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## An innovative solution for transportation among Caspian region

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### Abstract

Globalization and liberalization of the economies in worldwide raise the importance of transportation strategies to make difference in competitive environment. The rise of Asian economies attracted the attention of other countries. As a result of, the center of gravity of the World trade has shifted towards the east, Eurasian countries has appeared as ensuring sustainable economic growth by developing the trade relations among Eurasian countries as well as with other countries, and also European countries decided to expand the transport networks which facilitate trade relations. In line with these strategies, Asia-Europe transport corridor projects have been created. Some of these projects are; the Trans-European Transport Networks (TEN-T), Pan-European Corridors (PEC), Modern Silk Road and Europe-Caucasia-Asia Transport Corridor (TRACECA). But, there are deficiencies (like infrastructure, legislation) existing when these projects put into practice, and also, Caspian Sea (as an important land defect) necessitates intermodal transportation. In this paper, it has been aimed to examine alternative transportation lines in the region, reveal the current problems, and propose solutions within the context of infrastructure or transport policies. In scope of the study, qualitative research technique used, several visits were made to stakeholder countries to obtain data from field studies, and workshops were held as closed sessions.

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### 1. Introduction

Advances in transportation and communication technologies are gradually making the world smaller and more accessible. National borders, trade barriers and customs taxes disappear day by day. These developments, generally called as globalization, create new trade opportunities and also cause new difficulties (Candemir, 2001). Having many

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definitions in the literature according to different perspectives, globalization is defined by Dunning as a growth of international production, the way that changes in the structure and organization of the world's resources and capabilities impinge on the cross-border production and transaction strategies of companies (Dunning, 1993).

Due to the globalization, World trade has been increased. When the world trade is analyzed on the basis of the World Trade Organization data, it is observed that the growth rate of global trade was 3.1% in 2012 with a slight recession and it was recorded as 2.3% in 2013 due to further slowdown. Accordingly, World merchandise exports grew by 2,5 per cent and gross domestic product (GDP) grew by 2,0 per cent in 2013 (WTO, 2015). However, when the data is more thoroughly examined, significant decrease is defined in foreign trade of goods in developed countries while growth rates of developing countries, including the members of the Commonwealth of Independent States, are much higher. Within this scope, exports from EU member states to Eastern Europe have increased to a certain extent as a result of increasing foreign demand, and the imports from these states have recorded a more moderate increase. It is estimated that Russia's exports will slightly grow in 2014-2015 whereas energy exporters such as Kazakhstan and Turkmenistan will have higher rates of growth in parallel to China's increasing demand (UN, 2014). Integration of Asian countries into the global economic system, after the dissolution of the USSR, members of the Commonwealth of Independent States, which started to be included in the process of economic growth and development observed in East Asia. This situation changed the balances in world economy and made this region a center of production in the beginning of the 21st century. Thus, the center of trade which was announced by many sources turned its face towards the east (Economist, 2012).

As an economic consequence of globalization, today's leading companies have customer and supply networks that extend to more than one country or even more than one continent, and also, many companies, intending to benefit from emerging economic advantages. Because of the competition, companies just not only need the cost advantage in distribution channels, but also needs quick response which is moving rapidly through the production and delivery cycle, from raw materials to end customers (Perry et al., 1999, Fernie, 1994, Fiorito et al., 1995). As part of the operating strategies, adopting a marketing-oriented approach and putting efforts to meet customer demands without any delay have assured a considerable expansion in the product range.

In recent years, the availability and affordability of goods on global markets has become increasingly important; production is no longer the only metric. Logistics is one of the most important components in any supply chain. With the development of the manufacturing industry and the rapidly growing demand for specialized supply chain management services, the logistics industry is growing together with national economies (Acar and Yurdakul, 2015). Logistics industry growth needs logistics infrastructure improvements which mean investing in certain nodes of transport network as seaports, airports and linear infrastructure: road and rail links (Acar et al., 2015).

Previously the distribution system was mainly based of maritime transport; but the delays in the access to markets have gradually created a need to find an alternative to maritime transport although the unit cost is relatively low in maritime transport (Acar and Köseoğlu, 2014, Keskin, 2011). On the other hand, production industry concentrated around the southeastern ports of China have shifted towards the western parts of the country due to increasing workforce costs in the region, environmental factors and the inclination about universal humanitarian values, with the aim of being closer to energy and natural resources to gain advantage in terms of resource dependency.

The rise of Asian economies attracted the attention of other countries. As a result of, the center of gravity of the World trade has shifted towards the east, Eurasian countries has appeared as ensuring sustainable economic growth by developing the trade relations among Eurasian countries as well as with other countries, and also European countries decided to expand the transport networks which facilitate trade relations. Today's international logistics concept bases on intermodal transportation by depending on traditional transportation perspective, countries and companies seek a direct route to link Asia and Europe. In line with these strategies, Asia-Europe transport corridor projects have been created. Some of these projects are; the Trans-European Transport Networks (TEN-T), Pan-European Corridors (PEC), Modern Silk Road and Europe-Caucasia-Asia Transport Corridor (TRACECA).

Although Asia-Europe transport corridor projects have been created, there are deficiencies (like infrastructure, legislation) existing when these projects put into practice, and also, Caspian Sea (as an important land defect) necessitates intermodal transportation. In this paper, it has been aimed to examine alternative transportation lines in

the region, reveal the current problems, and propose solutions within the context of infrastructure or transport policies. In scope of the study, several visits were made to stakeholder countries to obtain data from field studies, and workshops were held as closed sessions.

In this context this study organized as follows. After this part used methodology will be expressed which including the meetings and workshops that hold. Chapter tree presents evolution of Silk Road Corridors and also Middle Corridor will be expressed in detail (which allows shorter and low costly solution thanks to intermodal transportation), and finally our innovative solutions will be evaluated in conclusion.

## **2. Methodology**

According to these study, several meetings held to decision makers. First of all, a visit to Azerbaijan's capital city Baku, which is a crucial terminal of the BTK Railway Project and also one of the strategic spots of the Silk Road, being revived. As part of the field study, personal meetings were held with senior officials of the Baku International Sea Trade Port, Caspian Shipping Company, and the Ministry of Transport of Azerbaijan. Pre-prepared topics were discussed during the meetings, and defined questions were asked to those officials. In this way, detailed information was gathered about Caspian Sea transits and the Azerbaijani section of the BTK Railway.

Thereafter, a visit was made to Georgia's capital Tbilisi, one of the strategic points of the Baku-Tbilisi-Kars Railway Project as well as the Middle Corridor which is an important part of TRACECA transit corridors. A minor roundtable meeting was held with the officials of the Transport Policy Department at the Ministry of Economy and Sustainable Development of Georgia.

Thirdly, a two-day workshop was held under the Ministry of Transport, Maritime Affairs and Communications of Turkey, gathering all stakeholders from related ministries and sectors. With regard to Turkey's potential to become a regional logistic base, participants revealed the current status in political, legal, economic, socio-cultural, technological and demographic terms, considering main criteria such as the infrastructure, legislation, traceability of freight and products. They also presented future projections within this context. Importance of the BTK Railway for transportation and the challenges observed in trade via road along the same route were discussed.

In the next phase, the Caspian Transit Corridor panel was organized in partnership with the International Turkic Academy and the Mazhilis of Parliament of Kazakhstan within the scope of the 8th Astana Economic Forum. During the panel, two sessions were held covering the subjects of cooperation between partner countries and the transport infrastructures within the context of the modern Silk Road. The panel hosted senior representatives of the transport sector from related countries such as Kazakhstan, Turkey, Azerbaijan, Iran and Turkmenistan, officials from leading non-governmental organizations that have made significant contributions to develop regional cooperation, and the representatives of the European Bank for Reconstruction and Development (EBRD). The panel, which was held within the scope of the Astana Economic Forum, served as a platform to raise awareness about the need to develop cooperation in the field of transportation with regional countries, and revealed the importance of joint projects.

Then, senior officials of JSC "NC "KTZ" (as the joint stock company of Kazakhstan Temir Zholy and KTZ Express) were interviewed in person. During the meetings, transportation strategies of Kazakhstan and its approach towards establishing cooperation with Turkey with regard to the Middle Corridor were discussed; comparative analyses were made on the time-cost basis among various transport corridors on the north-south and east-west axes.

All data obtained from the abovementioned institutions and organizations by means of meetings, interviews and field visits was collected, classified and examined in order to create a route map for governments as a supplementary tool for their development in this regard, and also for the logistics and transportation companies working along the Caspian Transit Corridor.

## **3. Evaluation of Silk Road Corridors**

Silk Road is the main transport project that gives Asian countries access to European markets. The Silk Road regained its significance after the Soviet Union was dissolved, a new period started for Central Asia, and Azerbaijan,

Kazakhstan, Turkmenistan, Kyrgyzstan, Tajikistan and Uzbekistan which became independent after the dissolution of the USSR took their place among developing countries. Also the increase of the trade volume between Europe and China according to the development of maritime transport and the disruption of the value chain at the international level helped the Silk Road come to the fore as an alternative route that saves time.

Recently China, which has become an important production center in the world, continues to develop its logistic network and implements major logistic infrastructure projects to transport its products to Europe faster instead of time-consuming maritime transport with the aim of gaining competitive advantage and improving its trade. In this context, it has put forward Silk Road projects and has developed its cooperation with the countries on the route.

These Eurasian transport corridors known as the Silk Road, connecting Asian to European continents, are separated into three different sections considering geographic and economic conditions.

**Northern Corridor:** Also known as the Trans-Siberian line, stretches from China to Europe through Russia and creates railway transport opportunities in Eurasia. This route which overlaps with the first corridor (Key CAREC Corridors, 2015), the most actively-used one among CAREC corridors, stretches between Europe and China's South Eastern coasts acting as an intercontinental bridge with the Trans-Siberian railway line in Western Russia. Also the second railway line (Chongqing-Xinjiang-Europe) that lies from China's western regions to Kazakhstan and from there to the North Corridor comes together with the Trans-Siberian line and accelerates the railway transport in the region, giving it an extra capacity. It became operational in 2011, extending for 11.179 km. This route, which started with the departure of a train consisting of 41 containers in August 2011, decreased the container transport time from China to Europe from 45-60 days by the sea to just 16 days by rail (Global Times, 2011). The biggest advantage of this corridor is that it is active since the Soviet Russia era. However, it has certain disadvantages such as high costs of maintenance of railways, geographic hardships, harsh climate conditions such as cold weather, and its being under Russia's monopoly in political terms.

**Southern Corridor:** Starts from China in the East, passing through Kyrgyzstan, Uzbekistan and Turkmenistan in the east of the region, and reaches up to the Port of Bandar Abbas in Iran or to Europe through Iran and Turkey. In this Central Asian section of the route, which constitutes the Eastern half of the corridor and accessing the Port of Bandar Abbas, overlaps with the third corridor of the CAREC program (Key CAREC Corridors, 2015). Generally land transport is used in this route together with a limited use of railway transport of containers. However in order for the corridor to compete with its alternatives, the railway infrastructure must be completed, security issues must be solved and international agreements must be signed. Moreover, Iran's lack of integration with the international markets due to political reasons and the lack of transportation, customs and borders check point infrastructures constitute an important disadvantage concerning the future of the line.

**Middle Corridor:** This corridor is also called as the Middle Corridor, is one of the most important components of the Modern Silk Road, extending from Western China to the Pacific Ocean particularly by railway through Kazakhstan, Azerbaijan (Caspian Sea transits), Georgia and Turkey to European borders. The other section of the line starts in Baku and connects to the Port of Turkmenbashi in Turkmenistan, and then to China through Kyrgyzstan and Uzbekistan. Thanks to this line, the ports of Baku, Aktau and Turkmenbashi are actively used in maritime transportation and they were integrated to the intermodal transport system.

Middle corridor which stretches from Turkey's Georgia border to Kazakhstan's China border is approximately 9,900 kilometers long by land with highways and Caspian Sea transits, and 9,700 kilometers by railway (Ministry of Investments and Development Republic of Kazakhstan, 2014). This route was shortened for approximately 1,000 kilometers with the newly constructed railway between Xhezkazgan-Beineu in addition to the railways that Kazakhstan inherited from Soviet Russia. Besides, the investments made in ports and railways by the countries around the Caspian Sea become more and more important every day as a strong alternative. If this route is actively used, it may create economic opportunities in Europe-China trade traffic for Central Asian countries (Starr & Kuchins, 2010). Especially the logistics centers and free trade areas that will be created in the Port of Turkmenbashi in Turkmenistan, Port of Kuryk in Kazakhstan –currently being constructed in the south of existing Aktau Port-, and the Port of Alat in Azerbaijan -first stage of which is completed- will allow the supply chains, which will be formed along the Europe-Asia route, to pass through the region.

### 3.1. Transport in the Middle Corridor

Strategic importance of the Caspian Region derives not only from its location at the crossroads of major powers of Eurasia -Russia, Turkey and Iran- but also from its location on various transit corridors connecting Europe and Central Asia. Today, all transit corridors and projects that have been declared to connect Europe and Central Asia, such as TRACECA, Silk Wind, BTK railway line and Trans Caspian, are located on ancient Silk Road routes. Under these circumstances, Caspian Region countries are expected to earn significant income from transit fees for the freight transport through this route in the future. At the same time, they will have the opportunity to increase their export volumes and gain access to more markets by effectively using these corridors. That's why today high amount of infrastructure investments are made in order to attract international cargoes to Central Asia and Caspian Sea, and there is a competitive race in this area.

Within this scope, countries in the region are not only improving their infrastructure but also simplifying customs and border crossing procedures, taking measures to reduce environmental effects of increasing transport capacities, making investments which will reduce dwell time of trains and road vehicles and follow cargoes and vehicles with the help of modern information technologies, and even more importantly, they are trying to integrate policies regarding transit tariffs. However, ongoing problems in border crossing practices and current diversity in international transport documents increase the importance of taking better-planned and joint steps.

#### 3.1.1. The Line's Impacts on the Economies of Regional Countries

Currently a significant part of Turkey's foreign trade with regional countries is realized via road transport. Therefore, when we analyze the issue within the context of export and import transports, reciprocal transport of Turkey with Azerbaijan, Georgia, Turkmenistan and Kazakhstan is shown in the tables below. The analysis of our transport capacity with those countries begins with Georgia as we share the same borders.

Table 1. Two- way transport with Turkey and Georgia

Turkey to Georgia	2012		2013		2014	
	Full	Rate (%)	Full	Rate (%)	Full	Rate (%)
Vehicles with Turkish License	78,186	84.0%	60,743	77.5%	45,331	66.1%
Vehicles with Georgian License	14,900	16.0%	17,596	22.5%	23,244	33.9%
TOTAL	93,086	100%	78,339	100%	68,575	100%
Georgia to Turkey	2012		2013		2014	
	Full	Rate (%)	Full	Rate (%)	Full	Rate (%)
Vehicles with Turkish License	2,012	72.6%	3,746	79.9%	3,126	80.8%
Vehicles with Georgian License	758	27.4%	942	20.1%	744	19.2%
TOTAL	2,770	100%	4,688	100%	3,870	100%

Source: Ministry of Transport, Maritime Affairs and Communications, Directorate General of Road Transport Regulation

Data given in Table 1 shows that the market share of vehicles with a Turkish license has decreased by 39.5% in our trade with Georgia since 2012. However, it should be underlined that total transport in the same period also decreased by 24.4%. Considering the fact that transportation and foreign trade is directly related to each other, Turkey's loss of market share is not only limited to transportation. It should be noted that Georgia has recently diversified its markets with reforms, and we have 18% share in Georgia's imports, which is the highest rate among other exporting countries.

In addition to reciprocal transportation with Georgia, 87.8% of the vehicles departing from Turkey through the border gates of Georgia go to Azerbaijan, 5.4% to Turkmenistan, 3.7% to Kazakhstan, and the remaining 3.1% to other countries. Reciprocal transportation with Azerbaijan, Turkmenistan and Kazakhstan through Turkey's border gates in Anatolia is examined below by taking into consideration final destinations.

When we examine the data in Table 2, it is seen that commodity trade by land between Azerbaijan and Turkey is further increasing despite a slight decline, and also Turkish companies dominate nearly the entire transportation market along this route.

Table 2. Two- way transport with Turkey and Azerbaijan

	2012		2013		2014	
	Full	Rate (%)	Full	Rate (%)	Full	Rate (%)
Turkey to Azerbaijan						
Vehicles with Turkish License	62,951	99.4%	98,084	98.9%	77,467	95.7%
Vehicles with Azerbaijani License	404	0.6%	1096	1.1%	3,454	4.3%
TOTAL	63,355	100%	99,180	100%	80,921	100%
Azerbaijan to Turkey						
Vehicles with Turkish License	3,243	89.1%	3,811	91.8%	4,337	88.3%
Vehicles with Azerbaijani License	397	10.9%	341	8.2%	574	11.7%
TOTAL	3,640	100%	4,152	100%	4,911	100%

Source: Ministry of Transport, Maritime Affairs and Communications, Directorate General of Road Transport Regulation

When we examine the data in Table 3, it is seen that there is an increase in transportation between Turkey and Turkmenistan since 2012. The share of Turkish companies in the emerging transportation market has not changed proportionately but increased the number by 38%. It is indicated that this increase is stemming from both from the growing foreign trade volume between the two countries and the competition advantage of Turkish carriers that have a good knowledge of the geography and official processes.

Table 3. Two- way transport with Turkey and Turkmenistan

	2012		2013		2014	
	Full	Rate (%)	Full	Rate (%)	Full	Rate (%)
Turkey to Turkmenistan						
Vehicles with Turkish License	26,525	88.7%	28,748	87.0%	34,247	86.8%
Vehicles with Turkmen License	3,366	11.3%	4,277	13.0%	5,215	13.2%
TOTAL	29,891	100%	33,025	100%	39,462	100%
Turkmenistan to Turkey						
Vehicles with Turkish License	5,783	68.3%	9,463	71.3%	10,377	68.5%
Vehicles with Turkmen License	2,680	31.7%	3,802	28.7%	4,780	31.5%
TOTAL	8,463	100%	13,265	100%	15,157	100%

Source: Ministry of Transport, Maritime Affairs and Communications, Directorate General of Road Transport Regulation

Transportation data between Turkey and Kazakhstan is given in table 4. It is seen that the number of total transport between the two countries has increased by only 14% since 2012. However, the number of vehicles with Turkish license on this route has not changed. Vehicles with Kazakh license have the emerging market share. It is believed that this loss is stemming from Kazakhstan's growth in logistics and transportation.

Table 4. Two- way transport with Turkey and Kazakhstan

	2012		2013		2014	
	Full	Rate (%)	Full	Rate (%)	Full	Rate (%)
Turkey to Kazakhstan						
Vehicles with Turkish License	6,671	89.6	6,521	79.2	7,205	77.4
Vehicles with Kazakh License	770	10.4	1,706	20.8	2,103	22.6
TOTAL	7,441	100	8,227	100	9,308	100
Kazakhstan to Turkey						
Vehicles with Turkish License	1,412	95.4	772	92	859	91.3
Vehicles with Kazakh License	67	4.6	67	8	81	8.7
TOTAL	1,479	100	839	100	940	100

Source: Ministry of Transport, Maritime Affairs and Communications, Directorate General of Road Transport Regulation

According to the data given in the tables above, it can be said that a great part of Turkey's land transport from/to regional countries is carried out by a fleet of vehicles with Turkish license. At this point, it should be underlined that land transport through Iran still has an important place in commercial transports with the region due to the fact that Caspian Sea constitutes a natural barrier and there are problems with the countries in the region about commercial transports.

92% of transit towards Iran and Central Asia via the border gates between Iran and Turkey is made through Gurbulak border gate, and the remaining 8% through Esendere border gate. Furthermore, in light of the comparative data in Table 5, it is observed that although Turkish transportation fleet has increased its market share, it does not have a dominant place on this route due to various reasons.

Table 5. Two-way haulage from Turkey to Iran

	2013		2014	
Vehicles with Turkish License	24,148	%34.6	35,968	%46.2
Vehicles with Iranian License	45,178	%64.7	41,562	%53.4
Other	497	% 0.7	319	% 0.4
TOTAL	69,823		77,849	

Source: International Transporters' Association (UND)

Although Middle Corridor has not been operational yet in terms of railway transport; transportation between regional countries is shown in the table below. Currently those countries can only use the Iranian route for transportation, and the share of this transportation in Turkey's foreign trade is only 2 per thousand. This is a very low level when we consider it in the light of the development of railways in world trade.

Table 11. Turkey's Railway Transport with Regional Countries

	2013 (ton)				2014 (ton)			
	Export	Import	Total	Share in Foreign Trade (%)	Export	Import	Total	Share in Foreign Trade (%)
Georgia	0	0	0	0	0	0	0	0
Azerbaijan	0	0	0	0	215	0	215	0
Kazakhstan	11,338	0	11,338	0.9	17,018	0	17,018	1.4
Turkmenistan	9,478	0	9,478	0.9	9,752	0	9,752	1
Uzbekistan	3,272	0	3,272	0.9	6,521	0	6,521	1.8
Tajikistan	605	0	605	0.4	564	0	564	0.4
Kyrgyzstan	708	0	708	1	1,272	0	1,272	1.6
China	0	312	312	0	0	258	258	0
TOTAL	25,401	312	25,713	0.01	35,342	258	35,600	0.02

Source: TUIK

#### 4. Conclusion

Today's business environment, due to the globalization, companies take their raw materials in different places, product their goods in different countries, and transfer their finished goods in different markets with not only constraint of cost, but also quick response. In this context transportation have a great impact on companies to alive in competitive environment.

Innovations and developments in transportation have concrete and intangible benefits such as the decrease in the duration and cost of operations, and increase in the efficiency and effectiveness of the employees. Services provided through the infrastructure form the basis of economic activities. Developments in transportation act as a catalyzer for the mobility of goods and services. Lower costs and easier access to markets have several impacts at the sectoral, regional and national level. The investments made in the transport infrastructure, one of the most important components of transportation, facilitate the mobility of traded goods. In this way, people find a chance to increase their living standards. The transport infrastructure is definitely an essential factor to realize main growth objectives such as urbanization, industrialization, increase in exports and sustainable economic growth. Various scientific studies

performed in different countries with different perspectives until today have revealed that there is a significant correlation among transport infrastructure expenditures, economic growth and international trade volumes.

As the first infrastructure that comes to mind within the historical context, the Silk Road is the most favored transport network of ancient times. This highly long and complex road network contributed to the globalization of the world with its many advantages. The Silk Road which is mainly based on road transport –or in other words the road section of the Silk Road- lost its importance as a result of the collapse of super powers that reigned over the region in ancient times, the shift of the world's political center to the west, and new developments in maritime technologies which led to cheaper and higher-volume maritime trade. Consequently the Silk Road sank into a deep sleep for many centuries but it started to revive when the Soviet Union dissolved in 1991, new independent states emerged and China recorded a significant economic growth in the eastern part of the continent. However, Silk Road's role has not changed from the ancient times to the present. This role is to integrate the Europe and Asia continents to allow the exchange of goods, cultures and beliefs.

Located at the heart of the Silk Road, the Caspian Region has substantial oil and natural gas reserves and in geostrategic terms it constitutes the junction point of east-west and north-south main transport axes which links Europe to Asia. Accordingly, the region has always maintained its importance throughout history. Countries in the region focused on economic growth and increased their foreign trade volumes by using the advantages of the region. In this regard, those countries become a member to various international organizations in order to develop their trade relations not only in the Caspian region but also with other countries. At the same time, they establish new organizations that will contribute to their strategic goals. Moreover, they ensure regional and global integration by making investments in transport infrastructures that will integrate modern, effective, efficient and various transport modes by using the funds they have created with the revenue obtained from the export of natural resources.

The rise of Asian economies attracted the attention of other countries as well as multinational companies. Many companies, intending to benefit from emerging economic advantages, have turned China into a production and distribution base for the world trade by using the privileges offered by China. As a result, the center of gravity of the World trade has shifted towards the east. Previously the distribution system was mainly based of maritime transport; but the delays in the access to markets have gradually created a need to find an alternative to maritime transport although the unit cost is relatively low in maritime transport. On the other hand, production industry concentrated around the southeastern ports of China have shifted towards the western parts of the country due to increasing workforce costs in the region, environmental factors and the inclination about universal humanitarian values, with the aim of being closer to energy and natural resources to gain advantage in terms of resource dependency.

Under these conditions, one of the most important policies for Eurasian countries has appeared as ensuring sustainable economic growth by developing the trade relations among Eurasian countries as well as with other countries. On the other hand, Europe's efforts to create a common market and expand its markets, and the intention of multinational companies operating in China to create faster and lower-cost distribution networks located Eurasia at the center of world trade strategies. Within the scope of the strategy developed in this regard, European countries decided to expand the transport networks which facilitate trade relations and consequently Asia-Europe transport corridors have been created. Upon the initiative of different countries and organizations, several international transport corridor projects have been realized one after another.

When we examine such projects from European side, we observe that the EU focuses on three main network structures. These are Trans European Transport Networks (TEN-T), Pan European Corridors (PEC) and other regional transport networks. On the other hand, Central Asia Regional Economic Cooperation (CAREC) corridors, which have been created by Central Asian countries, come to the fore as an important project that will develop the trade relations of Central Asian countries within the region and with other countries.

TEN-T transport networks are composed of the projects realized on priority corridors in roads, railways and airways which have been developed for establishing transport connections and consolidating current lines in order to ensure economic growth and sustainability in European Union member states. The TEN-T strategy primarily focuses on integrating Eastern and Western EU member states in accordance with the EU enlargement policy. The Trans



European Transport Networks will be developed to include the countries that have relations with the EU within the scope of the neighborhood policy following the completion of central network connectivity by 2030.

Another vital transport corridor is constituted by the TRACECA where Turkey is an active member. TRACECA is an intergovernmental program focusing on international transport, development and political-economic growth in the Black Sea, Caucasus and Central Asia. It is an international transport organization that supplements the Pan-European Transport Networks. Main objective of the project is to create a transport corridor between Europe, Black Sea, Caucasus, Caspian Sea and Central Asia by the help of EU funds and technical assistance under the leadership of the European Union. TRACECA, designed as a regional transport network, is planned to be integrated into Trans-European Networks in accordance with the global European Union strategies. In this framework, the project ushers in the connection of roads and railways following the Almaty-Kyrgyzstan-Uzbekistan-Turkmenistan route on the ancient Silk Road, to Georgia's Poti and Batumi ports through the Caspian Sea and Azerbaijan, and to Pan-European Corridors via the seaway through Ukrainian, Romanian and Bulgarian ports. But due to the route crosses a number of countries, and therefore a number of different border and customs checkpoints. Thus there is a chain of dependency in terms of timing (Ziyadov, 2012).

Among regional transport corridors, CAREC program corridors are important as a project realized by the countries in the Caspian region with the support of the Asian Development Bank. Within the CAREC program, various main transport corridors are designed to foster the connectivity of the region with Europe and other regions in the world in the shortest and most cost-efficient way. Each of these corridors is planned to provide access to at least two major Central Asian markets. These corridors are chosen on the basis of; (1) current traffic volume, (2) economic and traffic growth projections, (3) capacity to improve the relation between the settlements and economy, (4) potential to minimize delays and other obstacles, and (5) economic and financial sustainability.

Eurasia transport corridors linking the Asian and European continents, also known as the Silk Road, are mainly divided into three sections (north, central and south) considering the geographical and economic conditions. Among these corridors, the Caspian Transit Corridor (the Middle Corridor) is one of the most important components of the Modern Silk Road which extends from the western part of China to Kazakhstan (mostly by the railroad), Azerbaijan (crossing the Caspian Sea), Georgia (through the Caucasus), Turkey and Western Europe. One section of the line reaches up to Turkmenistan's Turkmenbashi Port from Baku, and then it is linked to China through Uzbekistan and Kyrgyzstan. This line allows the efficient use of Baku, Aktau and Turkmenbashi ports for maritime transport, and it integrates them to intermodal transport. On the other hand, the logistics and transport activities in countries surrounding the Caspian Sea must be developed for more efficient and effective operation of this line.

The Caspian Transit Corridor gain more importance every day as a prominent alternative with the investments made in the ports (Aktau, Kuryk, Turkmenbashi, Alat) and railways of the countries in the region. One of the most crucial steps to develop the non-oil sectors of regional countries is to improve the transport infrastructure and diversify the import-export goods. If the Caspian Transit Corridor is actively used for these purposes, Central Asian countries may gain many economic advantages from the Europe-China trade traffic. Logistic centers and free trade areas to be created particularly in Turkmenistan's Turkmenbashi port, Kazakhstan's Kuryk port being constructed in the south of the current Aktau port, and Azerbaijan's new Alat port where first phase construction works have been completed, will allow the transit of new supply chains through the region on the Europe-Asia route.

It is observed that regional countries are making various infrastructure investments to develop intraregional and global trade, and they have also passed new resolutions to facilitate trade. However, these efforts are generally made without any coordination among regional countries. Such a situation may lead to cost losses due to making unnecessary investments in the capacity planning and creating surplus. Therefore the Trans-Caspian Coordination Committee, which has been recently established among regional countries, must have an official structure to be able to develop common policies on environmental opportunities and threats. Moreover, economy and infrastructure problems and policies of Caspian countries must be jointly examined at the government level, considering the fact that logistics and transportation activities have a facilitating role on trade and increasing trade volume contributes to nations' economies.

For Turkey; the transport infrastructure has been developed and certain steps are being taken for the interconnection of domestic and international production and consumption centers as well as the integration of transport modes, in accordance with the “from transport to logistics action plan” which was introduced in the Tenth- 5 Year Development Plan for the period between 2014 and 2018. In this scope, with the aim of improving international integration, Trans-European Transport Networks (TEN-T) have been realized to a great extent with the investments made in concrete projects that consolidate the connectivity of Caspian states and the Middle East. At the domestic level, divided road construction works have continued, high-speed rail lines have been put into operation, two major container port projects have been prioritized, and the number of domestic and international passengers and trip frequency have increased. The public-private cooperation model for financing the transport infrastructure has also been used for the construction of highways, tunnels and bridges in addition to the construction of airports and terminals.

However, it is also observed that the Baku-Tbilisi-Kars (BTK) Railway project is still incomplete, which is a vital project for the integration of Caspian countries with Turkey, a country which is listed among the top 20 economies in the world and a key country not only in the east-west but also the north-south axis of Eurasia. When the project is completed, an uninterrupted and multimodal transport network will be created in the region, and the line will allow sustainable freight and passenger transport by railway between the Central Asia and Far East through Europe and Turkey-Georgia-Azerbaijan. Besides, the BTK project will pave the way for regional cooperation. Considering the ongoing infrastructure efforts in the region, most of which will be completed by 2017; any delay in the realization of the BTK project is believed to constitute a threat against Turkey’s political and economic status in the region.

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## References

- Acar, A. Z., and Köseoğlu, A. M. (2014). *Lojistik Yaklaşımıyla Tedarik Zinciri Yönetimi (Supply Chain Management with Logistics Approach)*. Ankara: Nobel.
- Acar, A. Z., and Yurdakul, H. (2015). Evaluation of competitive power of logistics industry in Turkey. *Journal of Caspian Affairs* , 1 (1), 1-22.
- Acar, A. Z., Bentlyn, Z., and Kocaoglu, B. (2015). Turkey as a Regional Logistics Hub in Promotion of Reviving Ancient Silk Route Between Europe and Asia. *Journal of Management, Marketing and Logistics* , 2 (2), 94-109.
- Altunışık, R., Coşkun, R., Bayraktaroglu, S., and Yıldırım, E. (2010). *Sosyal Bilimlerde Araştırma Yöntemleri*. Sakarya: Sakarya Yayıncılık.
- Candemir, Y. (2001). Küreselleşme, teknolojik gelişme ve ulaşırmada yenilikler: Dünya ve Türkiye. <http://www.imo.org.tr/resimler/ekutuphane/pdf/3183.pdf>
- Creswell, J. W. (2014). *Research Design Qualitative, Quantitative, and Mixed Methods Approaches*. Sage.
- Dunning, J. H. (1993). *Multinational Enterprise and the Global Economy*. Workingham: Addison-Wesley.
- Economist. (2012). The world's shifting centre of gravity. *Economist*. <http://www.economist.com/blogs/graphicdetail/2012/06/daily-chart-19>
- Fernie, J. (1994). Quick Response: An International Perspective. *International Journal of Physical Distribution & Logistics Management* , 24 (6), 38-46.
- Fiorito, S. S., May, E. G., and Straughn, K. (1995). Quick response in retailing: components and implementation. *International Journal of Retail & Distribution Management* , 23 (5), 12-21.
- Global Times (2011). <http://www.globaltimes.cn/NEWS/tabid/99/ID/669086/Chongqing-Germany-regular-cargo-train-starts-trip.aspx>
- Keskin, H. (2011). *Kavramlar, Prensipler, Uygulamalar, Lojistik El Kitabı, Küresel Tedarik Zinciri Pratikleri (Concepts, Principles, Practices, Logistics Handbook, Global Supply Chain Practices)*. Ankara: Gazi Kitabevi.
- Key CAREC Corridors (2015). <http://www.carecprogram.org/index.php?page=carec-corridors>
- Ministry of Investments and Development Republic of Kazakhstan. (2014). *Development of transit and transport potential of the Republic of Kazakhstan*. Astana.
- Perry, M. S. (1999). Quick response supply chain alliances in the Australian textiles, clothing and footwear industry. *International Journal of Production Economics* , 62 (1), 119-132.
- Saruhan, Ş. C., and Özdemirci, A. (2011). *Bilim Felsefe ve Metodoloji*. İstanbul: Beta.
- Starr, S. F., and Kuchins, A. C. (2010). *The Key to Success in Afghanistan a Modern Silk Road Strategy*.
- UN. (2014). *World Economic Situation and Prospects 2014*. United Nations. [http://www.un.org/en/development/desa/policy/wesp/wesp\\_archive/2014wesp\\_chap2.pdf](http://www.un.org/en/development/desa/policy/wesp/wesp_archive/2014wesp_chap2.pdf).
- WTO. (2015). *International Trade Statistics 2014*. Switzerland: WTO.
- Ziyadow, T. (2012). *Strategic Assessment of Euro-Asian Trade and Transportation Azerbaijan as a Regional Hub in Central Eurasia*. İstanbul: Hazar Strateji Enstitüsü.