



# Costs and efficiency of highway concessionaires: a survey of Italian operators

Jérôme Massiani<sup>1, 2\*</sup>, Giorgio Ragazzi

<sup>1</sup> Università degli studi di Bergamo – Italy

<sup>2</sup> Università degli studi di Trieste – Italy

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## Abstract

Measuring the productivity of highway concessionaires is very relevant, especially when a price cap regulation is applied where tariff increases are based on expected improvements of productivity. Output may be measured in terms of traffic or network length, or a combination of both, while quality of service should ideally be accounted for. To measure productivity we consider only operating costs, as amortization and financial costs depend upon the original highway design and historical costs. A cross section analysis of the Italian concessionaires shows that: 1) operating costs depend on both traffic and capacity; 2) economies of scale are relevant but their estimate is very sensitive to the model specification; 3) there are large differences in efficiency among operators, indicating that there could be significant room for yardstick competition.

We subsequently consider the main economic data regarding the major Italian concessionaire (Autostrade spa) over two decades. Revenues increased greatly, even more than traffic, while operating costs remained substantially stable in real terms, as the automation of toll collection allowed the company to reduce the number of collectors by almost half. Finally, a comparison between Italian and French concessionaires shows that the latter have much lower operating costs, which cannot be entirely explained by economies of scale or lower personnel costs.

*Keywords:* Highway; Regulation; Productivity; Price-cap.

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## 1. Introduction

In this article, we examine the concept and measurement of the productivity of highway concessionaires. The topic has become of fundamental relevance considering the major privatizations of concessionaries which have occurred in some European countries (Autostrade in Italy, ASF, SANEF, and SAPRR in France).

There are several reasons why the question of highway operators' efficiency becomes more relevant in a private-oriented competitive framework. A first reason is yardstick competition. If the regulator wants to use incentives to improve the efficiency of

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\* Corresponding author: [jmassiani@units.it](mailto:jmassiani@units.it)