Vast amount of literature is focused on analyzing the effects of restructuring and deregulating measures in the European railway sector with results that are quite ambiguous. It’s very important that we use extended and updated data covering the more recent period and more countries of the European railway sector, given the fact that most deregulation and restructuring measures have been implemented in the last few years due to the economic crisis.

Key words: knowledge management, rail industry, deregulation, underinvestment, infrastructure, separation, integration

JEL Code: H54, L12, L16, L92, R42

1. Introduction

During the past fifty years, the most common market structure in many countries rail sectors was a single, state-owned firm, entrusted with the unified management of both infrastructure and freight and passengers transportation. In general, it was assumed that the monopoly power of the national company required price and service regulation in order to protect the general interest. There was an obligation on the part of the companies to meet any demand at those prices, which in many cases were not very cost efficient. When they wanted to close an existing infrastructure line or to develop new services it was required that the government approved. Considering those facts, competition was rare and often discouraged, and the preservation of the national character of the industry was considered a key factor governing the overall regulatory system (Pedro Cantos Sánchez, José Manuel Pastor Monsalvez, Lorenzo Serano Martinez, 2012).

The worldwide restructuring of the rail industry began very timid. Romania started by replacing the National Railway Company with autonomous commercial bodies such as Freight Transportation Company, Passenger Transportation Company and Infrastructure Company, who possessed independent, balance sheets, in which only public service obligations could be explicitly audited by the government. After this first step the Romanian government opted to substitute the old geographically based management with a multi-Regional structure, defined by the companies’ most important lines of business and services.

The rail industry in Europe has been restructured on two levels: the vertical dimension, which involves the relationship between infrastructure and operations, and the horizontal dimension, which covers the connection between the multitudes of services that use the infrastructure.

There are three options for the vertical organization of the railway industry: vertical integration, competitive access and vertical separation.

Vertical integration refers to the traditional model of railway organization, where a single public entity controls all the infrastructure facilities as well as the operating and administrative components not the case for Romania, anymore.

Competitive access is characterized by the existence of an integrated operator, required to make rail facilities available to all the operators public and private on a fair and equal basis through the trading of circulation rights. This kind of organization has the advantage of integration but its overall effectiveness may be jeopardized if the integrated company has incentives to leave out its competitors. This type of structure is only used in Germany, Switzerland and Italy countries who maintain a vertically integrated structure, where trackage rights are used by operating companies.

The complete vertical separation scenario presumes that the management and ownership of facilities are fully separated from the rail functions. This is a very attractive option because although infrastructure may remain a natural monopoly, it is separated from rail services, where potential competition between different operators is encouraged. The main advantage of this kind of organization is that the railway transport is placed in a similar situation like road transportation regarding the tariff system.
and infrastructure planning. This vertical organizational system has multiple disadvantages such as the potential big loss of economies derived from joint operation of tracks and services.

The horizontal level reforms has been quite aggressive in Romania and consisted of many new operators entering the freight sector and of a franchising system in passenger services.

The vertical separation does not seem to be necessary to achieve an increase in productive efficiency, although tendering processes do appear to favor an increase in efficiency. (Pedro Cantos Sánchez, José Manuel Pastor Monsalvez, Lorenzo Serano Martínez, 2012)

2. Had deregulation increased investment in rail infrastructure?

Apart the case of natural monopoly, the intervention of the state in network industries such as rail transportation resulted in a restriction of the possibility to compete in the market, by granting legal monopoly to state-owned firms. Since the 1980s European countries have embarked on a process of deregulation, liberalising entry and removing other market features that hinder competition. In several countries, regulatory reforms were accompanied by a reduction or even elimination of the presence of publicly-owned sector monopolists.

Privatisation policies were based on the assumption that private ownership is superior from the point of view of productive efficiency, at the same time more sophisticated regulatory techniques made arm’s length regulation more desirable than direct public intervention. Private ownership generates stronger incentives for monitoring, cost efficiency and innovation than public ownership, because the owners of a private company or the managers acting in the name of the owners have residual rights over the cash-flow of that company while the minister, civil servants and public manager can only partially appropriate the benefits of cost reduction or quality improvements.

The decline of public ownership also reflects increasing recognition, among European governments, that it can create conditions contributing to inefficient investment. Policy makers may allocate resources to a given region or infrastructure project at the expense of others with potentially higher returns in other regions or sectors. As an example, governments may use state-owned companies to pursue policy objectives such as contrasting unemployment or inflation – through a pricing policy that has nothing to do with business objectives. (Araújo, 2011)

Likewise, underinvestment in public firms may occur if, confronted with fiscal pressures, public authorities do not value the long-term benefits of investment in infrastructure. Politicians may also be driven by electoral concerns, so the timing and the size of investments may follow the electoral cycle rather than efficiency concerns. Finally, public managers may be influenced by rent-seeking objectives.

For instance, public managers may pursue empire-building strategies to strengthen their support with the politicians that appointed them. This will result in overinvestment if managers can take advantage of soft budget constraints or state guarantees. In this case, privatisation can lead to a reduction in investment as empire building strategies are dismantled.

Liberalisation, that is, the introduction of more competition, can also foster investments as firms’ strive for efficiency gains. On the other hand, the presence of public-owned companies in the sector may create a disincentive for privately-operated firms to invest. In this case, the lack of a level playing field – often due to the state-owned company soft budget constraint – is a disincentive for private firms to invest. Furthermore, there may be confusion between the role of the state as the regulator and owner, which serves to amplify regulatory discretion and risk.

In network sectors, investment is often lumpy due to indivisibilities and entails high sunk costs. If faced with an uncertain environment, private providers of infrastructure services may delay investment. In the end, the government’s lack of commitment, leaving open the possibility of opportunistically expropriating the utility or to undertake price changes after an investment has taken place, leads to underinvestment in regulated industries.

Efficient investments levels in network infrastructure require a stable and credible regulatory framework, which should also be independent from political pressures. Ensuring the regulator’s independence is crucial to preventing regulatory capture. Against this background, the design of independent regulatory agencies, with their own budget and a clear delegation of powers can alleviate the uncertainty surrounding an investment project and mitigate the hold-up problem. (Araújo, 2011)

3. The investment gap for sustainable transport

Transport infrastructure system display inertia, due to their long life span and to the time lags between planning and construction. As a result, delivering both climate change mitigation and adaptation at scale, across country context, requires a large amount of effort in order to transform our mobility patterns, whether to renovate the existing transport infrastructure or build new infrastructure projects.
Also rail transport also shapes land usage, particularly at the urban level, which requires coordinating transport with land use planning.

With more than 50% of transport occurring in urban areas as from 2010, cities have a key role to play. There is a growing understanding that achieving a green growth development path will require designing efficient and sustainable urban transport system in support of urban mobility.

Due to their long operational lifetime span and localization in vulnerable areas, transport infrastructure systems are also vulnerable to climate changes. Extreme temperature, floods, increased wind strength as well as increased storm intensity and frequency can disturb railway operation and damage road and bridge foundations.

In addition to climate change concerns, other environmental goals of sustainable transport may include: health and local air quality, biodiversity, noise pollution, resource efficiency and land use impact. Economic goals include: supporting economic growth and competitiveness through achieving mobility of persons and goods, avoiding congestion, and not for last using resources efficiently without over-burdening public budget. Social goals consists in allowing individuals to meet their basic mobility needs (access to jobs, healthcare, education) in a way that does not impact their health and it is also equitable.

How to transition away from carbon-intensive and unsustainable transport demand patterns? The strategy towards sustainable transport is often described in the literature as the Avoid – Shift – Improve (A-S-I) approach. Sustainable transport policies can be grouped into three types of policies:

- **"Avoid"** or "reduce" the need to travel and the trip length, by improving the efficiency of the overall transport system through integrated land-use planning and transport demand management, through compact, mixed-use development planning, traffic restrictions, mobility management and marketing, and national subsidies for low-carbon transport metropolitan design and planning.

- **"Shift"** or "maintain" tools, to improve trip efficiency by encouraging modal shift to low-carbon transport modes such as public transport, through parking restrictions, road space allocation, public awareness campaigns on private vehicles alternatives, procurement of public transport.

- **"Improve"** fuel and vehicle efficiency and technologies through vehicle standards, speed limits, labelling of vehicles environmental performance, and fiscal incentives for electric or hybrid vehicles. (Géraldine Ang and Virginie Marchal, 2013)

Experiences show that A-S-I strategies need to be tailored to specific country context, depending on infrastructure needs, income levels, transport trends, energy mix and urban development patterns. For instance, while in developed countries, "Improve" strategies can help promote electric vehicles and rail electrifications, developing countries often make better use of encouraging small, efficient cars and innovation for traditional non-motorized transport modes such as bicycles. Effective sustainable transport strategies often require enhancing synergies between "Avoid", "Shift" and "Improve" policies.

The growth of global transport demand and global mobility will require significant increases in transport infrastructure investment. The challenge of financing sustainable land transport infrastructure can be analysed along two lines: the need to **scale-up** land transport infrastructure investment and the need to **shift** investment towards sustainable transport options. The two are intertwined and cannot be studied in isolation.

Current infrastructure investment flows will not suffice to handle the resulting growth in transport infrastructure needs, neither for extension of transport network nor for building missing links, removing bottlenecks and upgrading existing infrastructure.

Incremental investments for adaptation and mitigation in the transport sector might just represent a small share of the total investments required. In particular, high investment needs in low-carbon vehicles could be offset by net savings on rail, high speed rail infrastructure. The additional cost of investing in sustainable transport infrastructure should also be assessed with regard to the benefits across the whole network of infrastructure systems.

Who could finance the transition? Public actors have traditionally played a key role in financing transport infrastructure as transport display a quasi-public good nature, providing high social and economic public benefits. In particular, public transport systems represent a classic example of market failure where there is a public good associated with the infrastructure (economic development, health benefits) that is greater than the private good for the individual user of the infrastructure and therefore justifies public policy intervention.

As a result, public stakeholders have historically carried ownership, financing and investment risk of transport infrastructure. Urban transport infrastructure worldwide has been financed through local governments, operating savings, national and regional grants and public borrowing, rather than through user charges. Most rail and road infrastructure in the European countries has been funded through taxation and public borrowing since at least the middle of the 20th century.
Given the scale of investment required in sustainable transport infrastructure, and the growing pressure on public finance, mobilizing private investment has become indispensable. Since 2008, the global economic crisis of the Eurozone have exacerbated public finance strains (through reduced tax revenues and increased deficits and debt servicing cost due to lower credit ratings), and encouraged national and local governments to promote private sector participation in transport infrastructure.

Investment barriers however often limit the scale and pace of private sector investment in sustainable transport infrastructure projects. Investment barriers relate to the relatively lower risk-return profile of sustainable transport infrastructure projects and lack of opportunities, relative to fossil fuel-based alternatives, due to market and government failures that fall short of accounting the full cost of carbon-intensive transport modes.

Public investment is still skewed towards carbon-intensive road transport modes in most county context, which further discourage private investments shift towards sustainable transport. In the absence of robust domestic policy and regulatory frameworks in support of sustainable transport infrastructure investment, to account for the full cost for carbon-intensive road transport and the benefits of sustainable transport, project such as high-speed rail in our case, infrastructure that remains characterised by lower investment opportunities. (Géraldine Ang and Virginie Marchal, 2013)

4. Transport infrastructure: Higher investment needed to preserve assets

A quantitatively and qualitatively efficient transport infrastructure is a fundamental requirement for the success and prosperity of the Romanian economy, with its high degree of labor division, its many exchange relationships, and its south-eastern European location being a point of strategic point of connection for the European Union. Despite the importance of this sector for the economy, there is a serious lack of investment in the maintenance and quality assurance of the transport infrastructure.

Assuming that the investment gap will need to be closed in order to maintain the rail transport infrastructure in coming years, and if the cumulative result of years of neglect is also taken into account, the additional investment requirement is likely to be at least of 10 billion euros to rehabilitate all 10,800 km of rail existing in Romania.

There is a very big need in replacement investments that include replacing worn parts of the infrastructure installations as part of major repairs and renewal measures. A distinction is made here between simple restoration to its original form which is mainly done now by the companies’ employees, and a qualified securing of its asset value, which takes into account the quality standards of the replacement applicable at the time of the renewal and modified construction standards. The expansion of the network to include new lanes or tracks are net investments which are not part of replacement demand. (Uwe Kunert and Heike Link, 2013)

The methodological basis for calculating the demand for replacement investment is the investment and fixed assets calculation done by the Ministry of Transportation. Which uses a continuous inventory program to determine fixed assets, asset disposals (monetary equivalent of physical asset losses no longer in inventories) and write-downs (imputed depreciation), in which fixed assets are updated through the accumulation of individual annual investments, taking depreciations and disposals into account. The disposals of assets monitored continuously can be considered the requirement needed to restore assets to their original state. Additional demand for the qualified securing of asset value was derived from previous studies which compared model results for asset disposal and funds used in the past for replacement or renewal measures.

Infrastructure sectors including rail transportation fell under the financial remit of several government parties who controlled that sector and recorded declines in real investments. This affected particularly regional public rail transport.

The development of both fixed assets in terms of monetary value and of the technical condition of the transport infrastructure over time shows that investment activity in recent years has not been sufficient to maintain the desired infrastructure quality. Accordingly, there was a slight decrease in net assets in these areas. In addition, the condition of the infrastructure has deteriorated significantly. According to the infrastructure condition report, the score awarded to railroad bridges have significantly deteriorated, and more than 50% of them need to pass through a capital repair.

The quality and purpose of rail transportation depend not only on the infrastructure, but also on the vehicles. Thus, investment by transport providers in passenger and freight vehicles plays also an important role. In public passenger transport, the type of vehicles available to customers also determines the quality of the services and can therefore have a negative effect on demand.

Overall, for the necessary replacement investment in the rail transport sector, the pent-up demand for neglected replacement measures, and new investments beyond the current investment lines,
an estimated additional requirement of at least 5 billion euros is needed to maintain and improve installation and rolling stock. (Uwe Kunert and Heike Link, 2013)

5. **Separation versus Integration in international rail markets**

Following the Second Railway Package of the European Union, the Rail freight market across the EU Member States and Switzerland is liberalized, adopting an open access regime in each country. Since 2010, international passenger services is also open to competition within the European Union as part of the Third Railway Package; the recent Fourth Railway Package emphasizes the opening to competition of all rail services. These decisions aim to foster this rail activity which represents a significant part of railways revenues and market shares – more precisely, ten percent of railway undertakings passenger turnover and twenty percent of international traffic. While international rail services face a fierce competition from low-cost airlines, it is deemed that they would profit from the enlargement of the European high-speed network and its interconnection if intramodal competition is implemented. To do so, it is required that all member states grant the right of access to their rail infrastructure. Now, this policy raises in particular the question of designing what could be optimal organization of the European rail industry, the industrial structure that would yield the highest level of consumer welfare.

The traditional model of railway organization in Europe involves a single firm in charge of both the fixed infrastructure (the network of rail tracks and its associated equipment of signals and stations, and the operational services, which include rolling stock management and all the transport services). More precisely, the company is vertically integrated. The main reason advanced to support this kind of organization is that there is a need for cooperation between the two layers. (Guido Friebel, Marc Ivaldi and Jerome Pouyet, 2013)

Along these lines, a few econometric analysis of railroad cost functions document the existence of vertical complementsarities between infrastructure and operations. Vertical structures of railroads allow us to evaluate the cross-elasticities between the infrastructure output and the different service operation by fitting a translog cost function to a panel dataset of European freight railroads. More recent studies indicate that firms running each activity separately would have up to 24% higher operational costs than a vertically integrated firm. The main finding is that the marginal cost of passenger output is increasing with the level of infrastructure value while the opposite result is obtained for freight operations. Some studies show that vertically separated firms cost 5,6% more than an integrated system. However, vertically separated firms tend to perform better than integrated ones.

These results indicate that vertical disintegration might be costly from a technical point of view. They must be balanced with gains that could be expected from managing the rail infrastructure separately from the different rail service operations. In particular, from a regulatory perspective, it could be more difficult for authorities to obtain the information required for effective regulation access that in the disintegrated case. With separation, all firms that would enter the market are treated on an equal footing and face the same rule of access. Moreover, it could be easier to compare productivity and performance of the firms operating on the same track. Separation is viewed as a way to foster competition to the benefit of customers. It remains that well-known advantages of vertical integration are the diminished incentives for double marginalization and the better coordination through the value chain.

With these economic results and fact in mind, we question here the relevance of the European reform of the international rail service. Most empirical and theoretical analyses on the cost and benefits associated to integration do not consider international services which require the use and access of several infrastructure networks. The objective is to shed light on both the working of competition and the optimal industry organization for the international rail services in order to provide a theoretical setup to understand and illustrate the issues at stake. (Guido Friebel, Marc Ivaldi and Jerome Pouyet, 2013)

The focus must be on international transport services, that is, transport services from one country to the other. Therefore, to provide one unit of transport services, transport operators have to get access to both infrastructures, the pricing of a given network is under the control of a country specific (upstream) infrastructure manager.

The analysis focuses on two elements: the nature of the return-to-scale and the nature of the final services provided by the transport operators. We must consider that either the upstream segment (rail network) or the downstream segment (transport operator) can exhibit some increasing or decreasing returns-to-scale. The optimal industry organization depends on these returns-to-scale, in particular at the level of the upstream sector.

When the industry features downstream return-to-scale only, then vertical integration ought to be favored with respect to any other organizational choices which would imply some form of separation. With upstream returns-to-scale, a somewhat similar conclusion emerges: Integration (in both countries) dominates, provided that the return-to-scale parameter is not too large, when it increases, a mixed industry
organization, in which one firm is integrated whereas the other is separated, becomes optimal. When it further increases, separation in both countries becomes optimal.

We must take into consideration the situation in which final transport services are local only, that is, there are two national markets and railway operators are active on both markets. The comparison between the case of international services and the case of local services leads to the following conclusion. When the share of international services becomes greater with respect to the total level of transport services, some kind of separation tends to be preferred when the infrastructure is characterized by decreasing returns-to-scale, integration would be optimal, by contrast under increasing returns-to-scale at the infrastructure level.

Concerning international services, whether it is for freight or passengers, the incumbents of different countries sometimes have cooperative agreements to provide combined services whose revenues they share, based on some rule in transparent way for the users. Allowing the railroad operators to coordinate their pricing decision on the final market has the obvious drawback of increasing their market power.

Another option, much less discussed in the academic literature, is to allow some coordination between national infrastructure managers. We compare the situation of vertical integration or vertical separation in both countries with the situation in both national infrastructures managers are merged into a single entity, called the transnational infrastructure manager. The creation of a transnational infrastructure manager always dominates the situation with vertical separation in both countries since the horizontal externalities between the national access pricing decisions are now perfectly internalized.

The comparison with the case of vertical integration in both countries is less immediate: vertical integration allows to alleviate the double marginalization problem within each country (a vertical externality is internalized) but the horizontal externality between national infrastructure managers remains, with a transnational infrastructure manager, the horizontal externality is internalized, but not the vertical ones. Creating a transnational infrastructure manager always dominates any other industry organization. This result holds whatever the nature of the returns-to-scale of the upstream and the downstream segment. (Guido Friebel, Marc Ivaldi and Jerome Pouyet, 2013)

6. Public-private partnerships in the rail sector

Public-private partnerships in the rail sector have become increasingly common in the last two decades. They have been praised and criticized for a variety of reasons. Over the last 25 years, 27 public-private partnerships (PPPs) have been awarded in the rail sector. Rail PPPs however are controversial. Some argue that they allowed to fund and build projects that otherwise would have been impossible to launch, or that they fostered innovative systems. Others think that PPPs are a costly way to bypass budget constraints that cost more to the taxpayer at the end of the day. We must focus on three specific questions: what are the common features and the differences among rail PPPs and how did they evolve in the last two decades? What are the specific features of rail PPPs compared to other PPPs? Why do so many PPPs fail and need public support, especially among traffic-bases concessions? (Dehornoy, 2012)

PPPs have been used to build, finance, operate and maintain four types of rail projects:
- Airport rail links (ARL): projects that typically include not only the construction and operation of the infrastructure, but also the operation of the dedicated trains that run between city centers and airports, trains that run on pre-existing conventional networks for part of their trips.
- High speed lines: 8 PPPs are in Europe and are infrastructure-only projects that connect on both ends with conventional networks, with open access to train operators.
- Equipment’s / rolling stock: PPPs may be well suited for the construction and maintenance of specific equipment in order to optimize their lifecycle costs, such as signaling, power supply and train control or rolling stock.
- Conventional lines: in relatively few cases, PPPs may be used for the construction and operation of conventional systems. Such projects are usually less technically complex but PPPs can add value because of single ownership on cross-border projects, of increased flexibility for freight corridors or of lack of public expertise in certain markets.

The first conclusion of experience is that rail PPPs work: once the contracts had been signed, all but two projects have been delivered. Not all of them were delivered within scope, time and budget, but only two PPP projects failed prior to their commissioning. Thus from a technical perspective, rail PPPs have mostly been successes. One of the reasons for this overall technical success of rail PPPs may be that contracts are usually signed at a late stage in the design process of the projects. By that time, technical feasibility is no longer in question and many risks have already been mitigated. It happens sometimes that public authorities and public opinion have high expectations about PPPs, thinking that they will be able to
solve the defects of flawed projects, particularly so with financial defects. There may be expectations that a PPP will reduce the cost of a given project or that it will create additional resources that will lower the price to the taxpayer. Such expectations never materialized in the case of rail PPPs. (Dehornoy, 2012)

Very few railways in the world are financially self-sustainable and there are little reasons why things should be different for PPP projects. PPPs alone do not create value. At the end of the day, there are only two sources for financing: customers (passengers / shippers) and taxpayers (public authorities). What a PPP can do is reduce the cost of a project by optimizing its design and management and reduce the amount of debt that is borrowed by public authorities.

Many reviews provide a clear discussion on risk sharing mechanism in PPPs or transport PPPs. Some risks however are specific to rail PPPs and help explain why they may be more complex or have a poorer record than other PPPs. The main source of this section is the Painvin review, in which risks are categorized into three groups:

<table>
<thead>
<tr>
<th>Politics</th>
<th>Complexity</th>
<th>Commercial</th>
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<tbody>
<tr>
<td>Lengthy decisions processes may cause scope deviations</td>
<td>Long and complex completion phase</td>
<td>Revenue structure</td>
</tr>
<tr>
<td>Failure to execute / interference by public authority</td>
<td>Technical intensity: proven technologies but complex integration</td>
<td>Demand forecast</td>
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<td>“Political entrepreneur syndrome”</td>
<td>Structures and ground conditions</td>
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<tr>
<td>Public and market acceptance</td>
<td>Interaction of a variety of systems</td>
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<td>Involvement in incumbent train operating company</td>
<td>Safety</td>
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<td>Quality of legal and institutional framework</td>
<td>Technical interfaces</td>
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Table 1: Main causes of failures of rail PPPs (Painvin, 2010)

Rail projects are very political entities, more so than most other public infrastructure projects (on a par with roads). Typical governments will apply three types of pressure: the line must be built, the trains must run and price/quality must be acceptable. Rail is a public good and whoever may be contractually in charge of rail performance, governments will still be held responsible by citizens.

Most of the PPPs are technical and operational successes but end up being financial failures. Public budgets have had to bear much of the cost of these failures. Yet it is unclear whether PPPs perform financially better or worse than public schemes because PPPs reveal failures that could have been hidden in the case of public projects.

It is not very clear whether the global outcome of rail PPPs is rather positive or negative. Many mistakes were made, with naivety by governments and investors deserving much of the blame. Much has been learned from these mistakes and it is especially clear that there is now globally more wisdom about PPPs on the public side. It can therefore be hoped that the fourth wave of PPPs will be one of the smaller, better designed, less risky projects. With such conditions, railways might at last benefit from PPPs. (Dehornoy, 2012)

7. Conclusions

In the railway sector the market structure transformed from a single, state-owned firm, whom had the unified management of infrastructure, freight and passengers transportation to three separated companies and an open and fair competition for freight and passenger part of the business.

The decline of public ownership also reflects increasing recognition, among European governments, that it can create conditions contributing to inefficient investment. Underinvestment in public firms may occur if, confronted with fiscal pressures, public authorities do not value the long-term benefits of investment in infrastructure. In network sectors, investment is often lumpy due to indivisibilities and entails high sunk costs.

Efficient investments levels in network infrastructure require a stable and credible regulatory framework, which should also be independent from political pressures. Due to their long operational lifetime, span and localization in vulnerable areas, transport infrastructure systems are also vulnerable to climate changes. The growth of global transport demand and global mobility will require significant increases in transport infrastructure investment.

Current infrastructure investment flows will not suffice to handle the resulting growth in transport infrastructure needs, neither for extension of transport network nor for building missing links, removing bottlenecks and upgrading existing infrastructure. Given the scale of investment required in
sustainable transport infrastructure, and the growing pressure on public finance, mobilizing private investment has become indispensable.

A quantitatively and qualitatively efficient transport infrastructure is a fundamental requirement for the success and prosperity of the Romanian economy, with its high degree of labor division, its many exchange relationships, and its south-eastern European location being a point of strategic point of connection for the European Union. Despite the importance of this sector for the economy, there is a serious lack of investment in the maintenance and quality assurance of the transport infrastructure.

References