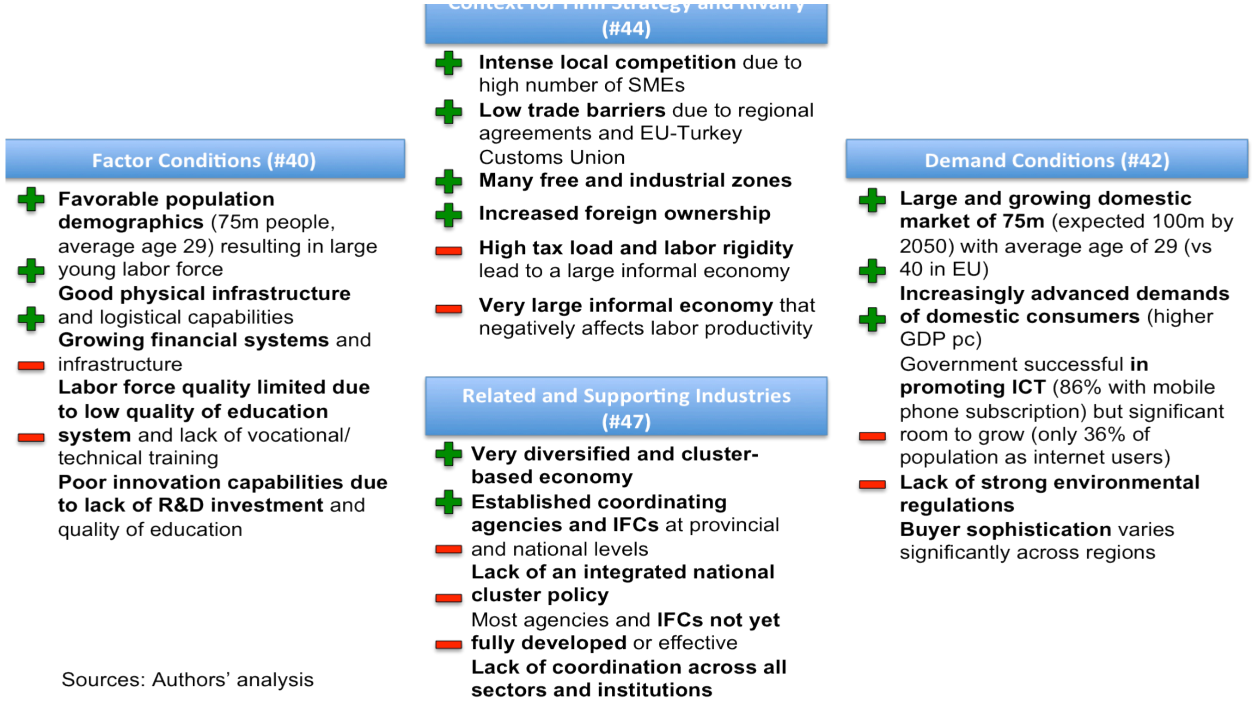
Turkey has made significant improvements in governance and institutional indicators. Turkey is politically stable with free elections participated by 50 parties. Effectiveness of law-making bodies, transparency in policy making and public trust of politicians have improved. Government has been effective in reducing poverty: headcount at national poverty line decreased from 27% in 2002 to 18% in 2009 (World Bank). However, some weaknesses remain, namely overly centralized policy making, favoritism in governmental officials' decisions and an increasingly authoritarian government that has led to less press freedom.

The recent constitutional reforms have enhanced the efficiency of legal framework and property rights. Corruption (as measured by Transparency International) has declined, making Turkey the least corrupt country in Eastern Europe and Central Asia. However, the arrest of military officers and other opposition forces has raised questions about judicial independence.

2.3 Microeconomic Competitiveness (#45)

c) Quality of the National Business Environment (#47)

Figure 7: National Diamond
Source: Authors' analysis



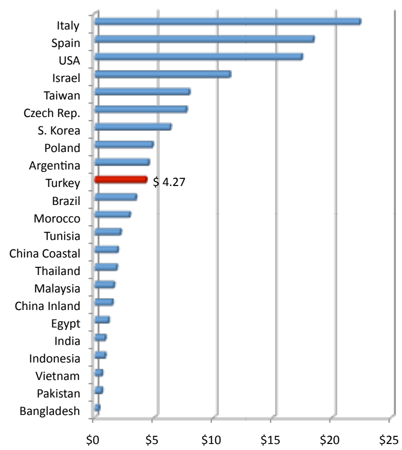
i) Demand conditions:

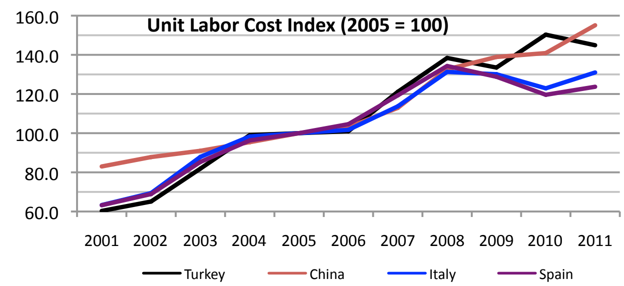
With a population of 75 million, Turkey has a large and growing domestic market, which is expected to reach 100 million by 2050. Due to higher GDP per capita, the local demand is becoming increasingly sophisticated but there is significant variation in buyer sophistication across regions.

ii) Factor / Input Conditions:

Turkey benefits from favorable demographics, namely its large and young population where average age is 29 vs. 40 in EU (World Bank). With 26 million people, Turkey has the 4th largest labor force in EU, of which ~50% are employed in services, ~25% in agriculture and ~20% in industry (TCMB). However, quality of this labor force is limited due to low quality of education system and lack of vocational / technical training. According to a 2012 OECD report, "an average 15-year-old in Turkey is one school year behind his OECD counterparts in reading, math and science skills." There are more than 4,000 technical high schools but demand is low since their reputation is not stellar and there is a preference for university education. Among the more than 160 universities in Turkey, only four are technical universities and two are institutes of technology. Although Turkey has qualified engineers and scientists, there is need for more, especially in order to move further up the value chain in textiles. Finally, unit labor costs are increasing relative to other emerging economies (Figure 8). This has reduced Turkey's competitiveness in labor-intensive industries, including textiles.

Figure 8: Turkey's Unit Labor Cost
Source: World Bank Statistics Database, Economist Intelligence Unit Database





Turkey benefits from good physical infrastructure and logistical capabilities and increasingly sophisticated financial markets. However, there is a big gap between western and eastern parts of the country, with the west being significantly more developed. This limits the ability of the eastern regions to access markets for trade.

Figure 9: Turkey's Performance on Key Innovation Indicators
Source: OECD iLibrary

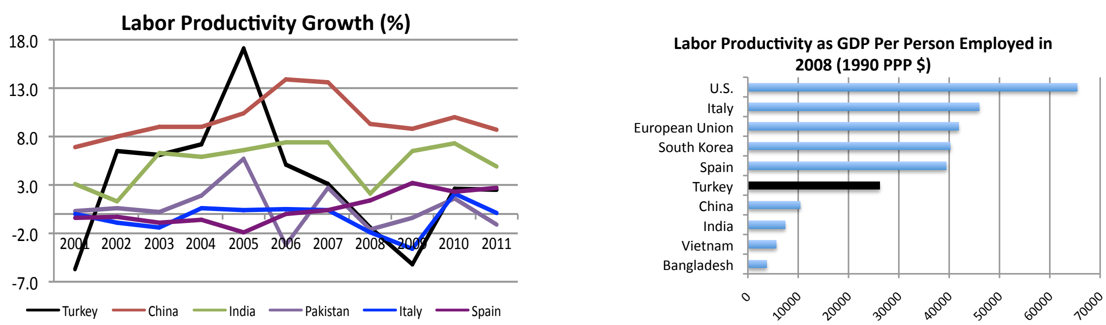
Innovation Indicator	Turkey	China	India	Italy	Spain
R&D Intensity 2010 (% of GDP)	**0.85**	1.70	0.88	1.27	1.38
Triadic Patents (2000 – 2008)	**38**	1,025	620	3,456	800
Published Science & Engineering Articles 2009	**8**	74	120	27	22

Turkey lags behind neighboring countries and trade competitors on key innovation indicators due to lack of R&D investment (less than 1% of GDP) and quality of education (Figure 9). This is especially relevant for textiles cluster as innovation emerges as the key driver of competitiveness for Turkey.

iii) Context for Strategy and Rivalry:

Turkey benefits from intense local competition as SMEs make 99% of Turkish economy (TCMB). On the other hand, high tax load and labor rigidity lead to a large informal economy (estimated to be around 40-45% of national economy). Restrictions on part-time and short-term contracts, high severance pay and redundancy costs contribute to the large size of the informal economy, negatively impacts overall labor productivity (with an estimated productivity gap of 30-40% for formal and informal businesses). Despite this, Turkey's growing labor productivity remains on par with Eastern Europe and exceeds that of many trade competitors, but falls below that of OECD states (Figure 10).

Figure 10: Turkey's Labor Productivity Indicators
Source: World Bank Statistics Database, Economist Intelligence Unit Database



Turkey also benefits from low trade barriers due to regional agreements and EU-Turkey Customs Union and the presence of many free and industrial zones, which together have been key drivers of the textiles industry in the past. Furthermore, a low corporate income tax of 20% has attracted many foreign firms, which have brought sophisticated production processes and technology know-how to the country.

iv) Related and Supporting Industries:

Turkey benefits from a diversified and cluster-based economy. However, Turkey lacks an integrated national cluster policy, and its existing clusters have emerged largely in response to a broader push for industrialization rather than a focused cluster strategy. Turkey has recently started to focus on regional cluster studies; however, these regional studies have not yet led to an integrated cluster policy at the national level. Consequently, the spillovers and linkages across existing clusters in Turkey are very weak or nonexistent. Additionally, initiatives at the cluster level continue to focus on cost reduction rather than building the capacity for innovation within existing clusters.

Turkey also lacks strong institutions for collaboration (IFCs) that can help facilitate the linkages and spillovers within and across clusters. Turkey has attempted to establish various IFCs at the national and provincial levels, including export agencies, Chambers of Trade in each city, sector-based trade associations, research institutions such as TUBITAK, and a Turkish Export Promotion Center. However, many of these IFCs have not yet fully developed to be effective. More broadly, there is a lack of coordination across sectors to include government agencies, private firms, universities, public research institutions, and trade associations.

d) State of Cluster Development

Turkey has a wide range of clusters, including textiles, tourism, automotive and construction (Figure 11). However, most of the economic activity is concentrated in the western regions, specifically the Marmara region in the northwest part due to the good technical, logistical and educational infrastructure (Figure 12). The difference between regions in terms of diamond strengths leads to high immigration to western parts, putting significant pressure on infrastructure in terms of transportation, health, education, etc and decreasing the overall competitiveness of the country. Recently, the government has launched various incentive programs to increase investment and cluster development in the eastern regions.

Figure 11: Turkey's Cluster Map
Source: Institute for Strategy and Competitiveness, 2011

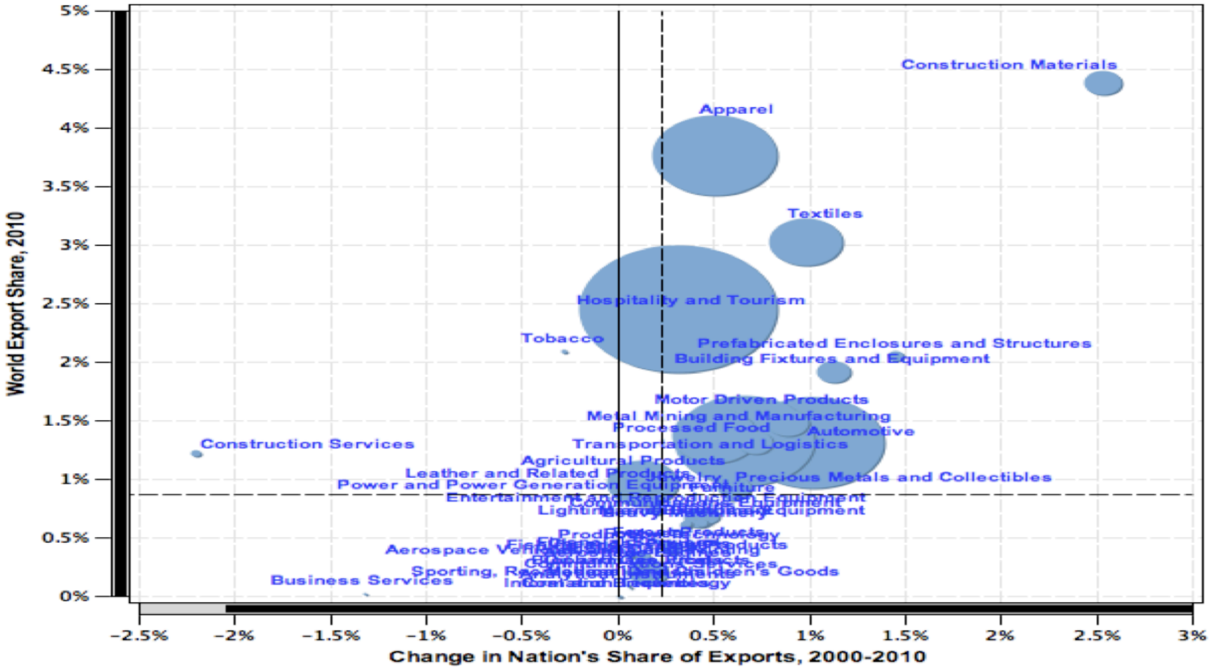
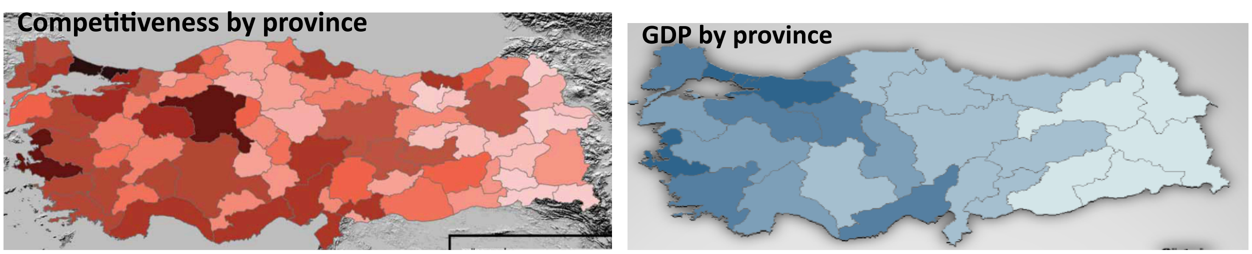


Figure 12: Turkey's Competitiveness and GDP by province
Source: Turkish International Competitiveness Institute (URAK)



e) Company Operations and Strategy (#37)

Turkish banks and conglomerates are regional success stories but only a few firms have global presence with only one firm (Koc) among global top 500 firms and just 12 Turkish firms in global top 2000. Sophistication of company operations and strategy is increasing with further internationalization of firms but large informal economy of economy deters progress.

2.4 Risks and Recommendations

Endowments: In order to diversify the energy base, Turkey should aggressively invest in alternative sources of energy (e.g., solar and wind) by financing development projects.

Macro policy: Turkey needs to continue to diversify the foreign investor base providing capital inflows to Turkey. To that aim, Turkey needs to establish tighter controls to address fiscal and current account deficits, which would help lower inflation and stabilize the lira. Finally, policies that encourage businesses to use more long-term equity capital denominated in domestic currency should be implemented.

Social and political infrastructure: Turkey needs to aggressively invest to improve its social infrastructure to deliver on the potential of its large and young population. Policies that target quality of its education and access to higher education need to be put in place. At the same time, the government needs to continue with constitutional reforms that address civil liberties and judicial independence.

Factor conditions: Turkey has to improve the technical and vocational education programs and establish public-private partnerships in education to link curriculum of universities with industry needs. To make progress on innovation and improve productivity, the government should encourage joint R&D initiatives across all sectors, and introduce incentives such as tax deductions and loan guarantees for R&D related projects.

Context for strategy and rivalry: The government needs to create one-stop shops to streamline the procedures and registration requirements for starting a business. Anti-corruption and good governance initiatives should be bolstered to reduce costs of doing business in Turkey.

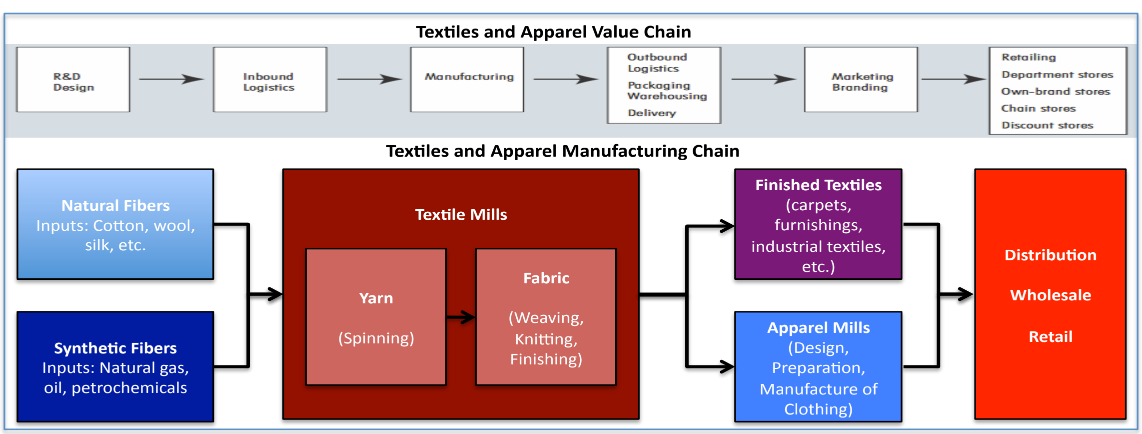
Related and supporting industries: Turkey needs to develop an integrated national cluster strategy that provides a common vision and framework. To coordinate the implementation of this strategy, a national competitiveness planning agency should be established.

3. Global Textiles and Apparel Industry

The global textiles and apparel clusters comprise a massive industry with an estimated total market value of $1.3 trillion in 2011, and industry forecasts predict a 5.8% compound annual growth rate through 2015 (DataMonitor, 2012). The global industry currently consists of a small group of producing countries that ship exports to a large diverse group of importing countries. The largest textile-exporting countries include China, India, the U.S., South Korea, Turkey, and Pakistan (World Trade Organization, 2012). The largest apparel-exporting countries include China, Bangladesh, Turkey, India, and Vietnam (World Trade Organization, 2012).

The elimination of the GATT's Multi-Fiber Agreement of 1974 impacted the industry considerably as bilateral import quotas were phased out by 2005, enabling low-cost producers such as China to establish dominant positions (Nordas, 2004, p. 13-16). The global value chain for the textiles and apparel industry continues to evolve as firms integrate across the value chain to remain competitive. The global value chain and manufacturing chain for textiles and apparel is represented in Figure 13 (McNamara, 2008; Xiaofen and Renyong, p. 1029):

Figure 13: Textiles and Apparel Value Chain & Manufacturing Chain
Sources: U.N. Industrial Development Org; Kerry McNamara, *Global Textile and Garments Industry*



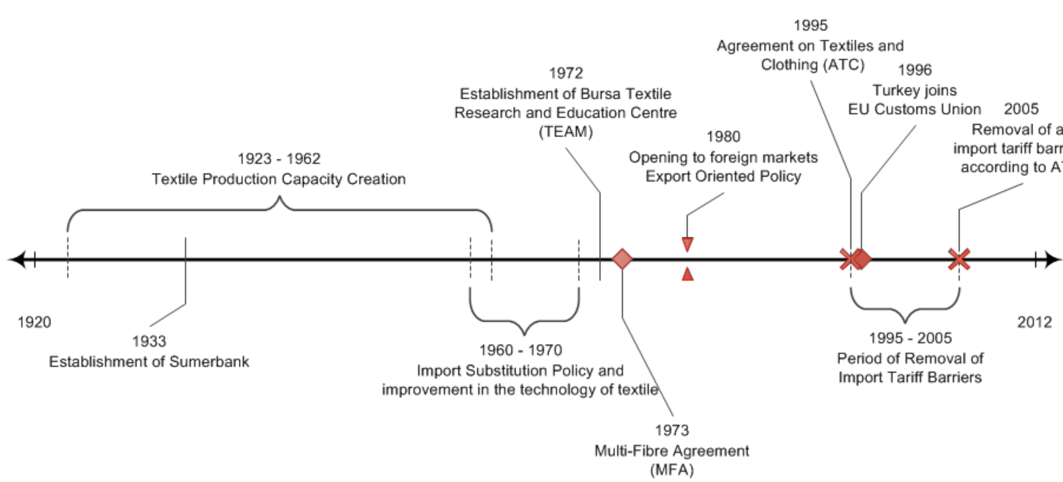
There are several key trends occurring within this value chain. First, transnational firms continue to dominate the industry as these firms expand globally and integrate across the value chain (McNamara, 2008, p. 6-7). Second, textiles are very trade-intensive because they can be exported at any stage along the value chain, allowing countries to be both major exporters and importers in this same industry (McNamara, 2008, p. 6-7). Third, lower-income countries typically focus on lower value-add segments such as inputs and fabric production, whereas high-income countries focus on higher value-add segments such as specialty apparel (McNamara, 2008, p. 6-7). Turkey is one country that actually plays across the entire value chain.

4. Turkish Textile and Apparel Industry

4.1 Evolution of the Turkish Textile Cluster

The history of textiles in Anatolia goes back centuries, archeological explorations still discover various ancient tools that were used in manufacturing textiles in the region. During the 16th and 17th centuries, textile production got further advanced and became widespread throughout the country. In fact, though the end of empire, the largest industry in Ottomans was textiles, a clear indication for the cultural importance and historical ties of the sector.

Figure 14: Timeline of Evolution of Turkish Textile Industry



The establishment of Sumer bank, a SOE producing various textile products, has been an important milestone for the development of sector in Turkey. After 1933, all the textile and apparel factories and small production units have been consolidated under Sümerbank umbrella. By making investments and educating labor, Sümerbank has been a leading force for the private sector by sharing and spreading the accumulated knowledge and technology throughout the private sector. With government support, a sizable textile production capacity was created in Turkey between the years 1923-1962. Extensive cotton production in Cukurova further contributed to the development of the sector during the following years, as cotton-based textiles were became an important source of income.

Between 1962 and 1972, Turkish government implemented import substitution policies in an effort to build domestic industries. During this first planned development period, private sector strengthened and played a larger role in the cluster. In 1972, the first textile industry association was created in Bursa. The same year Turkey became a net exporter of textiles for the first time. Between 1980 and 1989, aggressive export policies further increased the share of Turkish textiles in foreign markets. By 1990's, share of textiles in total Turkish exports has reached 9.3%. Today, responsible from 5.4 billion dollars in exports, textiles has become one of the most important components of the Turkish economy.

Due to the formation of Customs Union with the European Union (EU), production capacity of the sector increased throughout 1990's. Firms invested these profits heavily into machine capacity. For example, by 2008, Turkey has advanced to own 7.3% of OE rotor, 5% of long staple spinning, and 5.1% of wool weaving looms capacity of the world.

Today, there are nearly 7,500 textile manufacturers exporting from Turkey. The production facilities are mainly concentrated in Istanbul, Izmir, Denizli, Bursa, Kahramanmaraş and

Gaziantep. Most of these facilities belong to SMEs, though larger integrated facilities produce the greater overall volume. Cotton textile products such as cotton, fiber, yarn and woven fabrics constitute 24% of textile exports. The main export items are synthetic yarns from monofilaments, cotton woven and knitted fabrics, synthetic filament yarns, and woven pile fabrics like velvet.

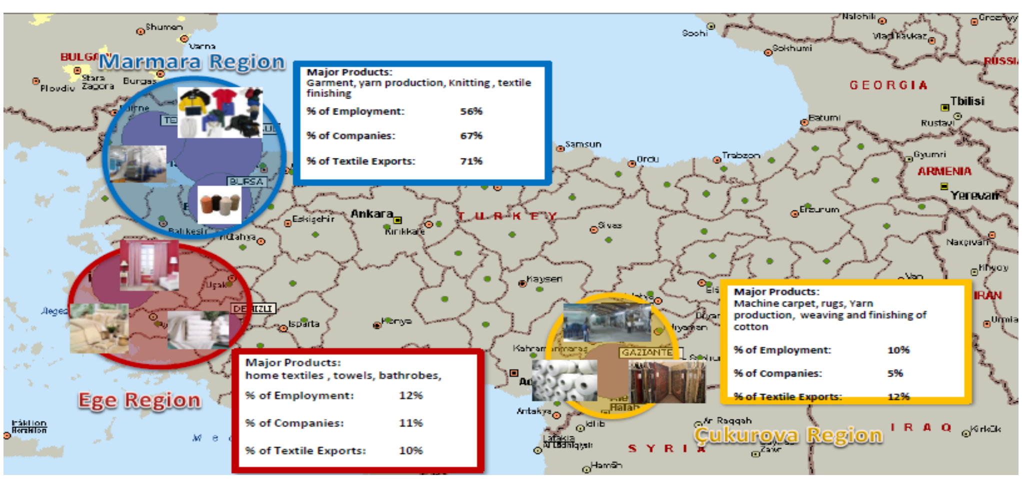
The most important turning point for Turkish textile industry occurred in 1995. WTO's Agreement on Textiles and Clothing (ATC) required removal of all MFA agreements and all trade barriers by 2005. This meant emergence of China as a major competitor in the international textiles scene. Turkish textiles industry, historically a successful and profitable one, is now in crossroads. Competitiveness of the sector needs to be significantly enhanced and strategically planned, since being a low cost producer is not enough anymore to reach sizable export figures.

4.2 Geographic Concentration of Turkish Textile Sector

According to employment numbers, number of companies and the export figures, textiles and apparel production is mainly concentrated in three geographic regions in Turkey: Marmara Region, Gee Region and Çukurova region.

Figure 15: Regional Concentration of Textile Production in Turkey

Sources: Ministry of Labor and Social Security, Turkstat



a) Marmara Region: The textile activity within the Marmara region is concentrated in the Tekirdağ, Istanbul and Bursa provinces. Marmara Region constitutes the largest textile cluster within Turkey's economy, responsible for 56% of the total textile employment in the country. This fact is reiterated by export and company number figures. The region accommodates around 67 % of the total textile related companies (Ministry of Labor and Social Security Statistics), and performs 71% of the total textile exports within the Turkish economy (Turkstat). The major production activities are garment manufacturing, yarn production, knitting and textile finishing.

b) Ege Region: Ege region has concentrated on home textiles, mainly towels and bathrobes. It has a share of 12% of the textile employment within Turkey, is responsible from 10% of the total of the total textile exports and accommodates 11% of the total textile companies.

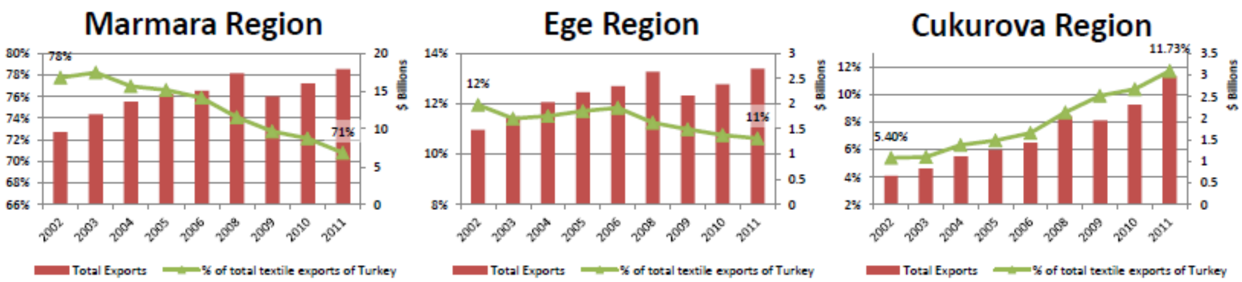
c) Cukurova Region: Last but not the least, Cukurova is an up and coming region for textiles production in Turkey. This region observes higher growth in terms of the textile exports, textile employment and textile related companies than any other. The major products for the region are machine carpets, rugs, yarn production and weaving and finishing of cotton. We will focus on performance of textiles in Cukurova in this paper.

4.3 Why Focus on Cukurova?

The export performances of these regions differed significantly during the last decade. Although all increased total exports numbers between 2002 and 2011, only Çukurova was able to increase its share in total textile exports (see Figure 16).

Figure 16: Relative Export Performance of the Regions

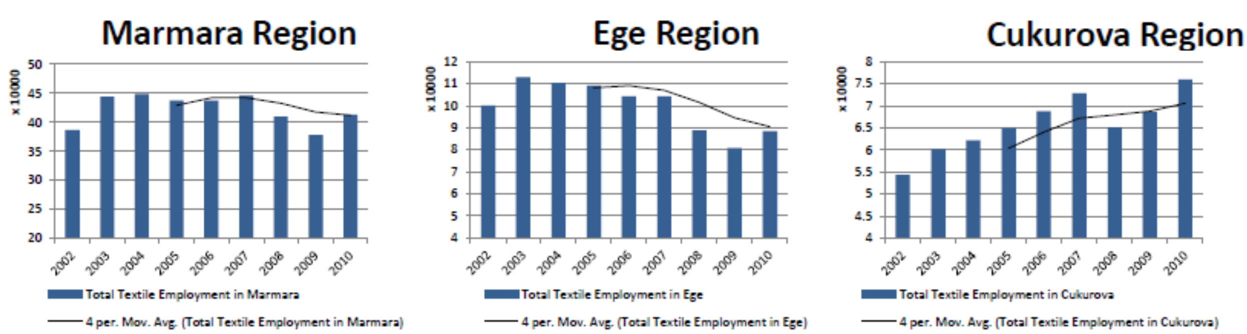
Source :Turkstat



A similar trend is observed in the employment figures. Figure 17 shows the relative employment figures between 2002 and 2010. Although the employment figures varied throughout the years, the four-year moving averages represent a smoother indication of performance. Since ATC became effective in 2005, overall Turkish textile sector has been in stagnation or decline. Despite this trend, Cukurova region managed to grow its textile employment.

Figure 17: Relevant Employment figures for the regions

Source: Ministry of Labor and Social Security



Due to international market pressures, as textiles lost its competitiveness in Marmara and Ege regions, labor and capital moved to relatively more profitable sectors, such as automotive. However, Cukurova offers many benefits to textile producers that make the region promising and uniquely positioned to compete internationally and reach significantly higher GDP and export figures. In the next chapter, we will discuss Cukurova's competitiveness diamond and explore areas of improvement in order to make an international success story from Cukurova textiles cluster.

4.4 Çukurova Textiles Cluster

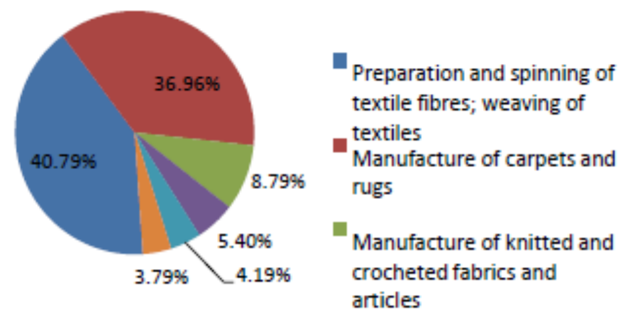
The major economic activity within the Çukurova region is distributed between three provinces: Adana, Kahramanmaraş, and Gaziantep. Especially for the last decade, these regions showed significant economic growth as a result of the regional development initiatives and incentives. Although the region has a diversified economy, textile is among main sources of employment. Local cotton production and closeness of provinces to ports has made a significant contribution to the development of textile sector within the region.

During the last decade, more than 500 companies entered in textile industry in Cukurova. Not only the number of firms has increased, but also the firms have started to grow in their exports and sizes. For example, in year 2010, 12 of the textile companies that are operating in the Çukurova region have ranked in the top 500 firms in Turkey.

The exports in the region has been focused on finished textiles, carpets and rugs with a relative share of 40.79% and 36.96% of the textile exports within the region (Figure 18) A closer attention to the product mix shows that Cukurova production has higher capital intensity compared to the product mix in Marmara and Ege regions. A closer attention to the product mix shows that Cukurova production has higher capital intensity compared to the product mix in Marmara and Ege regions.

A closer attention to the product mix shows that Cukurova production has higher capital intensity compared to the product mix in Marmara and Ege regions. Cukurova's productivity is exemplary, since the region is the highest in the capital intensity while still adding more labor to the sector in absolute levels.

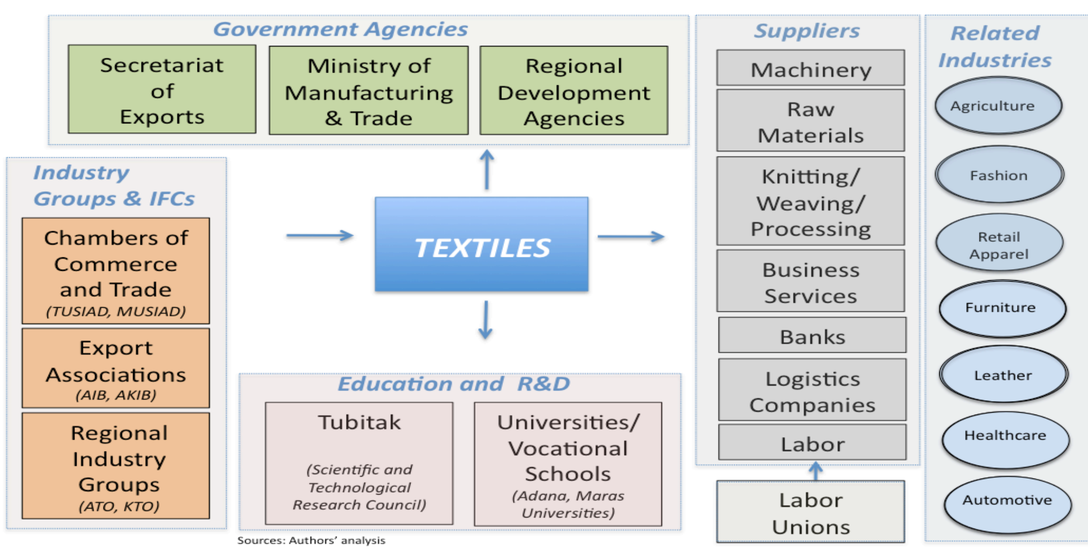
Figure 18: Exported Çukurova Textile Products



Source: Turkstat

Figure 19 shows a cluster map for Cukurova. The government agencies, trade agencies and industrial groups aim to support private sector, while existence of related and supporting industries create suppliers, downstream processing capabilities or sales opportunities for firms active in the cluster. Tubitak is the national research council, while regional universities, such as Adana and Maras, work to foster innovation in the region and actively provide textile engineering degrees.

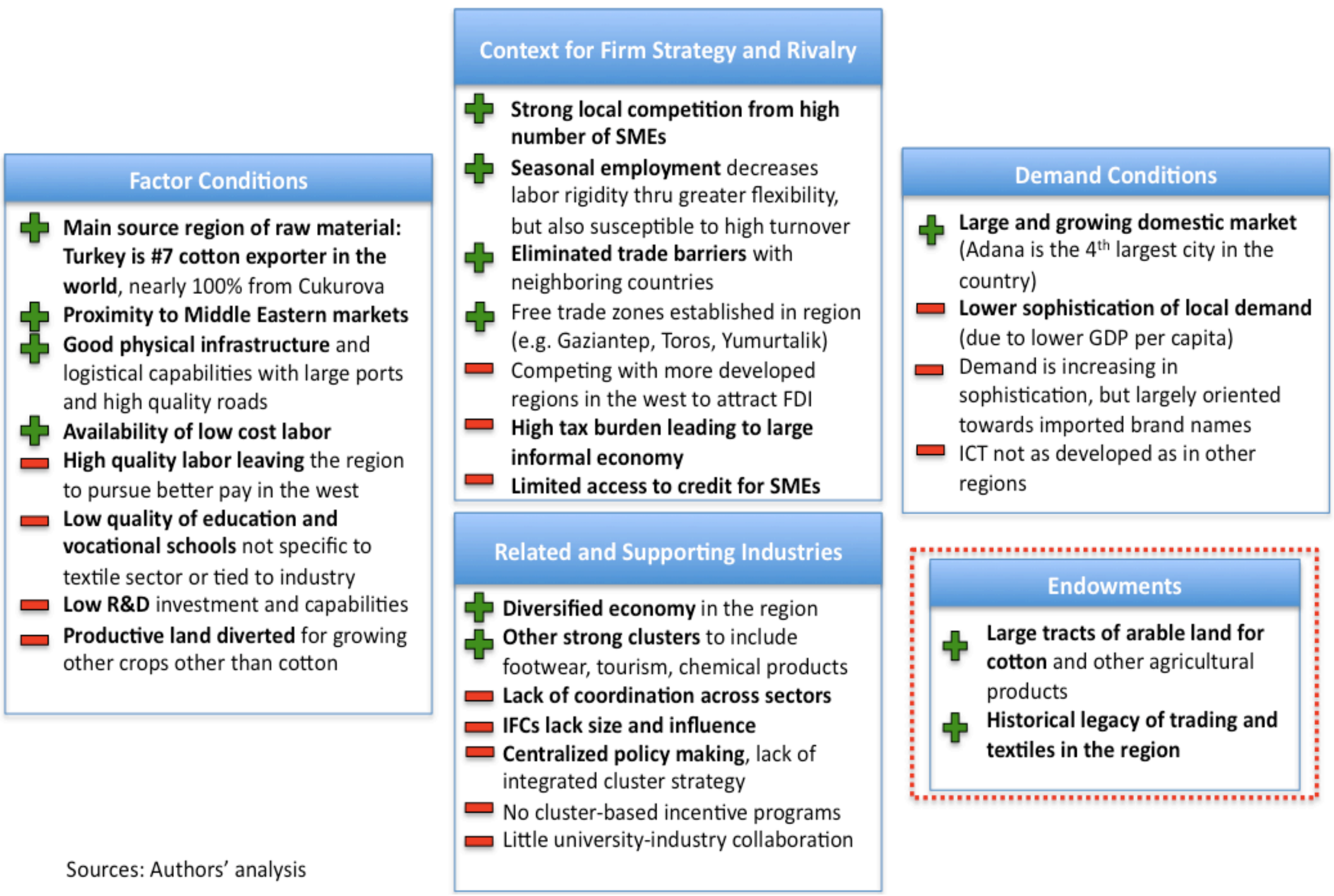
Figure 19: Çukurova Textiles Cluster Map



4.5 Cukurova Textiles Cluster Diamond

Çukurova textile cluster has a competitive structure with the potential to reduce the current decline the Turkish textile sector is in due to the pressures faced from international competition. The sector owes its competitive advantage to several factors, while more strategic effort can significantly enhance the region's global standing in textiles. Figure 20 below is the diamond for Cukurova textiles cluster.

Figure 20: Cukurova Textiles Cluster



a) Factor Conditions: Cukurova region is the 7th largest cotton producer in the world with more than 450,000 tonnes/year. Cotton, although light in weight, is large in volume, which makes shipment of raw material expensive. Since cotton is the main raw ingredient for most textile products, the size of local cotton production gives Cukurova its most important competitive advantage in textiles.

Cukurova is very well connected to the rest of the country, the Mediterranean and the Middle East. Adana airport with an area of more than 2 million square meters and Antep airport (3.5 million square meters) carry customers and freight internationally. The second largest airport of Turkey is under construction in closely Mersin, to be finished by 2014. Mersin and Iskenderun ports are among the largest in the country and Isdemir, Toros, Botas also allow for shipments through the Mediterranean. +1000 kilometers of roads in Cukurova connect the region to other Turkish provinces, but rural connection roads can use some improvement. Thanks to this infrastructure, Cukurova is uniquely located to ship textile products nationally and internationally and Cukurova's proximity to Middle Eastern markets provides an important advantage. For decades, main export partner of Turkey has been the EU. This trend was also visible in textiles, Europe accounting for more than 50% of Turkish textile exports. Recent penetration of Middle Eastern markets, to some extend, can counteract the contraction of the European demand after the economic crisis in the continent. Although relations with neighboring countries are not at the preferred stage yet, there is still huge cross-border trade potential for the region once the political stability of Turkey's neighbors improves.

Labor in Cukurova, relative to western part of Turkey, is cheaper, and this gives the region a competitive advantage in textiles over Marmara and Ege. This is useful for low skilled labor, but the region often losses its best educated human capital to higher pay industries in the west.

For Cukurova textiles cluster, the most important handicap under factor conditions is the lack of innovation and the need to improve quality of education. Education policy in Turkey is national. We have discussed the need to increase education quality for secondary schools under Turkish diamond section and these constraints apply to Cukurova as well. Vocational school graduates and higher education graduates are lower in textiles and apparel clusters than those in overall manufacturing sector (TISK). Although government opened vocational schools in the region for textiles, this is a new effort and most employees say they don't see benefits of hiring from these schools. The SME R&D activity is minimal. In Cukurova textiles cluster, most of the effort is focused on product innovation, which employers call "UR-GE". This involves design of new fabrics and models for end products. UR-GE brings short-term profits since this level of customization is usually responsive to customer demand, but it is not in depth research and development (in Turkish: "AR-GE") and does not result in increased levels of productivity.

b) Demand Conditions: Adana is the 4th biggest city in Turkey with a population of 1.8 million people and Cukurova region is densely populated overall. Although there is demand in terms of absolute consumption of textiles, local demand is low in sophistication. Branding Cukurova products is vital, since higher income segment in the region often prefer purchasing imported products such as brand name clothing or high priced European home textiles. Also, increasing the share of exports will improve the cluster as it becomes responsive to higher sophistication of international demand.

c) Context for Firm Strategy and Rivalry: A big advantage of Cukurova textiles cluster is the strong local competition emerging from high number of SMEs in textiles. 99% of companies in the region are operating as SMEs (IKA, RDP 2010) The SME domination of the regional economy not only provides high competition and a drive for efficiency, but also provides flexibility to adapt to changing market conditions (SME Strategy and Action Plan 2007). Some employers we spoke with said they could and have changed 70% of their production line quickly in response to evolving customer demands. Though, access to finance constitutes an obstacle for the growth of these SMEs.

Although Cukurova accommodates 27 textile companies with foreign capital, lack of institutionalization and high competition from relatively developed western regions, with better human capital and higher productivity levels, represent difficulties in attracting FDI to Cukurova (TCMB).

Less developed eastern provinces supply labor to Cukurova to smooth out seasonal fluctuations. Seasonal labor helps overcome labor rigidity and helps local firms respond to fluctuating demand. However, this flexibility comes with a higher turnover rate, which prevents the workers from accessing basic training and benefits, resulting in low productivity numbers. The challenges in registering seasonal employees and high tax rates stimulate informal economy in Cukurova, also an overarching problem in Turkey (State Planning Organization – Adhoc Committees for National Development Plan – Textile Sector).

The existence of many free trade zones lessens the trade barriers with neighboring regions, spurring the integration with those countries. Gaziantep Free Region which started operations in 1999 and Yumurtalik- Toros Adana (TAYSEB) Free Trade Regions active since 1990 are examples of important Free Trade Zones in Cukurova. However, free trade zones have some distortive effects, since local firms outside these zones still face high taxes.

d) Related and Supporting Industries: Cukurova is becoming a center of economic activity in Turkey. The economy is diversified: agriculture, transportation and logistics, energy, jewelry, plastics and paper and food processing are among the largest sectors in the region, all supporting textiles. However, the linkages among sectors are weak as IFCs are relatively new and need capacity building and support to establish cooperation. Trade and business associations are mostly national (TUSIAD and MUSIAD), though regional chambers of trade (Adana Ticaret Odasi, Kahramanmaras Ticaret Odasi) have started to gain some influence. Export associations such as Akdeniz Ihracatcilari Birligi are active, but still need more active members and a voice in regional policy.

Historically, government policies in Turkey have been centrally driven and not cluster-oriented as discussed in the section on Turkish competitiveness. Recently regional development agencies, such as Cukurova Kalkinma Ajansi, got founded and these should help bring local stakeholders to the table to make more effective policies. Textiles specifically have not received much government help since 2000's, although the sector has been in decline in Marmara and Ege. Regional development policies such as GAP (Guneydogu Anadolu Projesi) have helped southeastern regions of Turkey but a cluster-based approach is required. Recently Gaziantep and Kahramanmaras entered into the list of cities that are development priority areas, making them eligible for government support. However, this support is still not cluster policy oriented. For example, 2011

Financial Support Program offers government cofinancing (50k to 500k TL) for qualified investment projects in the region, but textiles projects are not on the priority list.

4.6 Recommendations For Cukurova Textiles Cluster:

As discussed in the previous section, Cukurova has a strong and promising textiles sector. While Marmara and Ege are losing grip in textiles, Cukurova can be a rising competitor in international markets. While showing a superior performance, in order to fulfill its potential Çukurova needs to address various challenges going forward.

Endowments: We discussed that energy costs are an important constraint in Turkey. Although energy costs make up only 9% of costs in textiles, given international price competition, this is still important. Relative to other regions in Turkey, dams in Cukurova help relieve this constraint a bit, but energy stability is a vital metric to watch for the health of cluster.

Factor Conditions: A major constraint in Cukurova is the quality of education and lack of R&D. The quality of vocational schools needs to be raised and curriculum should be reformed to be in line with modern manufacturing techniques in textiles and current human capital needs of employers. Government funding for R&D projects is essential and this effort should be focused on textiles. Through tax incentives and co-sponsored projects through public universities, Cukurova's innovation in textiles needs improved.

Demand Conditions: Branding Cukurova in textiles is essential. Turquality has been a successful effort to brand Turkish products internationally, and has been particularly profitable for home textiles from Denizli. A similar campaign, for example for cotton-based products produced in Cukurova would be beneficial. Also, entering different international markets will give Cukurova textile firms know-how on international demand, while it will diversify political and economic risks.

Context for Firm Strategy and Rivalry: In April 2012, Turkish government announced a new development plan with relatively more focus on cluster policy. This policy is planned to go live by fall 2012. Although the details of the plan are not announced yet, our recommendation would be for textiles to receive special attention and get significant government support in Cukurova.

The complex tax system with many exemptions and loopholes promotes informal sector. The existence of complex incentive system with many implementing agencies and unclear terms creates confusion and gives rise to irrational investment decisions within the market (Textile, Apparel and Leather Products Sectoral Evaluation Report 2010). Therefore, a simpler tax and incentive system that to foster formal economy is needed.

Although availability of seasonal labor provides Cukurova with a flexible labor force, high turnover rate as a result of this seasonality limits training opportunities and hinders human capital accumulation. This, in turn, lowers the productivity. Therefore, legal registration of seasonal labor force needs to be eased and we recommend adopting a flexible employment scheme within the region. Forming regional minimum wages rather than national ones can also be helpful.

Çukurova competes with more developed western regions to attract FDI. In that respect, the collaboration between regional development agencies and Invest in Turkey agency is of tremendous importance to attract FDI. Government should support local investment agencies and create links with Invest in Turkey to increase FDI to the region.

Related and Supporting Industries: Although the Cukurova economy is diversified, there is little collaboration between sectors. This is mostly due to lack of strong IFCs, trade associations and export groups. With the emergence of new organizations in Cukurova, the collaboration of related and supporting industries should increase. However, these new institutions lack support and credibility, overshadowed by national organizations such as TUSIAD and MUSIAD. Budgets of these organizations are limited, with little government support; they have to depend on private sector funds. Larger firms are more active in funding, thus more vocal in their agendas, while SME perspectives are often under-represented. Government support to these organizations and international knowledge transfer are essential in order to foster local stakeholder participation and industry spillovers in Cukurova textiles cluster.

4.7 Conclusion

In conclusion, we believe Cukurova has significant potential in textiles, but strengthening the cluster is essential to sustain and grow profits in this globally cutthroat industry. Lack of quality of education and innovation remain as major roadblocks to carry the cluster to a higher productivity level. High tax rates and informality in the economy hurts competitiveness both for Cukurova textiles cluster and for Turkey overall, while strong endowments and local competition due to numerous SMEs are propelling factors pushing the industry forward. Consistency and strong cluster focus in government policy are not only crucial in order to develop emerging clusters such as Cukurova textiles cluster, but also fundamental to increase competitiveness of Turkey as a country climbing up the development ladder.

REFERENCES

Acheson, Helena, Izsak, Kincso, and Markianidou, Paresa. (2011). *Innovation Policy Trends in the EU and Beyond* (Pro Inno Europe Report) Retrieved March 20, 2012, from www.proinno-europe.eu.

Akgungor, Sedef. (2004). *Industry Clusters In Turkey: Identifying Regional Highpoints* (Yapi Kredi Economic Review) Retrieved March 5, 2012, from http://www.yapikredi.com.tr/arsiv/english/economic_review/15-2-4.pdf.

Central Intelligence Agency. (2012). *CIA World Factbook – Turkey* (CIA World Factbook Online) Retrieved February 20, 2012, from https://www.cia.gov/library/publications/the-world-factbook/geos/tu.html.

DataMonitor. (2012). *Global Textiles and Apparel Industry Data* (DataMonitor Database) Retrieved March 10, 2012, from http://about.datamonitor.com/sectors/sourcing.htm.

Directorate General for Industry. (2010). *Textile, Apparel, Leather and Leather Products Sectors Report*. Ankara: Ministry of Science, Industry and Technology.

Economist Intelligence Unit. (2012). *Turkey Country Report* (Economist Intelligence Unit Limited) London: EIU.

Elbehri, Aziz. (2004). *MFA Quota Removal and Global Textile and Cotton Trade: Estimating Quota Trade Restrictiveness and Quantifying Post-MFA Trade Patterns* (USDA) Retrieved February 15, 2012, from https://www.gtap.agecon.purdue.edu/resources/download/1861.pdf.

Elci, Sirin. (2011). *Mini Country Report - Turkey* (Pro Inno Europe Report) Retrieved March 20, 2012, from www.proinno-europe.eu.

Emre, Peker, and Bryant, Steve. (2011). *Prosperity and Anxiety: Turkey's Boom* (Bloomberg Markets) Retrieved March 20, 2012, from http://www.bloomberg.com/news/2011-08-23/turkey-boom-most-since-ataturk-lets-erdogan-take-up-masterpiece.html.

European Commission. (2009). *Growth and economic crises in Turkey: leaving behind a turbulent past?* (European Commission Report) Retrieved March 20, 2012, from http://ec.europa.eu/economy_finance/publications/publication16004_en.pdf.

European Commission. (2010). *Turkey 2010 Progress Report* (European Commission Staff Working Document) Retrieved March 20, 2012, from http://ec.europa.eu/enlargement/pdf/key_documents/2010/package/tr_rapport_2010_en.pdf.

Institute for Strategy and Competitiveness. (2011). http://www.isc.hbs.edu/

Invest in Turkey. (2012). *Investment Guide: Ten Reasons to Invest in Turkey* (Invest in Turkey website) Retrieved March 5, 2012, from http://www.invest.gov.tr/en-US/investmentguide/Pages/10Reasons.aspx.
IKA (Ipekyolu Regional Development Agencies). (2010). *Regional Development Plan*. Gaziantep, Turkey.

ITKIB (Istanbul Textile and Apparel Exporters' Associations). (2010). *Turkish Textile Industry*. Retrieved from General Secreteriat of Istanbul Textile and Apparel Exporters' Associations Web Site:

Maastricht Economic and Social Research Institute on Innovation and Technology. (2012). *Innovation Union Scoreboard 2011: The Innovation Union's performance scoreboard for Research and Innovation* (UNU-MERIT) Retrieved March 20, 2012, from http://www.proinno-europe.eu/inno-metrics/page/innovation-union-scoreboard-2011.

McNamara, Kerry. (2008). *The Global Textiles and Garments Industry: The Role of Information and Communications Technologies In Exploiting the Value Chain* (infoDev Publications) Retrieved February 15, 2012, from
http://www.infodev.org/en/Publication.582.html.
http://www.itkib.org.tr/english/about/sectors/textile/textile_info.pdf

Ministry of Economy. (2011). *List of Companies with Foreign Capital in Turkey as of the end of 2011*. Retrieved from Republic of Turkey, Ministry of Economy :
http://www.economy.gov.tr/upload/40FA8506-0877-2D45-2E0795E937FA9941/Company_List.xls

Nordas, Hildegunn Kyvik. (2004). *The Global Textile and Clothing Industry post the Agreement on Textiles and Clothing* (World Trade Organization) Retrieved February 15, 2012, from http://www.wto.org/english/res_e/booksp_e/discussion_papers5_e.pdf.

Organization for Economic Cooperation and Development. (2004). *Small and Medium-Sized Enterprises in Turkey: Issues and Policies* (OECD Report) Retrieved February 15, 2012, from http://www.oecd.org/dataoecd/5/11/31932173.pdf.

SPO (State Planning organization of Turkey. (2007). *Textile, Leather and Clothing Industry Adhoc Commitee Report*. Ankara.

SPO (State Planning Organization of Turkey). (2004). *SME Strategy and Action Plan*. Ankara.

Turkish EU Accession Delegation. (2010). *EU Energy Policy and Turkey* (EU Document) Retrieved March 20, 2012, from
http://ec.europa.eu/enlargement/pdf/european_energy_policy/fact_sheet_ecd_brux_comments_25_may_en.pdf.

Turkish Ministry of Economy. (2012). *Economic Outlook March 2012* (Ministry of Economy Presentation). Ankara.

World Bank Statistics Database. (2012) http://data.worldbank.org/

World Trade Organization. (2012). *Trade Statistics Database* (WTO Database) Retrieved March 5, 2012, from http://stat.wto.org/Home/WSDBHome.aspx?Language=E.

Xiaofen, Shao, and Renyong, Chi. *Integrating Textile Industry into Global Value Chain Stage – Case Study From Shaoxing Textile Sector in Zhejiang Province* (Institute of Small and Medium Business, China) Retrieved February 15, 2012, from http://www.seiofbluemountain.com/upload/product/200911/2006zxqyhy10a4.pdf.