

# The Changing Structure of Turkey's Trade and Industrial Competitiveness: Implications for the EU

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# The Changing Structure of Turkey's Trade and Industrial Competitiveness: Implications for the EU

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Turkey EU Trade Competitiveness

## Abstract

This paper presents a brief analysis of the main changes in the structure of Turkish trade and its industrial competitiveness, highlights some fault lines that need to be corrected if Turkey's international trade is to help it stay on a sustainable growth path and analyses the role which EU-Turkey trade can play in this. Trade has expanded considerably over the last decades, but more recently the share of exports in GDP has been declining, albeit slowly. While the growth of exports has been robust, it appears that an increasing proportion of Turkish exports contain imported intermediate inputs, which implies that the local value of Turkish exports might be growing by much less than one would expect from the high growth rates of overall exports. The high import content of Turkey's exports makes a correction of the trade imbalance via the exchange rate channel more difficult. Furthermore, Turkey's industry seems to be specialising in low to medium technology products. The structure of Turkey's comparative advantage has become different from both those of developing countries and some southern European countries. The Customs Union Treaty with the EU has helped Turkish firms to improve their competitiveness over the years. Turkey should benefit from being obliged to conclude free trade agreements (FTAs) with those countries that already have entered into such an agreement with the EU because this will reduce the margin of preference for EU goods in the Turkish market. Although this will come with a decrease in bilateral trade, it will help Turkey's welfare by means of reduction in trade diversion.

## Introduction

In the last three decades, Turkey has undergone major changes in many areas. Despite a number of economic crises and political instability, it has managed to grow over the years and is now often cited as one of the best-performing emerging economies in the world. To commemorate the centennial of the founding of the Republic, the current government set the goal of being among the 10 largest economies of the world by 2023. Indeed this ambitious goal implies that Turkey needs to outperform countries like the Netherlands, South Korea, Russia, Indonesia and Canada. Therefore, its trade and industrial structures need to evolve in order to resemble those of richer countries, both in terms of technological composition and value-added. On the other hand, Turkey needs to be able to accommodate competitive pressures brought on by the Customs Union with the EU and the free trade agreements (FTAs) the EU has with third countries. This paper aims to evaluate the changing structure of Turkish trade over the recent years and to highlight some fault lines that need to be corrected if Turkey's international trade is to help it stay on a sustainable growth path.

From a political perspective, the 1990s were a turbulent decade for Turkey. After ten years of political turmoil and macroeconomic instability triggered by recurring structural problems, in 2001 Turkey suffered the most severe economic crisis in its history in which its GDP shrunk by 5.7%. Immediately following the crisis, however, the banking and finance sectors were reformed, creating the basis for a swift recovery. Since 2002, Turkey has enjoyed political and macroeconomic stability that has allowed continuous growth.

From an economic and trade perspective, the early 1980s can be considered as a critical period. Following a long period under an import substitution regime and protectionist policies, Turkey switched to an export-led growth model in the early 1980s that was followed by trade liberalisation. Since then, the country's volume of trade has steadily increased. In the last decade, its international trade has increased considerably.

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However, the growth has become unbalanced with the boom in domestic demand in recent years. With domestic demand remaining strong imports have outpaced exports – reaching \$240 billion in 2011, compared to exports of \$134 billion. This trend did not change in the first six months of 2012.

The official *Turkish Exports Strategy for 2023* aims to reverse this trend and envisages an export volume of \$500 billion, roughly quadrupling the 2011 volume, in the next 10 years (Turkish Ministry of Economy 2012). Achieving this goal would require a growth rate of 8% per annum (Lehmann 2011), much higher than the average achieved over the last decade.

Figure 1 in the Annex shows that, particularly after 2000, the export of goods was the main driver behind total exports. This contradicts the widely held view that it was Turkey's booming tourism sector, which contributed most to its recovery. In reality the share of export of services in GDP declined in the last decade. Most of Turkish services exports are in traditional industries such as tourism, travel and construction. Turkey still lags behind in the export of high value-added services such as ICT, financial, business and legal services. For the long-term performance of its overall exports, the export of services in high value-added sectors that depend on high rates of tertiary education and thus skilled human capital, needs to be enhanced.

Looking at the evolution of the share of exports in GDP from another perspective, it would be fair to say that over the years Turkey has managed to maintain and stabilise the openness of its economy, despite the global crises. However, this stabilisation has occurred at a relatively low level in comparison with some emerging and developed economies, as represented by Germany where 50% of its GDP is accounted for by exports, 31% for China, 29% for Italy and 52% for South Korea in 2011. The ratio of exports to GDP for Turkey is around 25% lower than for all these countries, which are all much larger than Turkey.

Assessing competitiveness by the performance of exports, it would be fair to say that Turkish exports have performed well on average over the last decade. However, the dynamism seems to have fallen. According to OECD projections (OECD 2012), Turkey's export growth rate for goods and services trails behind other emerging economies such as Brazil, Korea, China and Russia in 2012 and 2013 as Table 1 in the Annex shows.

## Change in competitiveness of Turkish exports

As the Turkish economy became more integrated with the EU and with the rest of the world, Turkey's share in global exports first increased rapidly, but more recently it has declined (see Figure 2 in the Annex). In this section, we analyse briefly the evolution of the structure of Turkish trade using the Revealed Comparative Advantage (RCA) index which was calculated for 255 SITC 3-digit product categories for Turkey and its trading partners in order to make a comparison between Turkey and other countries/regions of the world. The correlation coefficient between RCA vectors (over all the 255 product groups) of Turkey and the selected countries/regions allows one to see how similar the structure of Turkish trade was to other countries. Figure 3 in the Annex illustrates the correlation coefficient between the RCA index for all products for Turkey and selected countries/regions for 1999 and 2011.

It is apparent that Turkey's RCA became more similar to strong manufacturing countries like Germany and the United States. However, it has grown less similar to countries such as China, the European Union as a whole, India and Thailand. Finally, the revealed comparative advantage of Turkey continues to resemble that of southern European countries like Greece, Italy, Spain and to a lesser extent Portugal. This should be a cause for concern given that recent research suggests (see Chen, Milesi-Ferretti and Tresselt 2012) that part of the problem of these countries stems from a loss of market shares due to the increased competition from China and other emerging markets.

Has the structure of Turkish trade evolved in a similar direction as these and other countries? In order to present a more systematic picture, we also present the correlation coefficient of the changes in the RCA for each product group between 1999 and 2011. Figure 4 in the Annex illustrates the scatter plot of the correlation coefficient<sup>1</sup> between the changes in RCA (vertical axis) and the respective country's GDP per capita in 2011 (horizontal axis).

The change vector of Turkey's RCA between 1999 and 2011 is more positively correlated with low and medium GDP per capita countries, whereas it is more negatively correlated with very high GDP per capita countries. The revealed competitive advantage of Turkey in various products has thus evolved to resemble lower-income countries.

## Geographical and sectoral composition of Turkish exports

Most of Turkey's exports are manufactured goods. Although its share is declining, with 79% of total exports in 2011 it is second to only China among the BRIC countries. With such a large share of exports, the characteristics of manufacturing industry play an important determinant of Turkish export performance. One of the most significant characteristics of the manufacturing industry is its dependence on imported intermediary goods. According to the *Import Map of Turkey* prepared by the Ministry of Economy<sup>2</sup> the imported component of Turkish manufacturing industry was 43% for 2011 (up from 40% in 2010). The most dependent sectors are fertilizers (72%), iron and steel (69%), chemicals (56%), other metals and products (51%) and motor vehicles (51%). Furthermore, in 2010 the growth of imports for manufacturing has surpassed the growth rate of manufacturing itself, implying that the dependency of the manufacturing industry on imports has increased. Sectors that grow above the average industry growth of Turkey typically have larger share of import component. Finally, the share of domestic value-added of those industries that generate value added above 1 billion TRL in 2011 GDP was 5.5%.

In the last decade, Turkey's manufacturing industry has catered more to the domestic market than it did to international markets. For one unit increase in domestic sale of industrial goods, imports increase .38 units, which make the domestic demand the main driver of import of intermediary goods for industrial production. These figures signal that exports are less dependent on imported intermediaries. However these figures do not include energy imports, which was almost 21% of total imports in Turkey and cost \$54 billion. In total, as Figure 5 in the Annex shows, the import map study reported that imported intermediary goods content of Turkish exports in 2011 was 28%. The high dependency of exports on intermediate goods and the low domestic value added of exports signal that whilst growing its exports Turkey has become a "bazaar economy" (Sinn 2006). This point is supported by the various efforts run by the Ministry of Economy in order to decrease the foreign dependency of most competitive export sectors. This strategy is also designed as a long-term plan to remedy the current account deficit mostly caused by trade imbalances.

The high dependence of exports on imported intermediate inputs implies that exchange rate movements might have less of an impact on the trade deficit than before because depreciation will also increase the cost of imported intermediate inputs. Another illustration of the same phenomenon is found by simply subtracting intermediate inputs from both exports and imports. If the import content of exports is 40% this implies that the value added in exports is only 0.6 times \$130 billion or \$78 billion (with \$52 billion of imported intermediate inputs). The imports actually consumed within Turkey would then be equal to \$240 billion – \$52 billion, or \$188 billion. This implies that the import cover in value-added terms is only 78/188, or about 42%, much lower than the import cover on the gross figures, which is 130/240, or about 54%.

1 It should be noted that most correlation coefficients did not show statistical significance at  $\alpha=0.05$ .

2 See <http://www.ekonomi.gov.tr/index.cfm?sayfa=ithharita>.

## EU-Turkey trade

The EU has remained Turkey's most important trading partner, even if its share in Turkey's exports has fallen from 56% in 2000 to 47% in 2011. The decline in the EU's share is probably mostly due to the relative decline of the EU economy compared especially to the more dynamic markets in the Middle East and other natural resource-rich countries.

In part, a large share of the EU in exports is not only a natural consequence of the EU-Turkey Customs Union formed in 1996 and increased transposition of the EU *acquis* into Turkish legislation both through the Annexes of the Customs Union and, since 2005, through the accession talks. A number of studies have shown that the intensity of the bilateral trade relationship can be explained mostly by the size of the EU market. The EU-TK customs union seems to have had only a small impact on bilateral trade volumes (Bilici, Erdil and Yetkiner 2008). At first sight, this result is surprising, even though it has been reached by a number of other studies as well, e.g. Jiménez and Martín 2010 and Antonucci and Manzocchi 2005. In general it should be taken as a positive sign since it implies that the customs union has not led to significant trade diversion, but rather to a general opening of the Turkish economy.

In accordance with the Customs Union, Turkey is obliged to enforce a common tariff regime in its external trade. Therefore, Turkey has concluded many Free Trade Agreements (FTAs) over the years basically following the EU's path, the most recent one being with South Korea, which has yet to be ratified<sup>3</sup> (see Table 2 and 3 in the Annex for the status of the EU FTA agreements and the export-import shares of countries with or forthcoming FTA agreements in the total TK values). Unfortunately the EU negotiates its bilateral FTAs without consulting Turkey or taking Turkish interests into account. Following the FTA between EU and South Korea, both sides issued a joint declaration where South Korea was invited to enter into negotiations with Turkey for an agreement "on a mutually advantageous basis".<sup>4</sup> However, the so-called "Turkey clause" is not binding. This is politically not sustainable, but Turkey might actually benefit from these FTAs if it can obtain similar reciprocal market opening with these countries on a bilateral basis. Indeed, Table 3 suggests a potential for increasing trade with countries that have or will conclude an FTA with the EU. The countries listed in the table account for about 16% of Turkish imports and about 11% of Turkish exports.

Liberalizing imports from such an important group of countries should erode the margin of preference enjoyed by EU goods on the market of Turkey and should thus make the Turkish economy more productive. Being able to import cheaper intermediate inputs from these countries could become an important competitive advantage for Turkish exporters.

Consequently, the international exposure of the Turkish economy has forced Turkish firms to adjust by increasing efficiency. Finally, increased FDI (above 80% of total inward FDI originates from the EU) has contributed to competitiveness in goods (Pelkmans 2012).

In recent years, Turkey has diversified the geographical composition of its export destinations. Although exports shares of destinations other than the EU have increased, the EU still remains the main export destination. Despite a downwards trend in the last decade, Turkish exports to the EU in 2011 constituted 47% of total exports. More importantly, almost 38% of these exports were of medium- and high-technology goods, which Turkey increasingly needs in its export basket due to international competitive pressures coming from countries with lower cost structures for manufacturing of low-technology goods (see Table 4 for technological classification of goods). Currently 58% of Turkish exports are low-technology goods. The addition of new export

markets contributes more to the increase of exports in low technology goods than medium and high technology goods. In rare examples where the contribution of high-technology goods exceeds 10% (e.g. the Turkic States), the very small value of exports (0.7% of all exports) renders this contribution insignificant (see Figure 6). In short, although market diversification helps, Turkey is better off continuing to export medium- and high-tech goods to the EU countries (Taglioni 2012).

In order to see in greater detail how specific sectors and regions contribute to the export performance of Turkey, a Constant Market Shares analysis (Jiménez and Martín 2010) was conducted for the period 2006-11. The constant share analysis is a method to decompose the export performance of a country or a region into two main drivers of export growth: competitiveness effect and structural effect. The competitiveness effect tries to capture the performance of the exports that are independent of structural effects, such as product composition and export destination composition. (The formulae used to calculate these two effects can be found in Figure 7 in the Annex).

Accordingly, Turkish export growth outperformed that of the world in these periods. This performance is mainly due to product composition of the exports and to a much smaller extent to the increase in competitiveness. Although Turkey has diversified its export destinations over the years, market specialisation had a negative effect on the export growth. The main findings of the analysis are presented in Table 5 in the Annex.

As Figure 8 in the Annex shows, the sectors contributing to the competitiveness effect are low-technology goods and medium technology. Although some high-technology goods had a positive, yet small, contribution to the competitiveness effect, the aggregate contribution of high technology goods to the competitiveness effect was negative. This finding is in accordance with the results shown in Figure 9 in the Annex, where the Middle East and North Africa (MENA) region as well as EU 27 seem to have contributed the most to the competitiveness effect in the reference period.

## Conclusion

Turkey's external trade has been quite dynamic, but the specialisation seems to remain in low- to medium-tech products. Moreover, the value added contained in Turkish merchandise exports is quite low, which implies that the export sector is not as important for GDP and employment, as often assumed. But the high-import content of exports also implies that the exchange rate becomes a less effective means to correct a trade imbalance. A large devaluation would also increase the cost of the intermediate goods incorporated in exports. This should be a cause for concern as the current account deficits continues at a high level despite the recent cooling of domestic demand.

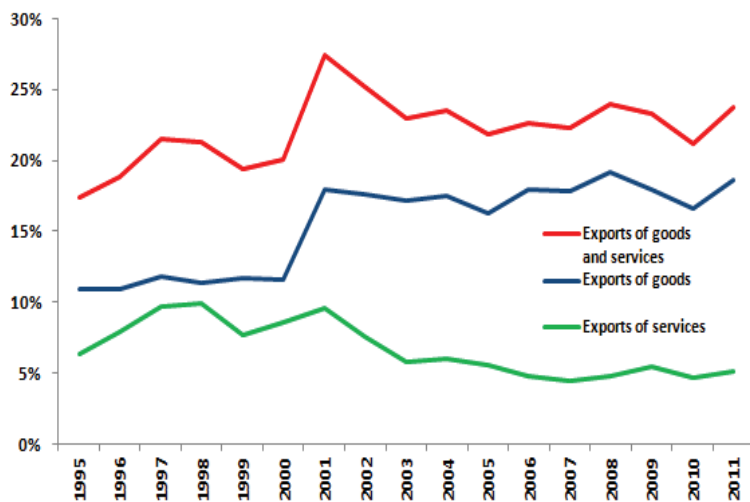
On the other hand Turkish exports need to cope with increasing international competitiveness. One constant irritant in Turkish-EU relations has been the fact that the EU has tended to negotiate free trade agreements with third countries.

Given the Customs Union, Turkey has little choice but to negotiate free trade agreements with these countries as well. This pattern is of course politically difficult to sustain. However, the beneficial effect of the increasing number of FTAs should allow a further opening of the Turkish economy. In the short run, there will be increased competitive pressures from other emerging industries, but in the medium to long run, Turkey should benefit from less distortionary trade. The extension of free trade to more and more third countries also leads to a de facto erosion of the preference for EU products on the Turkish market. This effect is too little recognised in Turkey as it should be unambiguously beneficial for Turkey, given that reduced trade diversion (which constitutes the main negative effect of a customs union) should always bring welfare benefits. The EU's policy of concluding more and more bilateral FTAs could thus lead to a strengthening of the Turkish economy, while weakening the bilateral economic ties at the same time.

<sup>3</sup> Turkish Ministry of Economy, *Turkey's Free Trade Agreements*, <http://www.economy.gov.tr/index.cfm?sayfa=tradeagreements&bolum=fta>.

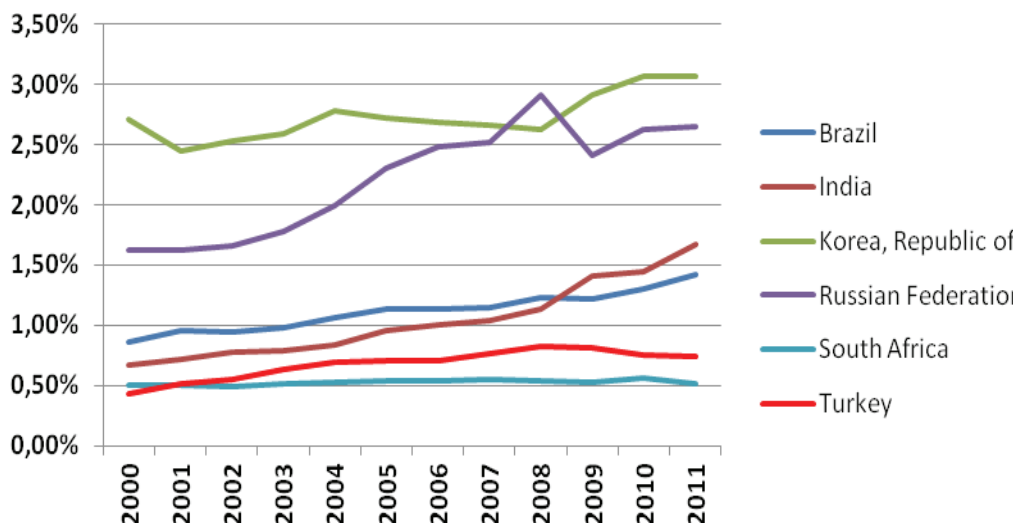
<sup>4</sup> EU-Korea Free trade agreement: Joint declaration on Turkey, 19 October 2009, <http://trade.ec.europa.eu/doclib/html/145195.htm>.

• **Figure 1 | Evolution of total exports as a share of GDP (current prices)**



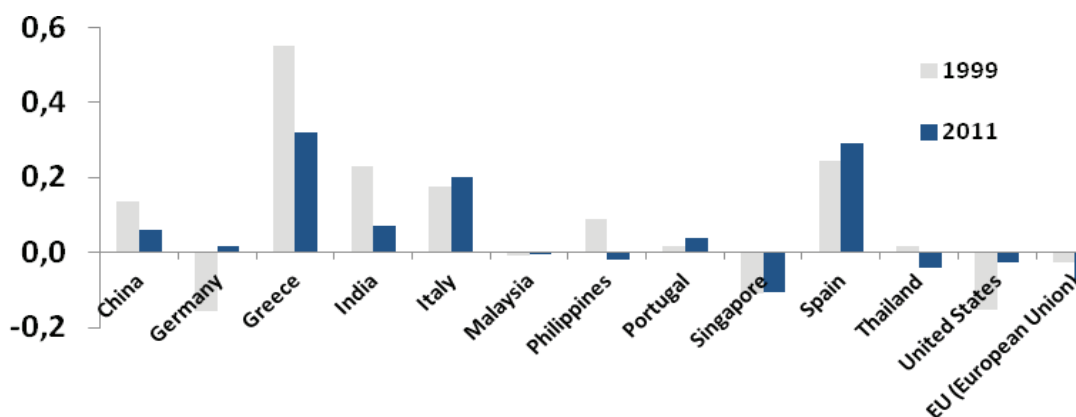
Source: OECD

• **Figure 2 | Selected country export shares in total world exports (value)**



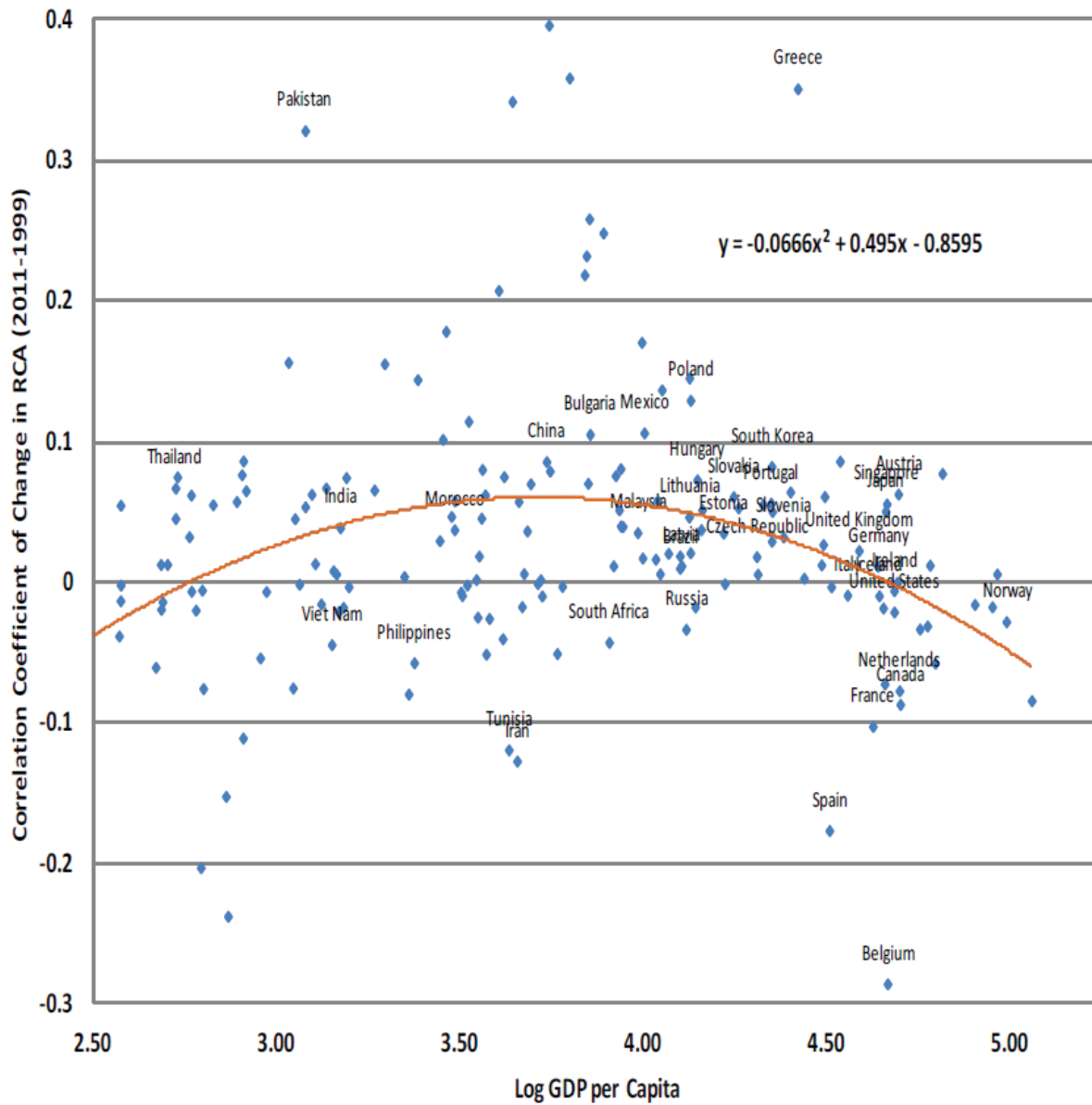
Source: UNCTAD Database and authors' own calculations.

• **Figure 3 | RCA vector correlation coefficient between Turkey and selected countries/regions**



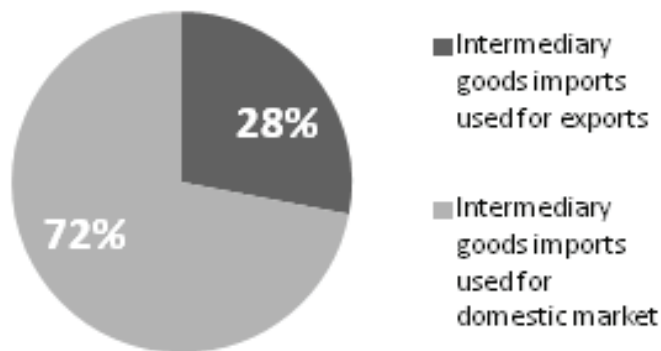
Source: UNCTAD database and authors' own calculations.

• Figure 4 | RCA vector correlation coefficient between Turkey and selected countries/regions



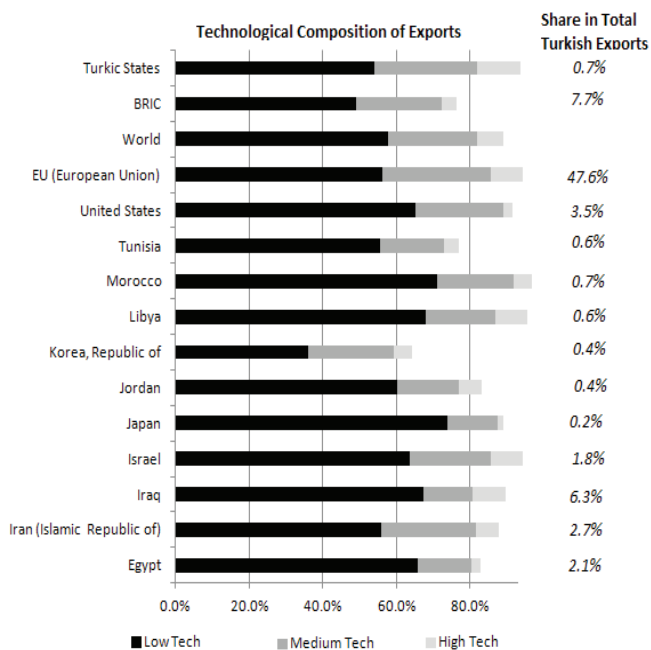
Source: UNCTAD database, World Bank Development Indicators, and authors' own calculations.

• Figure 5 | Share of imports in domestic market and exports



Source: Import Map of Turkey.

• **Figure 6 | Technological composition of TK exports and share in total TK exports**



Source: UNCTAD Database, authors' own calculations.

• **Figure 7 | Formulae**

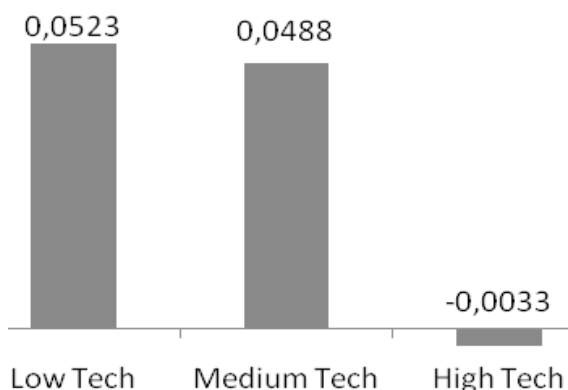
$$gX^p - gX^* = \underbrace{\sum_k \sum_j (a_{kj}^p - a_{kj}^*) gX_{kj}^*}_{\text{Structural Effect}} + \underbrace{\sum_k \sum_j a_{kj}^p (gX_{kj}^p - gX_{kj}^*)}_{\text{Competitiveness Effect}}$$

The breakdown of the structural effect:

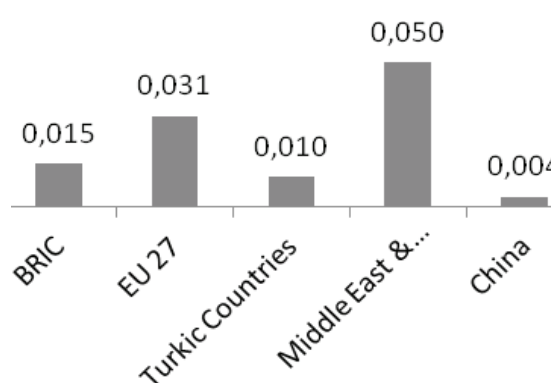
$$\underbrace{\sum_k (a_k^p - a_k^*) gX_k^*}_{\text{Product Effect}} + \underbrace{\sum_j (a_j^p - a_j^*) gX_j^*}_{\text{Market Effect}} + \underbrace{\sum_k \sum_j [(a_{kj}^p - a_{kj}^*) - (a_k^p - a_k^*) \frac{a_{kj}^p}{a_k^p} - (a_j^p - a_j^*) \frac{a_{kj}^p}{a_j^p}] gX_{kj}^*}_{\text{Structural Mixed Effect}}$$

The superscripts *p* and *\** represent Turkey and the world respectively and the subscripts *k* and *j* represent market and product respectively. Furthermore *gX* represents the export growth and *a* represents the share of the export of a certain product and/or to a specific region/country in Turkey's total exports in the base year (i.e. 2006).

• **Figure 8 | Technology group contribution to competitiveness effect** • **Figure 9 | Regional contribution to competitiveness effect**



Source: Authors' own calculations based on Constant Market Shares analysis.



Source: Authors' own calculations based on Constant Market Shares analysis.

• **Table 1 | Export market growth in goods and services (volume, percentage change on preceding year)**

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Czech Republic	1.5	5.2	8.7	7.6	11.4	7.6	3.1	-11.9	11.6	6.0	3.6	6.0
Estonia	3.0	4.7	9.2	9.2	10.3	9.4	5.6	-14.3	10.9	5.7	3.7	5.7
Greece	3.4	5.7	10.0	8.6	9.2	9.0	4.3	-11.5	10.7	6.0	3.8	6.3
Hungary	1.8	5.2	8.8	7.5	10.4	8.1	3.1	-11.7	11.0	5.9	3.4	6.0
Slovak Republic	2.0	5.6	9.2	6.9	10.8	8.7	2.8	-11.6	11.9	6.3	3.1	6.1
Turkey	3.1	5.0	9.4	9.1	10.0	10.3	4.9	-11.0	9.1	5.2	4.3	6.9
China	3.8	5.9	11.3	7.9	8.3	7.0	3.2	-12.3	13.1	6.0	4.8	7.1
Russia	3.5	6.4	9.9	8.4	10.0	9.2	4.1	-10.1	11.4	5.6	3.5	6.4
Brazil	-1.2	8.4	13.4	10.4	10.4	10.5	5.5	-11.7	14.8	7.8	5.3	7.2
Korea	7.0	10.6	14.4	9.8	10.5	9.3	4.2	-8.0	15.5	7.2	5.4	8.7
Mexico	3.1	4.7	11.1	6.6	6.6	3.6	-1.3	-13.1	12.6	5.2	4.0	6.4

Source: OECD. For more details on the methodology, see Brézillon, Guichard and Turner 2010.

• **Table 2 | State of FTA agreements**

Concluded FTAs	FTAs currently negotiated	Association agreements with FDA Component
South Africa	ASEAN	Central America
Chile	Canada	Andean Community
Korea	Gulf Cooperation Council (GCC)	Mercosur
Mexico	India	
	Malaysia	
	Ukraine	
	Singapore	

Source: European Commission, [http://ec.europa.eu/enterprise/policies/international/facilitating-trade/free-trade/index\\_en.htm#h2-1](http://ec.europa.eu/enterprise/policies/international/facilitating-trade/free-trade/index_en.htm#h2-1).

• **Table 3 | Export-import shares in total TK values (%)**

	Imports from/Share of Total Imports			Exports to/Share of Total Imports		
	2009	2010	2011	2009	2010	2011
Canada	0.67	0.49	0.54	0.33	0.42	0.65
Chile	0.14	0.17	0.20	0.04	0.07	0.10
India	1.34	1.84	2.70	0.40	0.53	0.56
Korea	2.21	2.57	2.62	0.23	0.27	0.39
Malaysia	0.68	0.61	0.65	0.14	0.20	0.14
Mexico	0.24	0.27	0.29	0.09	0.13	0.11
Singapore	0.14	0.11	0.15	0.34	0.53	0.62
South Africa	0.78	0.48	0.81	0.85	0.32	0.38
Ukraine	2.24	2.07	2.00	1.01	1.11	1.28
Central America	0.29	0.32	0.35	0.20	0.28	0.31
ANCOM	0.38	0.25	0.35	0.12	0.22	0.34
ASEAN	2.65	2.70	2.76	1.14	1.31	1.25
GCC	1.90	1.96	1.90	5.28	5.63	5.43
MERCOSUR	1.02	1.09	1.26	0.47	0.75	0.86

Note: Central America: Panama, Guatemala, Costa Rica, El Salvador, Honduras, Nicaragua.

GCC: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates.

Mercosur: Argentina, Brazil, Paraguay, Uruguay, Venezuela.

ASEAN: Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

Source: UNCTAD database



• **Table 4 | Technological Classification of Goods**

Product group	SITC code	Technology Group
Food, beverages and tobacco	0+1	Low tech
Textiles, wearing apparel and leather industry	61+65+83+84+85	Low tech
Paper and paper products, printing and publishing	64	Low tech
Wood and wood products, including furniture	63+83	Low tech
Non-metal mineral products	66	Low tech
Basic metal industries	67+68	Low tech
Metallic products, except machinery and transport equipment	69	Low tech
Other	81+62+89	Low tech
Manufacture of agricultural and industrial machinery, except electrical machinery	71+72+73+74	Medium Tech
Manufacture of transport equipment	78+79	Medium Tech
Chemicals, rubber and plastic products	51+52+53+55+56+57+58+59	Medium Tech
Manufacture of electrical machinery, appliances and accessories	76+77	High Tech
Pharmaceutical products	54	High Tech
Professional and scientific services, measuring checking and precision instruments, photographic and optical appliances, office machinery and computers	75+87+88	High Tech

• **Table 5 | Results of CMS for 2006-11**

Total	Competitiveness Effect	Product Effect	Market effect	Mixed Effect
0.188	0.0980	0.42	0.11	-0.22

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