

## An analysis of the railway access charges regime in the Italian context

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### ABSTRACT

An appropriate access charges regime represents the basis for implementing an open market and for guaranteeing fair competition in the rail sector. In accordance with the recent European and national legislations, the Italian rail infrastructure manager has lately presented a new charges scheme with a better cost orientation and a deeper market segmentation based on the ability to pay. This paper describes and compares the new and the previous regimes, presenting a case study on selected Italian corridors. Interesting insights are added by applying a data envelopment analysis to rank the efficiency of the rail segments considering the different standpoints of three stakeholders: infrastructure manager, rail operators and rail regulator.

The results of the case study, beside showing different patterns by applying the two charges schemes, suggest that high-speed services may better respond to the needs of infrastructure manager and rail regulator while the rail operator's perspective ranks better short connections by regional trains (especially under the new regime). This evaluation framework could help policy makers, transport authorities or railway stakeholders to identify where and how benefits could be gained or lost and by whom.

### 1. Introduction

In the last decades several countries worldwide, following the path traced before by the United States, have gradually moved from vertically and horizontally integrated public infrastructure services (i.e. electricity, gas, telecommunications, airports, ports, rail transport, etc.) towards the privatization of the related sectors (Coelli et al., 2003). However, in both industrial and developing countries, the process is proving to be tougher than expected, especially for those industries whose market structures inherently limit entry and can lead to concentration or monopoly (e.g. railroads, airlines, etc.).

In relation to privatized infrastructure industries, in fact, one of the main governments' goals is to foster a competitive environment and, where competition is limited, the regulation debate focuses on the pursuit of efficiency. Whilst monitoring the market, new regulators should ensure that efficiency gains from potential or effective competition are shared fairly between operators and users. Indeed, two of the major theories trying to explain the existence of economic regulation are consumer protection and industry protection. Whereas the former (see Posner, 1974) embraces the traditional and ideal view of regulation as a device for protecting consumers against the adverse effects of monopoly (i.e. maximizing social welfare by correcting market failures), the latter

(see Stigler, 1971 or Peltzman, 1976) considers that regulation is procured by politically effective groups (within the regulated industry) for their own protection (i.e. to generate economic rents). Hence, it is evident the need and the increased interest in adequate quantitative tools to evaluate gains from potential or effective competition for all the involved stakeholders (e.g. users, producers, operators, etc.). For this purpose, the scientific and technical literature (see for example Coelli et al., 2003) has already explored and proposed several measures of relative efficiency or historical productivity growth, together with methodologies for setting price caps or incentive-based regulatory mechanisms (such as yardstick competition).

In relation to the rail sector, the separation of infrastructure from operations not only adds a further entity (infrastructure manager) to rail operators, but even raises the issue of fair and non-discriminatory charges for the use of the infrastructure (e.g. Nash et al., 2004). Focusing on Europe, for example, after more than a decade since the first fragmented attempts to propose charge schemes taking in account several factors, such as infrastructure and train characteristics, mix of traffic, scarcity of capacity, energy consumption, environmental costs, etc. (see Nash et al., 2004; Nash, 2005; Nikolova, 2008; Ciuffini et al., 2012), nowadays European Member States are moving towards more uniform, detailed and comprehensive access charge regimes under the

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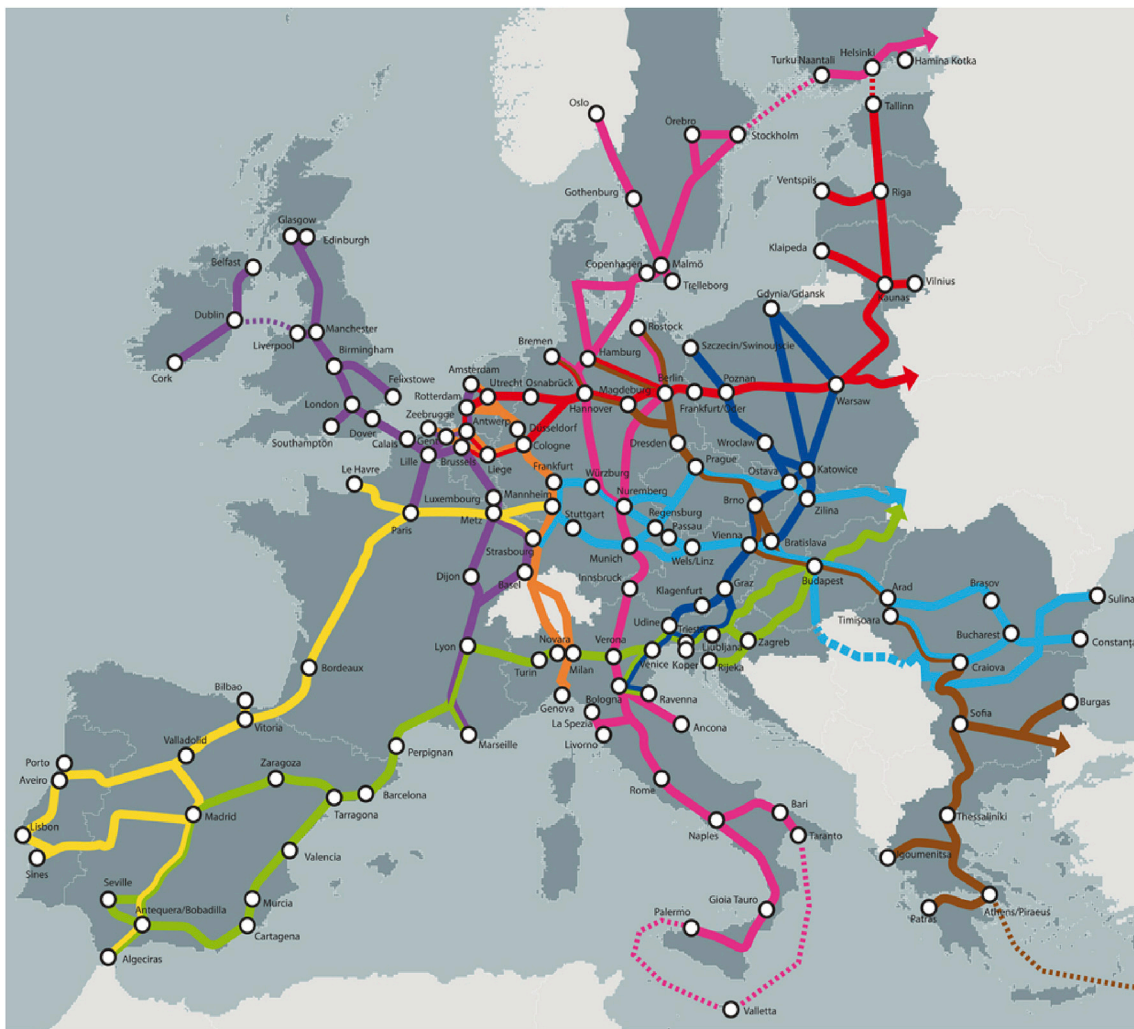


Fig. 1. Trans European-Transport Network (source: European Commission website).

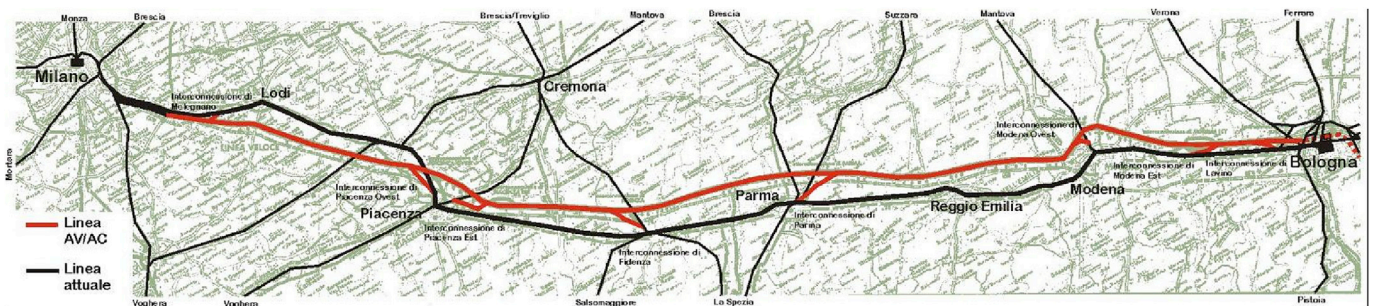


Fig. 2. HS/HC line between Milan and Bologna (source: RFI website).

guidance of the Community objectives and related directives.

This article outlines the differences between the previous and the recently adopted access regime in Italy, also evaluating their impacts for the different involved stakeholders. Specifically, a data envelopment analysis is applied to rank the efficiency of different rail segments considering the standpoints of infrastructure manager, rail operators and rail regulator. Indeed, whereas increasing the detail and the number of levers of a regulation scheme could allow better representing complex systems, it should above all guarantee fair conditions for all the involved parties.

The objective of this paper is twofold. First, we present a timely analysis of the new (more complex) Italian access charge regime to

evaluate the differences with the old scheme and the impacts for all the stakeholders along different lines and for territorial ODs. Secondly, for such purpose, we propose to utilize a data envelopment analysis (DEA) methodology, already used in other contexts and transport modes but, to the best of our knowledge, never used to specifically investigate the impacts of access charges taking into consideration the main stakeholders' points of view.

## 2. General context

The European Commission (EC) is intensely pursuing an open railway market with a fair competition, being a key element for the development

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