ECONOMIC AND FINANCIAL CRISIS IMPACT ON RAIL SECTOR

Drd.Ing.**Gheorghe-Stelian BĂLAN**
S.C. ALSTOM Transport S.A.
Bucharest

Conf.univ.dr.**Mariana BĂLAN**
"Atheneum" University Bucharest
Institute for Economic Forecasting

Abstract

Among transport modes existing today, rail remains of great interest because of certain benefits arising from that is the least polluting and most environmentally friendly. These are just some of the reasons why, in recent years, the European Union's strategy is trying to develop and implement programs to revive rail transport in the Community and to draw more traffic to this type of transport.

Economic and financial crisis that has put imprint on the sector and the economy. The paper proposes a brief analysis of the development of rail passengers and freight in the Union Europe in period 2006-2009.

As a transport sector with less risk factor than other types of transport, the paper presents a risk profile of railways.

Keywords: rail, risks in rail transport, effects of the crisis in rail transport
JEL Classification: L62, L92, J22, J31

Transports represent one of the keys to success for completing the single market in the European Union, because contributes to the realization of two of its fundamental objectives: free movement of persons and free movement of goods.

Over the past 20 years the European Community has been engaged in restructuring the European rail transport market, and in promoting the growth of rail transport. European Community efforts have concentrated on three major areas:

- opening the rail transport market to competition;
- improving the interoperability between national networks and the safety of national networks;
- developing rail infrastructure.

Since 2001, three packages have been adopted in European Community rail transport legislation with the aim of providing a legal framework for the opening of the European rail market, namely:

- the first package (2001) was intended to stimulate competition in order to create more and better international freight rail services and to improve the efficient use of infrastructure capacity;
- the second package (2004) aimed to accelerate the integration of the market by removing significant obstacles to cross-border services through the harmonization of technical standards. The package focused on opening the rail freight market to competition;
- the third package (2007) signaled an even closer integration by concentrating on international passenger services. Directive 2007/58/EC of the European Parliament and the Council1, which came into force on 1 January 2010[1], will open the EU international rail passenger market.

Besides opening the market for new entrants, the European Community encourages interoperability both within the European Union and between the European Union and neighboring countries. The Commission requires an updated and comprehensive overview of the current state of the European railway market and its potential development.

Characteristics of rail transport in the context of economic and financial crisis

The impact was hardest in the rail freight business. The rail passenger market was also affected, but to a lesser degree. However, while rail freight is beginning to show signs of recovery, passenger-kilometers continue to decline.

Since the onset of the economic crisis in the middle of 2008, the performance of the rail sector has deteriorated rapidly.

For the whole of 2009, tone- kilometers declined by almost 20% in Western Europe and 24% in Central and Eastern Europe.

Although the decline in tone-kilometers in 2009 followed a similar path in Western and Eastern Europe, the financial impact of the resulting revenue loss has been more severe in the latter. Here, tone- kilometers were already declining in early 2008 and the financial situation of rail companies has been critical for years.

As a consequence, some railways in Eastern Europe have been unable to pay their staff in full, and suppliers are not being paid and are charging penalties. Services have had to be cut, too.

[1] Directive 2007/58/EC of the European Parliament and of the Council of 23 October 2007 amending Council Directive 91/440/EEC on the development of the Community's railways and Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure

The impact of the economic crisis on rail passenger services became visible in the first quarter of 2009 and has been much more pronounced in Central and Eastern Europe than in Western Europe.

For the year 2009, passenger-kilometers declined by almost 8% in Central and Eastern Europe. In the 'old' EU Member States (EU-15), the decline in passenger-kilometers has been less dramatic, amounting to almost 2% for 2009 as a whole.

All transport modes have been deeply affected by the economic crisis, but many rail companies, especially in Central and Eastern Europe, have been hit even harder and are expected to take longer than other modes to recover.

In addition to such structural elements which are inherent in the rail sector, some of the framework conditions under which rail and infrastructure companies are supposed to operate are not being properly implemented in each Member State.

In contravention of Directive 2001/14 and the Public Service Regulation 1370/2007[1], many rail and infrastructure companies, especially in Central and Eastern Europe, are chronically underfinanced. Public sector contributions to expenditure in rail infrastructure have been insufficient to allow infrastructure managers to meet maintenance and renewal costs, and rail operators are not sufficiently compensated for public service obligations. All this has led to a deepening downward spiral of debt.

Rail companies were forced to react to the economic crisis mainly by staff lay-offs (or early retirements), cutting back on investment in rolling stock and generally reducing capacity as much as possible. These measures will weaken the railways in the long term and may cause them permanent damage.

Aiming to keep its promise made in the 2001 White Paper on Transport and to introduce a dedicated European rail freight network, late in 2008 the European Commission adopted a Regulation Proposal on a European rail network for competitive freight.

The proposal intends to increase the commercial speed and capacity of rail freight and to improve its reliability by developing international rail freight corridors – with the ultimate aim of reducing costs and increasing competitiveness.

In February 2009, the European Commission launched a discussion on how to revise existing legislation on the Trans-European Transport Networks (i.e. the so-called TEN-T guidelines and the TEN-T financial regulation) in the form of a Green Paper, including a stakeholder consultation. In the TEN-T Green Paper, the Commission outlines its intention to modernize TEN-T by making it more

[1] Directive 91/440/EEC on the development of Community's railways and Directive 2001/14/EC on the allocation of railway infrastructure capacity and charging infrastructure Railway

environmentally friendly and improving connections in the EU. More specifically, the paper highlights climate change, infrastructure bottlenecks, rail freight and ports as critical issues for the transport sector.

To streamline rail and increasing competitiveness, the EU seeks, among other things, European unification and control system of traffic management (ERTMS). ERTMS is designed to gradually replace the existing national and incompatible train-protection systems throughout Europe. ERTMS will bring considerable benefits in terms of interoperability.

On the other hand, especially during transition periods from legacy signaling systems to unified ERTMS equipment, ERTMS implementation represents a significant cost increase both to infrastructure managers as well as railway undertakings.

The first step in this direction was taken by the European Commission when the updated ERTMS deployment plan for ERTMS was adopted in July 2009. The deployment plan amends the implementation chapter of the technical specifications for interoperability for control-command and signaling subsystems (TSI, CCS), and defines the deployment strategy.

Depending on the sections, ERTMS will have to be installed along the principal European corridors by 2015; the major part of the European backbone network should be equipped by 2020.

Such a coordinated approach will ensure that investments by different countries are made in a similar time frame and that interoperability can be achieved on the busiest railway routes in Europe within a clearly defined timeframe.

In a similar manner, the ERTMS deployment plan sets the strategy for ERTMS implementation onboard vehicles.

It prescribes equipping all new railway vehicles for international services with ERTMS if they are ordered after January 2012 or put into service after January 2015. The existing vehicles will be gradually retrofitted in accordance with their operational use.

When the recession hit the rail sector hardest in early 2009, human resources directors from European railway companies, and representatives from the European Transport Workers' Federation (ETF) and the European Commission discussed the status quo and examined different perceptions of the impact of the crisis on railway business and railway staff, respectively.

The European social dialogue committee also decided to launch a study on insecurity and the feeling of insecurity in rail transport.

Demographic change is the major challenge at stake. The average age of workers in European railway companies is rising constantly. As in previous years, the possibility of early retirement will decrease. Recruiting young staff will become

increasingly difficult because of low birth rates, which exacerbates the competitive situation.

Competition for suitable employees will intensify. Employees will have to continuously further their education with a view to their professional prospects. In the context of global competition, it will also become increasingly important for the companies to be able to retain highly qualified staff on a long-term basis.

The changing employment situation is jointly examined in a new working party developed by the European social partners. This project is based on the 'Community of European Railway and Infrastructure Companies (CER) CER-ETF recommendations on the concept of employability in the railway sector'(2007). Employability is a strategic concept that aims to create a working environment which maintains and improves the qualifications and competences of workers while maintaining their health and fitness so that they remain employable.

The risk profile of the railways

The railways are generally safe for passengers and employees. Still, a large number of fatal accidents occur, mainly to unauthorized persons and level crossing users.

To measure the relative safety of rail transport, the number of accidents and the related number of victims have to be linked to traffic performance (Table 1).

Table 1 *Rail traffic performance (all undertakings) and number of significant accidents in the EU-27, 2007*

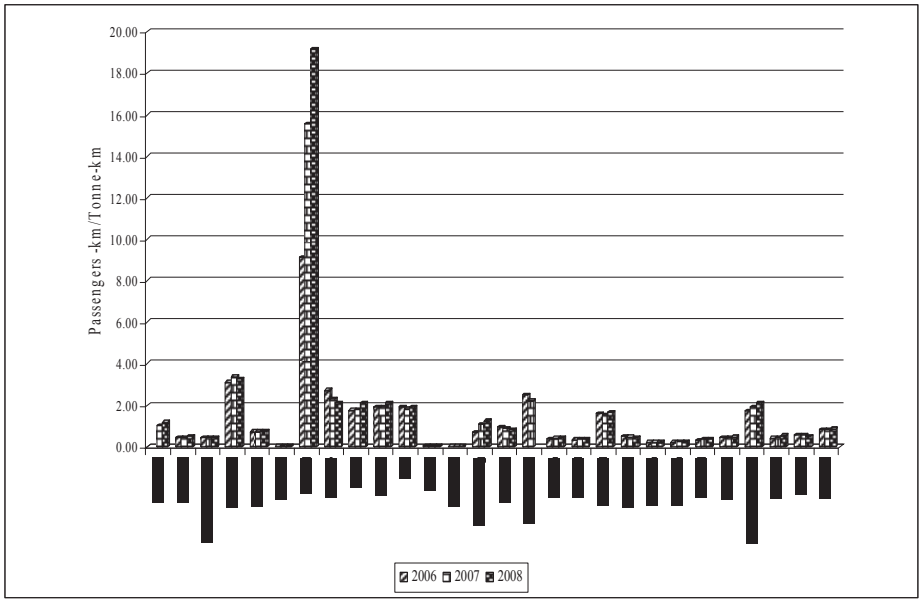
Country	Passengers (mil. Pass.-km)			Goods (mil. t-km)			Total number of accidents			Total number of victims		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
Belgium	8964	9403	10139	:	9258	8572	45	83	133	48	85	41
Bulgaria	2411	2404	2317	5396	5241	4693	84	56	65	123	61	82
Czech Republic	6922	6898	6773	15779	16304	15437	233	115	133	141	126	183
Denmark	5890	5979	6082	1892	1779	1866	32	25	23	30	19	21
Germany	78735	82685	85634	107007	114615	115652	1150	382	378	382	399	362
Estonia	257	274	274	10418	8430	5943	70	65	42	37	33	19
Ireland	1872	2007	1976	205	129	103	1	5	5	1	3	4
Greece	1811	1930	1657	662	835	786	70	53	40	89	54	46
Spain	20260	19966	22074	11541	11114	10475	100	123	94	112	109	73
France	79809	81961	86516	41190	42623	40627	171	413	165	136	122	132
Italy	46439	45985	45767	24151	25285	23831	166	133	120	168	120	107
Latvia	986	975	941	16831	18313	19581	63	51	61	63	45	60
Lithuania	268	246	258	12896	14373	14748	162	83	68	72	49	53
Luxembourg	298	316	345	441	287	279	5	0	0	17	0	0
Hungary	9524	8752	8291	10167	10048	9874	145	154	155	163	151	175
Netherlands	15696	15888	:	6289	7216	6984	28	33	26	29	30	26

Country	Passengers (mil. Pass.-km)			Goods (mil. t-km)			Total number of accidents			Total number of victims		
	2006	2007	2008	2006	2007	2008	2006	2007	2008	2006	2007	2008
Austria	8262	8514	9687	20980	21371	21915	100	106	98	104	115	93
Poland	18240	19524	19762	53622	54253	52043	905	976	883	502	633	574
Portugal	3876	3987	4213	2430	2586	2549	89	73	73	86	92	81
Romania	8065	7417	6877	15791	15757	15236	241	534	588	14	371	441
Slovenia	724	740	765	3373	3603	3520	48	61	65	20	47	50
Slovakia	2213	2165	2296	9988	9647	9299	626	270	217	95	93	94
Finland	3540	3778	4052	11060	10434	10777	103	58	27	35	21	27
Sweden	9617	10261	11017	22271	23250	23116	97	59	50	35	40	24
United Kingdom	47037	50171	52886	27365	26384	24831	85	110	105	58	89	80
Croatia	1322	1573	1769	3305	3574	3312	78	52	53	81	52	58
Turkey	5277	5553	5097	9544	9755	10552	455	394	386	347	312	358
Norway	2820	2861	3123	3351	3502	3621	16	12	14	5	5	2

Data source: Eurosta. www.eu.eurostat.eu

In most countries of Western Europe, the number of passengers carried by rail has exceeded those recorded for goods. Performance ratio of passenger freight was particularly high in Ireland and Denmark, where the number of passenger-km in excess of the amount of freight tone-a factor that ranged from 9.13 in 2006 to 19.18 in 2008 respectively from 3.11 to 3.26 (figure 1).

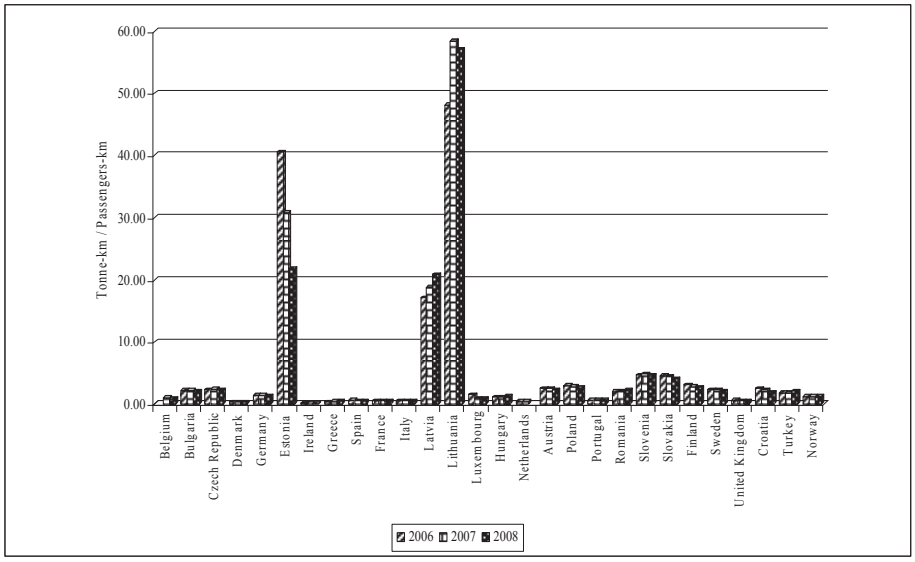
Figure 1 *The ratio of number of passenger-km and tones-freight transported by rail*



Data source: Eurosta. www.eu.eurostat.eu

Furthermore, rail freight traffic was significantly more important in the Baltic States, which were the only countries where the number of transported goods was higher than the number of passengers (Figure 2).

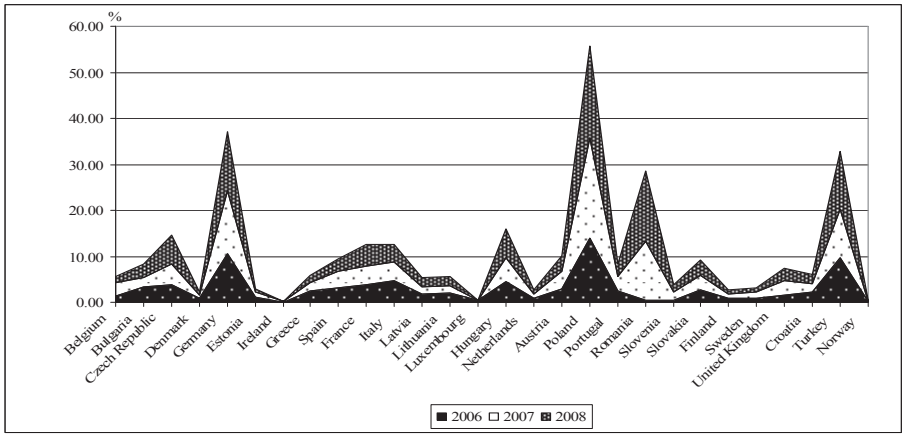
Figure 2 *The ratio of freight tones-km and the number of passengers transported by rail*



Data source: Eurosta. www.eu.eurostat.eu

Four countries (Germany, Poland, Romania and Turkey) in 2008 amounted to almost 62% of all crashes that occurred in the EU27 rail. That same year, the number of people killed or injured in northern European countries was under 1% of all victims at the EU-27, while in Poland there were 18.6% (Figure 3).

Figure 3 *The share of the victims in total accidents in railway (EU27*)



Data source: Eurosta. www.eu.eurostat.eu

Even though the risks to the users of the railway system are low, there are a number of railway accidents including third parties. The majority of the accidents occur when persons trespass in order to cross railway lines where it is forbidden.

The number of level crossing accidents constitutes a substantial share of the total number of accidents. Across Europe, the number of railway level crossings is constantly low (a reduction of approximately 6% annually).

When new railway lines are built, they are normally conceived without level crossings. The closing down of existing crossings as well as other measures should continue to improve the situation.

In this category of accidents, Romania has reported zero deaths in 2006 and 58 in 2007 and the highest number of deaths registered in Poland: 48 in 2006 and 81 in 2007.

Hungary has reported 22 deaths at level crossings in 2006 and 57 in 2007. The overall EU-27, year 2007 is characterized in that category of accidents on the rail with a 47% increase.

The number of significant collisions, derailments and fires are low compared to accidents that occur at level crossings or relate to accidents to persons caused by rolling stock in motion. There is a 15% decrease in the total number of accidents between 2006 and 2007.

This is mainly due to a decrease in reported number of collisions and fewer accidents to persons caused by rolling stock in motion. This difference does not reflect a true variation but is instead due to changes in definitions.

Germany and the Czech Republic have explained that they reported all collisions of trains in 2006 and only significant collisions in 2007 because significant accidents could not be extracted for 2006.

The accident profile is also reflected in the number of fatalities, the largest number remains in the category “unauthorized persons”.

Typically, this involves trespassers being hit by rolling stock in motion. Variations occur only in Romania, where the number of unauthorized persons injured in 2006 was 244 and fell to 0 in 2007.

SELECTED BIBLIOGRAPHY

1. Anna Białałas-Motyl, *Rail transport accidents decreasing in 2007*, Eurostat, Statistics in Focus, 52/2009;
2. Anna Białałas-Motyl, *Rail transport of passengers between 2007 and 2009* , Eurostat, Data in Focus, 28/2010;
3. Anna Białałas-Motyl, *Railway passenger transport decreased slightly at the beginning of 2009*, Eurostat, Statistics in Focus, 15/2010;
4. Flynn, S. E., *Transportation Security Agenda for the 21st Century*, TR News, No. 211, November/December 2000, pp. 3-7;
5. Jan-Tecker Gayen, *Safety Management in Railways,* 2004, www. Rzv113.rz.tu-bs.de;
6. Mark D. Abkowitz, *Transportation Risk Management: A New Paradigm***,** 2002, www.

*** *A closer look at the railways. Annual Report 2009-2010***,** Community of European Railway and Infrastructure Companies, www. cer.be;
Directive 2007/58/EC of the European Parliament and of the Council of 23 October 2007, amending Council Directive 91/440/EEC on the development of the Community's railways and *Directive 2001/14/EC on the allocation of railway infrastructure capacity and the levying of charges for the use of railway infrastructure,* www. *eur-lex.europa.eu*

*** *The Railway Safety Performance in the European Union,* 2009*,* European Railway Agency, www. era.europa.eu;

*** *Statistics Eurostat,* www.eu.europa.eu.