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**Evaluating the Contribution of
Transportation and Logistics Industry to
Turkey's Competitive Power**

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Evaluating the Contribution of Transportation and Logistics Industry to Turkey's Competitive Power

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Abstract

Competitiveness is an irrefutable phenomenon in liberalized, privatized and globalized business environment at the level of both corporate and economies. In such conditions countries tend to reach more international trade volume to be more competitive and to increase country's economic growth rate. Meanwhile, logistics industry, particularly transportation, as a facilitator in international trade grew significantly while logistics became a significant part of the business economic system and major global economic activity in recent years. Today, logistics is becoming a vital element of competitiveness and economic performance both in itself and within the context of increasing globalization.

Turkey has a plan to improve its economic position through increasing international trade volume, simultaneously wanting to increase its competitiveness in logistics as well. Since the aim of this paper is to evaluate the competitive power of logistics industry in Turkey, Logistics Performance Index (LPI) is analyzed without neglecting its facilitator role in business life and relationship with economic competitiveness. While analyzing LPI, a qualitative comparison is done with Global Competitiveness Index (GCI).

Keywords: Logistics, Competitiveness, Turkey, Indexes.

Introduction

Competitiveness, mostly driven by liberalization, privatization and globalization of economies and companies is an undeniable phenomenon. The changes and pressures are enabling global rivals to make their products and services available to customers worldwide, resulting in a greater range of options for consumers together with a need for companies to offer better quality products and services at lower costs (Shailendrakumar 2007). Thus, the international competitive power of states is an ever-growing focus among governments, firms and academics (Ketels 2006). This growing competition exists not only between rivaling firms within a country, but also between countries across multiple industries (Tongzon 2007). Therefore, countries undersign many bilateral and multilateral trade agreements.

The complexity of foreign trade transactions increased the importance of logistics which is becoming a vital element of competitiveness and economic performance, both in itself and within the context of increasing globalization (Guasch 2011). Logistics costs have a significant impact on competitiveness, productivity, trade, integration, food prices, inequality, and poverty (Guasch 2011).

A recent study shows that countries with greater capability in logistics are taking the lead over their competitors (Erkan 2014). Countries are aiming to benefit from the competitive power of the logistics industry, in order to improve their overall competitiveness. The competition among countries is especially fierce in the area of logistics, where the economic benefits are greatest due to increasing trade and investment flows between countries (Tongzon 2007).

Turkish logistics industry has recently grown more than its economy. As a developing country, Turkey realised the importance of logistics in the macro perspective. According to data from the Turkish Statistics Institute (TUIK), the Turkish Transportation & Logistics (T&L) industry had a value of \$30 billion in 2011 (TUIK 2013). Turkish economy achieved 2.2% growth in 2012 and 4.1% in 2013, becoming the world's seventeenth largest economy (World Bank 2015a). Logistics expenditures (mainly in regard of transportation and warehousing) constituted 12.3% of national income in 2013 (TUIK 2013). Considering that the growth of the T&L industry is greater than economic growth, it can be roughly estimated that Turkish T&L industry will have the value of \$45 billion by the end of 2015.

Researches indicate that there is a strong relationship between logistics performance and the general competitiveness of a country. However, there is only one piece of research (Erkan 2014) on the relationship between the Global Competitiveness Index and the Logistics Performance Index in context of Turkey. Looking at another World Bank publication, Doing Business Index (DBI) ranked Turkey 55th out of 189 countries (World Bank 2015b). In 2014, the World Economic Forum's Global Competitiveness Index (GCI) ranked Turkey 45th out of 144 countries, with an overall score of 45 (WEF 2014-2015).

The aim of this paper is to evaluate the contribution of transportation and logistics industry to Turkey's global competitiveness rate and make suggestions what to do next. In this context, LPI, and GCI indexes are analysed, the results are interpreted and critical points to develop are presented in the conclusion.

Determinants of Competitiveness in Logistics

Competitiveness is primarily understood as the condition of being better than others (Garelli 2014). M. Porter, a leading researcher in the area, defines competitiveness by focusing on productivity (Porter 1980). In line with Porter's arguments, many researchers and authors recognize productivity as the key determinant of competitiveness in regard to efficiency. In its Global Competitiveness Report, the World Economic Forum states that "the only meaningful concept of competitiveness at the national level is productivity" (WEF 2014-2015). In international business environments, competitiveness can be defined as the ability of a firm or a nation to offer more value-added goods and services than its rivals.

Determining international competitiveness in logistics, there are several factors that can be categorised as either macro or micro factors (Tongzon 2007). Porter suggests an industry level competitiveness framework. The five forces model determines the intensity of competition in an industry. According to Porter, a number of structural factors can affect industry rivalry, such as (1) numerous or equally balanced competitors, (2) slow industry growth, (3) high fixed or storage costs, (4) lack of differentiation or switching costs, (5) capacity increased in large increments, (6) diverse competitors, (7) high strategic stakes and (8) high exit barriers (Porter 1980).

As macro factors are taken into consideration in inter-country perspectives, the majority of discussions made on the competitive success of nations focus on aggregate, economy-wide measures like the balance of trade. Porter suggests a framework to evaluate the competitive advantage of nations. In his model, (1) factor conditions, (2) demand conditions, (3) related and supporting industries, and (4) firm strategy, structure, and rivalry are the key factors to determine competitive advantage of a country. He also added (5) government and chance to those factor conditions (Porter 1990).

In evaluating the competitive power in terms of logistics, LPI indicators (World Bank 2014) are the most used at the macro level. The LPI assesses the performance of countries in six main areas, and is an equally weighted average of these six components:

1. Customs: Efficiency of the customs and border clearance process.
2. Infrastructure: Quality of trade and transport-related infrastructure.
3. International Shipments: Ease of arranging competitively priced shipments.

4. Logistics Competence: Competence and quality of logistics services in regard of trucking, forwarding, and customs brokerage
5. Tracking and Tracing: Ability to track and trace consignments.
6. Timeliness: Frequency with which shipments reach consignees within the scheduled or expected delivery times.

Mohan's study (2013) revealed that logistics management affects global competitiveness in India. According to the study, logistics service providers can provide benefits to customers by reducing logistics costs, while simultaneously improving the service standards (Mohan 2013). Erkan (2014) found a strong mutual relationship ($r=0.865$) between the total score for logistics related indicators from the Global Competitiveness Index and the overall Logistics Performance Index score, while GCI indicators explain 74.5% of the changes in LPI in context of Turkey (Erkan 2014).

Turkey presents a strategic plan aimed at boosting its LPI ranking, and at becoming a regional logistics hub. These two objectives are closely related. Tongzon's (2007) study examines the determinants of competitiveness in logistics, and identifies the key factors that are required for a successful logistics hub.

The most significant determinants are operations efficiency and adaptability, which can be controlled by operators and represent the quantity and the quality of the services provided by service providers (Tongzon 2007). Beyond the operational efficiency and adaptability, the territory should be strategically located. It should have an air terminal that provides extensive linkages and global connectivity to the world (Tongzon 2007). Its seaport should be the focal point of shipping lines and have good linkages to other ports worldwide, as well as capabilities in warehousing and related services. More importantly, adequate and highly efficient infrastructure must be available. Political and economic stability with a strong and supportive government that promotes growth of the logistics sector through implementation of transparent policies and harmonious management, and labour-government relations are also critical factors in success (Tongzon 2007).

Current Situation of Turkey in Different Indexes

We will analyse two most relevant indexes in regard how Turkey's transportation and logistics industry contributes to its global competitiveness: Logistics Performance Index (LPI), and Competitiveness Index.

Logistics Performance Index (LPI)

LPI, which gives a benchmarking tool by measuring on-the ground efficiency of trade, supply chains, or logistics performance, has been published biannually by the World Bank since 2007. The 2014 edition includes 160 countries.

The LPI indicators help countries to understand and overcome the challenges they face in an international logistics environment. Table 1 shows us Turkey's position among some countries in last three reports.

Table 1. Turkey's Position Among Selected Countries in LPI

Economy	2014		2012		2010	
	Rank	Score	Rank	Score	Rank	Score
Germany	1	4.12	4	4.03	1	4.11
China	26	3.53	26	3.52	27	3.49
Turkey	30	3.50	27	3.51	39	3.22
Romania	40	3.26	54	3.00	59	2.84
Greece	44	3.20	69	2.83	54	2.96

International LPI's analysis is based on six components as shown on Table 2.

Table 2. Turkey's Performance during 2010-2014 period in LPI Indicators

Indicator	2014		2012		2010	
	Rank	Score	Rank	Score	Rank	Score
General	30	3.50	27	3.51	39	3.22
Customs	34	3.23	32	3.16	46	2.82
Infrastructure	27	3.53	25	3.62	39	3.08
Ease of arranging shipments	48	3.18	30	3.38	44	3.15
Quality of logistics services	22	3.64	26	3.52	37	3.23
Tracking and tracing	19	3.77	29	3.54	56	3.09
Timeliness	41	3.68	27	3.87	31	3.94

Source: Tongzon 2007.

The Global Competitiveness Index (GCI)

Competitiveness is an important tool for formulating improved economic policies and institutional reforms (WEF 2014-2015).

According to the report, the concept of competitiveness involves static and dynamic components which are grouped into 12 (WEF 2014-2015: 4): (1) Institutions, (2) Infrastructure, (3) Macroeconomic environment, (4) Health and primary education, (5) Higher education and training, (6) Goods market efficiency, (7) Labor market efficiency, (8) Financial market development, (9) Technological readiness, (10) Market size, (11) Business sophistication, and (12) Innovation.

Table 3. The GCI 2014-2015 Rankings and 2013-2014 Comparisons

Country / Economy	Rank (out of 144)	Score (1-7)	Rank among 2013-2014 economies	GCI 2013-2014 rank (out of 148)
Singapore	2	5.65	2	2
US	3	5.54	3	5
Turkey	45	4.46	45	44

Given Turkey's overall ranking of 45 (Table 3), it is noteworthy that in almost all pillars it ranks under 45 (Table 4). If we exclude "market size" -for

which Turkey is ranked 16- Turkey's general rank would be of 62. This has both negative and positive implications regarding future strategy. On one hand, having the 16th rank in "market size" which contributes to Turkey being 18th biggest economy in the World is a big plus. On the other hand, the fact that all other pillars rank under 45 is actually an indicator that Turkey, in fact, stands at the rank of approximately 60 excluding the habitual advantage of its market size.

Table 4. *The GCI 2014-2015: Efficiency Enhancers*

Country/	Efficiency Enhancers		7. Labour market efficiency		9. Technological readiness		10. Market size		Rank	Score
	Rank	Score	Score	Rank	Rank	Score	Rank	Score		
Switzerland	5	5.49	5.39	1	11	5.29	10	5.97	39	4.57
Singapore	2	5.68	5.64	2	2	5.84	7	6.09	31	4.71
US	1	5.71	5.05	4	9	5.35	16	5.78	1	6.94
Turkey	45	4,43	4,60	131	58	4,21	55	4,27	16	5,31

Discussion and Conclusion

This paper aims to evaluate the competitive power of the logistics industry in Turkey. As discussed, international trade is an important factor in economic growth. Global exports of Turkey were 9% of total revenue in 1960, increasing to 25.4 % in 2013. The growth of trade volume also increased T&L activities to an acceptable level. Lower-cost, fast, and qualified T&L activities will provide more international trade opportunities, which will in turn contribute to increasing national competitiveness and economic growth.

A close examination of logistics reveals that the Turkish logistics industry benefits significantly from its strategic location at the crossroads of Europe, Asia and the Middle East, and the size of its domestic market. For the time being, more international investors are recognising Turkey's beneficial geographical location and large domestic market. This growing awareness is helping to drive foreign direct investment both in the manufacturing and service industries. According to Ernst & Young's survey results, Turkey is set to become a regional and global business hub in the next 10 years. Its key strengths, such as its location and large domestic market, are helping Turkey to become a centre of operations for multinational companies (Ernst and Young 2013).

Considering the whole country as a regional logistics hub with its geostrategic position across the continents, Turkey has not only many world class airports that provide extensive linkages and connectivity to the world, but also seaports at key points along shipping lines and good linkages to other ports worldwide. Turkey offers an adequate and highly efficient infrastructure, plus a T&L sector which has received significant state investment. Its large and young population provides the human capital necessary for realising its ambitions as a successful logistics hub. For a decade, political and economic administrations have been standing behind the T&L sector and promoting the

growth of the sector through the implementation of transparent policies and harmonious management and labour-government relations.

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