Uluslararası Yönetim İktisat ve İşletme Dergisi, Cilt 9, Sayı 18, 2013
Int. Journal of Management Economics and Business, Vol. 9, No. 18, 2013

DEVELOPING RAIL POLICY FOR TURKEY

Yrd. Doç. Dr. Haşmet GÖKIRMAK
Süleyman Şah University
Faculty of Management and Administrative Sciences
Department of International Trade and Finance
gokirmak@gmail.com

ABSTRACT

In Turkey, the rail system is unable to fulfill the demand for passenger and freight movement at existing prices, quality of service, and at acceptable levels of reliability. Inadequate infrastructure is the main reason that the railways are not profitable and experience a low demand. The non-physical reasons for the stagnation of rail transportation include existing inappropriate institutional and regulatory structure. In order for railway to shoulder the ever-growing demand for transport services (1) Turkey should put significant investment into railway infrastructure to upgrade and expand existing network; (2) Institutional and structural reforms should aim to restructure the railway investment and financing system, and enable private firms to invest in infrastructure and equipment, and operate and compete for both passenger and freight traffic; (3) Railway infrastructure and railway operations functions must be separated and managed independent of each other; (4) An independent national rail regulator must be assigned to oversee all railway undertakings to ensure non-discriminatory access for track capacity and setting of track access charges; (5) It is crucial to implement such a regional integration strategy that simplify transit procedures to enhance international cooperation for Turkey to further benefit from its strategic geopolitical position.

Keywords: *Railway, Railway Policy, Turkey, Privatization, Railway Reform, Railway Network, Infrastructure.*

TÜRKİYE'DE GELİŞEN DEMİRYOLU POLİTİKASI

ÖZET

Türkiye'de raylı sistemin mevcut hizmet kalitesi ile yolcu ve yük talebini karşılaması mümkün değildir. Yetersiz altyapı demiryollarına talebin düşük olmasını ve demiryollarının karlı olarak işletilebilmesini imkansız hale getirmektedir. Raylı ulaşımdaki durgunluk, fiziksel yetersizliklere ilave olarak, mevcut kurumsal ve düzenleyici yapıdaki eksikliklerden de kaynaklanmaktadır. Demiryollarının ulaştırma hizmetlerine olan ve sürekli artan talebi karşılayabilmesi için (1) Demiryolu altyapısına yatırım yapılmalı, mevcut demiryolu ağı iyileştirmeli ve genişletilmelidir; (2) Kurumsal ve yapısal reformlar demiryolu yatırım ve finansman sistemini yeniden yapılandırmayı amaçlamalıdır. Özel firmaların da altyapı ve ekipman için yatırım yapabilmeleri, yük ve yolcu taşımacılığında işletme ve rekabet yapabilmelerine imkan verilmelidir; (3) Demiryolu altyapı ve demiryolu işletme fonksiyonları birbirinden ayrılmalı ve birbirinden bağımsız olarak yönetilmesi sağlanmalıdır; (4) Tüm demiryolu işletmelerini denetleyecek, geçiş ücretlerini belirleyecek ve geçiş haklarının adil olarak dağıtılmasını sağlayacak bağımsız ulusal bir demiryolu kurulu atanmalıdır; (5) Türkiye'nin komşuları ile olan ekonomik ilişkilerini geliştirmek ve stratejik jeopolitik konumunu güçlendirmek açısından sınırlarda yapılan geçiş işlemlerinin kolaylaştırıldığı bölgesel bir bütünleşme stratejisinin uygulanması oldukça önemlidir.

Anahtar Kelimeler: *Demiryolu, Demiryolu Politikası, Türkiye, Özelleştirme, Demiryolu Reform, Bölgesel Ağ, Altyapı.*

www.ijmeb.org ISSN:1301-4749 E-ISSN:1301-8051
http://dx.doi.org/10.11122/ijmeb.2013.9.18.416

1. Introduction

A close relationship exists between efficient passenger and freight movements and the healthy functioning of the economy in the region. Some products of goods-producing sectors and construction are more economic to move by rail. These products require moving in bulk for extended distances. The goods-producing sectors include agriculture, forestry, fishing, mining and manufacturing. Construction uses many manufactured inputs, but there is also the heavy use of sand and gravel, which comes from the mining sector, ready-mix concrete that comes from the glass, clay and stone products industry.

Long-haul traffic is comprised of those trips into or out of the area with destinations more than 400 Km away from the point of origin. For long-haul transportation of freight trucking, rail, intermodal, barge, ship and air all play important roles. In Turkey, railway should be able to compete actively with long-haul truckload carriers. At present, however, railway infrastructure is not adequate for rail to compete with highways.

Turkey's transport system has major regional importance. Turkey is in a strategic location with its neighbors Greece, Bulgaria, Georgia, Azerbaijan, Armenia, Iran, Iraq and Syria. It has long coastlines on the Mediterranean, Aegean, and the Black Sea. Turkey also controls the only connection between the Mediterranean and the Black Sea with the Bosporus and the Dardanelles. It also hosts several major oil pipelines and serves as a transit country in the region.

Rail industry has a national strategic importance to Turkey. A safe, secure and efficient rail industry will strengthen a variety of business, trade and tourism activities, which contribute significantly to country's economic prosperity. Turkey increasingly depends on rail transport to link its people and industrial products to the four corners of the country and to the neighboring regions.

Private companies built many of the railway lines during the Ottoman reign. Upon the formation of the Turkish Republic in 1923, all private railway lines were nationalized and combined into the "General Administration of Railways and Ports," in 1924. In 1953, Republic of Turkey General Directorate of State Railways Administration (TCDD) took its current form as a state-owned enterprise under the supervision of the Ministry of Transport.

Turkish national rail market has been a closed monopoly served by TCDD. TCDD controls the national rail network and run the operating services. In addition to having monopoly on passenger and freight rail transportation, TCDD also has monopoly over the manufacturing of rolling stock and tracks. Today, TCDD acts de facto as the legislator, regulator and operator.

Despite the fact that it has a monopoly power, TCDD is one of the largest loss-making public enterprises in Turkey, losing about 1.0 USD billion annually in its rail operations (TCDD, 2012). Its financial position has been unstable for many years. It is totally reliant upon Government subsidy.

Some of the Turkish Government's immediate objectives include reducing the current financial burden of TCDD. Government intends to increase the competitiveness

of the Turkish economy by reducing the logistic costs associated with the inefficiencies of the railways and ports.

TCDD's relationship with Government is complex and not well defined. Government's expectations of TCDD to perform its role and objectives are not very clear or explicit. Ministry of Transport carries out the Government level coordination and supervision of TCDD. However, TCDD's tariffs and safety procedures have been essentially unregulated. TCDD sets its own tariffs.

In combination with its affiliates, TCDD has a monopoly on passenger and freight rail transportation and the manufacturing of rolling stock and tracks. Locomotive and Motor Corporation of Turkey (TULOMSAS) manufactures locomotives under license, Wagon Industry Corporation of Turkey (TUVASAS) manufactures passenger coaches and Railway Machines Industry Corporation of Turkey (TUDEMSAS) manufactures freight wagons.

However, Thompson (2009) argues that the Turkish railways face tremendous challenges to turn around a massively loss-making industry, to meet investment requirements for maintenance and expansion of the rail lines, and to attract private companies to invest in both infrastructure and private rail operations to boost efficiency and competition.

This article aims to highlight the importance and urgency of reforming the Turkish rail industry. In section two, a brief history of railroads is presented. In the third section, the state of the railroads is discussed. The forth section discusses the financial conditions of the state-owned railroad company, TCDD. The fifth section highlights the benefits of a greater rail network. The sixth section describes the liberalization efforts in the US and Europe. State Planning Organization (2007) has suggested to adopt a more liberalized structure for Turkish railways. These early liberalization efforts in rail transportation are discussed in the seventh section. The government is in the process of reforming the structure for its railways, which would enable it to meet future requirements for European Union accession and attract private investment in modernizing the infrastructure (Railway Gazette, 2009). These reform initiatives are described in the eight section. Conclusions and recommendations and proposals for action are discussed in the final section.

2. From the Ottoman Empire to Present Turkish Railways

The first railway line was built between Izmir-Aydin. The construction and operating rights of this line was given to a British company in 1856. This 130 Km line was opened for business in 1866. The next line opened in 1893 between Izmir and Turgutlu. Istanbul-Baghdad railway construction has started in 1871, during Sultan Aziz's reign. The line reached İzmit in 1873. The railway construction and operation was left to the British in 1880. The construction of the Izmit-Ankara section had been started again in 1889, reaching Ankara in 1892 (TCDD, 2012).

The Ottoman Empire failed to develop a market-oriented economic structure to start an industrial revolution because it had not developed a national railroad system to meet its own demand and get connected to the other countries. When the Turkish Republic established in 1923, the railroad had 4.138 Km of railway line from the legacy

of the Ottoman Empire, but often disconnected from each other.

Likewise, Turkish Republic have not benefited from railways for its industrial development. A sound rail infrastructure was not in place for rail to take part in the promotion of regional and international economic growth. Between the years 1923-1950, in a 27-year period, only 3.149 Km of railway lines was constructed. From 1950 until 2010, the new rail construction rate did not pick up and today country has only 8,324 Km of main line tracks. This is a dismal development compared with countries like Germany (34.218 Km) and France (29.286 Km) that have about the same geographical size as Turkey (TCDD, 2012).

Starting in 1950s, the railways lost their importance as the main mode of transportation for both passenger and freight. As railroad was neglected, further problems surfaced due to the poor conditions, resulting in the loss of lives and property. Today, the most important issue for the railways is the lack of a sufficient infrastructure.

In recent years, however, the government has been investing in high-speed rail lines. The government plans to construct a network of 1.500 Km of high-speed lines by the end of 2013 and a 10.000 Km network by the year 2023. A subsidiary of Turkish State Railways, Yüksek Hızlı Tren, is the sole commercial operator of high-speed trains in Turkey.

The construction of the Istanbul to Ankara high-speed rail line is in progress. The main objective in building the Ankara-Istanbul high-speed line is to reduce the travel time between Ankara and Istanbul, two largest cities in Turkey. The first section of the line, between Ankara and Eskişehir, was inaugurated on March 13, 2009. The distance between Ankara-Istanbul will be reduced to 533 Km from 576 Km and the travel time from seven hours to three hours once the Eskişehir-Istanbul segment is completed (TCDD, 2013).

The line between Ankara to Konya was completed on August 23, 2011 and it is in operation. This line reduced the travel time from 10 hour 30 minutes to less than two hours. Konya will also be connected to Istanbul when the Eskişehir-Istanbul segment completed.

Another major rail project in progress is the Marmaray project in Istanbul. The Marmaray project will connect the subway and railway lines on the European and Asian parts of Istanbul with a tunnel under the Bosporus strait.

3. An Underdeveloped Rail Network

Turkey's road network has seen substantial investment in the last 50 years, leaving little for the rail. Inadequate infrastructure is the main physical reason that the railways experience a low demand and have not been profitable. It is difficult to improve rail service quality for both passenger and freight. The main drawbacks of the rail network include poor condition of rail tracks, lack of signalization, extent of un-served metropolitan and industrial areas and missing sections (Yönter, 2004).

Turkey has a highway system of about 65.000 Km and 12.215 Km pipelines for gas and 3.332 Km for oil (KGM, 2012; BOTAŞ, 2011). As of 2011, there were 8.324 Km of main railway lines in Turkey, of which 5% are double tracked, 28% are

electrified and 25% are signaled; there are also 2.342 Km of sidings. In 2011 TCDD, with its affiliate companies, employed total of 32.802 people (TCDD, 2012).

In 2011, there were 45 electric locomotives, 496 diesel locomotives and 12 high-speed train sets in Turkey. In addition to the 101 Electric Multiple Units (EMUs) and 56 Diesel Multiple Units (DMUs) for passenger transport, there were 962 coaches in Turkey. About 18.200 wagons of various types make up the rest of the fleet (TCDD, 2012).

Currently only about 25% of the railway network is electrified and signaled. The total length of the railway line with electrification is about 2.670 Km. The lines between the largest two cities Istanbul and Ankara and between Divriği, Sivas and Yakacık, Iskenderun, freight route being used to transport iron ore pallets from the mines to the steel production site, are electrified (TCDD, 2012). Lack of signalization sometimes causes major delays and fatal accidents. The available capacity is not being utilized efficiently.

Turkish rail system has a high number of curves on its network. However, less than 20% of the curves meet the international standards. Hence, the speed of the train is reduced in the vicinity of the curves, causing extended travel times and significant energy loss. Frequent changes in the travel speed cause additional friction. This, in turn, increases the wear and tear on the tracks and the wheels of the locomotives and cars. Industrial standard for the maximum slope of the rail lines is 10 per thousand. In Turkey, however, more than 24% of the railway network has slopes over 10 per thousand. At higher slopes trains cannot fully utilize the potential kinetic energy, increasing energy costs (Thompson, 2009).

The demand for railways services is low since there is not an extensive rail network. The connections between the major cities in the country cannot be performed at an optimal level. This is because the existing network follows winding and circuitous routes instead of direct and short connections between the major urban centers. About 98% of the total length of tracks is a single line (TCDD, 2012). Other infrastructure problems include poor condition of rails, missing sections (Van Lake, Erdemir-Zonguldak), lack of adequate ferry crossing facilities, secure vehicle parks, driver rest areas, etc.

These infrastructure problems create long waiting times and cancellations. The reliability and service quality are quite low. All these factors increase the costs associated with per ton-Km shipment of freight and passenger-Km Therefore the railway transport costs are high because of the prolongation of the trips due to circuitous routes and single-track rail lines.

The international trade with neighboring countries experiences some difficulties due to inadequate port facilities, poor conditions of border crossing facilities, and long waiting times. Different rail gauges and inadequate swapping stations create difficulties for trade with the neighboring countries in the east (Russia, Georgia, Azerbaijan). International trade is also being impacted due to poor implementation of international conventions, complicated border-crossing and administrative procedures, visa formalities, bilateral rail transport permit quotas and extra charges, and excessive transport inspections.

4. A Loss-Making Industry

In Turkey, rail has not been a deciding factor in the economic activity. Although fares for passenger transportation and freight shipments are set far below sustainable or market dictated rates, demand has been lacking due to inefficiencies, unreliability and poor safety record. International standards and or requirements are not met in many sections of the rail network.

Over the years, TCDD's performance and market share has declined both in freight and passenger traffic. Rail share of the passenger (passenger-Km) traffic is about two percent of Turkey's total passenger traffic. The rail freight accounts to about five percent of Turkey's freight (ton-Km) traffic. Highway system carries 98% of the passengers and 75% of the freight. Pipelines carry about 15.6% of the total freight (TCDD, 2012).

The rail system is unable to fulfill the demand for passenger and freight movement at existing prices, quality of service, and at acceptable levels of reliability. The non-physical reasons for the stagnation of rail transportation include existing inappropriate institutional and regulatory structure. TCDD has not been held accountable for inefficiencies. It is structurally incapable of adjusting to the current market conditions for both passenger and freight movements.

Between 2005 and 2011, TCDD's passenger traffic experienced slow or no growth. Freight traffic grew 4.3 % per year, intercity passenger traffic increased about 1.7 % per year, and suburban passenger traffic grew about 5.7 % per year. Rail carried 5.9 billion passenger-Kms in 2011. Total passenger-Km increased 2.8% per year between 2005 and 2011, growth coming mostly from the suburban traffic (Table 1).

Table 1: Passenger (Passenger-Kilometers) by Type of Train (Millions)

	2005	2006	2007	2008	2009	2010	2011
Suburban	1.375	1.399	1.473	1.447	1.802	1.885	1.880
Mainline	3.602	3.802	3.999	3.552	3.469	3.493	3.922
International	59	76	81	98	103	113	80
Total	5.036	5.277	5.553	5.097	5.374	5.491	5.882

Source: TCDD. (2012). Annual Statistics, 2005–2011.

Rail carried 11.7 billion tone-Km of freight in 2011. The total freight tone-Km increased about 4.3% per year between 2005 and 2011 (Table 2).

Table 2: Freight (Ton-Kilometers) (Millions)

	2005	2006	2007	2008	2009	2010	2011
Domestic	7.997	8.227	8.439	9.186	9.308	10.282	10.311
International	1.081	1.318	1.316	1.367	855	1.018	992
Total	9.078	9.545	9.755	10.553	10.163	11.300	11.303
Departmental	74	131	166	186	163	162	374
Grand Total	**9.152**	**9.676**	**9.921**	**10.739**	**10.326**	**11.462**	**11.677**
Private Wagons	968	1.566	2.187	2.527	2.545	2700	3.901

Source: TCDD. (2012). Annual Statistics, 2005–2011**.**

TCDD reports directly to the Ministry of Transportation. However, TCDD's tariffs and safety procedures have been essentially unregulated. TCDD sets its own tariffs. Revenues for both passenger travel and freight shipment cover only a small portion of the costs. There has not been any explanation why the freight rates are set so low. Some degree of political influence on the operations and rates exists.

TCDD is one of the largest loss-making state-owned enterprises in Turkey. TCDD has been losing significant amount of money in all rail operations. In 2011, total loss for rail operations was about 2 billion TL (US$1.1 billion). Freight generates the largest amount of financial loss. Mainline passenger is also very highly unprofitable. Suburban passenger traffic is less unprofitable than either freight or intercity traffic. The cost coverage ratios (ratio of revenue to expenses) for the year 2011 are: 26% for passenger and 28% for freight (Table 3).

Table 3: Revenue-Expenditures Balance of Operational Activities (Million TL)

	2005	2006	2007	2008	2009	2010	2011
Total Passenger (Suburban + Mainline)							
Revenues	129,1	142,7	159,2	165,0	184,1	197,3	237,1
Expenditures	570,5	618,9	702,6	729,2	823,2	835,3	926,6
Profit/Loss	-441,3	-476,3	-543,4	-564,2	-639,1	-638,0	-689,5
Cost Coverage Ratio (%)	23	23	23	23	22	24	26

Freight							
Revenues	287,6	316,5	354,2	408,9	410,2	459,6	515,1
Expenditures	933,8	1.018,7	1.109,4	1.316,6	1.351,6	1.580,4	1.836.5
Profit/Loss	-646,2	-702,2	-755,2	-907,7	-941,4	-1.120,8	-1.321,5
Cost Coverage Ratio (%)	31	3	32	31	30	29	28
Total Rail							
Revenues	416,7	459,1	513,3	574,0	594,3	656,9	752,2
Expenditures	1.504,3	1.637,7	1.811,9	2.045,8	2.174,8	2.415,7	2.763,1
Profit/Loss	-1.087,6	-1.178,5	-1.298,6	-1.471,8	-1.580,5	-1.758,9	-2.011,0
Cost Coverage Ratio (%)	28	28	28	28	27	27	27

Source: TCDD. (2012). Annual Statistics, 2005–2011**.**

5. Benefits of A Greater Rail Network

For several years, the Department of Transportation has been promoting the use of the rail transport system as an economical way to add freight capacity to the national freight transport system. As congestion continues to threaten the performance of the highway infrastructure in Turkey, government is looking into finding ways to incorporate underutilized rail into freight capacity planning.

In addition to taking away some of the freight and passenger traffic from overcrowded highways; the rail can provide many additional public benefits. These benefits include reduced congestion and pollution and improved air quality and highway safety. However, although these anticipated public benefits sound appealing, they cannot become realities until rail services actually begin to attract freight and passengers.

If the purpose of developing rail services is to add freight capacity, policymakers need to evaluate such services by measuring the congestion they are likely to alleviate. Rail's ability to relieve highway congestion should be judged by the number of vehicle miles it can be expected to transfer from highways to the rail. The greater the number of vehicle miles removed, the greater the value of the rail improvement projects.

The total economic benefit to the nation will be in the billions of dollars, in addition to the environmental and highway safety benefits. Rail construction will create employment opportunities and economic development for the communities around the main rail tracks.

The rail operations will create positive externalities for the public in general. Rail services can reduce air pollution and lower the number of highway accidents. Private benefits include incentives to attract potential users to rail services. Some of these incentives are productivity gains, travel timesaving, vehicle operating cost savings, reliability, and quality and comfort of the voyage.

6. The Liberalization of Rail Transport in the US and Europe

Regulatory reform in the railroad industry has started decades ago in many other countries. In the United States, The Staggers Rail Act of 1980 deregulated the American railroad industry to a significant extent, and replaced the regulatory structure that existed since the 1887 Interstate Commerce Act. The Staggers Rail Act gave railroad managers pricing freedom, allowed access by one railroad to another railroad's facilities, allowed the rail mergers, and permitted to establish contracts between carriers and shippers (McCullough, 2006).

About the same time, a similar work was in place to revitalize the railways in Europe. Eisenkopf (2006) reports that the European Parliament approved the First Rail Infrastructure Package, a set of three directives aimed at transforming the rail sector into a single, unified, European market in 2001. It was designed to open the international rail freight market, establish a general framework for the development of European railways, and clarify the formal relationship between the State and the infrastructure manager, and between the infrastructure manager and railway (train) operators. It set out the conditions that freight operators must meet in order to be granted a license to operate services on the European rail network. It introduced a defined policy for capacity allocation and infrastructure charging. The European Commission adopted the Second Railway Package in 2004. Its aim was to create a legally and technically integrated European railway area. The European Commission adopted a third package of measures in 2007, to open up international passenger services to competition within the European Union by 2010.

7. Early Liberalization Efforts of Rail Transport in Turkey

The institutional structure of the rail passenger and freight sectors is inappropriate and the regulatory frameworks are incapable of resolving problems in the industry.

TCDD's monopoly power, over the rail passenger and freight movement, reduces efficiency and the value proposition to customers. In addition, the lack of infrastructure provision and poor infrastructure maintenance contribute to a poor value proposition to customers and add to the logistics cost burden.

Turkey has been looking to adopt a more liberalized structure for its railways. The strategic objective is to attract more passengers and some of the freight shipments to rail away from the highways. The integration of aviation with high-speed rail will be a crucial development for passenger transport. An intelligent and integrated logistics system for freight transport must materialize, with development of connections to ports, industrial sites and intermodal terminals. Logistics operations using synergies between sea and rail also have great potential for development.

With a comprehensive liberalization effort, the rail companies have great

chances to gain more customers and more transport volume in the long-distance passenger and freight services. Thereby they will also become more competitive compared to road transport. This will, in turn, reduce the congestion and emissions on the highways.

For many decades Turkish railway market has been a closed monopoly, served by TCDD, which was unable to respond adequately to the challenges of the market. Market conditions and lack of funds for replacement of rolling stock, however, forced TCDD to get more private sector involvement in rail operations.

The first liberalization initiative was to let private sector own and use its own freight cars (TCDD, 2005). The privately owned freight cars initiative aimed to reduce costs for the shippers. These cars are being transported by TCDD at a discounted fare (45% discount at TCDD rates). The privately owned freight cars are assembled along the network and delivered to their destinations by trains led by TCDD locomotives. Attracting more of the freight moving on the highways to rail was assumed to increase TCDD's modal share and revenues in freight movement.

The privately owned freight cars project was initiated in 1997. The number of privately owned cars increased considerably, from 771 in 2003 to 2.870 in 2011. The tonnage carried by these freight cars increased to 7,3 million tons in 2011, reaching to 29% of total freight carried by TCDD.

The second liberalization initiative allowed private firms to form their own block-trains, starting in 2002. This saves time to transport, already loaded, freight cars to their destinations without waiting for other freight cars and avoiding excessive maneuvering between stations to form a train. Block trains carried 25.4 million tons in 2011 with an increase of 174% in tonnage compared with 2003 figures.

The third liberalization initiative allowed private trains to operate on TCDD tracks. In 2005, TCDD passed a resolution for the operations of third-party trains. The first private rail operation, with its own equipment (locomotives and freight cars) and employees, was initiated by ERDEMIR Logistics, Inc. shortly after the passage of the resolution.

The agreement signed between ERDEMIR and TCDD on June 17, 2005. ERDEMIR has started operations after a 3-month long preparation period. ERDEMIR trains operated on the freight route between Divriği, Sivas and Yakacik, Iskenderun, starting on September 15, 2005. This route has been used to transport iron ore and pallets from the mines to the steel production plant in Iskenderun, since the 1970's.

This first successful private rail operation managed by the author, employed 50 professionals of which 24 were train operators. The operation reduced travel time between the origin and destination from 72 hours to 18 hours and transported 3.000 tons of iron ore per day. Increased efficiency and cost savings encouraged ERDEMIR to lease or purchase more locomotives and purchase freight cars to increase the amount of iron ore transported.

However, upon the TCDD employee union's court appeal, Turkey's High Court (DANISTAY) suspended the operation on the basis of legal rights of TCDD that has the monopoly power over rail passenger and freight transportation. ERDEMIR ended its

rail operations on January 6, 2006, in less than four months from the start date. This was an opportunity missed for both rail industry and the country as a whole. ERDEMIR continued to import iron ore for its steel plant in Iskenderun from Brazil at higher prices. Mining industry lost a chance to exploit large iron ore deposits in Sivas and Malatya Provinces. Both industries lost a chance to create new employment opportunities as the local communities missed a chance to reinforce long-term economic growth.

8. Reform Initiatives of Rail Transport in Turkey

Turkey is looking to adopt a more liberalized structure for its railways, which would enable it to meet future requirements for EU accession. Plans for restructuring TCDD have been drawn up following a study by external consultants funded by the European Commission and the German government under a project to 'reform and strengthen' the Turkish rail sector. A draft resolution, that will restructure TCDD and open passenger and freight services to the competition, is before the Grand National Assembly of Turkey (TBMM). The proposed plan of action suggests a significant change in the structure of TCDD. Proposed new "The General Railway Framework Law" establishes TCDD as the railway authority for supervising the railway companies and infrastructure manager for safety, licensing and interoperability issues.

TCDD will be responsible for constructing, maintaining railway infrastructure and setting the railway tariffs. TCDD will also have authority to investigate accidents and serve as the regulatory authority for free access to infrastructure. The cargo and passenger operations will be separated from TCDD. A new company, Türk Tren A.Ş. (Turkish Train, Inc.), will be established to conduct the passenger and freight transportation (Karaman, 2010; Radikal Gazetesi, 2008). Separation of accounts between Infrastructure and Operations and making each one a profit/loss center will help identify the real source of loss TCDD has been accruing.

9. Conclusions and Recommendations

Turkey's economic growth has been among the strongest in the World in recent years, supported by financial stability, international investor confidence and a dynamic business sector. As the Turkey's economy takes-off, the demand for transportation capacity and quality of service is increasing substantially.

In Turkey, the railways are not profitable. The rail system is unable to fulfill the demand for passenger and freight movement at existing prices, quality of service, and at acceptable levels of reliability. The reasons for the stagnation of rail transportation include inadequate infrastructure and existing inappropriate institutional and regulatory structure.

The government should put significant investment into railway infrastructure to upgrade and expand existing network. Turkey's railway infrastructure assets have not been properly maintained and have been ageing and deteriorating. The budgeting, planning, and maintenance of major rail infrastructure assets has been inadequate over the years. Investment in railway infrastructure could divert trucks off the road and would bring many other public benefits, from reduced highway accidents and lower repair costs to enormous improvements in fuel efficiency and pollution reduction.

In order to reduce the inefficiencies in the rail industry, Turkey is, now, looking to adopt a more liberalized structure for its railways. Liberalization in the railway sector can provide substantial benefits to railway passengers, freight shippers and to the Turkish economy as a whole. Turkey should assume full responsibility and urgency to reform the railway industry.

Institutional and structural reforms should aim to restructure the railway investment and financing system, and enable private firms to invest in infrastructure and equipment, and operate and compete for both passenger and freight traffic. In addition, separation and independence of functions are essential for an effective regulatory framework and the satisfactory functioning of the rail service market. This will ensure non-discriminatory track capacity allocation and setting of track access charges. The national rail regulator must be fully independent from all rail operators and therefore separated from operations.

Transporting more passengers and freight on the rail network will provide a reduction in transport emissions levels. This will also reduce congestion on key routes used by road shippers and improve journey times on key congested routes.

In Turkey, restructuring and reform in the transportation industry is required not only to increase railway competitiveness but also to catch up with the developments in Europe. The legislation in Turkey should be modified to the European Union acquis related to the railways as part of the Turkey's accession process.

Similar to the developments in the US and EU, Turkey should introduce policy reforms to improve the performance of rail passenger and rail freight operations. Various reforms are required to develop a sustainable, well-integrated and efficient rail system and to bring rail transportation into a competitive and sustainable growth path. Institutional and structural reforms should aim to restructure the railway investment and financing system, and enable private firms to invest in infrastructure and equipment, and operate and compete for both passenger and freight traffic.

Separation and independence of functions are essential for an effective regulatory framework and the satisfactory functioning of the rail service market. This will ensure non-discriminatory track capacity allocation and setting of track access charges. The national rail regulator must be fully independent from all rail operators and therefore separated from operations.

In addition, the national rail regulator should supervise the railway companies and infrastructure; manage safety, licensing and interoperability issues, and certification of train crew-operating locomotives and trains. It should also be responsible for setting the railway tariffs and have authority to investigate accidents and serve as the regulatory authority for free access to infrastructure.

To ensure rail freight competitiveness, infrastructure access and usage conditions must be non-discriminatory and regulated. Rail-related services must be open to all undertakings at clear conditions to ensure liberalization of all market segments. New entrants are relatively small compared to the existing state-owned enterprises but work more efficiently and provide attractive services for their customers.

Infrastructure investments must follow long-term strategies, which reflect the

needs of all market actors. Private sector involvement in rail operations should be developed. Partnerships with the private sector will provide resources for investment in infrastructure and related services, construction of public and private joint venture local railways, connections to ports, industrial areas and factories to promote the development of local economies. Public-private sector partnerships can be used to successfully manage and maintain infrastructure assets. Commercial agreements however, need to include clear and adequate maintenance obligations to ensure private sector commitment to maintenance. Private rail operations will also take away the financial burden on TCDD. Public assets (terminals, workshops) must be offered for sale or rent to the market if they are not used any more by TCDD to ensure rail passenger and freight market growth.

The Turkish Rail Industry is in a dare need of modernizing (electrification and signalization) and increasing the capacity (new lines and double tracks) to improve transport efficiency on key routes of the national railway system. Removing constraints and expanding the system by constructing new lines to un-served metropolitan and industrial areas will significantly improve the existing rail capacity. Electrifying and otherwise improving rail infrastructure would indeed facilitate the coming of true high-speed rail passenger service to Turkey. Rail electrification also offers significant opportunities for zero-emission freight and passenger transportation. The complimentary services should be improved for operations, loading, unloading and storage and other logistics services along with the communication networks, including wireless services. There is also a need to improve the railway system's efficiency by using new technologies and modern management tools for planning and operations (scheduling and operations control). Innovative and customer service-oriented services should be developed to come up with the service quality of the intermodal competitors. Technological innovation will be a major contributor to the solution of the transport challenges. New technologies will provide new and more comfortable services to passengers, increase safety and security and reduce the environmental impacts.

In order for Turkey to further benefit from its geopolitical position, a regional integration strategy has to place a priority on harmonization and simplification of transit procedures to enhance international cooperation. This will speed up border-crossing procedures, reduce barriers to trade and transit transport, and strengthen regional cooperation.

In summary, for railway to meet the growing demand for transport services (1) Turkey should put significant investment into railway infrastructure to upgrade and expand existing network; (2) Institutional and structural reforms should aim to restructure the railway investment and financing system, and enable private firms to invest in infrastructure and equipment, and operate and compete for both passenger and freight traffic; (3) Railway infrastructure and railway operations functions must be separated and managed independent of each other; (4) An independent national rail regulator must be assigned to oversee all railway undertakings to ensure non-discriminatory access for track capacity and setting of track access charges; (5) A regional integration strategy should be implemented to harmonize and simplify transit procedures to enhance international cooperation for Turkey to further benefit from its strategic geopolitical position.

References

BOTAŞ. (2011). *2011 yılı sektör raporu*. Erişim Tarihi: 06.02.2013, http://www.enerji.gov.tr/yayinlar_raporlar/Sektor_Raporu_BOTAS_2011.pdf

DPT (2007). *Dokuzuncu Kalkınma Planı, (2007–2013)*. Erişim Tarihi: 07.02.2013, http://ekutup.dpt.gov.tr/plan/plan9.pdf

Eisenkopf, A. (2006). The liberalisation of rail transport in the EU. *Intereconomics*, 41(6), 292-313.

Karaman, S. (2010). *Demiryolu ile Yük Taşımacılığı*. Erişim Tarihi: 06.02.2013, http://www.aso.org.tr/b2b/asobilgi/sayilar/gorusmayishaziran2010.pdf

KGM (2012). *Yol Ağı Bilgileri*. Erişim Tarihi: 09.02.2013, http://www.kgm.gov.tr/Sayfalar/KGM/SiteTr/Kurumsal/YolAgi.aspx

McCullough, G. (2006). The liberalization of european rail transport: A American view. *Intereconomics*, 41(6), 311-313.

Radikal, TCDD yeniden yapılandırılıyor. 29.07.2008. Erişim Tarihi: 08.02.2013, http://www.radikal.com.tr/Radikal.aspx?aType=RadikalDetay&ArticleID=890858&CategoryID=80

Railway Gazette, 09 March 2009. On the fast track to reform. Retrieved 06 February, 2013, from, http://www.railwaygazette.com/news/single-view/view/10/on-the-fast-track-to-reform.html

TCDD (2010). Türk – Fransız kolokyumu şehiriçi demiryolu ulaşımı ve karayolu altyapısı. Erişim Tarihi: 02.02.2013, http://www.tcdd.gov.tr/home/detail/?id=557

TCDD. 2013. Hızlı tren projesi. Erişim Tarihi: 15.03.2013, http://www.tcdd.gov.tr/tcdding/hizlitrenprojesi_ing.html

TCDD (2006). Turkish state railways annual statistics (2001-2005). TCDD Yayınları.

TCDD (2010). Turkish state railways annual statistics (2005-2009). TCDD Yayınları.

TCDD (2012). Turkish state railways annual statistics (2007-2011). TCDD Yayınları.

TCDD (2005). *Türkiye Cumhuriyeti devlet demiryollari işletmesi genel müdürlüğü hatlarında diğer şahıslara ait vagonların işletilmesine dair yönerge*. Erişim Tarihi: 06.02.2013, http://www.tcdd.gov.tr/home/detail/?id=409

Thompson**,** L. S. **(**2009**).** Railway and ports organization in the Republic of South Africa and Turkey: The integrator's paradise?. Discussion Paper No. 2009-5. Paper presented at International Transport Forum.

Yönter, İ. U. (2004). Türkiye'de demiryolları ve demiryollarının altyapı sorunlarının iktisadi çerçevede değerlendirilmesi. *2023 Dergisi*, 4(40).