



## Effect of imperfect competition on infrastructure charges

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### Abstract

The text explores the optimal infrastructure charges of an unbundled activity where the infrastructure manager sells the use of the infrastructure to operators providing services to a downstream market made up of atomistic customers. This situation has been widely analysed under the assumption that the upstream market is competitive, but more rarely in the case of imperfect competition. Typical examples are the railways activity in Europe and air transport. Various market structures are considered, illustrated by situations encountered in the transport field: a single mode operated by a single operator, two operators competing within the same mode, and two modes competing in a Bertrand way. In each case, situations are analysed using analytic formulae with a simplified demand function and a simplified cost function, and performing simulations with sensible parameter values drawn from current average situations. The main result is that the analysed imperfections make a dramatic departure from the conventional Marginal Cost pricing doctrine. Conclusions are drawn regarding infrastructure charging policy.

*Keywords:* Imperfect competition; Transport infrastructure; Rail; High speed train; Marginal cost; pricing; Differentiation; Pricing behaviour; Market power; Lerner index.

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### 1. Introduction

The liberalisation of public services has created a great interest in Infrastructure Charges (IC), especially in Europe with the reforms leading to the unbundling of infrastructure management and operations. In this framework, the general doctrine commonly addressed (Proost and alii (2004), Quinet (2005)) is the Short Run Marginal Cost Pricing (SRMC), where the IC is equal to the Short Term Infrastructure Marginal Cost.

Inside this framework, a growing interest arose about differentiation of Infrastructure Charges. Among the many situations explored by the research program “Different”, a

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