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Market Liberalization of domestic long-distance bus services: evidence from deregulated EU countries and prospects for the market

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Abstract:

Long-distance coach services have long remained a marginal mode of transportation across Europe. While high speed rail and airlines attract much more political and media attention, the bus and coach industry has only recently caught the attention of policy makers. In a monopolistic and heavily state subsidized transportation market, coaches have been mainly used to cover residual and remote areas without access to rail infrastructure or proper public transportation. However, in the last decades long distance coaches have experienced a significant rejuvenation especially among low-income segments of the population, offering a valid alternative to those who do not have access to a private car or rail. The bus and coach industry has been slowly opening up to competition across all European Member States but significant differences within the regulatory frameworks for access to national road passenger transport still persist across all the national domestic markets. The UK and Nordic States have been long liberalized, while Germany, France and Italy have only recently opened their markets to private competition fostering the growth of this industry rapidly. Nowadays, the transportation sector is witnessing a small revolution and even if it is a recent phenomenon the results in recently liberalized countries are promising. Studies conducted mainly by the European Commission, show that effects of opening the long-distance bus market have been promising especially in terms of new entries, higher frequency, lower fares and, in general, better services with higher quality standards. This thesis makes a careful review of the current situation in the interurban passenger transport market by bus describing the main developments that have taken place following the market liberalization with a specific focus on performance related effects covering economic, social, environmental and operational dimensions.

Introduction

In the 1970s, deregulation as a means of economic advancement started to gain traction in the United States and since then many regulated industries in a large number of countries have been liberalised. Although deregulation processes were initiated and implemented across many industries and countries in the last two to three decades, a mixture of public policy arguments and lobbying activities delayed the implementation of corresponding processes in the case of the long-distance bus services. This resulted in a high-restriction and limitation of intercity bus services in a multitude of regions within Europe. Until recently long-distance bus services were either non-existent or underdeveloped. They were more often than not, taking the form of services provided by local, regional or national monopolies operating under a public service obligation in return for which they received subsidies from the State. The general picture could be summarized in a Europe of national carriers based on national sovereignty and non-competing principles. Consequently, the current situation of long-distance coach services is largely affected by the historical transport characteristic of each country and by the policies taken towards the transportation sector along the years. Attempts by governments to restrict access to their domestic markets to foreign competition is a rather common phenomenon.[1] Such constraints resulted from the attempt to protect the state financed rail sector. Historically, all the national railway markets were operated on the basis of statutory monopolies. The rationale behind such restricted bus services was to avoid wasteful competition with the national rail sector. The railways needed to be protected against coach competition as opening up the market might have resulted in losses of attractiveness for the rail system by reducing attendance of existing railway connections and substantial losses in passengers, thereby generating harm to the colossal state investments in the rail network. Only recently the EU took initiatives to revive this sector by liberalising the international carriage of passengers by bus

[1] Van de Velde, Didier, (2013), *Long-distance coach services in Europe,* Chapter 5 in Regulating Transport in Europe.

but such initiative brought only limited results since the majority of domestic markets were still hampering foreign competition.[2] An important step that the EU is currently pursuing is the harmonisation of the regulation across all EU states creating a favourable internal market for the long-distance bus services. The purpose of the liberalisation of the bus services is to provide consumers with a low-cost mobility alternative and create new demand for those who in absence of such services would have not have been able to travel or would significantly reduce travel expenses. Therefore, the recent reform aims at creating new demand rather than increasing the competition on the rail sector. Still, the liberalisation process is very slow and tedious in the majority of countries, hence very unlikely to happen overnight. This is mainly because of the past approach of transportation field which brought national carriers to have a considerable market power and leverage, underlined by the fact that state-owned rail companies are currently excessively dominant in their domestic markets, often with market shares of more than 90 percent such as SNCF, Deutsche Bahn and Trenitalia. Besides, the natural proximity of the state-owned rail company and the railway infrastructure organization are prone to lead to many conflict of interests with the opening of the market to alternative long-distance travel modes. Nonetheless, the EU is actively fighting railway protection. A first rail liberalisation package entered into force in March 2002 and today the EU has reached an agreement on the 4th rail package with the intention to open up all European domestic markets to private competition by 2020.[3] The idea is to replicate the success of the single European aviation market to the European rail network and bus sector as well. In this way, the EU strives to achieve a continental network that can offer a wider choice between modes of transportation, cheaper fares and improved quality of services. The liberalisation of the long-distance bus services had an initial great success across all countries that implemented it with promising numbers and increase interest from customers. Nonetheless, the bus remains far

[2] SDG (Steer Davies Gleave on behalf of the European Commission), *Comprehensive Study on Passenger Transport by coach in Europe*, Final Report, April 2016, London.

[3] European Commission "*The Clean Mobility Package*" (2017) The Directive on Passenger Coach Services.

behind other modes of transportation in terms of market share, accounting for only 2.5% of long-distance travel compared with 67% for car, 17,3% for train and 9,3% for airline.[4] Creating and promoting a solid intercity bus mobility would provide increased connectivity for EU citizens, particularly to those facing financial difficulties and to those who do not have access to a private car and are dependent on the availability of low fares alternatives. In addition, it would deliver significant savings in environmental and accident costs which in overall overcome the harm of some diversion of traffic from the rail sector.

The research in this thesis refers mainly to an economic evaluation perspective, but the perspective of legal evaluation also finds consideration. From an academic perspective, the transition from regulated to liberalised industries offers a rich set of research questions. The methodology applied in this thesis follows the subsequent focal points of interest: research into the forces that have given rise to regulatory reform; structure of the respective regulatory changes and stakeholders involved; effects of deregulation processes and outcome variables such as industry efficiency, innovation and digitalization, pricing effects and competition forces in this sector.[5]

[4] Pocketbook 2018
[5] Methdodology by Perl (1997)

Literature

Despite the fact that is one of the most fascinating trends nowadays, the intercity bus deregulation did not receive much attention from media neither from scholars. Therefore, very few researches and analysis exist on the topic. Most of the literature comes from the experience with the intercity bus deregulation from countries such as U.K. with White and Robbins (2012), Sweden with Alexandersson et al. (2010) providing observations after a decade of long-distance bus deregulation and Norway with AArhaug et Fearnley (2012). Van de Velde contributed greatly to the research with precious insights on the recent developments across Europe and Beria et al (2014) wrote extensively regarding early deregulation effects in Italy, however no follow up of market impacts exists. Augustin et al (2014) provides useful insights on the rapid expansion of coach services in Germany. A source of relevant data on the topic was mainly attained from state regulatory bodies such as ARAFER in France and ANAV in Italy. Moreover, the development of economic and social effects can be deduced and rebuild based on a rich literature related to airline deregulation markets, both in the U.S. and in the EU.

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1. REGULATION AND DEREGULATION OF THE INTERCITY BUS SERVICES IN THE EU

In this paragraph, necessarily introductory with respect to the topics that will be thoroughly described in the next sections, an overview of the main factors that brought the transportation sector under increasing market pressure is provided. Specifically, with regards to the long-distance bus industry, we will go through an analysis of the main reasons that brought the sector to be highly regulated and restricted to the minimum service. Starting from an initial characterization of all deregulation processes that started in 2007 – consequently to several initiatives from the EU Commission to deregulate the international carriage of passengers by coach and bus in the attempt to achieve a better-connected mobility network and to revive an undeniably romantic mode of transportation for long distances deserted by younger generations – we will then, take a deeper look at the regulatory framework governing the bus and coach transportation market.

1.1 Deregulation tendencies in transportation sector

The transportation sector is traditionally a highly-regulated industry, with reason considering that transportation is a fundamental lever for policy makers to impact large and diverse population groups of a country and therefore explains the relatively strong State intervention. Until recently the transportation sector in most of the European regions was mainly characterised by services provided by local, regional or national monopolies operating under a public service obligation in return for which they received subsidies from the State. The general picture could be summarized in a Europe of national carriers based on national sovereignty and non-competing principles. This was the case for the aviation industry (where the national carrier, so-called “flag carrier” was also a symbol of national identity), for the railway transportation which also saw the National / State-subsidised operator overwhelmingly dominating the market with a strong protection from foreign

competition and road competition. Crucially, from the political economic point of view it is necessary to understand the reason for such a pervasive intervention of the State. Transportation is often regarded as a public good[6] since it constitutes a key mechanism in promoting, developing and shaping the national economy of a country and is also a question of fundamental importance for the security and control over the national space and borders. Therefore, governments feel responsibility to produce and guarantee such service because of its strategic nature. However, many economist argue that transportation services should be rather defined as a "merit good" since it has a cost and presents the possibility of exclusion along to other similar services as health, education, kindergartens, museums or libraries. All these are services that can be provided by the private market as well but which the government feels that its consumption produces positive externalities and deserves public spending to incentivise them. State intervention usually happens through economic regulations which are conceived as a myriad of measures and actions with the scope to guide or control the behaviour of individuals or firms.[7] Such measures typically aims to impact the structure of any industry and travel industry is no exception. For example, in restricting the number of firms on the market regulating entry and exit methods or through financial incentives or disincentives, controlled prices, quality and other aspects of economic behaviour of firms operating in the industry with the aim of achieving wider policy objectives. Transportation services along with other public utility services is one of the oldest, most established areas of regulatory inquiry, and has been, as such, at the forefront of debates about the appropriate role of government in business activities. State intervention was particularly encouraged after the WWII[8] in most domains with the main purpose to restore social stability and economic growth, but it was only after the 70s that "especially in the developed world" countries turned towards neo-liberal economic values, which seek to encourage the role of the private market in public policy and

[6] By definition public goods have the characteristic of being non-rivalrous and non-excludable. Which implies that one individual consume does not reduce the availability to another individual and from which no one can be excluded.

[7] Decker, Christopher. (2014) Modern Economic Regulation: An introduction to Theory and Practice. Cambridge University Press p.15

[8] Negli anni precedenti 20'-30' è caratterizzata più per una politica di laissez-faire applicata dai pubblici poteri.

service provision. The degree and pace of privatisation and deregulation have become increasingly important in planning transport across all modes. It started in the United States to rapidly portray in western Europe as well. First sector to be affected by neo-liberal ideas was aviation first in the U.S. in 1978 with the *Airline Deregulation ACT*[9] and subsequently the European Union has launched an ambitious process of liberalisation of the aviation industry in 1988[10]. The goal was to offer a substitute to the normative and disciplinary of entry and exit of the market as well as of the controlled establishment of prices with the principle of free market and that of enhanced concurrence. This tendency reflected the new conception, which generated in early 70s, that the state intervention served only to the incentive of a chronic inefficiency of the system. Public subsidises brought national carriers to have little attention to their operational costs, which were excessively high and reversed on consumers. Therefore, the opinion that a limited government intervention would have brought to a general benefit to the whole sector was very popular. Supporters of deregulation, claimed that competition would have cut tariffs to the benefit of consumers. Moreover, carriers would have been forced to regain efficiency by adapting the offer and innovating the service. Finally, deregulation would have favoured economic activity and business opportunities. In Europe, the deregulation of the aviation sector had not only an economic aspect but also political: as it already happened in other sectors of the European community e.g. monetary union, and the establishment of BCE the aviation liberalisation had an important objective in building an integrated Europe not only economically but also politically and socially.[11] Other examples are also the electricity sector for which liberalisation and restructuring have also dominated EU energy policies since mid-90s. By initiating and implementing network deregulation processes, policy makers aimed at increasing allocative and productive efficiency and at the same time reduce the amounts of subsidies paid to the respective industries.

[9] October 1978, under the presidency of Jimmy Carter the Airline Deregulation Act (A.D.A.) was adopted ending 40 years of protectionism in the sector.
[10] E. Valdani, D. Jarach, *Compagnie Aeree & Deregulation*, Strategie di marketing nei cieli senza frontiere, EGEA, 1997 pp. 132
[11] E. Valdani, D. Jarach, *Compagnie Aeree & Deregulation*, Strategie di marketing nei cieli senza frontiere EGEA, 1997 pp. 139

Long-distance coach services in the U.S. have been deregulated since the 80s[12] as well as in the UK with the Transport Act 1980. The effects in these mature markets have shown that after a certain period of the market opening the share of many small and medium companies tends to concentrate and new entrants are squeezed out of the market shortly after entry or eliminated due to mergers and incorporations. In the rest of Europe long distance is a rather young phenomenon and still in process. The EU is playing a significant role in promoting this industry but until now it was mainly the initiative of single States to deregulate their domestic markets.

1.2 Rationales of the high restriction of long distance bus services:

Transportation services are frequently provided by firms that occupy strong, and often dominant market positions. In some cases, this is the natural result of cost and technological characteristics while in others, it reflects public policy decisions. Government intervention is usually justified in the presence of a natural monopoly[13] (e.g. rail) for a question of sub-additive cost function: an industry in which multi-firm production is costlier than production by a single firm (monopoly).[14] Such situation arises in the presence of large investments in infrastructure and technologies which also can present non recoverable costs upon exit (the so-called sunk costs) which can deter an easy entry and exit from the market. Generally, these characteristics do not apply to the bus industry, it does not require investments in infrastructure and fixed costs are limited to the acquisition

[12] Augustin et all, *Analysis of intercity bus markets on long distances in an established and young market: the example of the U.S and Germany*, Research in Transportation, December 2014

[13] A natural monopoly though arises where for technical or social reasons there cannot be more than one efficient provider of a good or a service. A sector generally is confined as natural monopoly if under certain conditions, it is most efficient if a single firm, rather than two or more firms produces a specific set of outputs. In most cases, this situation arises where production in an industry comprises a large proportion of fixed costs (investments in durable and immobile assets) or that a constant and common type of technology is used in the production process (usually an equipment that is indivisible such as: copper wires for telecommunications, gas pipelines, railway tracks etc).

[14] W.J. Baumol et al, *On the Proper Cost Tests for Natural Monopoly in a Multiproduct Industry*, Vol 67, No. 5, American Economic Association, 1977, pp. 809-822.

and maintenance of the vehicle fleet. Theoretically, it is a perfect contestable market, which implies that there are no natural barriers to entry or exit of the market.

Then why is mobility by bus on long distances subject to economic regulation? In economic science, the reasons for public intervention are justified on the basis of market failures[15] along with grounds of dissatisfaction with the market outcome from a socio-political point of view. Restriction on market access is driven by the need to ensure the economic viability of a service. In an open market, such services can be vulnerable to competition from operators focusing on most profitable lines, or times of the day ruining the commercial integrity of a wider network. It is also a question of welfare, since the private provision of transport service follows the commercial logic, the less-profitable lines run the risk of being under-served. Although connecting remote areas, is of the utmost importance to society, and this for obvious social inclusion reasons, namely to not isolate already vulnerable population parts that live in secluded or less developed regions. Moreover, all transportation modes produce negative external effects on the environment but can also reveal themselves to be worrisome in the matter of road damage, accidents, congestion, oil dependence and noise pollution. All these negative externalities are hardly paid by private entities that creates them and most of the time, falls under the responsibility of the government to be solved.

Nevertheless, the main reason for which liberalisation in the intercity bus industry has been discouraged is mainly on grounds of the statuary monopoly of the rail sector (indeed it can be observed that mobility by bus is often more popular and expanded in regions where there is a shortage either in the supply of rail services or in its efficiency e.g. Southern Italy and Eastern European regions). In Western Europe, bus services have been subject to authorisation and limited only to a certain type of services such as: replacement services for intercity trains; routes described as of national interest, intercity routes established by regions and private charter busses. The existence of a rail service parallel to a new proposed bus connection was often the main criterion to justify the ban on the bus route. However, the decision to ban bus routes often lacked economic justification. In the countries where deregulation

[15] F. P. Kostoris, *Struttura del mercato e regolamentazione del trasporto aereo,* Il Mulino, Bologna 1995

happened almost a decade ago facts proved to be different. Rail hardly suffered passenger losses while coaches opened up possibilities of travel for new segments of low-income customers who hardly could afford the train otherwise. Moreover, there were a number of structural dimensions that haven't been analysed such as: the level of substitutability between rail and coach transportation modes. Beyond a certain distance the risk of consumers being diverted from public rail services to private bus operator is very low. Typically, beyond a 200km threshold the two transportation modes are not considered substitute for one another anymore. Further stressing this point, it is surprising that in the majority of cases, the eventual benefit that rail sector might receive from intercity bus services has not been assessed. Indeed, the existence of bus-services can also develop and attract customers on under-served collective mode routes, including routes for train stations or airports. An optimal intermodal combination can work as a feeder line system for the rail services. For long-distance trips, customers are often willing to combine two different transport modes, offering the possibility to the rail and bus services to coexist in a single integrated market.

Broadly, the current situation of long distance bus services is deeply affected by historical transport characteristic and the tendency to develop national monopolies operating under a public service obligation. This normally brought to:

a) the introduction of a national traffic reserve regime
b) the subsequent use of the concession as an instrument of legitimation for the exercise of the activity
c) a necessity of public participation to the capital of the principal concessionary company
d) the provisions of state aid to the company
e) the regulation of tariffs and part of contractual conditions[16]

Both forms of regulation (public governance and privatisation) have negative and positive effects. Wherever the transportation market is run by the State, it is able to

[16] F. P. Kostoris, *Struttura del mercato e regolamentazione del trasporto aereo,* Il Mulino, Bologna 1995

provide essential public services to all citizens and can do this by operating at a loss. The problem with this form of organisation is efficiency, an industry run by the state runs the risk of providing a service that dissatisfies consumers and the losses can be extremely high thus aggravating the public debt. Indeed, under the highly protected environment most national rail companies incurred growing deficits during the 1970s and 1980s. Moreover, in this period the industry experienced a substantial fall of the market share and a general move from rail to the private automobile means of transport. The legacy rail sector showed itself unable to adapt fast enough to the changing conditions of the economic environment and this is partly because of the way in which the industry was regulated: with a high degree of managerial inefficiency and business activities exclusively oriented towards production targets rather than commercial and market ones.[17] Additionally, with the current economic downturn and the increase of poverty among population as the household incomes generally fell – individuals feel the need for low-priced mobility and bus transportation can be a valid alternative for low-cost collective means of transportation.

1.3 EU initiatives for deregulation of the international coach sector

Important reforms of various transportation sectors have been introduced in individual member states since 1992, when the first White Paper was published by the Commission. However, in comparison with rail and air transportation service sectors, little European legislation applied to the bus and coach market. As a result, there is a significant variation among the EU member states regarding the regulatory framework for road passenger transport operations. The coach and bus market used to be regulated by each EU Member State individually and by bilateral agreements between single States.[18] To tackle this issue in 2009 the European

[17]M. Berutti Bergotto, *The European Railway Liberalisation Process. The case of Italy and the introduction of Competition in the high-speed rail passenger market*, Libera Università degli studi Sociali LUISS Guido Carli, a.a. 2015-2016, supervisor Dott. V. Meliciani

[18]M. Juul, European Parliament, *Access to the international market for coach and bus services*, Briefing, EU legislation in Progress, PE 621.907, May 2018

Union adopted a new regulation with the aim to open up the international passenger transport by bus and coach (Regulation 1073/2009). Such regulation, which found application since December 2011 was a merger of two previous Regulations (Council Regulation N°684/92 and Council Regulation n°12/98) into a single one intended to simplify and clarify the previous two obsolete regulations by streamlining procedures and setting common rules for access to the international European market and reduce administrative formalities as much as possible. The Regulation 1073/2009 applies to regular international services and enables the possibility for operators to undertake cabotage services (even though with restrictions, as these should be part of a course of a regular international service)[19]. Since 2011 bus operators from all Member States are granted access to international transport without discriminations on grounds of nationality or place of establishment. The reform also permits Member States to extend this liberalisation further bilaterally or multilaterally but leaves the opportunity to the different member States to decide the depth of any eventual modification.

The main purpose of the EU intervention is to create more competition in a sector previously characterised by a collusion between national monopolies. However, a relatively recent evaluation of the impact of Regulation 1073/2009[20] concluded that its impact was rather limited in promoting travel by bus on long distances and that further action was needed in order to foster bus transport as a valid alternative to individual car transport. The international coach market is rather small compared to the domestic one, since most passengers are carried within national borders. However, according to a Steer Davies study, the international coach passenger numbers grew by 40-60 per cent between 2009 and 2014.[21] This growth is a valid proof that operators responded positively to the opportunities provided by international liberalisation. Thanks to the European

[19] Cabotage refers to national road passenger services carried out on a temporary basis in a host country, or picking up and setting down of passengers within the same EU country in the course of a regular international service

[20] Steer Davies Gleave on behalf of the European Commission, *Comprehensive Study on Passenger Transport by coach in Europe*, Final Report, April 2016

[21] Steer Davies Gleave on behalf of the European Commission, *Comprehensive Study on Passenger Transport by coach in Europe*, Final Report, April 2016 – (However, data is highly unreliable since few states produce separate statistics on international services).

initiative there is today a greater involvement of the private sector while national governments also bestowed major attention to the topic. As a result, several countries have initiated or already fully liberalised also their domestic coach market after 2009 such as Germany, France and Italy (recently also Poland) which are four of EU's largest economies. To this day, at least 70% of European market for interurban bus services have introduced at least some degree of liberalisation. However, other countries (especially southern EU region) are still regulating the service by using a concession tendering model where the competition between operators is for the market and not in the market (e.g. Spain).

Building an integrated European wide mobility is not only an economic aspect but also a political and social one. Granting an easy access to transportation is essential for the EU to build an European identity and awareness of unity and EU citizenship.

1.3.1 *The domestic coach markets:*

As debated in the chapter above the European Union strives to build a homogeneously integrated transport market across all EU member states. However, it has to take into account the heterogeneity of the single national markets. Presently the European Union suffers from a patchy legislation and the efforts of opening the international market alone has had a rather limited impact on the intercity bus sector. The main issue that hampers the integration of bus market is the differences in openness of national markets, diverse national access arrangements, and also discrimination in access to terminals. It is extremely complex to bring to a unity such a fragmented reality. It is not only about the aspects directly related to the sector but also with regards to the fiscal rules, concurrence, industrial relations, work laws that have different characteristics from context to context. The lack of harmonisation is quite central since even the countries that have liberalised the bus market can present some constraints and each of them introduced liberalisation at different levels and with different requirements (e.g. distance requirements, authorisations type, access to terminals etc). Of these aspects, the EU seems to not have taken into account all implications, underestimating many issues. Such an

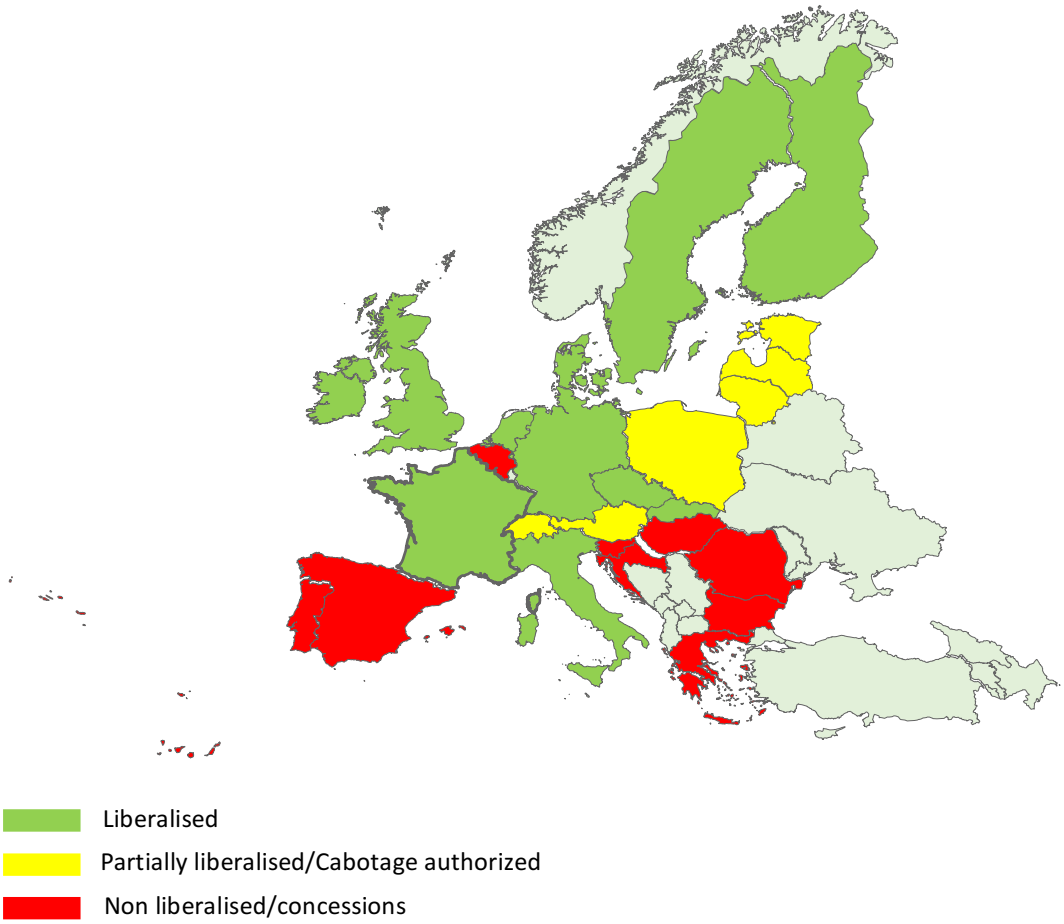
attitude does not help to solve the problems related to the sector and is counterproductive in finally reaching a tipping point with the communitarian deregulation.

There are a great range of services that can be provided by bus and the way these are distinguished in domestic regulatory frameworks varies considerably across nations. Generally, states with a regional or provincial level of government distributed responsibilities between national and regional authorities. In these circumstances, international lines as well as those crossing internal boundaries are under the responsibility of the national ministry of transportation and the internal services within a region or a county fall under the responsibility of the regional authorities. Therefore, often the regulatory framework does not vary only between Member States but also within a State between regions, within regions between municipalities and within municipalities between coach terminals and even bus stops.[22]

Furthermore, the type of liberalisation as well as the extent of liberalisation vary widely between Member states. The main regular frameworks can be subdivided in the following sections:

- Regional concessions either by direct award or competitively, with exclusive rights to operate service (e.g. Spain)
- Commercial operations subject to rules designed to protect Public Servce Obligations(PSO) (e.g. France, Italy)
- Commercial operations subject to minimum distance levels (Germany, France, Italy, the Nordic countries).

[22]Steer Davies Gleave on behalf of the European Commission, *Comprehensive Study on Passenger Transport by coach in Europe*, Final Report, April 2016



This complexity of regular frameworks translates in effective barriers to market entry at a number of levels: it imposes asymmetric requirements upon domestic and non-domestic operations. Moreover, it involves a highly bureaucratic process which negatively influences the private operators, setting significant boundaries to their economic activity (especially towards those who might seek to provide services in more than one domestic market). This concerns especially the small and medium size enterprises (SMEs) which are disproportionally affected since they may not have the necessary influence or sufficient resources to develop EU-wide business strategies.

Still according to Steer Davies Gleave, there are three key problems that emerged from the consultation of the stakeholders in this sector concerning accessibility and competitiveness of interurban bus and coach services:

Table 1: Key problems with respect to market accessibility.

Key Problem	Objective	Rationale
Restricted access to national markets	Introduce uniform market access rules	Limited access is a barrier to new entry and a constraint on further development often even in states that have already liberalised
Restricted access to key transport infrastructure	Provide access to public terminals	Discriminatory access is widespread. It is usually preferable to serve a terminal rather than on street stops.
Excessive administrative costs of entry	Simplify administrative procedures.	Administrative costs are considerable also regarding time which can lead to costs in form of revenue forgone.

Source: Steer Davies Gleave based on review of evidence from stakeholder consultation.

The EU took further action to complete the process of liberalisation across the rest of EU and boost bus and coach transports for inter-city travel. This topic is largely addressed in the second Mobility Package[23], published in November 2017, it contains the European Commission proposal to amend the Regulation 1073/2009 and further extend liberalisation to all domestic European markets. The Commission's proposal for the review of Regulation 1073/2009 revolves around four key elements:

- Liberalisation of commercial national coach and bus services markets
- Access to terminals – conditions and procedures
- Conditions for the establishment of non-resident carriers and the ensuring modification of the definition cabotage
- The regulator's role in monitoring compliance with these new obligations.

Obviously, there have been stakeholders cheering Commission's move and those who strongly disagreed. The latter group, mainly questions the potential

[23] The Mobility Package is a collection of 3 initiatives concerning the governance of commercial road transport in the European Union, representing the biggest change to EU road transport rules and addresses a number of problems or support specific developments within EU transport sectors. The mobility package was realeased in three waves: 1st mobility package in June 2017, 2nd mobility Packahe in November 2017 and 3rd mobility package in May 2018.

impact on job quality and social sustainability of road transport sector. However, the amendment is still in the process of being discussed at European level and in case of approval by the Council the Commission move will finally end a decade-old restriction which served mainly the interests of affiliates of publicly run companies. It is however of great importance that, by introducing liberalisation of the sector, the EU takes into considerations all the difficulties that might arise from introducing competition and addresses issues such as the need for technical regulation of the market, the need to safeguard the unprofitable routes and finally the need to provide consumers and especially workers with adequate protections. So far, the EU has been slow in providing solutions to such issues. This would require a profound transformation of the regulatory institutions: as the establishment of an independent authority in charge of coordinating the sector in close relation with the national authorities but under the European Commission control, similar to the aviation sector.

1.4 Deregulation process in Italy, France and Germany

As we have seen liberalization, deregulation and generally topics such as privatisation have been highly debated concepts since many decades and there are still divergent opinions on the amount of government intervention considered optimal for efficient economic operations. In the case of the long-distance bus services the proponents of deregulation were mainly the competition and consumer associations endorsing its favourable effects for the final consumer such as reduction in prices while increasing quality and also encouraging new entrepreneurial opportunities, able to adapt to the market and offer a vast variety of services fostering better answers to the most specific needs of consumers. Against the liberalisation of the intercity bus market were noticeably Deutsche Bahn, SNCF or TrenItalia, that to say most of the large national rail operators which were likely to see their undisputed domination of market fade. They claimed that the advent of the competition would compromise even more their already precarious economic situation, with the risk to further cut unprofitable lines. The worker unions also declared themselves opposed to the liberalisation of the market. They believed and

feared that the new nascent bus companies would favour the inclusion of workers that do not belong to any union in their staff, and in this way easily giving rise to a levelling down of work conditions and wages as well as introducing a high degree of precariousness in the preservation of work places. However so far, as a result of liberalisation processes, express long-distance coach transport is growing exponentially, and the conditions of workers have arguably improved. Indeed, the need for skilled staff, including bus drivers, network planners as well as station agents largely exceed the current offer on the market, thereby providing workers unions significant leverage to better their situation.

1.4.1. The liberalisation in Italy:

The intercity bus industry in Italy has developed differently from region to region. An underdeveloped internal air traffic and poor train connections especially in the South have favoured the development of private passenger transport rather than a collective one. However, due to historical developments, the bus sector is mainly concentrated in the Southern region to be almost absent in the Northern one. The vast majority offers services within the Southern region and very few developed an international network.

In Italy, the legislative framework of the interurban coach market can be divided in different level of government competence. The main distinction is between national and regional lines, the former one referred to by law as "interregional road services of state competence" (linee extraurbane di competenza statale) enables providers to operate commercially on routes within 200-1200km, between the largest cities located in different regions. To be distinguished from local and regional bus transport which is in the responsibility of regional governments (linee extraurbane regionali) which serve routes between 30-300km between cities located within the same region. The latter category is not subject to deregulation and are still directly awarded subsidies with strictly regulated routes and fares. With regards to national bus lines, the sector has been gradually liberalised since 2007. The legal regime applicable to this kind of lines has been updated in November 2005 with the Legislative Decree 285/2005 aiming at opening the market and which

amends the old law from 1939 (legge del 28 Settembre 1939, n 1822). The new decree established a transitional period from 2007 until December 2013 during which firms could keep the existing concessions or voluntarily switch to authorisations, losing the exclusivity but gaining more operational freedom.[24] The previous regime of exclusive concessions had detailed fixed characteristics which could be only be changed after a long bureaucratic iter involving many stakeholders for consultation and this guaranteed that other companies could not operate on competing lines. Non-exclusive concessions simply allow services after the release of a go-ahead (authorisation). Coach operators simply have to apply for an authorization at the ministry, without any further obligation but also without any exclusivity, so an undetermined number of operators can run on the same route. While the former regime did not allow competition, the new authorisation regime is supposed to make competition on road possible. However, the transition period was particularly heavy and slow, with frequent government changes that postponed the full liberalization several times. Even after the full deregulation, the sector still had a difficult time with recent proposals from Senators aimed against the new emerging low-cost competitors[25] In 2017, an amendment has been proposed in the so-called Decree "Milleproroghe" designed to grant authorisations only to the operators which have transportation on road as a main activity. In this way the new low-cost companies (which operate based on online platform and do not own the busses that operate but rather lease them or operate on the base of a partnership) would have been excluded from obtaining authorisations. It was clearly an action against the competition of the new entry low costs and against their business model, aiming at protecting the interests of the local traditional family owned companies. After a period of turbulence, the amendment was not approved but several stakeholders still show defiance towards this market. Indeed, Italy is still strongly attached to the historical development of this industry especially in the South. Until the liberalisation, the bus market in Italy was highly fragmented with a large number of

[24] P. Beria, R. Grimaldi, A. Laurino, *Long distance coach transport in Italy: state of the art and perspectives*, MPRA Munich Personal REPEc Archive, Paper No. 53768, posted February 19 2014
[25] J. Stratenschulte, *L'emendamento contro gli autobus low cost*, "il Post", Wednesday 22 February 2017.

small to medium sized local operators, often owned by regions or municipalities which in addition to regional lines also offered extra urban lines to Rome or Napoli and other major Italian cities. Therefore, a national cohesion of the industry was missing. Very few companies had national coverage (such as Marino Bus and Baltour) and no national operator took a position that could dominate the market. After the liberalization the sector witnessed a significant boom. The market opening brought many opportunities and has turned into new routes, higher frequencies and consequently an increase in passengers. As in other European countries, the market attracted new competitors and stimulated the existing ones to invest and innovate their fleet. Trenitalia introduced its own business with Busitalia Fast-SIMET[26] and the expansion of foreign competitors flourished as well, with the extensive appearance of the German FlixBus and the French Ouibus. Also, the type of services augmented with the introduction of seasonal routes to maritime destinations in summer and to ski resorts in winter, and new offers as night services, express routes and touristic points. In economic terms, the turnover of the sector in 2016 is estimated around 200 milions euros, which is a remarkable growth with respect to 2012 when it was around 130 million.[27] Also for the future is foreseen a prosperous growth if there won't be any legislative impediments.

1.4.2 The liberalisation in France:

The French situation is specific for several reasons: first, because France has developed a dense rail network across the country and the national rail operator SNCF was favoured to have the monopoly for the interregional passenger transport and second the national network which is centralized around Paris (this is also a legacy from the 19th century development) makes East-West connections highly expensive either by train or plane. Before the liberalization there was essentially no long distance express coach services in France. Coach services existed in the form of

[26] P. Beria, D. Nistri, (2018) *Rapporto sul mercato delle autolinee a lunga percorrenza in Italia*, TRANSPOL REPORT 1/18 & Checkmybus. Milano, Italy

[27] Autorità di Regolazione dei Trasporti, *Relazione dugli esiti dell'indagine conoscitiva sull'analisi dei profili regolatori inerenti il mercato dei servizi di trasporto via autobus a media e lunga distanza in regime di libera concorrenza*, pp.14-22

charter or restricted to regional services (through a public service delegation contract) but no regular services were operated on a national scale on real long distance. Operators serving international routes also existed but with limited to no possibility to serve domestic connections. Until 2015, there was no competition between rail and road on long-distance trips, market entry and market initiative by individual transport operators was de facto impossible since the enactment of the transport legislation in 1982 explicitly prevented direct competition with rail SNCF services. This situation partly changed in 2011, as the EU as well as the political majority in France had intentions to introduce a number of amendments to the old legislation to allow international coach services. Following this trend cabotage was introduced: which allows international operators to serve domestic passengers as well but with strict quantitative limitations:

a) it should not exceed 50% of the traffic and sales of the route

b) did not compromise the economic equilibrium of a public service contract for passenger transportation (e.g. rail).

c) cabotage routes could serve only one city per region.

In few words, cabotage routes were supplementary to the international service and with hardly any impact on the domestic market, penalising consumers willing to take advantage of an alternative transportation mode. Subsequently, the liberalisation of the bus market had been triggered by the then Minister of the Economy Emmanuel Macron (in the French media the reform gained the appellative as of Macron's busses). He has introduced a system of largely deregulated authorisations, which effectively abolished the monopoly of SNCF on long distances. The Emmanuel Macron's reform aimed at fostering "growth, activity and equal economic opportunity"[28] contributed to the creation of an intercity bus transportation market in France. Based on the new reform, operators can presently exercise freely any route above 100km. The distance threshold was highly debated

[28] See Loi N° 2015-990 of 6 august 2015 pour la croissance, l'activité, et egalité des chances economiques – the law also included the reform of regulated professions, extension of Sunday and evening trading, and simplification of red tape.

but was justified on the base that the risk of consumer being diverted from public services to a private bus operator is very low on distances above 100km[29] . For lines shorter than 100km the bus companies have to submit a request to ARAFER[30] to evaluate if the route does not compromise the economic balance of a public subsidised contract service. Shorter distances have its benefits since it can favour to foster a dense bus network better suited for areas poorly served by rail. SNCF had an ambiguous reaction to the liberalisation of the market, on the one hand reluctant to abide for fear of losing monopoly and facing competition and on the other hand seeing an opportunity for its own bus and coach subsidiary (IDBus). Liberalisation is also an opportunity for SNCF which could benefit from replacing some of its loss-making interregional services with more profitable coach services. Shortly after the announcement of liberalisation SNCF introduced its own bus company, OuiBus (former IDBUS) which receives subsidies by the French government but nonetheless fails to compete against the new emergent private operators.

In France, as in the rest of Europe, the market had a positive answer to liberalisation. Since the enactment of the Loi Macron in June 2016, bus operators realized a turnover of 40 million euros.[31] From the perspective of consumers, the bus is a new and budget-friendly way of travel – 99% of its passengers in France chose to travel by bus because of its low fares[32]. Besides, the increase of lines and frequencies is undeniable: until the enactment of Loi Macron only 60 French cities were served by a bus in the cadre of an international route and it interested only the bigger centres as Lyon, Paris, Bordeaux, Toulouse etc. (see Image 1). In only 4 months after the introduction of the reform 80 more cities were added to the French bus network, showing the high dynamism of the sector if properly encouraged (see

[29] The debate was highly controversial around the distance threshold since in Germany such distance is set at 50km while in Sweden at 200km. Since the European Union did not intervene yet in the national domestic liberalisation each State defined the threshold as better required for their territoriality and administrative organisation.

[30] ARAFER (Autorité de régulation des activités ferroviaires et routières), *Rapport annuel 'Marché du transport par autocar et gares routières' 8/8/2015-30/6/2016,* 2016, Paris / Le Mans.

[31] T. Blayac, P. Bougette, *Should I go by bus? The liberalisation of the long distance bus industry in France*. Université de Montpellier, UMR LAMETA, Facultè d'économie, France

[32] I. de Foucaud, "*Qui sont les voyageurs convertis à l'autocar?"* Le Figaro, September 30, 2015

image 2). Also, the competition seems well balanced, on approximatively 70% of the routes there are at least 3 operators competing. Initially, OuiBus (former IDBUS), FlixBus, Megabus, Isilines and Starshipper were the principal companies on the French market. After a period of consolidation, at the end of 2016 the number of operators decreased from 5 to 3 following to the acquisition of Megabus by FlixBus and the merger between Ouibus and Starshipper. Currently, FlixBus detains 54% of the French market share, Isilines 37% and Ouibus 23% and together offer more than 1100 connections per day. [33]

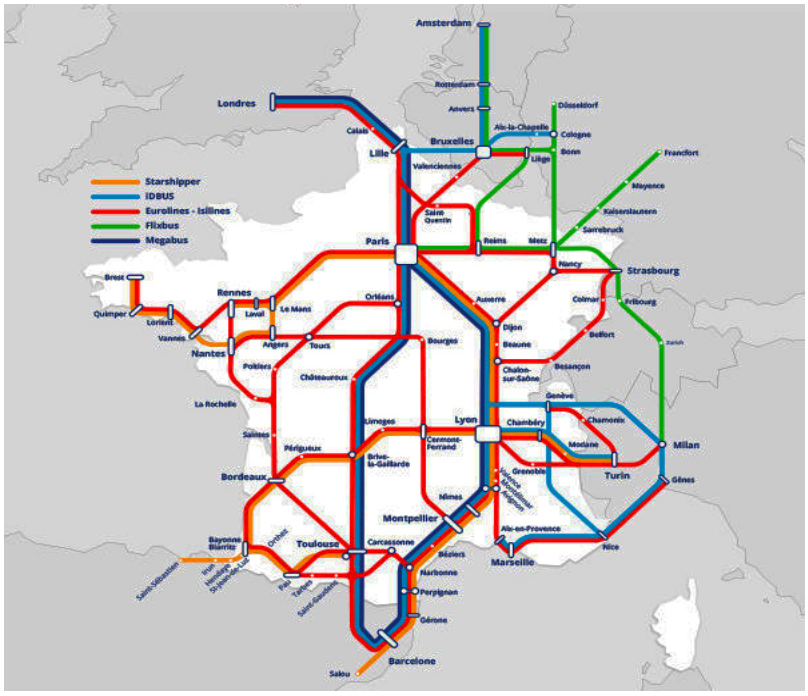


Image 1 - The long distance coverage in August 2015 (international lines + cabotage services).

[33] A. de KelBillet, « Bus : de plus en plus de voyageurs séduits au troiseme trimestre 2016 » 14 Decembre 2016

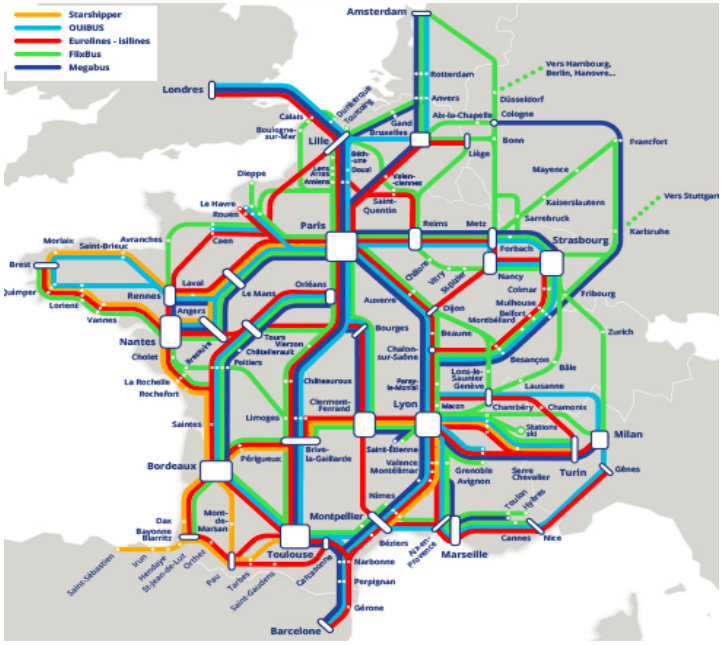


Image 2- The long-distance coverage in December 2015 (4 months after full liberalisation)

Source: Kelbillet.com

1.4.3 The liberalisation in Germany:

Germany is a very interesting case study of market liberalisation.[34] The basic regulatory principle of the German express coach market was always that of free market and free initiative but in practice was more complex. In Germany as well, the transport market was strongly regulated by the National law on public transport. That law was restricting direct competition between transport operators providing significant protection to the existing operators. Supplying new or parallel service to another existing operator was only allowed when these could represent a significant improvement to the already existing services. However, this specification regarding the required level in quality or quantity improvement remained unclear. Indeed, since 1931 bus companies were allowed to offer regular bus services on routes on which the state-owned railway company was unable to provide an acceptable service. Due to the extensive rail network in Germany it was de facto impossible to operate long distance bus lines which would not be in direct competition with Deutsche Bahn, the state-owned railway company. The debate to open the German

[34] B. Wirtz, « *Bus market Liberalisation : The European Commission gets it right* », Vocaleurope, November 24, 2017

intercity coach market has been started shortly after the start of the second millennium: two political parties in Germany the liberal democrats of the FDP and the Green Party tried to promote the idea of deregulation for interurban services in 2005 and 2006, but the Parliamentary Committee on Transport, Building and Urban Affairs rejected both requests. Bus market deregulation had its breakthrough when the coalition between Merkel's centre-right CDU and the FDP occurred in 2009 and announced formal intentions to deregulate the market and end the monopoly of the national rail operator. The Federal Passenger Transportation Act has been amended until the end of 2012 and the new public transport law has been enacted in January 2013 allowing intercity coach services again since the ban from 1934. Until 2012, the only bus services operating in Germany were those provided by BerlinLinenBus[35] connecting West Berlin with the Federal Republic and was a legacy of the past. Every journey had to have Berlin as starting point or as destination. Services starting in Berlin could not be boarded at other stops and buses towards Berlin could only stop in Berlin (Maertens, 2008). Any other new services competing with existing public transport have been prohibited until the end of 2012. The new legal framework allows now any intercity route, including those directly competing with existing train services with some conditions: any sellable route should be above 50km between stops and not in direct competition with a subsidised train service for a journey which takes less than one hour. Coach companies are allowed to set up new bus stops wherever they like as long as their services do not disturb local public transport and as long as they strictly respect public transportation safety rules. Obviously, there is no public funding of the intercity coach service, they completely operate on commercial basis. The laws which prohibited bus operators to run freely had been in the books since the Weimar Republic, denounced as market protectionism which was older than Second World War. Prior to the liberalisation of the bus market, intercity buses only accounted for 1.5 per cent of long-distance travel: a number that shot up to 15 per cent in four years. Today, in the travel competition between rail and road, long-distance buses have to a large degree

[35] BerlinLinenBus is a joint venture of various coach operators partly owned by DB with 65% (100% since 2015)

caught up. As reported by the Federal Statistical Office 165 million passengers[36] have been carried in 2017. That translates in an exponential increase of 171% with respect to the precedent year. The clear growth trend in the German interurban bus industry in only three years after liberalisation is also proven by the increase in supply and frequencies. The German interurban bus industry saw a rather rapid consolidation of the market shortly after deregulation. The reason of this rapid consolidation can be seen as a consequence of business concepts which proved to be more successful than others and which caused less efficient firms to leave the market either through liquidation or through merger. The implications of mergers and general market consolidations will be further analysed in the second chapter of the thesis.

Table 2: Liberalisation process in Italy, France, Germany in a nutshell

Liberalisation process in a nutshell			
Country:	Italy	France	Germany
Before liberalisation	Regime of exclusive authorisations: Fragmented market Small to medium size operators Little or no competition No national cohesion, operators very linked to their geographical area	Statuary monopoly of the national rail operator and restricted regional bus services subject to authorisation. Almost absent long-distance bus market	Free market principles but hampered by old anti-competition laws. Long-distance bus services limited to specific cases. National rail monopoly
Liberalisation type	**Non-exclusive authorisations** *For lines linking	**Declarative regime** *for lines above	**Amendment of Passenger – transport Act**

[36]DESTATIS, German National Statistics, "More bus and rail passengers than ever in the first half of 2018" Passenger transport.

	more than 2 administrative regions[37]	100km *shorter routes are subject to assessment.	**(2013)** *50 km between stops *if over 1h by rail
After liberalisation	Open market but bureaucratic barriers still persist Cohesive national coverage from North to South Gradual increase of concentration of the market especially in the Northern region. Enhanced intramodal competition by foreign operators.	Extensive national coverage New enterprises on the market An economic alternative to the train	End of exclusive rail monopoly Free competition New mobility trends and entry of low-cost companies. Extensive national coverage High concentration of the market in the long term.

Source: Personal elaboration.

1.5 Intercity bus sector in a changing environment

The long-distance transport services by bus is rapidly evolving in Europe nowadays. As can be read in the cases presented above, the liberalisation and deregulation of the coach sector is perceived to be a success in the countries that

[37]the specification "more than two regions" means that all those services linking only two regions even though having long distance characteristics (hundreds of kilometres), remain under the responsibility of the involved regions and thus differently regulated through public trndering or more often through direct awarding.

have implemented it. After approximatively 5 years of liberalisation, the market development is still experiencing rapid growth and significant improvements. Since 2015, the market is starting to consolidate, normally through mergers and market exits, FlixBus, the German low-cost giant merged with MeinFernbus almost at the beginning of their activity creating a humongous establishment with over 50% of market share. Subsequently, FlixBus incorporated other companies such as Megabus, Postbus, Polskibus and Swebus, now boasting to have the biggest market share in the German domestic market as well as a sizeable share in Italy and France. The same scenario can be seen for other major European operators as BusItalia which acquired SETA in Italy and OUIBUS which incorporated Starshipper in France. Hence, while the sector is commercially focused and responsive to new market opportunities it is important to recognise the potential for market dominance and distortion of competition.[38] A concern often pointed out by liberalisation detractors is that while in the short term it often leads to market entry by a large number of new operators, there is a rapid period of consolidation and consequent formation of an oligopoly or a dominant operator on the market. Such issue was identified after the liberalisation of the air transport market as well in the 80s, with a number of carriers peaking before stabilising at a relatively small number of carriers. In the UK domestic coach market, where liberalisation occurred in 1980, the country saw a rapid emergence of a dominant long-distance operator (National Express) and a comparable pattern appears to have happened in Germany as well within only two years after liberalisation which saw two of the largest players merge. Italy likewise is seeing continued consolidation and the same can be said about the recent developments on the French market.

A key strategy of most new entrants to the industry to quickly extend their route networks was to avoid buying their own fleet but rather develop a subcontractor-type business model with the already existing traditional local bus companies. Major tech oriented innovations transformed the sector immediately.

[38] SDG (Steer Davies Gleave on behalf of the European Commission), *Comprehensive Study on Passenger Transport by coach in Europe*, Final Report, April 2016, London.

The new low-cost emergent operators immediately after the liberalisation (e.g. Meinfernbus, Flixbus) offered a digital platform for booking tickets and an organised system of partnerships with smaller operators under the same brand. Similarly, other operators work through marketing alliances or the so called "marketing co-operation" strategy, which is a type of commercial franchise. Individual operators, conscious of the existence of demand-side network effects present in this industry, bundle their products under an attractive brand name allowing them to realise a wider service coverage and higher product attractiveness than would be possible as an isolated provider. A good example of such cooperation at the European level is Eurolines. The marketing co-operation system is similar in many ways to the model of the main operator subcontracting most of its operations to local operators which were mentioned above, yet, a few crucial differences exist. Those differences lie in the balance of power and attribution of risks between the small contractors and the main contractor, or the assembly of operators in the case of co-operation.

Liberalisation of the intercity bus market saw the emergence of the so called *smart-mobility*: the advances that have occurred in information and technology had a dramatic impact on transport industry. The bus services today offer free wi-fi on board, sockets for charging PC and mobile phones, real-time information to users about delays or cancellations via mail and messages (sms), emission of digital ticketing through mail or app without the need for printing, also customized mails based on customers interests and travel preferences. This novelty was also a boost for the intermodal competition (e.g rail service) which introduced wi-fi and other digital services stimulating a general improvement of mobility in Europe.

2. DYNAMIC IMPACT OF LIBERALISATION ON STRUCTURAL DIMENSIONS

The coach industry is increasingly becoming important for the national economic development and integration. This section explores the intercity bus economic performance and its actual competitive status after deregulation with an analysis concentrated mainly on the supply and demand side variables as well as a consistent analysis of competition interaction and market concentrations in the sector. The results show a positive increase in departure frequencies in all countries which implemented domestic liberalisation, as well as the development of a wide network (serving cities also with less than 10.000 inhabitants). The increased offer is reflected by a consistent increase in popularity and passenger numbers: since 2012, Germany registered an increase of +700% in passenger numbers and in Italy the intercity coach sector takes 12% of the total market share of long distance mobility in 2016. France is registering a rapid growth as well and its market potential shows very favourable towards the coach sector. Hence, the liberalisation policy has led to increasing traffic, lower prices, higher frequencies and other consumer benefits in terms of quality service and travel opportunities. Additionally, the market showed a high dynamism in the short-term with several new entries and a balanced level of competition. However, the sector experienced a heavy process of mergers and acquisitions which brought the market to be highly concentrated in the long term. This resulted in monopolies in some regions and rather distorted levels of competition in others. All arguments, were possible, are supported by data and evidences.

2.1 Market supply

At the early stage of the liberalization of the industry, it is expected to have a substantial market entry by both new and incumbent firms leading to the development of aggressive competition and to the creation of a broad and comprehensive network. Indeed, the interest towards the sector was immediate and

can be analysed on three levels: a) number of operating licenses issued; b) entry of new firms; c) expansion of incumbents' respective networks.

Regarding operating licenses there has been registered a strong growth of issued authorisations since the announcement of deregulation. The German Government reports that by 31st December 2012 only 86 authorisations were delivered (and of which many were only recently established since the deregulation was expected on the 1st of January 2013), to gradually raise to 221 in December 2013 and finally 350 authorisations in September 2016 (which is an increase of +326,83 per cent with respect to 2012)[39]. The number of new registered companies operating intercity bus services likewise grew substantially (from 76 firms in December 2012 to 94 firms in December 2014 which is an increase of 24%).[40] In October, 2016 the Italian market counted 145 enterprises in the sector for a total of 245 authorisations issued.[41] The majority of which are small and medium sized companies with only 9 enterprises which count more than 20 employees. The most long-standing companies in the market have their office in the Southern regions (Campania, Calabria and Puglia). This is because the offer is concentrated mainly for connections between South and North of the country. This is also evident from the fact that the greatest number of services authorized by region of origin is in Calabria (48 bus lines), Basilicata (27), Lombardia (27), Puglia (24) while the regions for the greatest number of authorized services of destination are Lazio (58), Lombardy (29), Campania (26) which are also the major and most vivid Italian regions. The strong presence in the South is due to an entrepreneurial phenomenon that was born to meet the needs of connection in the South. In France, the intercity bus services are freely organised under the declarative regime, therefore no authorisation is required unless the route takes less than 100km between two stops.

[39] bmvi.de
[40] N. Durr, K. Huschelrath, "*Determinants of entry in the deregulated German interurban bus industry*" 2015.
[41] (ART) Autorità di Regolazione dei Trasporti, "*Relazione dugli esiti dell'indagine conoscitiva sull'analisi dei profili regolatori inerenti il mercato dei servizi di trasporto via autobus a media e lunga distanza in regime di libera concorrenza", p-13*

Overall, at the time of market opening, incumbent or state owned companies were expected to expand their existing network or start new services, but they did not show themselves very active on the market or hesitant to do so. Indeed, they have been overtaken by new entrants and especially by start-ups. After 2 years of liberalisation, data shows that the new entrants have become the largest providers of routes in Germany with MeinFernbus[42] (1288 routes), FlixBus (960 routes), Postbus (556 routes) leaving the already existing ones behind: Eurolines Germany (136), DeinBus.de (111), Berlin Linien Bus[43] (111) IC Bus (18). Interesting to note is that the success of the companies at least in terms of operated routes can be explained by the respective times of entry: MeinFernbus in April 2012, FlixBus in February 2013, Postbus in October 2013. An explanation of this outcome could be the inherent advantage of the first mover. Pioneering companies, that appear on the market first can redefine what the market is, and therefore build stronger defences against subsequent attacks.[44] Even on the Italian market, it is worth noticing that the intramodal competition was introduced only after the entrance of foreign competitors such as Megabus (market entry in 2014), and FlixBus (market entry in 2015). Until this date, even though the incumbent operators were already presented with the opportunities to extend their markets, there was no new routes overlapping but each operator rather maintained the pre-existing local monopolies which was a legacy from the concessionary regime.

Commonly, the effects of deregulation in the domestic markets depend on the extent to which the industry was regulated before as well as on the determinants of entry and exit of the market. Entry and exit requirements are essential elements to determine the market supply of an industry. In the pre-liberalised era the barriers

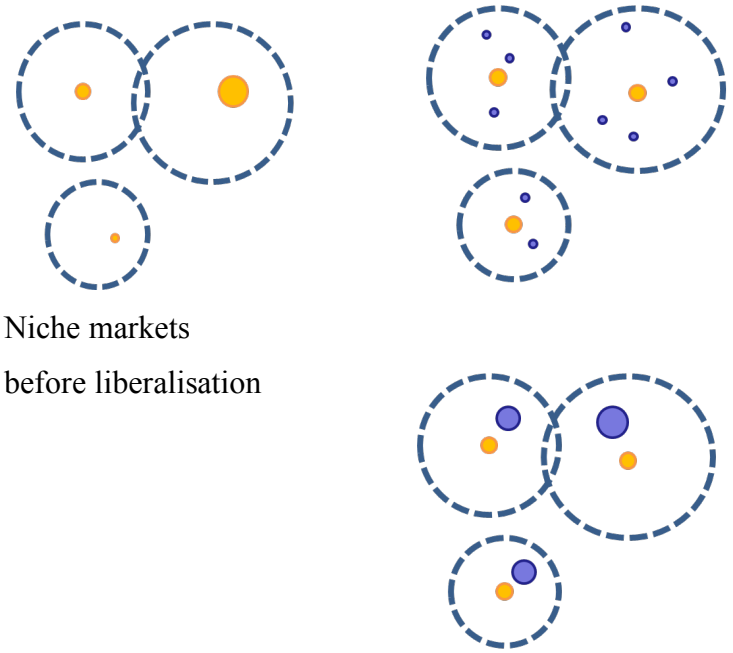
[42] Merged with FlixBus in 2015
[43] owned by Deutche Bahn as well as IC BUS
[44] Note: there is another aspect to be taken in consideration, while it helps to be first it is rarely enough for the long-term. Indeed, the case of MeinfernBus is quite interesting, while being the first one to develop the fastest growing bus network in Germany it was overtaken by FlixBus only in two years of operation in the market. Gaining the initial advantage is important but sustaining it depends on many variable factors. In many cases, the first mover bores the extra costs of investing in buyer education and infrastructure, only to be overtaken by "fast followers", who were able to overtake the pioneers that had established a new market.[44] Fast followers usually watch the early entrants trying different things, and they figure out the right recipe for success. Though the success of FlixBus can be explained more than a clever fast follower an innovative business strategy that had the consumer at the heart of its operations.

to entry were erected by governments which constituted through licensing, exclusive concessions for a determined period (usually for a maximum of 5 years), quantitative control of entry, imposed access to determined rotes within specified markets and specified type of routes. Even in countries which have a competitive tendering model for licensing (e.g. Spain) requirements[45] are determined in such a way that incumbents have higher chances of obtaining the license resulting in a continuous renewal and confirmation of already existing operators. All these arrangements resulted in niche markets and rather an inactive market – the sector has been stifled to such an extent that the variety and quality of the service was poor, demand quite low, and costs therefore prices too high. Deregulation on the contrary is known for lowering barriers to entry and exits, which is guaranteed by non-discriminatory access to the domestic intercity coach market, fair authorisations procedures and non-exclusive route authorisations. Such a set should enhance competition or create an effective contestable market. According to Baumol's contestability theory in an open market entry should be absolutely free and exit absolutely costless.[46] Coach sector does present the characteristic of a contestable market since entry does not require substantial investments in fixed costs and in case of exit does not present the sunk costs since vehicles can be easily sold on the second-hand market. However, even if in the post-liberalisation era entry and exits is definitely more flexible some barriers remain in place. Such barriers are mainly related to the bureaucratic uncertainties and long procedures to obtain an authorisation. Italy is an example where bureaucratic procedures can constitute an obstacle, despite being more open the authorisation process is quite complex and can take up to 5 months for each route. In Germany, such process is more rapid but requires high controls on safety standards and especially on bus stops authorisations.

[45] Historical rights are the most incisive requirement for obtaining an intercity coach operator license which implies an almost automatic elimination of new entries.
[46] R. Grimaldi, K. Augustin, P. Beria, "Intercity coach liberalisation. The cases of Germany and Italy" Transport Research Procedia, Vol. 25, 2017 KCW GmbH, Berlin Germany

Before deregulation, bus routes were set up in niche markets, connecting small cities with no rail access since any other routes were legally prohibited.[47] With the announcement of deregulation the main concern of policymakers were the provision of the service towards smaller centres which might have not been attractive to commercially operating enterprises. Both existing and new operators were expected to expand or start routes with the highest market potential. According to the analysis provided by Beria et all, two main outcomes of *cherry picking* were expected:

Figure 3: expected developments after intercity bus liberalisation



Niche markets
before liberalisation

a) "Cherry picking" – entry of new competitors on the most profitable routes

b) "Cherry picking" – by strong competitors, to the damage of smaller carriers.

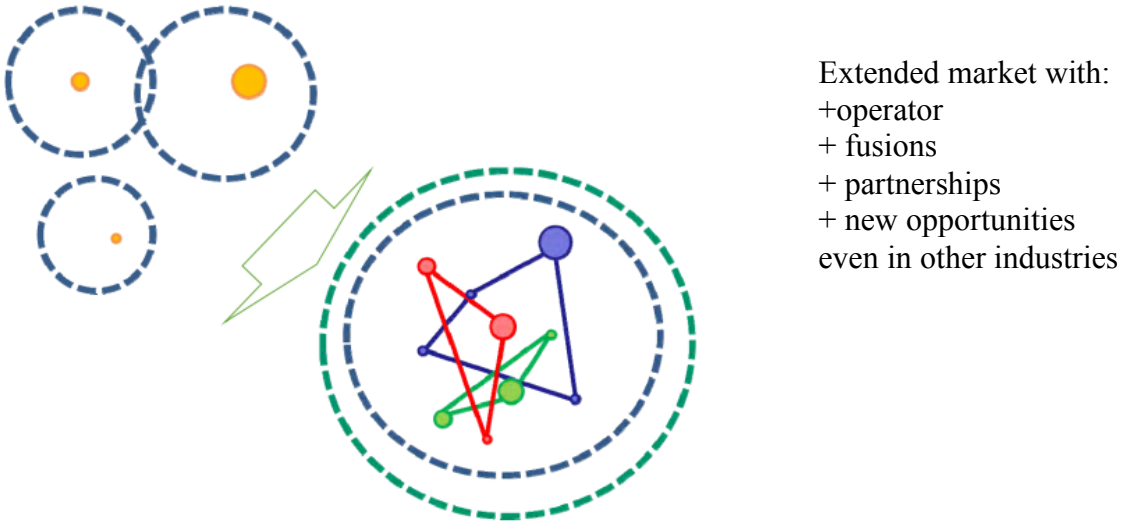
Source: ANAV.it

Considering the evidences from recently deregulated markets, we can deduce that the result is likely to be neither a) or b) but rather a new market structure with new competitive rules in a wider market. A transition from separated *n*-markets with scarce concurrence among them to a wider and rather cohesive

[47] J. Aarhaug, N. Fearnely, "Deregulation of the Norwegian long distance express coach market" Institute of Transport Economics,, Oslo, Norway

market where operators cooperate (either through mergers or partnerships) and gaining additional strength also to extend the market to new areas and industries. (e.g. railways). An example is the recent launch of FlixTrain. After the great success in the bus sector, FlixBus is currently widening its markets to embrace also the rail market.

Figure 4: Market outcome after intercity bus liberalisation



Source: ANAV

Figure 4, represents the post-liberalization resulting market structure. Contrariwise to the expected adverse impacts of the liberalization reform, cherry picking does not seem to have occurred in the form of excessive competition on profitable routes and abandoned territories, nor through the eviction of smaller operators from the market. Indeed, the first observations of the post-liberalization coach market show the creation of more complex networks, not only built around head-on competition on single profitable lines (classic intercity services) but also the inclusion of previously underserved cities, villages or regions thanks to the cooperation of large coach operators with locally-grounded coach companies.

In their search for the widest, most-comprehensive network, new entrants quickly understood the value of enabling new direct connections for isolated regions.

This, in combination with lower prices allowed by coach transports, effectively contributed to the increase of global travelled long-distance passenger kilometres,

with populations previously shunned by public transport willing to increase their travel frequencies.

Thus, the liberalization of the market attracted many new and mainly small and medium sized operators which often work together in a partnership under one brand. Naturally, the number of small and medium local operators cooperating with a large company on the market exponentially increased to benefit from a centrally operated sales platform and unified brand image on the numerous local markets.

Moreover, with regard to the concerns pertaining to the potential unfair competition to pre-existing public transport, in particular regional rail networks, it must be recognized that the new coach networks brought along a multitude of positive effects:

- Faster connections, wider schedule ranges and lower fares for passengers
- Larger economic impact for regional administration due to better transport connectivity
- Spillover effect for the legacy rail company by picking up coach passengers from isolated areas that used the coach services to reach formerly inaccessible rail stations

It is true that besides those positive effects, the main scepticism on the liberalization reform lies on the ability of public authorities to protect the viability of a public service rail route when coach services travel times are similar to that of rail services but at a much lower fare. This might indeed incentivise passenger to choose coach services. To effectively protect undoubtedly necessary public services, the authorities are prone to assess the degree of substitutability between the two services given a range of criteria (e.g. fares, duration, schedules, ticketing solutions, etc.)

Nonetheless, on the supply side network effects must be recognised in deregulated markets - in Italy, nel period a cavallo della liberalizzazione saw a total growth of number of routes from 286 in 2013 to 380 routes/week in 2015 which translates in a +33 percent of routes increase[48]. Also, in terms of frequencies there

[48] Beria p., Laurino A. Bertolin A. Grimaldi R "*Autolinee statatli: gli effetti della riforma. Risultati, opportunità e criticità dell'apertura del meracto*" Milano, Italy

was a consistent growth: from 1421 frequencies in 2013 to 1973 frequencies/week in 2015 which is a growth of +38percent. All geographical relations witnessed a growth, there was a consolidation in the South and a significant growth on routes South-North. In relative terms, the most significant growth happened in the North due to the fact that in the past the service was severely underdeveloped, while the routes Centre-Centre remained almost unvaried but that is possibly due to the short distance between cities in the Centre and thus less incentives or existence of legal distance barriers to set new routes.

Figure 5: Intercity bus market supply in Italy (in 2013 and 2015)

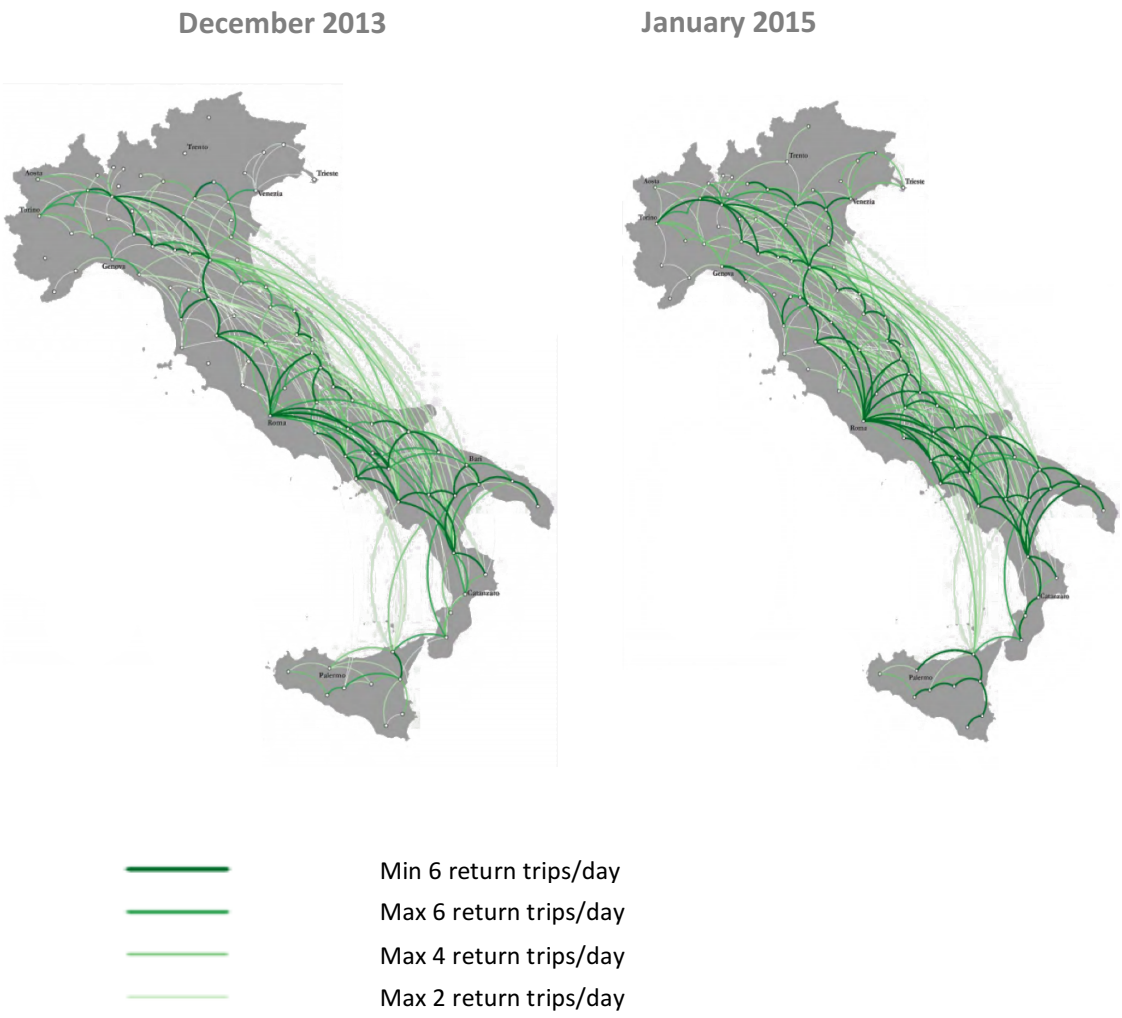
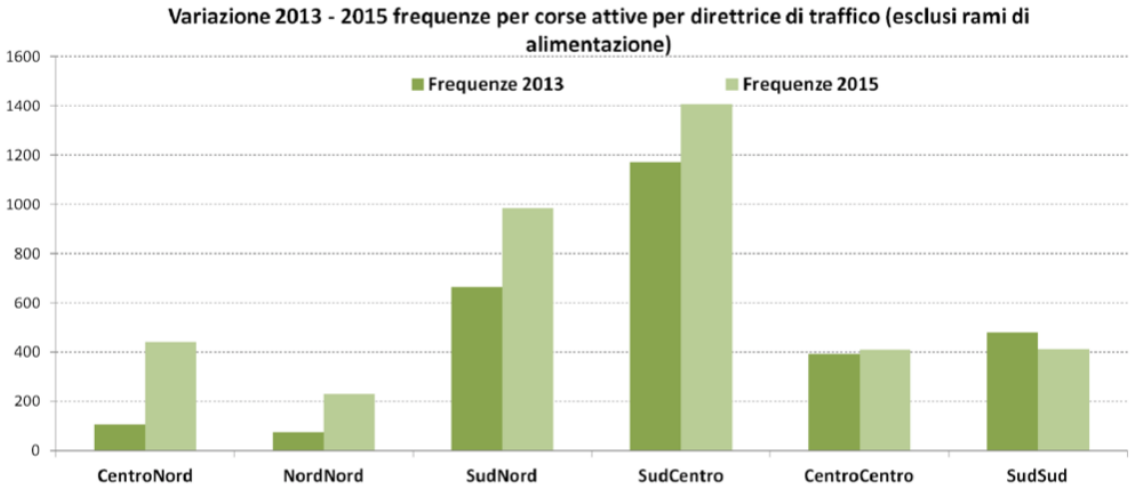


Figure 6: Intercity bus frequencies variations in Italy 2013 vs 2015



Source: ANAV.it

In France, the number of cities served is in continuous growth exceeding 300 cities in 2017. (from 135 cities in 2015 – 236 in 2016 –to 303 cities in 2017.) Frequencies of these new intercity bus services grew at a generally sustained pace (on average 25% quarterly growth), with a peak of activity during summer period. Since the declarative legislative regime allows a high flexibility in setting and cutting lines the offer and frequencies are highly fluctuating based on seasonality, therefore the growth is not linear but rather reactive to commercial choices implying to open or close temporarily services according to seasonality and commercial results. Thus, the marketed network reaches a peak during summer months and returns to a more restrained offer during autumn and winter time. Concerning the typology of the cities served the routes having Paris as origin or destination are the most popular followed by Lyon (respectively travellers dispose in total of 146 and 106 destinations without correspondence daily). However, smaller cities are also largely served which contradicts the concerns that deregulation will lead to services only on the most attractive routes with the highest demand. In 2017, 303 communes were served by at least one coach operator, of which 33% were centres with less than 10.000 inhabitants:

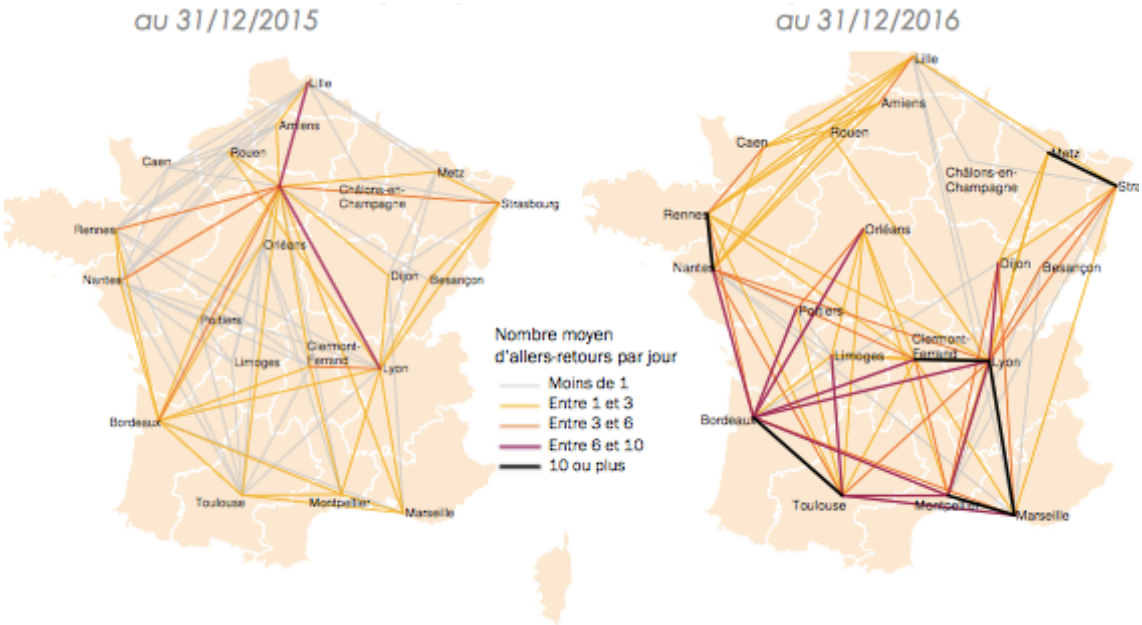
Table 3: Intercity bus service coverage according to city inhabitants dimension in France

Centres with population	2015	2016	2017
< 10.000	25 (19%)	82 (35%)	100 (33%)
10.000>50.000	49 (36%)	89(38%)	127 (42%)
50.000 >100.000	27(20%)	31 (13%)	40 (13%)
100.000>400.000	30 (22%)	30 (13%)	32 (11%)
>400.000	4 (3%)	4 (2%)	4 (1%)
Total n° of cities	135	236	303

Source: ARAFER

In addition, 26 percent of centres served do not have a railway station (at least not in the municipality) and 46 percent of cities served are classified as costal zones or mountain areas. On these routes, at least 31 of them do not have a **direct** rail alternative such as Lyon-Rouen, Clermont-Ferrand_Rennes, Bordeaux-Strasbourg or Marseille-Nantes.

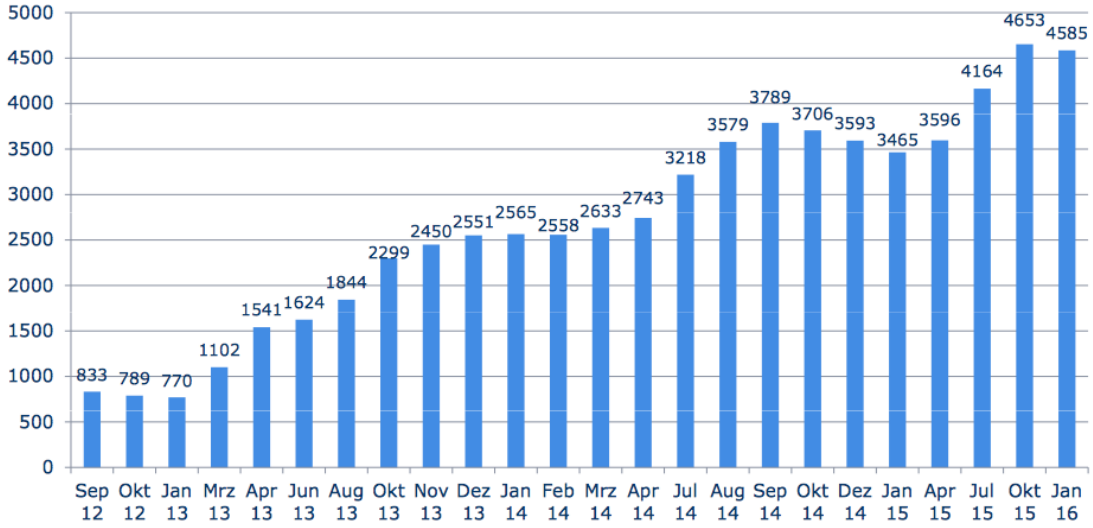
Figure 7: Frequency variation of intercity bus service in France 2015 vs 2016



Surce: ARAFER

In Germany, the market share of intercity coaches on long-distances increased from 2% in 2013 to 14% in 2015.[49] The number of round trips sextupled in only two years going from 833 to 4653 end of 2015:

Graph 1: Total round trips of intercity bus services in Germany



Source: IGES

[49] IGES Institut GmbH, *Economic Lessons from the Liberalization of the German Bus Market*, 2016, Berlin

Intercity bus coverage November 2012 (one month before full liberalisation)

Intercity bus coverage November 2015 (three years after liberalisation)

Source: KCW.de

Contrary to expectations, head-on competition was not the main form of augmented supply, effectively contributing to an increase of demand, especially in underserved segment of the population. Market supply increased despite what we expected will happen on the market. We thought that some areas would be abandoned but proved that cities that were before not served by rail gained access to global mobility and liberalisation contributed to densify the network in terms of operators, large and small and in terms of route operations, effectively giving customers more choice in their travel decisions. Dense market supply positively contributes to increase the demand from customers.

2.2 Demand

People make decisions on how to spend scarce money and time on transport, reflecting not only their mobility needs but also their preferences. There

are several factors that influence the demand side and are essential for understanding the evolution and growth of this industry, since it refers to the amount and type of services people will consume under specific conditions. The main explanatory variables can be monetary (price and fares) and non-monetary such as the quality of the service, discomfort, status impacts, and risks. It also includes other variables such as population and GDP of the origin and destination place of the trip, the distance between them and the time taken to conclude the trip. Often, on long distances, bus and coach services can be seen as an inferior good.[50] Such characteristic can influence the behaviour of the demand: in a situation of economic prosperity the train can be perceived as preferable to the bus (or an air service). And on the contrary during a period of economic downturn the bus can see it's demand increase. People under certain conditions are expected to make rational economic decisions, evaluating the costs (either in price or time) of different options they have presented.[51] The demand can be segmented between groups of consumers which express a strong preference for shorter time travels and willing to pay a higher price (the so called *time-sensitive* customers, generally those who value time more than the monetary cost of the trip e.g. businessmen) and those who are more *price sensitive* for whom independently of the length of the journey prefer the cheapest option (usually that category of population that has a higher availability of time but a more constrained budget e.g. students, pensioners, unemployed, low income groups etc.) The time sensitive customers would normally prefer a trip by plane, or high-speed rail, while the second is the typical customer of the bus and coach industry.[52]

[50] An inferior good is that type of good for which demand declines as the level of income or real GDP in the economy increases.

[51] T. Litman, "*Transport Elasticities: Impacts on Travel Behaviour, Understanding Transport Demand to Support Sustainable Travel Behaviour*", Sustainable Urban Transport Technical Document, Federal Ministry of Economic cooperation and Development, Berlin, Germany Sustainable Urban Transport Technical Document

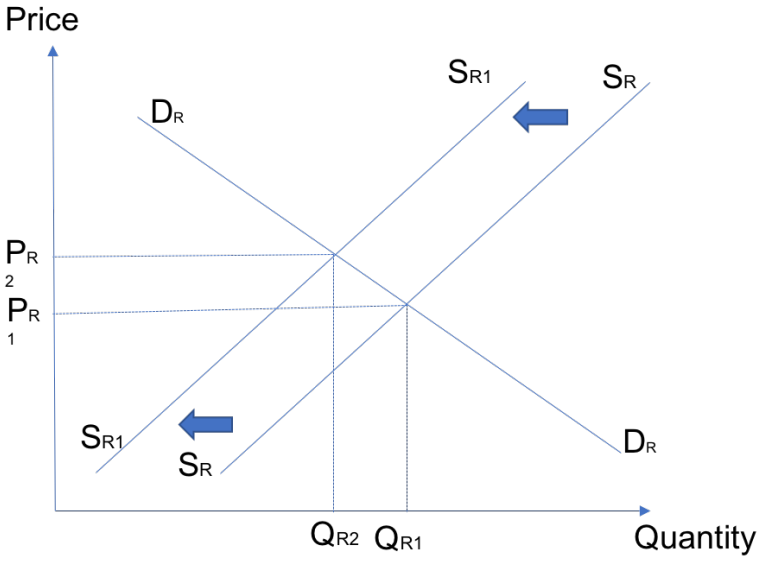
[52] G. Alexandersson, S. Hultén, N. Fearnley, F. Longva (2010), *Impact of regulation on the performances of long-distance transport services: A comparison of the different approaches in Sweden and Norway*, Research in Transportation Economics, Vol. 2

The elasticity of demand for coach and bus depends also on the price of other potential substitutes modes of transportation and their immediate availability in the region. The higher the number of alternative modes available the closer they are in meeting the same basic travel need, the higher will be the price elasticity for a particular transport service. It is therefore essential to understand consumers demand responsiveness to changes in price of other modes of transportation and their willingness to change to a coach service. Such measure can be defined with the cross price elasticity[53] for substitutes services:

$$\textbf{Cross-price Elasticity} = \frac{\text{Percentage change in quantity demanded of service A}}{\text{Percentage change in price of service B}}$$

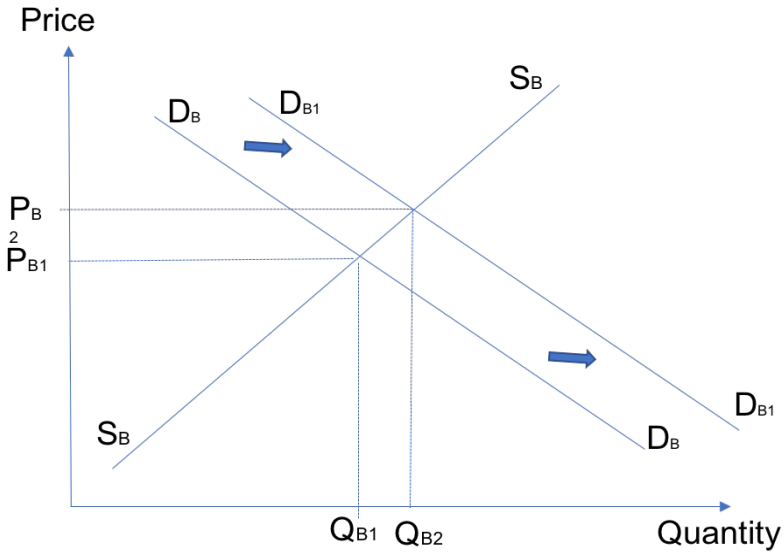
Let A be a coach service and B a rail service and/or carpooling service, the increase in the quantity demanded of the bus service can be calculated based on the variation of rail service fares: generally, for substitute transport service the cross price elasticity is always positive. Thus, the effect of price increase in service B has a positive effect in terms of demand for the substitute service A.

Market for Rail Service:



[53] Cross Price Elasticity: a measure of the effect of a change in the fares or rates of one mode of transport or transport operator on the demand for the services of another mode/transport operator.

Market for Bus service:



Analogically, the responsiveness of demand depends also on changes in income:

$$\textbf{Income Elasticity} = \frac{\text{Percentage change in quantity demanded}}{\text{Percentage change in income}}$$

$$\textbf{YED} = \frac{\%\Delta D}{\%\Delta Y}$$

In this case, is taken in consideration not the total income but the disposable income (after taxes). Therefore, in short term, income elasticity for bus and travel is negative, and hence as real incomes increase consumers will use other forms of transport, either rail or private car. In the longer term the income elasticity of demand for bus services is likely to become less negative due to social effects like congestion, pollution etc.

Price and time dimension are evident parameters that can influence the demand of the bus and coach service. But there are other factors that can affect the customer behaviour and its choices. We can observe the characteristics of the product itself, indeed a service can be distinguished for a series of conditions and modalities based on which the consumer can be more or less sensitive. Such

conditions can be strictly related to the product: e.g. the commodity and comfort of the seat, the quantity and reliability of luggage transportation, Wifi on board, restrooms, hostess, snacks, bike transport, booking system, break times etc. or determined by the flexibility with which a consumer can benefit of the service. This can depend on the time elapsing between the date of departure and that of return, or by the possibility to modify the travel programs or cancel the trip at zero costs.[54] Moreover, subsist network effects that can influence the customer behaviour, this depends on the extension of the network and connection served by an operator. Such effects can result from consumer preference as well as from marketing strategies adopted by the enterprises. The preference of a consumer for the operator which offer the most extensive network depends mainly on the possibility to take a trip to regions not served by other operators. To this can be added the marketing strategy to offer loyalty programs[55] which can make passengers concentrate their demand on a single operator presumably in the chance to obtain good arrangements. Recapping, is necessary to keep in mind that the demand consists of numerous segments defined by:

- The elasticity of demand to price and time dimension.
- The availability of substitutive modes of transportation and the cross price elasticity
- The income elasticity in short and long term.
- The different value attributed to qualitative factors and flexibility characteristics of the service.
- The existence of a wide network and capillary connections combined with marketing strategies.

[54] Khan, (2003) Lessons from Deregulation: Telecomunications and airlines after the crunch, Brookings Inst

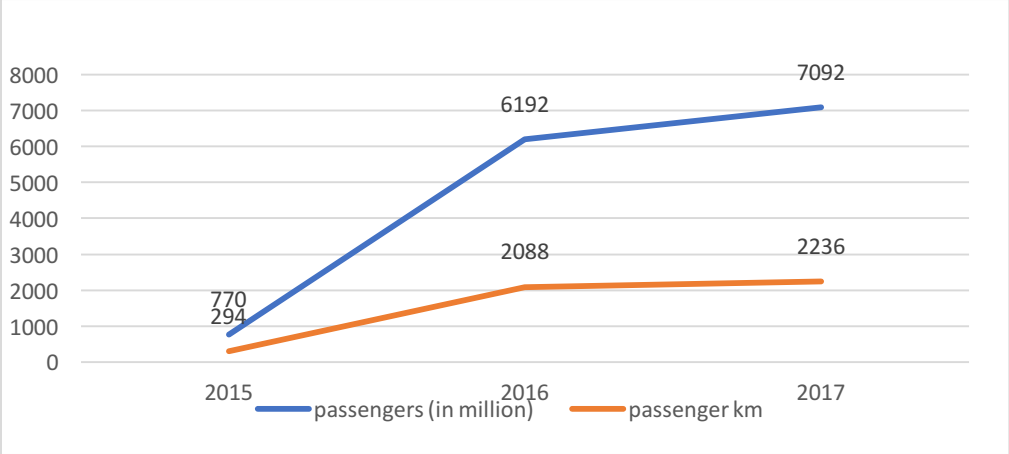
[55] In the aviation sector such programs are more popular as for istance the so-called *frequent flyer programs*

2.2.1 Empirical data of coach traffic passenger demand

Passenger numbers have impressively increased since liberalisation. According to statistical records. In Italy, intercity busses have a 12% market share in terms of passengers for mobility on long distances for an estimated total number of 10 million passengers in 2016.[56]

In France, there was also a steady increase in the number of intercity bus passengers. In only one year of operation passengers grew seven times with respect to the passengers in 2015:

Graph 2: Intercity bus service passengers in France



Source: ARAFER

The result of the ARAFER surveys in 2016[57] estimated that in the absence of intercity coaches of the total 6 million passengers nearly 1 million would have not travelled at all and the remaining 5 million would have been made by car (53% including an option of car-sharing) and the rest by train (45%).

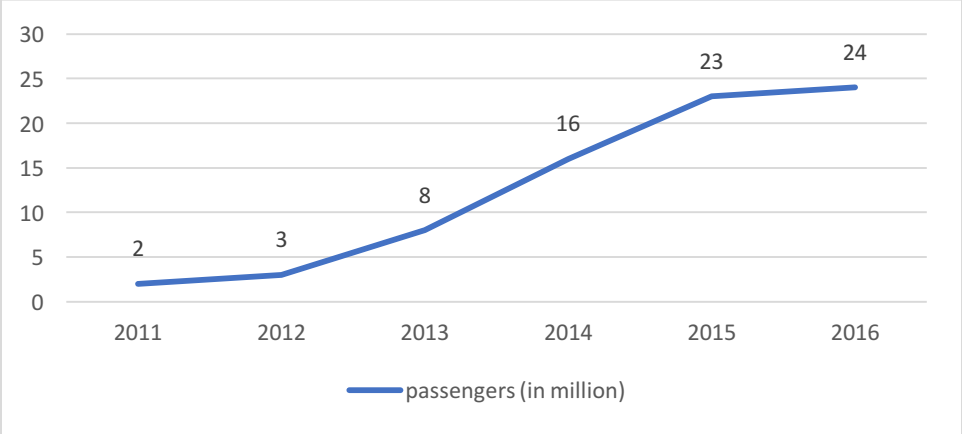
Germany registered a striking initial growth in passenger numbers. From 2012 (year of liberalisation) to 2013 the number of passengers more than doubled and showed the same pattern the following year reaching 16 million passengers in 2014 but since 2015 the growth is stabilizing showing that intercity bus services

[56] ART Trenitalia – NTV – Checkmybus - Rail services which operate in regim of PSO cover 17%(14 million passengers) and highspeed rail (Trenitalia Alta Velocità + Italo Nuovo Transporto Viaggiatori) cover 71% (57 millions passengers).

[57] Link to the survey:http://www.arafer.fr/wp-content/uploads/2017/01/Enquete-2016-mobilite-des-voyageurs-en-autocar-Arafer.pdf

might have reached its market potential (in any case for this conclusion further tests at analysis over time are necessary).

Graph 3: Intercity bus passengers in Germany



Source: IGES

Market seasonality is another aspect that influence significantly the passengers traffic. Obviously, the number of passengers increases during Winter holidays, that is December around Christmas time and beginning of January (from 19th December until 10th of January) and in summer for the whole touristic period with the pic between 10th and 17th of August. During these periods large share of population move mainly from big cities to home towns or sightseeing places. Generally, the result is a high load factor and even extra services with additional booster buses on the most popular lines.

2.3 Low-cost operators' strategies

Similarly, to the aviation sector one of the most significant outcomes of deregulation has been the emergence of low cost coach operators. The low cost has been expanding rapidly and growing at a very fast pace, generating strong pressures and incentives to innovation both in the coach sector and also on the other means of transportation such as rail or car sharing.

Unlike the air LCC services, the new coach low-cost did not base their strategy on restraint costs related to the service, on the contrary the service significantly improved following their entry by setting totally new quality standards (last generation buses, comfortable seats, introduction of Wi-Fi on board, trained bus

drivers and real-time travel information). What constituted the success of low-cost coach carriers can be rather attributed to their organisation and new business models. The most acclaimed novelty was the introduction of partnering model. The new comers did not invest in buying their own fleet but rather build a partnering model with a well-developed network of small and medium sized coach operators. Such business model consists of a collaboration between the new low-cost entity and the coach partner based on a contract with a clear subdivision of competences:

- The main entity administrates the brand, the commercial services, the authorisation process, marketing operations, develops the network and timetables as well as provides the access to its online booking platform.
- The partner supplies the busses (which respond to the quality standards defined by the main entity) the drivers staff and takes care of maintenance of the fleet and generally bear the operational costs.

In this way, the optimisation is not carried in the production unit (maximising the use of resources for single lines) but at the enterprise level with a priority to the concatenation of services that converge on a hub.[58] But most importantly, this model does not involve investments directly linked to the service (e.g. acquisition of vehicles), but only to the acquisition of available capacity from the market without paying the capital. The subdivision of competences is a key strategic decision, which allowed the main entity to focus on network plan and the sales platform while bus partners use their knowledge and expertise in caring passengers.

This formula was widely adopted by FlixBus which allowed it to rapidly gain territory and form an economy of scale in the intercity coach mobility sector.

(competition gap with the traditional operators)

Liberalisation considerably incentivised the market and other forms of low-cost business models made their appearance on the scene, even though less prominent but also because still in phase of evolution:

[58] A. Bergatino "*Lo Sviluppo dei vettori low-cost: nuovi assetti organizzattivi e ampliamento della clientela*" paragrafo struttura dei prezzi pag. 109

- *Bus sharing* services which replicates the concept of shared mobility similar to car-pooling but from the dimensions of shared private car to the shared bus. This service is inspired to the crowdsourcing concept which allows motor coach to respond quickly to customised demand for bus travel. Such service is based on a pre-defined offer of possible routes subordinated if a minimum number of passengers is achieved. In other words, if enough customers express their willingness to pay for a bus leaving at a set time on a determinate day, the operator then hires a bus and completes the shared bus trip. If the trip fails to attract enough riders the service is simply not operated and no price for it is paid. The price of the service is indirectly proportional to the number of passengers on the bus. The most popular low-cost based on this principle is GOGOBUS, established in Italy by two young entrepreneurs in 2015. Such service is mainly suitable for events destinations like concerts, exhibitions, sports events or organised strikes. The idea is a mix of private bus charter and scheduled bus service – is more flexible than hiring a private bus since there is no need to ask for quotations, or find the minimum number of passengers for the trip by itself but rather the platform organises a customised trip by bus based on the exigencies of other travellers and combines it in one trip. Similar to this concept was also initially founded the German Deinbus.de by two students. However, it did not meet enough success and were soon pulled out of the market. This kind of service is popular also in those countries which have not liberalised the long-distance coach market yet, and in this way operators try to recreate as much as possible a service similar to the scheduled regular one but legally under charter form (e.g. MementoBus in Romania is regularly offering routes under charter form).
- Another innovative low-cost concept is that of interception of "*empty routes"* on the busses of already existing operators and selling them last-minute at very low-prices. Such approach allows to fill in the empty seats which have not been sold and which the operator would have been forced to run empty. This concept is well-known under the start-up brand Trivabus. However, this is a replication of an already existing idea since at least a decade operated by

EurobusNetwork but acquired much higher relevance in recent years with the increase of the bus travel popularity. Such business model overthrows the relation "market platform – carrier" proposed by FlixBus: while FlixBus commissions to partners a quota of routes to be managed in the name of the platform, in this case are the operators itself that entrust the platform with the task of allocating seats that otherwise would remain empty. Moreover, such business model does not require to exclusively use the buses for a certain brand allowing them to be employed in other types of services as well.

These new approaches even if they offer services that aim at the capacity optimisation of charter busses rather than traditional coach operators, have high chances to absorb customers from both traditional coaches and FlixBus, making prominent a type of offer and capacity which were not available even few years ago, showing the potential and the vivacity of the market if stimulated by commercial interests.

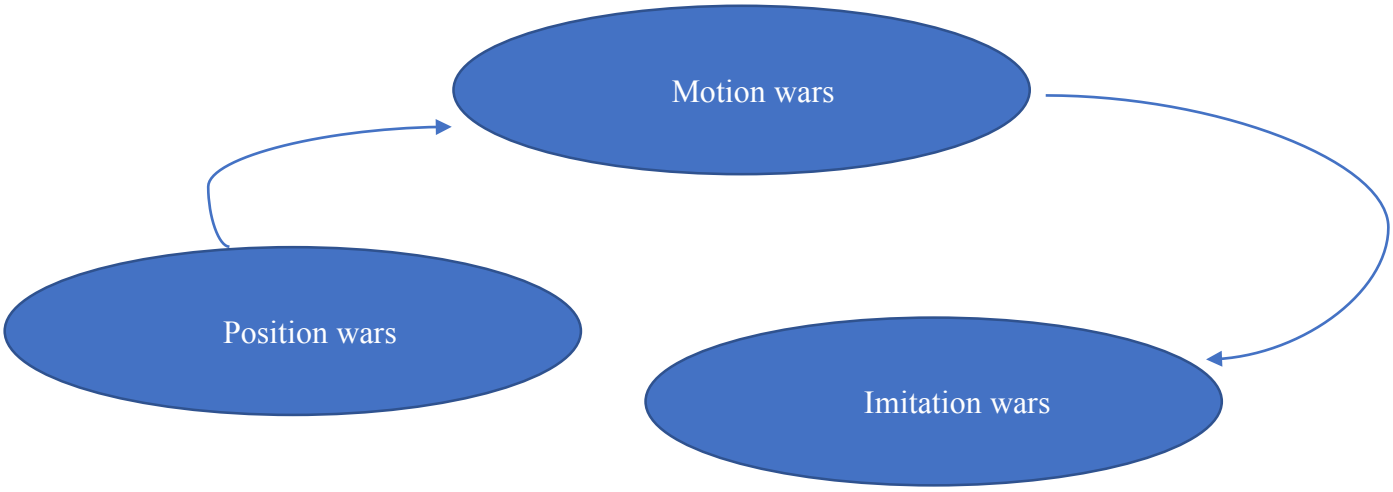
2.4 Evolution of competitive confrontation stages:

The basic argument for liberalizing the long–distance coach market is the prospect of direct and indirect gains from competition. Such gains, in the form of reduced fares and improved service quality have been documented in several liberalised network industries: from air transportation, to electricity and gas. Liberalisations brings dynamic developments in the market. Initially, it is interesting to observe the stages of the competitive confrontation[59] to then reach an analysis of the evolution of the competitive content post-deregulation.

The competitive confrontation can manifest itself through three different stages: motion wars, imitation wars to then result in position wars which will eventually restart the cycle through motion wars again determining the circularity in which competitive comparison translates into a dynamic succession of games of movement, imitation and position:

[59] The model of stages of competitive confrontation is developed by Enrico Valdani in Marketing Strategico, Etas Libri, 1995.

Figure 9 : Market competitive confrontation stages



The principles of motion wars implies that the success of a company is related to its capacity to anticipate the changes that occur in the market and to its flexibility and rapidity to adapt to the new environment and better answer the needs of consumers rather than the simple subtraction of market shares of its rivals. The motion war necessitates of a different strategic predisposition, oriented to market creation, and generation of value through the creation of new opportunities and new ideas. The companies that develop and bring on the market a new product or service first often acquire the advantage of the first comer. Before deregulation, the competitive advantage was in the hands of already existing operators e.g. in Germany Deutche Bahn was leading the long-distance coach market (because of the previous restricted and monopolistic market structure) as well as Deutche Touring which was already operating international lines and would have been expected to immediately enter the domestic network. However, these incumbent firms did not immediately perceive that they were facing major change of paradigm in their industry. Therefore, they did not reinforce their opportunities in the market and were soon overcome by new start-ups. Young entrepreneurs saw in the deregulation the opportunity to start new businesses and entered the market with innovative spirit and dynamics totally new for the market.

Similar feature can be observed in Italy as well. The intramodal competition was introduced only after the entrance of foreign competitors as Megabus (Italian market entry 2014), FlixBus (Italian market entry in 2015), and Postbus starting since 2014. Until this date, even when for the incumbent operators was already presented the opportunities to extend their market they missed the opportunity to fully exploit its potential. There were no routes overlays but rather maintained the pre-existing local monopolies highly linked to their regional territory which was a legacy from the concessionary regime. Old operators proved themselves incapable of facing new competition and tried to attack with legal impediments rather than commercial strategies.[60]

What constituted the first motion war from the side of the new start-ups was breaking new ground *market creation* strategies. New-comers coach operators introduced major tech-oriented transformations pushing the sector into new directions and determining a rather aggressive and rapid expansion of the intercity bus industry. This was possible mainly because of their innovative business model which allowed them flexibility and lower operational costs as well as to totally avoid the investments directly linked to the service (e.g. acquisition of vehicle fleet).

Furthermore, new entries introduced communications channels and contemporary marketing strategies to acquire customers and increase their brand loyalty, as well as online sales platforms to boost distribution beyond the limited coverage of agencies. Indeed, deregulation brought the bus sector online. In non deregulated regions, online sales represent only 2 percent of total sales[61]. That is because traditional operators did not have incentives to innovate and introduce online modern Computer Reservation Systems.

[60] Proposal in Decreto Milleproroghe to make the business model of the new low-cost illegal and prevent from operating in the Italian market.

[61] Data based on FlixBus.ro sales platform. However, other aspects can influence this result such as low penetration rate of internet and low confidence in online payments.

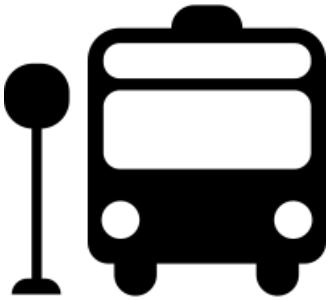
Motion war in a deregulated market environment:

- New entry in the market of low-cost operators
- Development of new business strategies
- Introduction of marketing strategies and loyalty programs
- Introduction of online sales platforms

The success of an innovative company stimulates other organisations to follow in a competitive game of imitation.[62] The imitation war characterise those companies which immediately follow and imitate the pioneer (e.g first comer) showing a tendency to replicate or improve its entrepreneurial formula. They can imitative partially or completely their business formula or the critical key elements of their success as for instance introduction of dynamic pricing, flexibility in organisation and online marketing strategies. Sometimes the company that imitate has high chances to improve the formula of the pioneer since it is an effective way for saving time and attention in decision-making. Some define it as a *low-cost strategy* to success. Enrico Valdani, identifies three types of conduct chosen by the imitator: *parasite imitation* that is when another company reproduces a similar successful standard – also called "dominant design"[63] that happens usually when legal or commercial barriers are weak or difficult to defend thus enabling quick imitation. *Incremental or redundant imitation* – when the imitator introduces innovations in his turn and is able to offer the same service as the pioneer but are technologically incompatible and therefore fight each other to become the standard taken on by the market.[64] And finally induced imitation – is when the pioneer encourage the game of imitation, since this can turn out an effective way to establish their standard on the market. Following deregulation of the intercity coach sector, the German market was able to produce innovators (DeinBus, MeinfernBus, FlixBus)

[62]E. Valdani, A. Arbore, "*Strategies of Imitation: An Insight*", Problems and Perspectives in Managements, 5(3-1), 2007
[63] Utterback, 1996
[64] E. Valdani, A. Arbore, "*Strategies of Imitation: An Insight*", Problems and Perspectives in Managements, 5(3-1), 2007

which were later replicated by imitators from other markets (e.g. RegioJet in Chech Republic, Marrozzi in Italy). Imitation strategies were launched also by the rail companies which launched their own bus subsidiary in the attempt to become a multi-modal operator to not lose or further consolidate their leading position (e.g. Ouibus in France and BusItalia in Italy).



Imitation war in a deregulated market environment:

- Imitation of the critical factors of the low-cost offer.
- Imitation of the pioneer's marketing strategies and loyalty programs which proved efficient
- Imitation of CSI system

Companies following one or the other way eventually evolve and transform in position wars – which reflects a market characterised by concrete and already well defined market borders. In time, position war usually degenerates to reach the last frontier of value. It maximises the marginal utility but reduces as well as the profitability and attractiveness of the sector. Therefore, urges to develop new strategies or new market creation becoming a motion pioneer again and so creating a vicious circle.[65]

2.5 Mergers and acquisitions effects:

Recently, a combination of bankruptcies, mergers and acquisitions strategies have thoroughly redefined the picture of the intercity coach industry, considerably reducing the number of competitors present in the market. The low-costs operators rapidly achieved a substantial market share creating a gap with the traditional coach operators, leaving them far behind. Such result was mainly

[65] E. Valdani, A. Arbore "*Strategie competitive. Giochi di movimento, imitazione, posizione*", EGEA, 2008

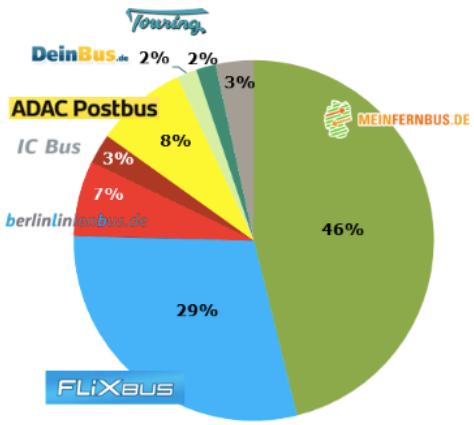
possible through a process of horizontal mergers and acquisitions which was initially pursued mainly by FlixBus, and afterwards pushed other actors in the market to privilege such form of business growth as BusItalia (acquisition of SIMET) and Ouibus (acquisition of Starshipper). In this way, we are assisting at the passage from a public controlled oligopoly to an oligopoly created by market forces.[66]

FlixBus is a case of merger-mania which impacted the market especially in Germany where created an intercity bus monopoly, and shows increasingly similar intentions in the French and Italian market. A marked milestone was signed in 2015 with the merger between FlixBus and Meinfernbus which at the time had the most extensive network inside Germany. Indeed, in 2014 Meinfernbus detained 46% of market share while FlixBus could only boast 29% of market share. The merger between the two created a colossus owning 73% of the German intercity bus market. However, in the same year, it saw the entry on the market of two other major transportation players: Megabus and Postbus. Still, far from being rattled by the competition, FlixBus aggressive acquisition strategy led them to incorporate the two new players in the FlixBus network only one year after. In 2017, FlixBus owned 93% of market share inside Germany and recently acquired other players as the Austrian HellöBus, the Polish Polskibus and the Swedish Swebus.

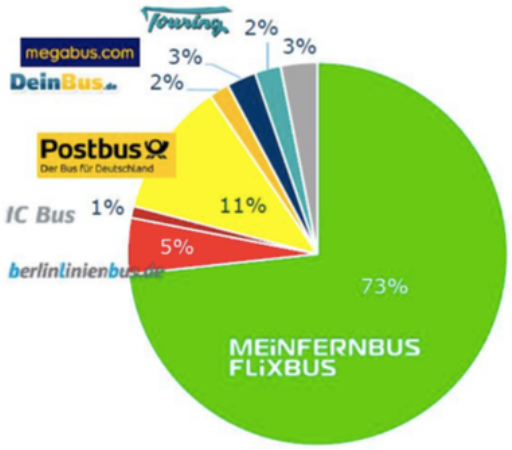
In two years of intercity bus market liberalisation at least five companies appeared leaders on the German market holding 90% of the market share, in 2015 the number of operators was reduced to only three companies detaining 90% of the market. In 2017, FlixBus owns almost a monopoly in the intercity bus sector with 93% of the market share and few timid rivals which serve mainly international connections from and towards Germany:

[66] G. Alexandersson, S. Hultén, N. Fearnley, F. Longva (2010), *Impact of regulation on the performances of long-distance transport services: A comparison of the different approaches in Sweden and Norway*, Research in Transportation Economics, Vol. 2

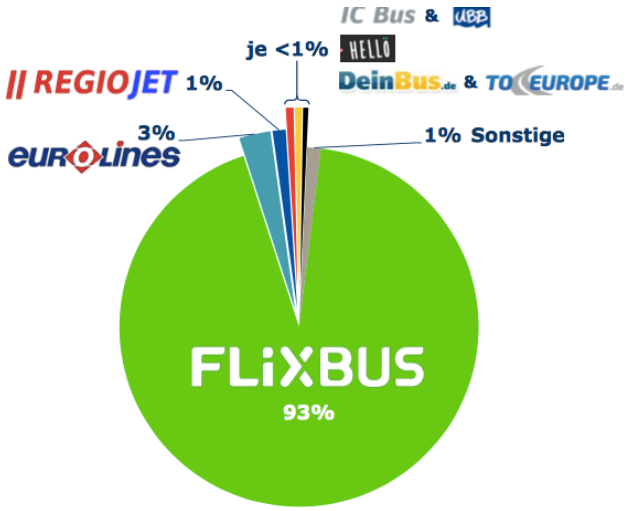
Two years after liberalisation 2014



Three years after liberalisation 2015



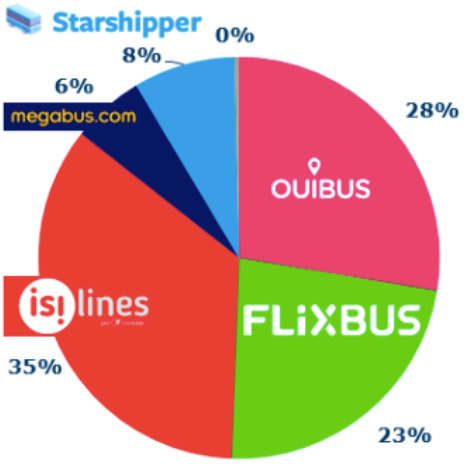
Four years after liberalisation 2017



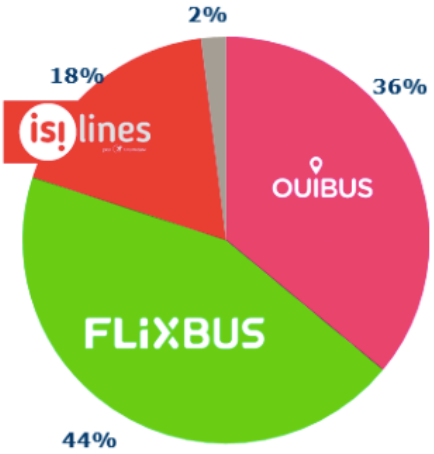
Source: IGES,2017

France is also showing similar consolidation trends with two major players on the market: FlixBus and Ouibus, followed by Isilines which is losing territory year after year. FlixBus is growing at the highest rate, almost doubling its French market share in only one year, on the other hand, Ouibus is keeping the pace but growing at a slower rate:

Two years after liberalisation 2016



Three years after liberalisation 2017



While mergers and acquisitions in any given market generally means a reduction of competition and a consecutive loss of consumers bargaining power – be it in terms of higher prices, less transportation options and a stagnation or decrease of offer quality – one must keep in mind that the intercity bus market is standing among a wider array of long distance transportation option available for consumers.

Therefore, while regulators and public opinion first instincts might be to bemoan the current trends in Europe, facts and experience show that there is little risk to see prices drastically increase and/or offer quality and quantity to decrease.

The presence of low-cost airlines (e.g. Ryanair), carpooling options (e.g. Blablacar) as well as low-cost highspeed trains (e.g. OuiGo) guarantees a wider range of competition for intercity bus transport. Considering this state of fact, it can be argued that the consolidation of intercity services is a necessary evil as it allows the consolidated companies to effectively use their economies of scale and increased competitive edge to challenge these markets, all-in-all contributing to the provision of a wider variety of affordable and qualitative options to end consumers.[67]

[67] J. Meyer, C. Oster (2007) *"Airline Deregulation: The Early Experience", Auburn House Publishing Company, 1981*

In the near future, it would likewise not be surprising to observe simultaneous movements from those operators in each other's square meadow. For example, as it would be natural for FlixBus to start operating low-cost train services, it would not be unexpected to watch Blablacar operating some bus services. As a matter of fact both companies have already embarked in such movements with FlixBus launching FlixTrain in early 2018, while Blablacar punctually united with OuiBus to offer bus services on its platform in April 2018.

Besides these elements, it is commonly admitted that if new entrants do not fear unfair competition with market giants it is likely that they will be encouraged to enter that particular sector. Especially, if they believe that they can benefit from an edge thanks to a disruptive technology or process innovations.

According to the contestability theory even if an economy of scale is created, but the market presents low barriers to entry and exit, then the only threat to entry by potential new firms in the market is enough to keep existing operators on alert and behave as if the market has a highly competitive structure. Which means that even if there are few operators or even a single operator in an oligopolistic market, the market will still resemble a competitive one if threatened by potential entrants.

Therefore, as consolidation of the coach sector is likely to continue, this eventually could incentivise European Union to develop a more protective policy in this sector with regards to keeping low barriers of entry and exit, effectively keeping large companies on the lookout.

As a conclusion, mergers and acquisitions in the intercity coach market although potentially worrisome, proceed from normal market behaviours and overall can be beneficial for the end consumers if it enables the created large organizations to challenge the status-quo in other mobility sectors. Still these market concentrations need to be monitored by regulators to foresee and manage its most likely effects.

2.5 Market Concentration

An indicator that can show the market concentration in the bus and coach sector is the Herfindahl index[68] (HHI market concentration). It is a concept widely applied in competition law and gives the result of proportional average market share weighted by market share.[69] The formula is rather simple, first is necessary to calculate the market share for each operator:

$$market\ share^{route\ 1}_{operator\ A} = \frac{frequency_A^{route\ 1} * timetable\ kilometres_A^{route\ 1}}{\sum_{operators=1}^{N} frequency_n^{route\ 1} * timetable\ kilometres_n^{route\ 1}} \quad (1)$$

and then calculate the Herfindahl index:

$$H = \sum_{i=1}^{N} s_i^2$$

Where Si is the market share of firm A and N is the total number of firms on the market. Increases in the HHI index indicate a decrease in competition and an increase in market power, whereas decreases in HHI index indicate the opposite, a competitive industry with no dominant players. A Herfindahl-Index close to zero is interpreted as a low market concentration, which means a high number of competitors on the market, whereas a Herfindahl index equalling one resembles a monopolistic structure, with only one operator playing on the market. If two operators serve the market with equal shares and each have 50 percent of the market, the Herfindahl index would turn to1/2 by calculating $0.5^2+0.5^2$. To pursue the calculation, first is necessary to gather data regarding total intercity coach supply in km and the number of companies operating:

[68] Herfindahl index (HHI) – is a measure of the size of the firms in relation to the industry and an indicator of the amount of competition among them.

[69] N. Dunne (2015) *Competition Law and Economic Regulation: Making and Managing Markets*, Cambridge University Press, London

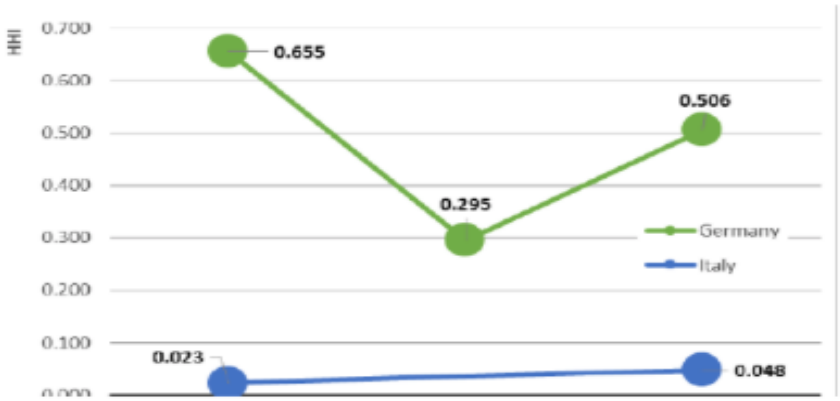
Table 4: Market concentration index

	Germany		**Italy**	
	Before 2012	After 2015	Before 2012	After 2015
Coach supply in million km	26	220	85	145
Companies	<30	>50	>45	
HHI	0.655 (high)	0.506 (high)	0.023 (low)	0.048 (low)
Market share of the biggest company	68%	70%	14%	12%

Source: KWC data for Germany and Beria et al for Italy

The early results show an overall low concentration for Italy, which is not particularly disruptive. And on contrary than Germany the market share of the biggest company results diminished rather than increased. However, the significance of the data has to be taken in consideration since the data in the table is based on checkmybus.it platform and such data can be altered most probably by the later entrance of other companies on the platform. Germany shows a high concentration pattern since 2012 (before deregulation) that was represented mainly by Deutche Bahn monopoly who was owning some bus connections in the country in exclusivity. Immediately after liberalisation the HHI index has a significant drop, justified by the numerous entrance of new players: DeinBus, Meinfernbus, FlixBus, Berlinlinenbus, Touring, Postbus etc. However, because of the mergers and acquisitions phenomenon which happened at a rather high speed

under the brand FlixBus today the German market represents almost a monopolistic picture (93% of marketshare is owned by FlixBus)[70] and thus a high HHI index:



The pattern of German market concentration can be defined as initially high but in a small market (before 2012, dominated by DB bus subsidiaries), expanded immediately after the liberalisation with many new entries and then concentrated again (after 2015 because of the mergers and acquisitions under one single brand – even though making use of subcontractors).

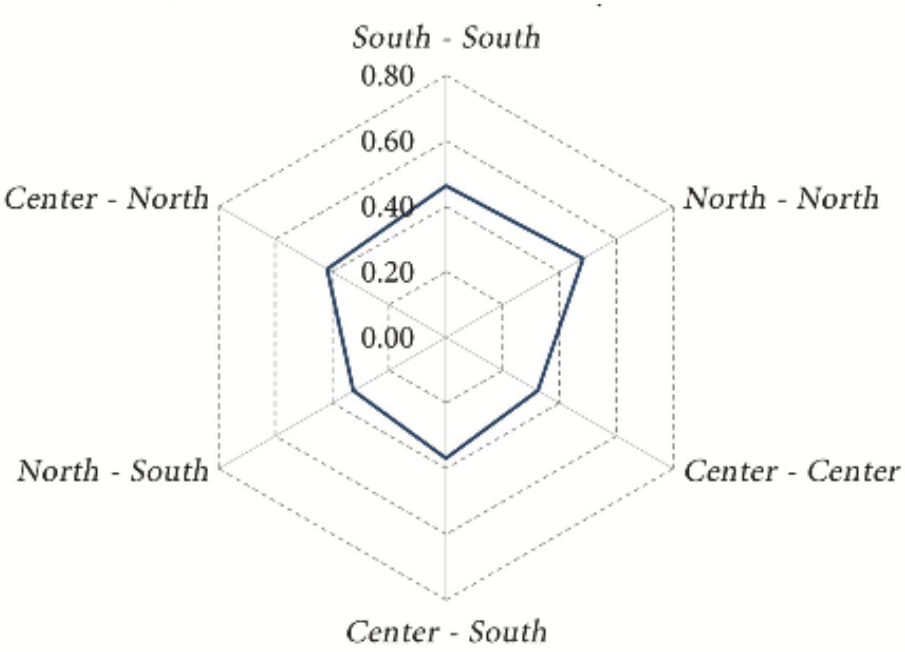
Italian market remains quite fragmented even after liberalisation and especially shows geographical differences. It is particularly interesting to have an overlook of the HHI index based on geographical relations. It can be observed that the highest concentration is in the North-North relations where mainly new entrants placed themselves on the market and depicted a situation similar to the German one (it also a consequence of the absence of coach services in the past, therefore large newcomers did not have difficulties to overtake the area). While relations North-South has the lowest HHI index, demonstrating the vivacity and attractiveness of the relation, moreover this can be a result that such market was already developed before liberalisation with historical operators already operating

[70] IGES Institut GmbH, *Economic Lessons from the Liberalization of the German Bus Market*, 2016, Berlin

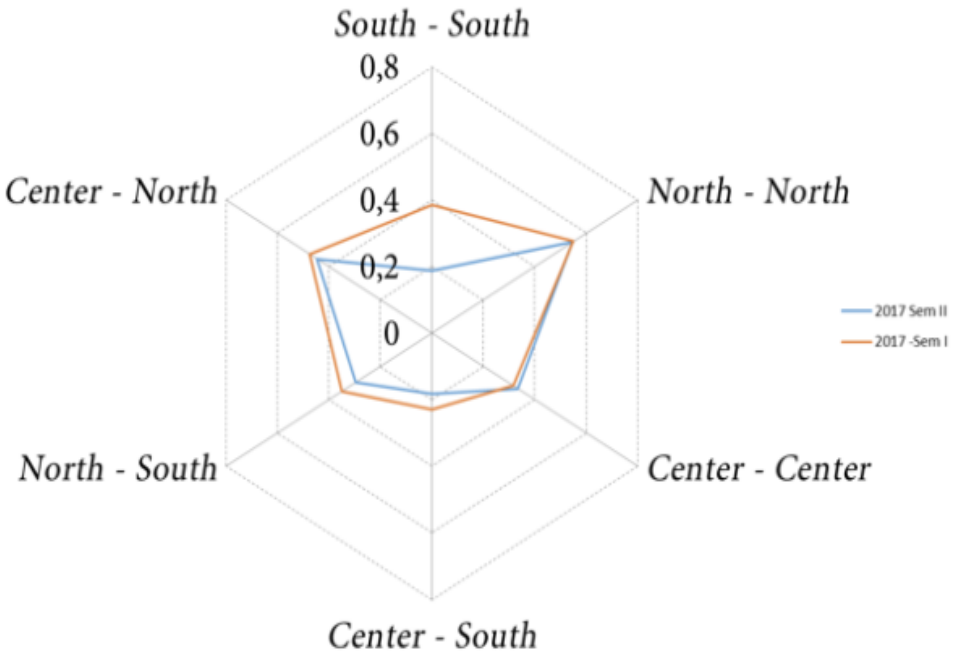
on the market. In 2016, the market was in evolution with the exist of Megabus which results are visible mainly in 2017 graph.

Confronting the first semester and the second semester in 2017, a significant reduction of the concentration can be observed in the South-South relation, while it lightly increases on the Centre-Centre relation. The North-North relation remains the most concentrated, and increases with respects to 2016. That's because large operators serve that region and especially an effect of the exit of Megabus and primarily a dominance of FlixBus can be observed.

HHI long distance services in Italy 2016



HHI long distance services in Italy – Semester I vs Semester II 2017



Source: elaborations on Checkmybus.it by Beria et al.

In conclusion, ca be deduced that in markets where the sector was previously to liberalisation already partially developed, the market concentration is less remarkable and there is a certain degree of competition among operators. An example of such reality is the Italian market where such distinction can be made on macro areas between Southern region and Northern region: the former has a low HHI index, indicating a high number of companies operating on the market (showing a balance between existing operators and new comers) while the Northern region has a rather high HHI where large new comers did not meet the opposition from already existing operators on the market and established themselves as dominant.[71]

On the contrary, in Germany the coach market saw a rather low HHI Index only in the initial phase of liberalisation when the market saw the entrance of many

[71] P. Beria, R. Grimaldi, E. Ferrara, A. Laurino, *Autolinee statali: gli effetti della riforma. Risultati, opportunità e criticità dell'apertura del mercato*. Studio ANAV 2015, 2015, Milano

new players. However, the market tended to consolidate quite rapidly through mergers and acquisitions under one main brand establishing FlixBus in almost a monopolistic position on the market.

2.6 Competition with rail sector

Intramodal competition between coach and rail became highly prominent after the liberalisation of the former. It has been already said that the prior prohibition of bus routes was mainly justified on grounds of protectionism of heavily subsidised national railways and avoidance of wasteful competition. Thanks to regulatory changes, coaches are now free to directly compete with rail on long-distances.[72] Indeed, most of the coach routes overlap with the railway network (except for France, which established a more capillary service than rail, mainly because of historical rail network structure shortcomings). Generally, intercity busses offer comparable service to train therefore an erosion to rail market share would be expected. However, rail presents several advantages such as national and dense networks, strong brands, loyal customer bases and most importantly a network of train stations that are perfect points of departure and destination since most of the times stations are placed in the heart of the cities. Buses on their side present several structural advantages as well: buses do not need to make use of the costly rail infrastructure network and present easy reachable stock as well as show a higher level of flexibility in their network in terms of number of stops, terminals and regulate frequencies and time schedule. Busses are by construction a highly mobile factor of production allowing a very flexible operation over the entire network.

To make a confrontation, I compare the most popular routes in each liberalised country with high competition between bus and rail. Considering Berlin to Hamburg Deuthche Bahn offers service about every 30minutes and the trip takes 1h42 with a standard price of around 65 euros. Intercity bus service offers the same

[72] Regional rail services are still protected thanks to the set of distance requirements between bus stops in all domestic markets: DE – 50km; FR – 100 km; IT – crossing of at least three administrative regions; only UK has a rather low distance requirement which is about 25 miles.

frequency, the trip takes double the time but the price is six time lower. The main advantage of the coach is the relation price-quality. Since buses are structurally much cheaper and more flexible to operate than trains they can afford considerably discounted prices. According to an OW survey, passengers see the coach as more innovative and service-oriented than train but rail still wins on comfort and enjoyment. On routes served by high-speed rail there is a totally different competitive situation. High-speed rail benefits a huge advantage in travel time gaining the time sensitive customers. (300 km per hour train vs 100km per hour on average for bus)[73]

Table 5 – Rail vs. low-cost bus operators (frequency, time and price)

	Trains			**Low cost bus**		
Route:	Frequency	Time	Price	Frequency	Time	Price
Berlin-Hamburg	30min	1h42	65€	30 min	3h	9.99€
Milano-Roma	≈15min 1h	3h30* 7h	92€ 60€	60 min	8h45	25€
Paris-Lyon	30 min	2h	97€	60 min	5h30	18.99€

*highspeed rail Source: Prices for 17th September 2018 as of the platform Goeuro.

According to Goeuro price Index bus is currently the cheapest mean of transportation for 100km of travel in all European countries (except Sweden). In the recently liberalised countries the coach is from two to four times cheaper than rail, but that is also due to the initial phase of liberalisation since prices tend to rise once the market is consolidated.

[73] Forbes, European Bus Upstarts Snatch 20 percent of Passengers from Rail, Joris D'Inca, Jean Pierre Cresci.

Table 6: Price per 100km from April 2015 to April 2016

Country	Average price for flights €	Average price for trains €	Average price for buses €	Overall average price €
United kingdom	36	23.44	**13.59**	24.34
France	14.74	17.59	**4.78**	12.37
Germany	18.31	12.9	**5.33**	12.18
Spain	12	13.74	**8.2**	11.31
Italy	14.84	12.28	**5.7**	10.94
Poland	17.05	4.52	**3.04**	8.2
Sweden	13.05	5	**5.41**	7.82

Source: goeuro.com

According to ARAFER the impact of coach liberalisation on rail sector in France is quite remarkable: national traffic data estimates losses between 50 and 100 million euros for the domestic rail transport. Indeed, rail transport is down 1,5 year to year and this situation of relative loss of passengers has continued since 2011. Between 2011 and 2016, demand in rail services shows an annual decrease of 0.5% on average, while other modes are growing such as road (+1.4%) and air (+1.9%).[74] So the losses in rail sector cannot be fully attributed to the coach sector since its decline started prior to market liberalisation but rather to its lack of attraction and inability to satisfy customer's needs. Nonetheless, in terms of traffic it is interesting to note that links provided by intercity coach for which there is a rail alternative generated 1.8 billion passengers/km compared to 38.4 billion passengers/km for train services. Long-distance bus services account therefore for only 4.6 percent of the traffic on these routes.[75]

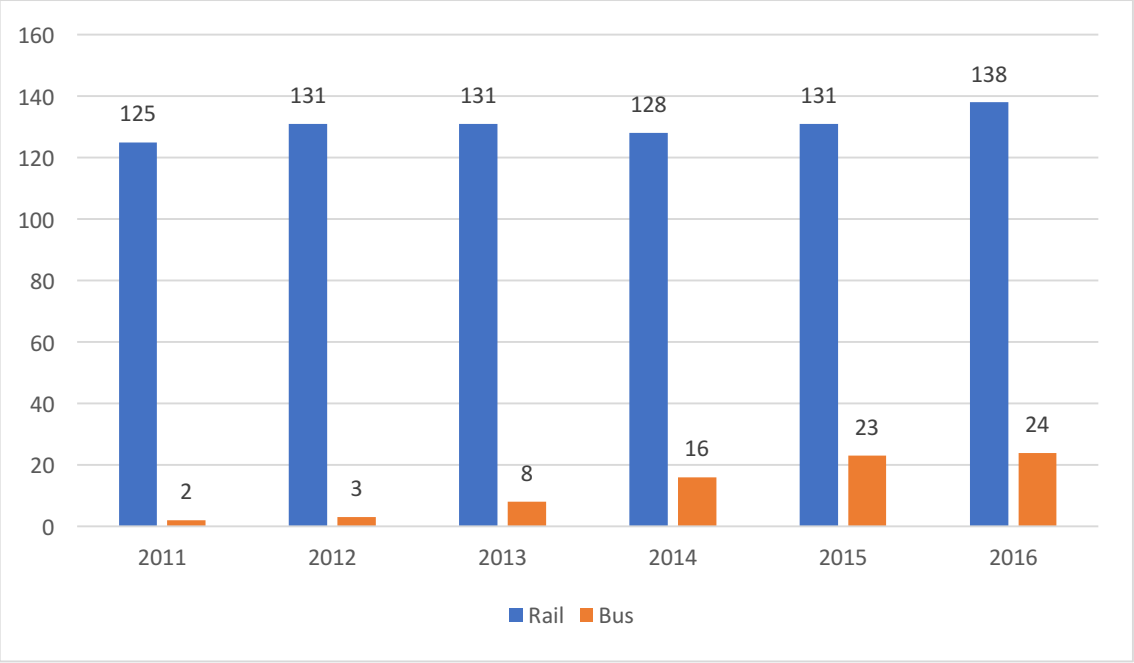
Germany on the contrary saw a growth in both sectors, which could be also a sign of increase in general mobility. Since 2012 bus registered a growth of +700

[74] ARAFER (Autorité de regulation des activités ferroviares et routieres), "*Observatory of transport and mobility, The French passenger rail transport market*" Report 2015-2016, Paris, France

[75] ARAFER (Autorité de regulation des activités ferroviares et routieres), "Marché du transport par autocar et gares routieres" Rapport annuel 2016, Paris , France

percent in passengers number but rail has a better year to year growth. Interesting to notice is 2014 when rail saw a drop of traffic passenger of -2,30 per cent and bus a significant increase +100 percent. It could be attributed to the increased popularity of the bus and therefore a switch from rail services to the more convenient bus. However, in the last two years 2015 and 2016 bus is showing a rather stable growth which could be also a sign that the market reached its potential, at least at this stage but further data is necessary to confirm such outcome.

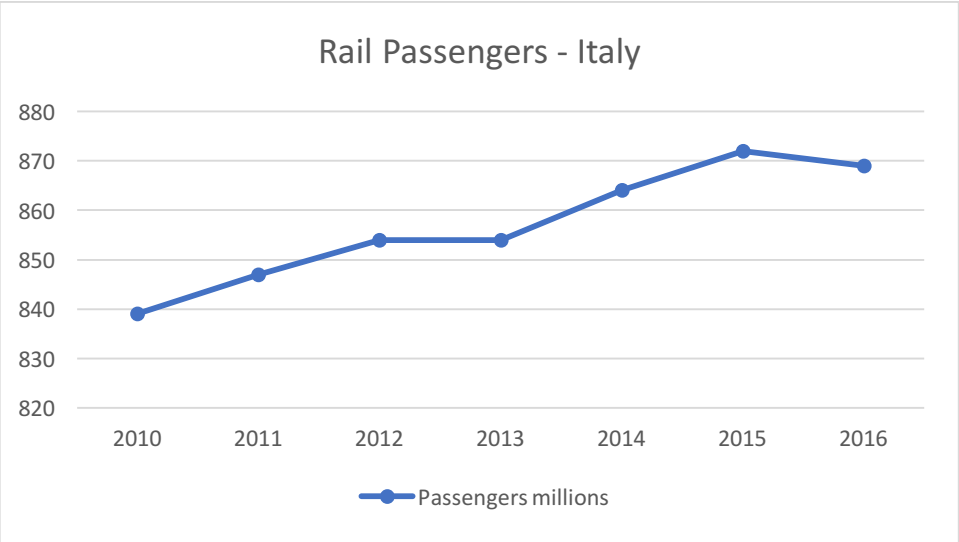
Graph: Rail vs intercity bus passengers (in millions)



Source: Statistischen Bundesamt (passengers in millions).

In Italy, as well rail services have not been particularly affected by long distance bus deregulation at least in terms of passengers' volume. Indeed, it experienced a steady growth and did not go through any major structural changes after introduction of bus services on long-distances. More than road competition, rail in Italy is facing the intramodal competition from private rail operators as *Italo- Nuovo Transporto Viaggiatori* (operating since 2012) and low-cost air carriers such as Ryanair mainly on connection between North and South.

Graph : steady passengers growth for Trenitalia rail services



Source: ISTAT

Nowadays, intermodal competition is ubiquitous. Intercity bus services face endpoint –to –endpoint competition with rail, low cost air and even ferry services. Moreover, each mean of transportations is trying to advance based on the insufficiency presented by the other (e.g. during strike rails commercial bus companies are pursuing an aggressive marketing campaign to attract customers who were unable to complete the trip by giving free rides vouchers). Such an action is recently widely adopted especially by FlixBus in the face of the frequent Ryanair strikes. Concerning low-cost air competition, an analysis conducted by Aarhaug on the Norwegian market found that the entry of the low-cost airline "Norwegian" in early 2000 coincided with a stagnated growth in express coaches. However, was founded that competition between intercity bus services and low-cost air services is accentuated only on few lines characterised by very long-distances, such competition is obviously reduced on shorter distances. Long-distance coaches reduced their offer on some lines, especially between Oslo and major cities on the west coast but there are more examples of routes which continued their service in parallel with airline service without being particularly affected. Generally, on routes above 500km intercity bus service still maintains its presence on the market but with low frequency and substantially lower passengers volumes than low-cost air

service. On connection characterised by a length over 500 km air detains a 52 percent market share while bus between 1 and 3 percent.[76]

2.7 Consequences of tariff liberalisation:

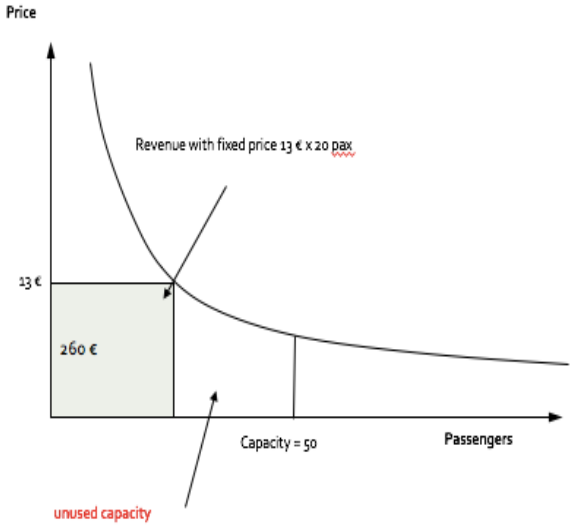
One of the main consequences after liberalisation is the absolute pricing freedom. In this chapter will be analysed how pricing has changed pre-and post-liberalisation. Regulation stringently limited the use of pricing, usually setting constraints on timetables and fare setting. The aim of regulatory policy is to obstacle the establishment of excessively low prices on the market to avoid potentially destabilizing effects. Most of the times, under the concessionary regime, the fares for rail services for medium and long distances served as a parameter benchmark for the establishment of coach sector prices. With the liberalisation, price setting is free (with the condition it respects competition European laws) and is up to the operator to set its best price technique. This brought to aggressive war fares on the market: the new comers offered relatively low average prices and made large use of campaigns with advertisings like "as cheap as one Euro". This predatory low-price ticket was adopted as a market entry strategy, mainly for PR reasons and intended to get market shares in the deregulated market.

Moreover, operators adopted advanced revenue management techniques for setting prices, which constituted a novelty for the collective transport, since trains and public bus services operate on a fixed price and generally incumbent coach operators had a rather non-flexible pricing strategies. Dynamic pricing made price setting more flexible but also less transparent. Usually, revenue management technique allows the price to vary in function of the level of demand for a specific ride: in principle the price is very low when there is still a high available number of seats and increases gradually as the capacity for the ride is saturated or the departure day is approaching. Price discrimination allows to erode the consumer's income and increase the *load factor* of every trip.[77] In other words, dynamic price is based on a vast forecasting to predict demand and other customer behaviour in

[76] Denstadli and Gjerdaker, 2011

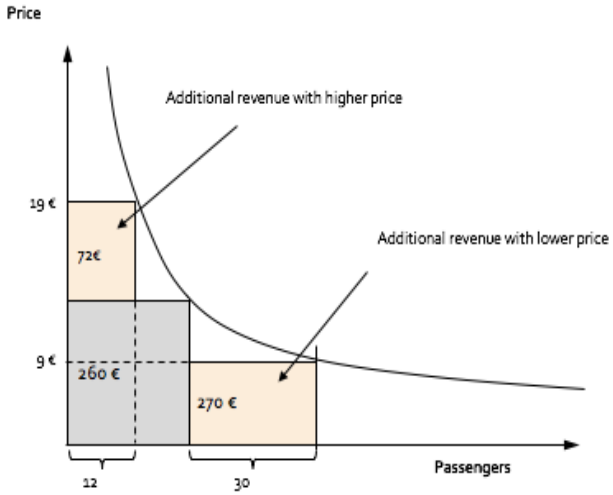
[77] A. Bergatino "Lo Sviluppo dei vettori low-cost: nuovi assetti organizzattivi e ampliamento della clientela" paragrafo struttura dei prezzi pag. 109

order to optimise attendance and price. Since customers are willing to pay different amounts for the same trip, revenue management allows to sell the right product, to the right customer at the right time and at the right price – which means that when demand is high for a determined trip the prices will increase vice versa when demand is low and availability of seats still high the prices will go down so that a better load factor can be achieved. By adjusting pricing, operators maximise their total income and their yield.



Fixed Price

- No discrimination of customer willingness to pay
- Unused capacity and lost revenue
- No optimisation of the load factor

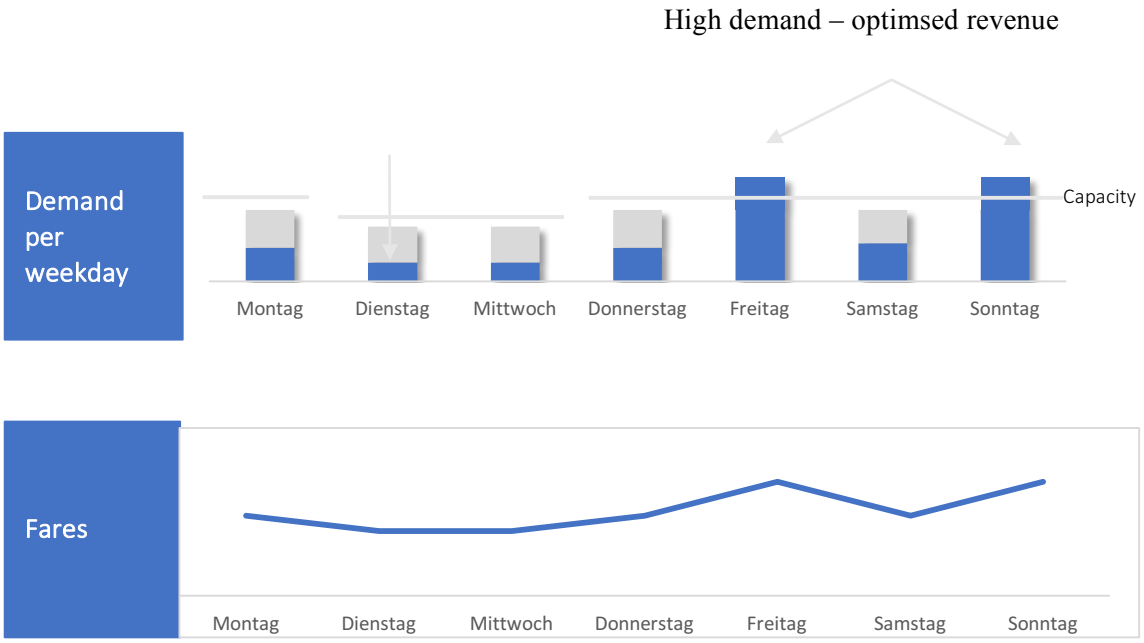


Dynamic Price

- Adjustable prices based on cutomer behaviour and seat inventory
- Additional revenue from higher and lower prices
- Increased load factor

Another parameter that defines the price and can bring further insights is the differentiation between days of the week and time of booking. Since weekends are expected to register a higher demand prices accordingly are expected to rise and

vice versa on weekdays when the affluence is lower prices will fall (same logic is applied to holidays and seasonal travel time). Time of booking also has a measurable effect on the average fare paid, it can be expected that bookings in advance are cheaper compared to last minute bookings before departure. Such pricing technique was already applied to the airline industry since the 80s and today is widespread to other industries which have the characteristic of selling a perishable good or service (hotels, e-commerce, etc).

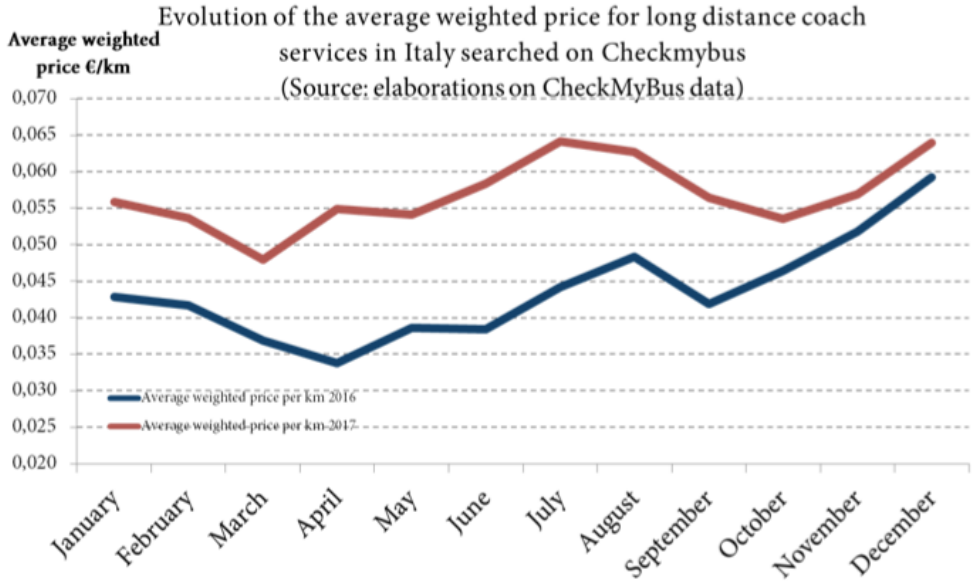


The level of fares is an important measure of both market conduct and market performance[78] in the initial phase of market liberalisation the intercity coach sector experienced a considerable fall in average prices per km. This can be mainly attributed to the initial aggressive pricing strategies of the new entries which have pushed down also the fares of the incumbent firms. Indeed, prices have decreased enormously since 2013. In Germany, the average fare decreased to about 9€cent/km and there are special offers for less than 4€cent/km. Indeed, new comers when launching new routes tend to offer the cheapest fare to attract the customer. However, on long-term after the end of promotional fares and aggressive

[78] N. Durr, K. Huschelrath, « *Competition in the German Interurban Bus Industry : A Snapshot Two Years after Liberalisation* » Discussion Paper No. 15 -062 chapter 3.3 fares pag. 11

discounts prices tend to stabilise and raise accordingly. The rise of prices can be attributed directly to the highly-concentrated market. On the provider level prices depend on the degree of competition of the route. Prices should fall with an increasing number of firms on the same route and on the contrary increase when an operator does not face competition. Based on the German market data average prices are highest if only one provider is operating on a determined route (from 0.059€/km to 0.064€/km) and decrease significantly if a second operator is operating the same route (0.055€/km) or third operator (0.049€/km). A fourth or fifth operator do not have any significant additional effect on average prices.[79] However, pricing is highly dependent not only on competition from other bus companies but from the presence of overall mobility offer on a determinate route.

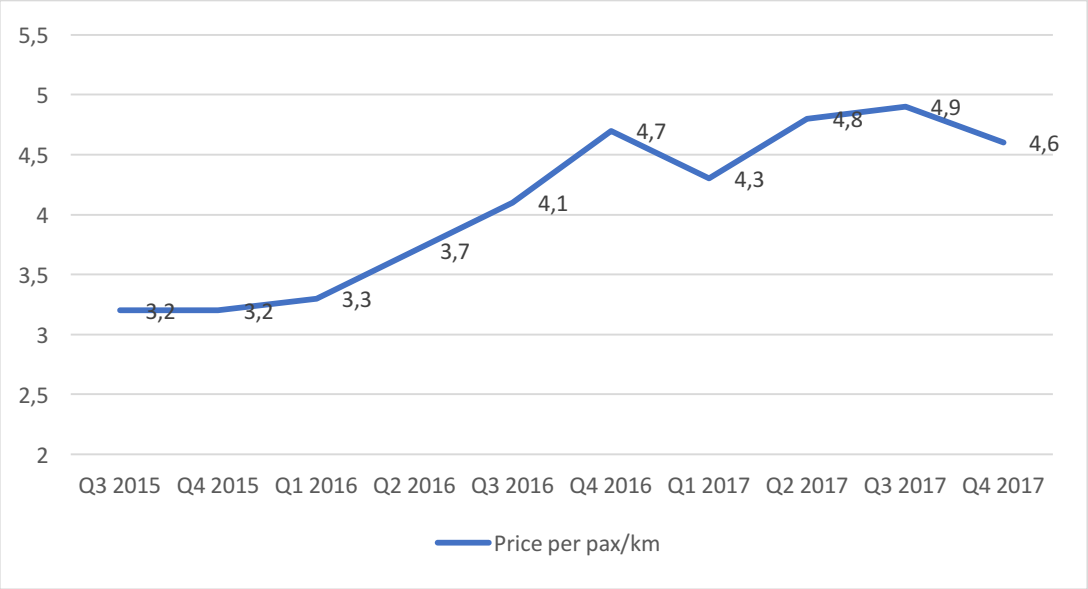
In Italy, the curve of average weighted price per km in 2017 appears higher than that in 2016 during all correspondent months. The graph shows a tendency to an increase from 0,038€/km in 2016 to 0,058€/km in 2017. The difference is most remarkable starting from April (Easter holidays and other spring bank holidays) when the tendency of the curve is opposite to that in 2016, only towards the last months of the year the two curves come closer. Which is also a sing of the growth from the demand side and the end of the initial aggressive commercial strategies as well as the end of discounted and promotional fares:



[79] N. Durr, K. Huschelrath, « *Competition in the German Interurban Bus Industry : A Snapshot Two Years after Liberalisation* » Discussion Paper No. 15 -062

Source: Checkmybus.it

On the French market prices seem to follow a similar pattern as in Italy: gradually increasing after market maturation and highly volatile based on seasonality:



Source: ARAFER

Lastly, liberalisation of intercity bus travel allowed the introduction of a cheap mean of transportation with initial low fares and aggressive discount promotions which eventually acted on the travel cost of other means of transportation as well, tending to bring prices down. However, in long term fares tend to increase in all observed markets which cab bring us the conclusion that liberalisation has not brought always a decrease in average prices but surely an increase in price variability and discounts.

2.8 Conclusions and perspectives:

In conclusion, many opportunities arise from the liberalisation of intercity coach industry, as a way to develop new services and widen the market. Deregulation has facilitated significant growth in both the number of operators and frequency of routes. Allowed a development of a wide network, incorporating not only bigger cities but also integrating smaller towns since it can offer a rather flexible network. The success of such service is validated by the large amount of passengers which makes clear the necessity of providing

innovative mobility by bus. Forasmuch, five general key outcomes can be observed in long-distance bus deregulated markets:

- **Rapid growth following liberalisation in terms of new entry, higher frequency and wider network, diversification of service types and higher comfort on board:** when entry regulation was lifted bus operators rapidly entered the market with innovative business patterns and were able to create and expand the market in a relative short term. In several countries such as Germany or France deregulation was able to create a market where there was no market before with positive effects especially concerning the service offer. Operators expanded in an organic way, starting with the core network by connecting bigger cities to then gradually expand more capillary and integrating smaller and underserved cities in their network. Also in terms of frequencies it shows a constant increase over time with few exceptions related to seasonality. However, recently the market shows signs of a certain slow-down or a less stipe increase which can be translated either in a stagnation due to high market consolidation or rather a market saturation effect.

- **Liberalisation enhance consumer welfare and wider availability of mobility choices:** Mobility by bus on long distances provides benefits to a large number of people widening their travel possibilities and choices. Impacted positively the purchasing power since they can save on travel expenses and enabled certain customers to make trips which they could not have afforded otherwise. It is a considerable contribution to social inclusion, since enhanced mobility add benefits to the whole economy of a country.

- **Liberalisation fosters intra and intermodal competition making train and carpooling fares cheaper and their standard service improve** – the introduction of coach services on long distances had a reversible effect on the rail services in all domestic markets. In response, national rail networks introduced special fares, new marketing strategies and are striving to improve their services (e.g. furnish the cabins with free Wi-Fi, sockets, air

conditioning etc.). In terms of passengers growth, data shows that coach industry was able to expand at the same time as the traffic volumes on the railways grew. Which means that the growth of coach markets has not been directly at the expense of rail markets. Indeed, intercity bus industry is able to provide a service which cannot be provided by rail even when routes run in parallel. It serves smaller markets and decisively offers a more flexible network. There are lines that are operated by bus profitably after deregulation and which before where underserved or relied heavily upon government subsidies.

- **Liberalisation increases the chance of Mergers and Acquisitions – leading to high concentrated market**. – As a rule, consolidation follows growth. Shortly after market deregulation the new low-cost entrants achieved a substantial market share through aggressive acquisition strategies. Highly concentrated markets can be worrisome since it can displace competition by using economies of scale and discouraging potential new entries. However, since bus does not exist alone but is part of wider mobility system, the presence of low-cost airlines, carpooling options and trains guarantees a wider range of competition for the intercity bus transport. Moreover, the introduction of bus services contributed at challenging these markets leading to a wider variety of affordable and qualitative travel options to the benefit of the final consumer.

- **Liberalisation brought to aggressive pricing in an initial phase with predatory pricing strategies and very low fares which eventually tend to increase and stabilise over time:** in an initial stage coach operators pursued an aggressive war fare as a market entry strategy with predatory pricing actions to gain market share and popularity among customers. They also make large use of advanced revenue management techniques which allows prices to be flexible in function of the level of demand. However, data shows that prices tend to raise in the long-term, especially if a consolidation of market takes place, but bus still remains one of the cheapest mean of

transportation. Liberalisation has not brought always a decrease in average prices but surely an increase in price variability and discounts.

From theory, it is expected that the introduction of a new service into a market will grow rapidly until it reaches a saturation and then levels off. The intercity bus market seems to follow this pattern. Indeed, the observed developments are in line with market expectations. Whether the deregulation has produced improvement of the sort predicted? Regardless of the competition outcomes and formation of highly concentrated markets often leading to monopolies, a substantial degree of improvement in efficiency and consumer welfare has occurred without doubts.

3. EMPIRICAL ANALYSIS

The aim of this chapter is to test the general effects of intercity bus deregulation on single individual routes (both domestic and cross-border). A meaningful empirical analysis has to be guided by both: theory and facts-based knowledge on single factors that can affect the outcome. To simplify the quantitative research France has been chosen as representative market of deregulation effects for several reasons: a) is the latest market to have been liberalised and includes learnings both from the German as well as from the Italian intercity bus market; b) existence of a regulatory body which asses the outcomes each quarter since liberalisation and therefore making the availability of valid data possible and reduce mistakes from estimations to the maximum extent possible. However, when available notions and insights on the German and Italian market will be also provided.

3.1 Determinants of entry in the deregulated market

In liberalised markets companies have the opportunity to optimise their entry into a particular industry, generally taking into account the available resources, possible constraints or barriers in order to operate profitably and develop a sustainable market presence. Frequently, firms have to decide on the optimal mixture of entry

strategy which can be: entering existing markets and facing competition by incumbents or entering new markets which is expected to greatly contribute to the favourable outcome for the company.[80] In the deregulated intercity bus sector it is particularly interesting to observe the determinants entry strategies since is a great contribution to comprehend the interactive and competitive processes among operators. By analysing the determinants of route entry we could come to a final completion and investigate whether operators make the choice of entering each others routes or prefer to avoid **direct confrontation**, and to what degree intercity bus operators takes in consideration intermodal competition from rail and carpooling.

In defining the determinants for route entry a firm has to take in consideration several factors among which examine the attractiveness of the market through analysing potential customers, suppliers, possible partners and existing competition. Following these assessments a company has to evaluate also its internal capabilities and own resources that will determine the ability to compete in the respective market. According to recent market entry researches, this can be reduced to two main questions: "Is entry possible?"; "Is entry profitable?" [81]

- *Possibility of entry* – an entrant has to address the problem of the possible extent of entry into a certain market and in the case of mobility beside regulatory constraints has to be taken in consideration also the access to necessary infrastructure (e.g. point and line stops, here are frequent instances of bus stops that reached their capacity during certain times of the day, therefore many operators have been forced to find alternative stops in the suburbs) network size of competitors and their respective strength on the market. Companies which operate economies of scale often intimidates and disincentives new entry.

[80] N.Durr, K. Huschelrath, "*Determiants of entry in the deregulated German interurban bus industry*" Industrial and Corporate Change, Volume 27, Issue 3, November 2017

[81] Muller et al (2012)

- *Profitability of entry* – profitability is a key determinant in the decision to enter a market and closely connected to the entrant's expectation about the conduct and performance of other firms on the same market. Moreover, profits immediately after entry are not a necessary condition for a rational entry decision but rather the expectations of *market growth* which can promise ample profits in the future. Likewise, routes which are expected to be most profitable are entered first, independently of the number of operators on that route.

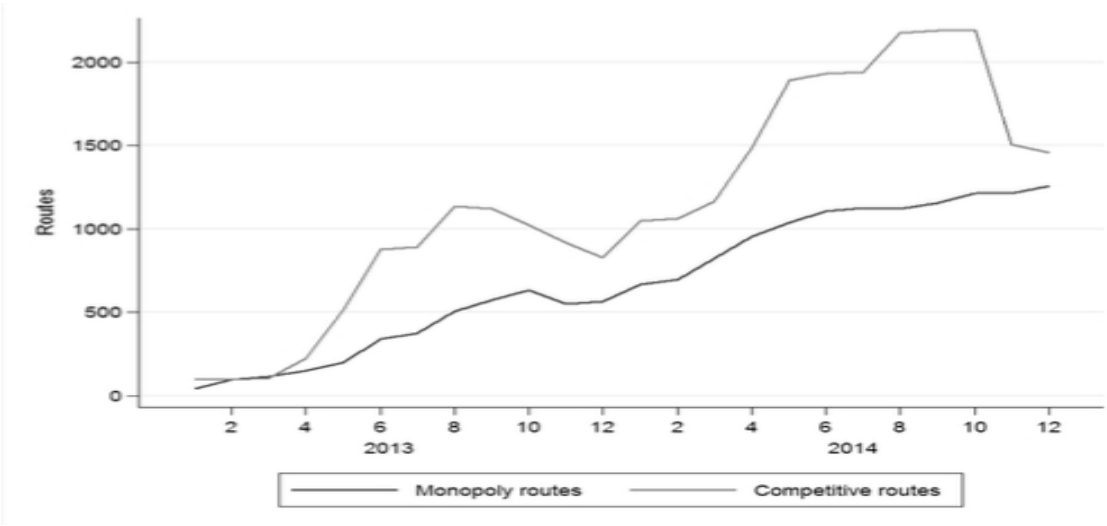
In other words, in absence of entry barriers it is expected that entry decisions are guided primarily by the profits expected to be earned. It is reasonable to assume that entry decisions by interurban coach operators is interdependent between mainly four key features:

1**) The presence and characteristics of competitors** – a high presence of other companies in the same market reduce profit expectations also because it is expected to pressure on the service price. Therefore, this might suggest potential limited revenues and determine a rather negative relationship with entry. However, it depends on market dimensions: large markets offer greater revenue potential and allow more than one operator to be profitable. In this case, the presence of other competitors is expected to have a moderate negative effect on the probability to enter a large market. Although, it is quite reasonable to analyse the characteristics of the competitor on the market. While there is a tendency to think that the quality service cannot differ much among long-distance bus providers, such differences can be accentuated in terms of size, power and degree of competitive interaction of a certain operator in the sector. Hence, the probability of entry is subject to the characteristic of the route and the characteristics of the competitor already present on that determined route: strong competitors are expected to be avoided in small markets, but attacked in larger markets since the possibility of positive profits is highly likely and normally those routes constitute the backbones in the construction of a national or international network.

In the first two years of liberalisation, can be observed the development of monopoly and competitive routes. In Germany, in the year following the

liberalisation the number of monopoly routes show a constant growth trend, while the number of competitive routes show a more volatile growth over time even though the offer is substantially larger than the monopoly routes:

Figure : Number of served monopoly and competitive routes in Germany

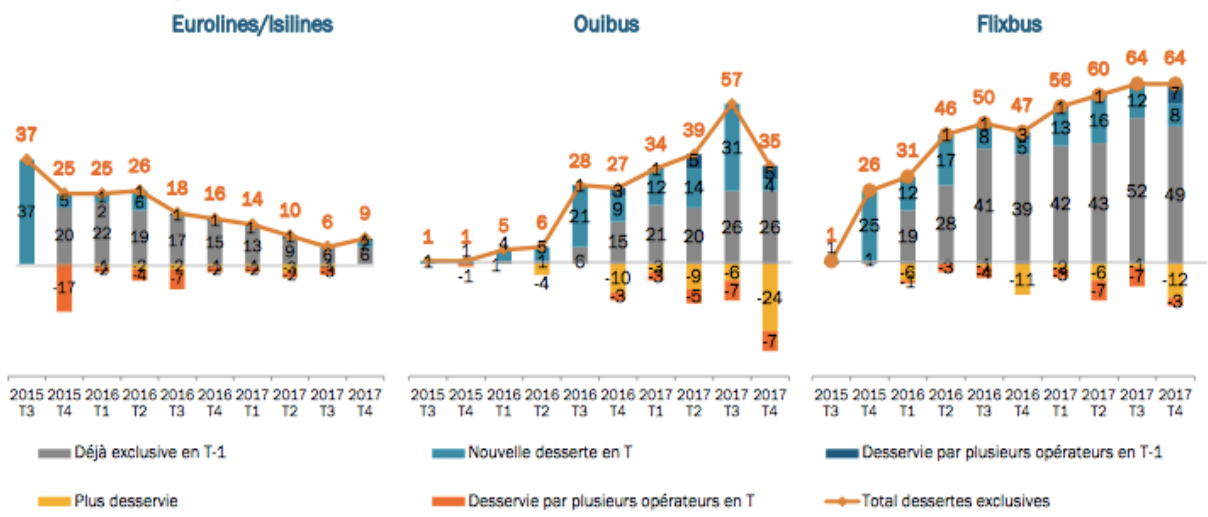


Source: Durr et all, elaboration based on Simplex mobility data.

However, is worth noticing that the majority of compettitve routes are operated by only two providers (40%), and only 6%, 5% and 2% served respectively by three, four and five or more providers. Results in the successive years to liberalisation are not representative since the mergers and acquisition of competitors alterated the German market resulting in almost absolute exclusivity for one operator.

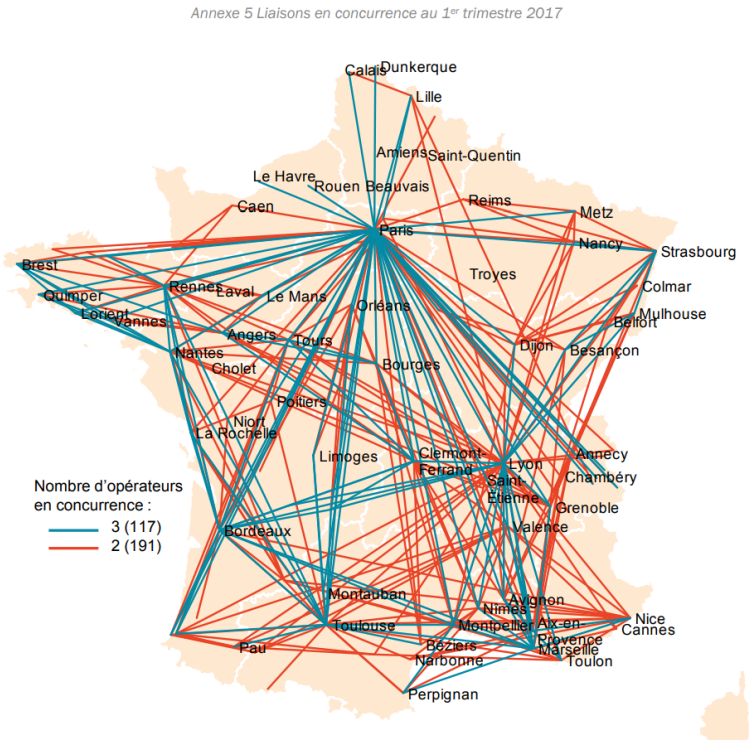
In France, about 55% of cities are served in exclusivity by only one operator (which makes 168 cities in total – of which 40% served by FlixBus, 39% by Ouibus and 5% by Isilines.

Figure: quarterly evolution of exclusive cities served by the three main operators in 2017



Source: ARAFER

FlixBus as a storng operator therefore with the highest share of exclusive routes. (map of backbones connection have 3 or 2 competitors).



Source: ARAFER

2) **Spatial structure** – variables concerning spatial structure can also greatly influence the decisions of market entry. This can be determined whether a provider

is already present in origin or destination location – this can also add to the organic growth of an already existing base of customers for new routes from those determined points. In other words, entry decisions are highly guided by the already existing network of the provider and its further expansions plans from those points. The distance from the highway from a respective city can also influence an entry decision, since the closer is the highway the lower are the costs for serving a determinate route both in terms of fuel consumed and time incurred by the trip. Moreover, is worth accentuating that intercity coach services is characterised by fewer stops compared to local bus services therefore providers first identify major relevant routes connecting large cities and subsequently decide whether and where to stop along the route serving smaller cities by connecting larger ones and thus contributing to the development of a more expansive and integrated network.

3) **Demographics** – drivers for market entry are surely influenced by the market size in terms of inhabitants – the more populous a city is there more chances are that a bus provider is likely to enter the market independently of other competitors –since it is assumed that there is a sufficiently large share of potential customers. However, is not important only the number of the inhabitants but also its characteristics: cities with a high number of students and dynamic structure in terms of population income that might not own a private car or dispose of sufficient economic means are more likely to be entered. On the contrary, cities with a large share of population with high income reduces the likelihood that a sufficient share of customers exist for the bus market considering that they might own a car or prefer a rail service. Finally, particularly important is the share of tourism for a particular destination. For instance, many touristic attractive points are not served by rail network therefore bus has a great opportunity to enter successfully those markets.

4) **Mode characteristics** – the presence of an airport can have a significant impact on entry decisions. Certain airports are not well connected to the railway network (usually they are far from the city centre) therefore is a good occasion for the bus sector to have a successful route. And second mode characteristic is of course, the

quality of existing railway connections. Bus gains in attractiveness if a poor railway network exist that might imply many train changes on a determinate route (particularly in France for instance many railway routes have to pass through Paris, making the trip excessively burdensome).

Conclusively, we can assume that intercity bus operators show increased probability to enter a market which presents the characteristic of possible populous routes with a large share of young inhabitants. In terms of competition, in large markets entry probability is increased independently of the presence of other providers but in small-and medium size routes operators largely refrain from entering if that route is already served by another strong competitor. Therefore, in the long-term strong competitors build a rather dense exclusive network mainly between small and medium sized cities while the backbone routes remain under competition.

3.2 Analysis of intercity routes development on the French market

Based on data elaborated by Blayac et al[82] it is particularly interesting to investigate the dynamics of intercity bus routes shortly after deregulation in order to test the expected theoretical outcomes from the market. To provide a representative picture of the evolution of the French coach market after liberalisation a selected number of routes has been analysed based on rationale selections criteria and further interpreted results. Data was collected between August 20, 2015 (start of intercity bus liberalisation in France) and June 9, 2016 for a total of nine months.

3.2.1 Route selection criteria

The selection criteria used are based on several route characteristics in order to gain exhaustive insights and test the assumption described in the chapter

[82] Blayac T., Bougette P. Université de Montpellier, UMR Lameta, Faculté d'économie "Should I go by bus? The liberalisation of the long-distance bus industry in France"

above. First criterion is distinguishing between new domestic routes established thanks to the enactment of Loi Macron (Montpelier –Bordeaux; Montpelier – Lyon, Lyon – Nantes, Lyon – Strasbourg, Lyon-Paris) and cross border routes for which domestic regular services were already allowed before deregulation in the context of international coach cabotage, therefore with strict restrictions (Montpellier – Barcelona, Montpellier – Milano, Lyon – Torino; Paris – Lyon). In this way, we can asses the outcome of newly established domestic routes as well as the effects on routes which probably were already more familiar to the travellers but since liberalisation free of any cabotage restrictions (it is also a particularly interesting situation for studying the possible effects of a partial liberalisation).

The second criterion for the line selection is related to the specificity of the spatial organisation of transportation network in France, which is star-shaped around Paris and is a heritance of its imperial development. This implies that contrary to rail the bus services can provide direct province to province routes by bypassing Paris: this is the case of the following routes: Lyon-Nantes; Lyon-Strasbourg for which there is no direct connection by train. Distance is another important feature since influences the consumer choice when faced with other alternative modes of transport. In this analysis different distances have been taken in consideration in order to have a clear overview

Short-medium distances of an average of 300km: Montpellier – Lyon, 303km; Lyon-Torino, 312 km, Montpellier – Barcelona, 340km.

Medium distances of an average of 500 km: Montpellier – Bordeaux, 490km; Lyon – Strasbourg 500 km; Lyon – Paris 460 km; Paris – London, 470 km.

Long distances of an average of over 600 km: Lyon – Nantes, 680km; Montpellier – Milano, 650 km.

Finally, based on the DATAR rankings of European cities, the attractiveness of the cities connected is also taken in consideration. Such index refers mainly to the city's economic potential, urban population and population structure (age, share of young adults and seniors:

Table 7: Characteristics of cities involved in the analysis

Parameters	Barcelona	Bordeaux	London	Lyon	Milano	Montpellier	Nantes	Paris	Strasbourg	Torino
GDP[83]	145	38	623	74	413	29	35	623	44	69
inhabitants	1.620	246	8.825	**521**	1.368	**589**	300	**2.206**	276	886
Area(10sqm)	5.5	10	18.9	8.8	14.6	6.3	8.9	16.9	6.8	10.4
Ranking of metropolitan areas	75	39	96	52	72	33	38	100	41	47
Young adults	8.9	16.6	9.4	15.8	7.7	18.1	15.9	13.6	16.4	8.2
Seniors	9.3	7	7.4	7.3	12.0	7.5	7.1	8.0	7.2	12.1

Source: updated numbers based on Blayac T., Bougette P. Université de Montpellier research

3.2.2 Descriptive observations on selected routes

From the data observed in the Table 8 it can be confirmed that on routes connecting cities with a high economic potential operators face high competition and do not restrain themselves from entering that route even if threatened by competition. For instance, on the route Lyon – Paris which are the two biggest poles in France there are on average five different intercity bus companies, making it the most contestable route: considering the competitive framework which has been established in France after liberalisation all new entrants were offering this route since liberalisation in 2015 until June 2016 (Starshipper, Megabus, OuiBus, Isilines and FlixBus). This outcome is reflected also on the number of frequencies with the existence of at least 25 daily departures from Lyon to Paris by bus. The second route from the analysed ones to face a fierce competition is Montpellier – Lyon where on average at least four operators provide this service daily. Same characteristics can be taken in consideration based on its economic attractiveness and high number of inhabitants however the number of frequencies is considerably lower with respect to Lyon-Paris route (4.95 vs 25.19) this indicate the discrepancies between Paris as a central metropolis and the other secondary cities. The high competition in terms of a high number of operators entering the route can be also explained as part of a

[83] GDP in millions referred to 2012 from wikipedia list of gross domestic products in EU metropolitan areas

wider network Montpellier – Lyon – Paris, therefore all operators provide a service connecting Montpellier with Paris by connecting Lyon in between but since its sizable distance frequencies are substantial lower. Furthermore, it is detectable that the respective two routes Lyon – Paris and Montpellier – Lyon have the highest revenue per passenger kilometre beside the high competition – confirming that large markets do not prevent from attaining profits even when is shared with several competitors. On the other routes as for instance Lyon –Strasbourg and Lyon – Nantes the revenue is much lower notwithstanding low competition: respectively 0.028€ pax/km facing 2.4 competitors and 0.030€ pax/km facing 1.8 competitors.

The monopolistic position of the national rail SNCF can be validated by having only one train operator on every route. Carpooling has the highest frequency offer (implied also as total number of competitors) and follows the pattern of the intercity bus offer, Lyon-Paris is the route with the greater offer followed by Montpellier – Lyon. However, the bus appears to be the cheapest mean of transportation on absolutely all routes but this can be conducted to the initial aggressive pricing strategy to induce demand for the new routes services. On the other hand, train appears to be the most expensive mean of transportation but also the fastest connecting long-distances in less than half of the time compared with an intercity bus journey. The train daily frequency offer is also higher compared to the bus only the route Lyon-Paris can be comparable in terms of frequency.

Table 8: Overall average results of new domestic routes concerning frequencies, travel time, number of providers and consequent HHI Index and revenue per pax/km

Parameters	Mean of transp.	Montpellier Bordeaux	Montpellier Lyon	Lyon - Nantes	Lyon Strasbourg	Lyon - Paris
Daily Frequency	Bus	3.86	4.95	2.58	3.49	25.19
	Train	6.47	15.02	4.05	6.67	25.86
	Carpooling	16.47	30.86	7.49	9.49	52.21
Travel time	Bus	7h17	4h40	11h15	7h46	6h55
	Train	4h32	1h53	4h35	3h50	2h07
	Carpooling	4h56	3h19	6h54	4h51	4h28
N°of operators	Bus	2.12	4.42	1.88	2.42	5.40
	Train	1	1	1	1	1

	Carpooling	16.47	30.86	7.49	9.49	52.21
HHI Index	Bus	average	low	average	low	Very low
	Train	1 (high)	1 (high)	1 (high)	1 (high)	1 (high)
	Carpooling	low	low	low	low	low
Avg. revenue per pax/km	Bus	0.032	0.040	0.030	0.028	0.037
	Train	0.109	0.148	0.135	0.132	0.140
	Carpooling	0.062	0.060	0.059	0.060	0.058

Source:Bougette P. Université de Montpellier and own elaboration

However, overall results do not portray the change over time. To better understand the evolution of deregulation effects it is necessary to divide the period of the study in two slots of equal length of time and carefully analyse the variations of frequencies, number of competitors and the revenue per pax/km of the intercity bus offer. The timeframe is devided as following:

- First period is from August, 2015 to January 2016 (initial phase of deregulation)
- Second period from February to June 2016.

On the rote Lyon – Paris the expected deregulation effects are well visible: frequency increased considerably as well as competition and fares sensibly decreased– so we can assume that on attractive routes the deregulation effects proved to be valid. However, on route Montpellier – Lyon which in the overall results showed positive results, by analysing the evolution results it can be noticed that the expected deregulation effects proved wrong. Indeed, service frequency decreased, as well as the number of operators serving this route. Prices generously increased which can be a direct consequence of reduced competition on the route. Concerning prices the seasonality effect has to be taken in consideration, with the exception of the route Lyon - Paris and Montpellier – Bordeaux all other connections sees the average price increase in the second period independently of the presence of competitors on the same route. Such results can depend on the fact that the second period covers spring and summer months which are usually tending to increase prices since more travel demand is expected. On Lyon –Nantes route competition almost doubled but

nonetheless revenue is increasing and same pattern can be observed on Lyon – Strasbourg route.

Table 9: Evaluation of the evolution of effects after deregulation depending on parameters such as: frequencies, number of competitors and revenue per pax/km on domestic new routes:

Route:	Parameters	T1	T2	Evolution	Comments
Lyon- Paris	Frequency	19	32.14	+69.15%	Higher frequency
	Competitors	4.62	6.29	+36.14%	Increased comp
	Rev pax/km	0.038	0.036	-5.26%	Lower fares
Montpellier Lyon	Frequency	5.38	4.57	-15.05%	Decreased freq.
	Competitors	4.86	4	-17.69%	Decreased comp
	Rev pax/km	0.034	0.046	+35.29	Higher fares
Lyon-Nantes	Frequency	1.71	3.52	+105.84%	Increase frequency
	Competitors	1.33	2.48	+86.46%	Stronger comp.
	Rev pax/km	0.024	0.038	+58.33%	Higher fares
Lyon-Strasbourg	Frequency	2.71	4.38	+61.62%	Increased freq.
	Competitors	1.81	3.10	+72.22%	Increased comp.
	Rev pax/km	0.025	0.033	+32%	Higher fares
Montpellier Bordeaux	Frequency	2.86	4.90	+71.32%	Higher Frequency
	Competitors	1.43	2.86	+100%	Stronger comp.
	Rev pax/km	0.033	0.031	-6.06%	Lower fares

Source: Blayac T., Bougette P. Université de Montpellier research

Analysing the already existing international lines can allow us to understand the relaxing effects of cabotage restrictions and complete integration of international lines into domestic ones. Compared with the cabotage circumstances, liberalisation allows bus operators to undertake trips anywhere in the country with the only condition of 100km distance between two stops and the former restriction of 50% of passenger for domestic routes is not persistent anymore, therefore international routes are mixed into the domestic network with no particular restriction. This should lead to the increase in bus load factors for international routes and also to

the boost of their attractiveness for operators. Therefore, a higher competition is also expected as well as lower fares.

As can be observed from the data, the highest frequency is registered on the route Montpellier – Barcelona. This is definitely due to the proximity between the two cities and the fact that the route is served mainly by Spanish operators rather than newly established French ones (the route Lyon –Torino counts even less in terms of travel time but the daily frequency is not that prominent as for Montpellier – Barcelona and can be explained with the fact that Barcelona is ranked higher in terms of economic attractiveness, therefore more movement is expected from and towards Barcelona rather than from Torino). As already stated for the domestic lines the route connecting major cities with highest economic potential (e.g Paris-London) presents the highest frequencies and highest number of operators in competition. However, the revenue per passenger kilometre results to be the lowest on Paris-London due to the fierce competition which pushes prices down. Indeed, the route Montpelier –Milano has the highest fare for the bus service and also the lowest competition between providers. In addition, compared to the chart for domestic lines it can be noticed that cross-border lines doubles the price of the service. For instance, Lyon – Nantes takes more than 11h of travel time and a revenue per passenger km of 0.030 while Montpellier- Milano which takes more or less the same amount of time the revenue per passenger km raises to 0.132€. The border effect can be noticed on all lines and is from two to four times higher on average compared with domestic lines which take the same amount of travel time. No border effect is noticeable in the carpooling offer, revenue per passenger km seems rather stable and in accordance to the km travelled independently of domestic or international destinations.

Table 10: Overall average results of existing international lines under cabotage context.

Parameters	Mean of transp	Montpellier Barcelona	Montpellier Milano	Lyon - Torino	Paris - London
Daily frequency	Bus	45.23	4.05	9.51	21.14
	Train	3.91	4.26	1	15.67
	Carpooling	NA	1.27	3	3.63

Travel time	Bus	6h17	10h59	4h53	8h44
	Train	3h01	10h	3h53	2h26
	Carpooling	NA	7h	3h42	5h23
N° of operators	Bus	6.05	2.58	4.77	4.40
	Train	1	1	1	1
	Carpooling	NA	1.27	3	3.36
Avg. revenue pax/km	Bus	0.130	0.132	0.092	0.072
	Train	0.202	0.265	0.199	0.378
	Carpooling	NA	0.062	0.066	0.083

Source: Blayac T., Bougette P. Université de Montpellier

The international bus market seems to better reflect the expectations of a deregulated market. Indeed, all routes show an increase in frequency and lower fares in time. However, observing the evolution effects the rotes Montpellier – Barcelona and Montpellier - Milano do not seem to be greatly affected by the liberalisation process: prices only sensibly decreased and competition even registered a decrement. On the contrary, Lyon –Torino and Paris – London have experienced a substantial increase in frequencies and have seen prices decline even though competition increase is rather moderate.

Table 11: Evaluation of the evolution of effects after deregulation depending on parameters such as: frequencies, number of competitors and revenue per pax/ on international routes:

Route:	**Parameters**	**T1**	**T2**	**Evolution**	**Comments**
Montpellier Barcelona	Frequency	43.71	46.76	+ 6.97%	Higher frequency
	Competitors	6.10	5.95	- 2.45%	Decreased comp
	Rev pax/km	0.131	0.128	-2.29%	Fares down
Montpellier – Milano	Frequency	3.76	4.33	+15.15%	Increased freq.
	Competitors	2.67	2.43	- 8.98%	Decreased comp
	Rev pax/km	0.133	0.131	-1.50%	Fares stable
Lyon-Torino	Frequency	7.29	11.86	+62.68%	Increase frequency
	Competitors	4.57	5.00	+9.40%	Stronger comp.
	Rev pax/km	0.101	0.080	-20.80%	Lower fares
Paris - London	Frequency	20.90	21.38	+2.30%	Increased freq.
	Competitors	4	4.81	**+20.25%**	**Increased comp.**

	Rev pax/km	0.081	0.063	**-22.22%**	**Lower fares**

Source: Blayac T., Bougette P. Université de Montpellier

3.2.3 Further analysis of intermodal competition

Travel modes comparison which compete with intercity bus services on the same routes. Concerning the average revenue per passenger/km, it varies widely from 0.034€/km to 0.261€/km depending on transportation mode. Domestic bus services appear to have the lowest average revenue per passenger km and thus the most economic mean of transportation. Train, on the other hand is clearly the most expensive travel mode for domestic and international routes. It can be also noticed that unlike the train and bus, carpooling does not show a remarkable border effect.

Table 12: Average revenue per passenger km according to mode of transport for domestic and international routes

Mean of transp.	Overall	T1	T2	Evolution
Bus domestic	0.034	0.031	0.037	+ 19.35%
Bus international	0.106	0.112	0.101	- 9.82%
Train domestic	0.133	0.135	0.131	- 2.96%
Train international	0.261	0.261	0.261	unchanged
Carpooling domestic	0.060	0.060	0.059	-1.66%
Carpooling international	0.072	0.076	0.068	- 10.53%

Source: Blayac T., Bougette P. Université de Montpellier

Based on this analysis intercity bus services and carpooling appear to be better substitutes than bus and rail in terms of fares and travel time. This is surely due to the fact that car sharing is quite popular in France and has been growing strongly thanks to platforms as BlaBlaCar[84] also in the years prior to the advent of long-distance bus travel. Therefore, the two modes of transportation are in strong competition. However, carpooling offer is also concentrated on major hubs rather

[84] BlaBlaCar – is an online platform that organises private shared rides by putting in contact offer and demand. It is a rather developed community with more than 10 millions of trips per quarter and present in 19 countries across Europe.

than between small towns and is less ecological than bus as a collective transport service.

3.3 Findings and Conclusion

The expected effects of deregulation can be observed on certain routes and less remarkable on others. The outcome of deregulation on the selected French routes is rather mixed and can present distinct market cases:

- *Cases where expected results from deregulation occurred* – (Lyon – Paris; Montpellier – Bordeaux, Paris – London, Lyon - Torino) as can be expected relations connecting major cities met immediately all the expected deregulation effects. This is mainly due to the reason that all operators provided such routes regardless of the presence of other competitors, creating a dense network characterised by high frequencies and low prices since new entries always strived for setting the lowest fare on the market.
- *Cases where expected results from deregulation only partially occurred* - (Lyon –Nantes; Lyon – Strasbourg) despite the increase in daily frequencies and competition on these routes it seems to not have reduced prices. But as stated before the analysis requires to be carried on a larger spam of time since immediately after deregulation all operators were practising very low prices to generate demand for this new service. Therefore, more accurate results would derive from a subsequent analysis after the initial promotional phase is terminated.
- *Cases where deregulation did not produce the expected outcomes* - (Montpellier – Lyon and Montpellier -Milano) these two routes did not show any particular effects after the introduction of competition: no increased competition, no price cuts nor any increase in frequency.

Interesting to note is that relaxing quantitative restrictions on international routes which were under the prior cabotage regime has met all the expected results in terms of lower fares, new entry, higher frequency and higher quality. Therefore, liberalisation did have a positive outcome on those lines which are not new in the market but decisively more free in terms of operation. Concerning domestic lines, the market is still very young with newly created routes and in need of stabilisation.

However, most of the expected outcomes from deregulation can be observed with the exception of reduced fares – that's mainly because operators enter the market with aggressive pricing to then increase the fares once the customer becomes more accustomed with the service. The fare increase, at least at this stage cannot be attributed to market concentration since data shows that even on routes where competition grows prices are raising in any case. A nine-month period of analysis immediately after the introduction of liberalisation needs future evaluations and a more extensive investigation over a longer period of time in order to capture further deregulation effects.

However, some key outcomes stand out which illustrate the trends going in the long-distance bus sector after the introduction of liberalisation:

1. Initially all operators enter networks connecting major cities with high economic potential and high share of young population since it eventually translates in a high expected travel demand. This network is most of the time directly in competition with the railroad. After the earlier development however coach network appears in greater expansion which is generally spurred by a desire to fill in the gaps in the system and improve connectivity through intermediate stops. Operators choose to serve middle to small towns based on their spatial geographic position by connecting the major hubs. This is mainly possible thanks to the high flexibility with which the bus network can be adapted and by virtue of the extensive highway and road network. Indeed, the capillarity of the road infrastructure is a key element allowing bus operators to extend their network rapidly and seamlessly.
2. Operators enter the market with aggressive pricing strategies only for a short period of time to stimulate demand and make customers accustomed with the new service. Over time, prices tend to increase quickly but bus still remains the cheapest mode of transportation for domestic and international trip destinations
3. Shortly after deregulation a race for market share takes place which brings to an intense use of mergers and acquisitions as a way to grow the business. This strategy can affect the market in terms of competition but so far no particular distortions on the pricing and service quality is observed.

4. Concerning intermodal competition from the French data market analysis can be deduced that long-distance bus service introduced a fierce competition with carpooling with whom is rather substitutable in terms of pricing and transportation time rather than with rail.

Conclusion

Currently, the intercity bus industry finds itself on a frenetic growth trajectory which brings to the industry a great deal of attention. After almost five years of market liberalisation major impacts can be noticed in terms of supply, demand, competition and service quality that resulted from the transition from exclusive licenses to the authorisation one (or declarative in the case of France). Liberalisation has given immediately a big boost to the sector, reviving travel by coach across Europe and incentivising many forms of start-ups to enter successfully such market. Based on recent developments travel by bus on long distances had a major impact on the way people see and use this service. In many regions is a "new-way" of long-distance transport which has seen a significant growth of users, especially in Germany, France and Northern Italy marking an important revolution in the sector. The introduction of travel by bus has facilitated mobility especially among the already fragile strata of population characterised by low budget and higher availability of time such as students, pensioners and unemployed people. Cheap opportunities of travel is a fundamental contribution to social inclusion guaranteeing access to mobility to everyone. Therefore, from a social point of view the opening of the market to this long underestimated mean of transportation was a necessary act. As could have been expected, after the lifting of regulation barriers followed a rapid growth characterised by new entries, diversification of service and improved quality of service. Such growth was mainly drove by new actors and mainly start-ups rather than the incumbent bus operators, who missed to see the opportunity in the newly emerging sector. The emerging operators entered the market with innovative business formulas which allowed them a rapid expansion and reformulated the organisation and the position of small and medium bus companies integrating them in a wider network through partnerships and cooperations. Currently, the market is witnessing a conspicuous market consolidation under one brand (FlixBus) which was achieved through aggressive

and rapid strategies of mergers and acquisitions. Such behaviour can result worrisome since it could displace competition in the sector but the benefits in terms of service output deriving from economies of scale have to be taken in consideration as well. Moreover, the intercity bus sector even if concentrated acts as a perfect contestable market since it does not operate in isolation but is integrated in a wider transportation network.

Since the market is still in expansion it is quite early to give a conclusive verdict about this revived sector. However, several insights can be deduced into **what can be expected to affect the sector over the next several years based on the current trends:**

- **Developments and improvements in route planning**: operators will continue to expand their network involving always more secondary routes in addition to the busiest corridors. This trend suggests that there is a growing optimism concerning the financial payoff of increasing capacity on the market and that ultimately will manifest through more expansion.
- **Emergence of booking aggregator sites and e-ticketing platforms**: characterised by increased efforts by tech oriented start-ups to use innovative strategies to be able to make shopping for bus services much easier and mostly convenient. Not only offer a comparison shopping but also create crowdsourcing and dynamic scheduling by allowing passengers to freely switch between departures with minimum effort combining more than one brand to complete one trip. Such characteristic will allow buses to compete even more effectively and close the gap with rail and airline sector.
- **Strategic tech-oriented moves:** liberalisation changed the image of travel by bus. Incremental tech-oriented measures emulate in many ways to the service provided by airplanes. E-ticketing is likely to become even more widespread and an industry standard, which is highly adaptable to the present mobile generation. Seat reservation, bus tracking and life travel information about delays or cancellation are bringing the service to the new century. Expansion of premium services such as business class, first class, reservation of special front panorama seats or even overnight sleeper service (e.g. a company offering such service was launched in the U.S. Cabin which

describes itself as a moving hotel, having private sleeping cabins which allow customers to lie on beds while disposing also of comfortable lounges with conventional seating).[85] Therefore, is expected a substantial growth of business-class and luxury bus services.

- **Intermodal cooperation and partnering** with different transportation providers such as Blablacar or Uber to offer a door to door service with only a single booking. Or even with public urban bus services as a guaranteed feeder line system. Vertical integration from several bus companies and other transportation operators can be expected as their objective is increasingly leaning towards offering the most comprehensive offer to customers: the ultimate one-stop-shop product.

All these points suggest that a previously long time sleepy industry has still much to offer if correctly incentivised and will most probably continue to thrive and expand contributing to create an even more complex and competitive transportation market in Europe.

[85] P. Joseph, B. Antolin "Driving Demand" 2018 Outlook for the intercity bus Industry in the United States, January 29, 2018

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