ELSEVIER

Journal of Public Economics 88 (2004) 667–694

JOURNAL OF PUBLIC ECONOMICS

www.elsevier.com/locate/econbase

Essential facility financing and market structure

Bernard Caillaud[a,*], Jean Tirole[b]

[a] CERAS-ENPC (URA 2036, CNRS), 48 Boulevard Jourdan, Paris 75014, France and CEPR
[b] CERAS-ENPC (URA 2036, CNRS), Paris, IDEI, Toulouse and MIT, Cambridge, MA 02139-4302, USA

Received 16 October 2001; received in revised form 26 July 2002; accepted 14 September 2002

Abstract

The paper analyzes the funding of an infrastructure project when an incumbent operator has private information about market profitability and the regulator does not have access to taxpayers' money. An open access policy raises welfare, but may make the project non-viable since funding must be provided by operators' capital contributions. We characterize the optimal market structure. The regulator can ask the incumbent to bear a higher share of investment cost if the latter insists on an exclusive use. Yet, the incumbent is willing to pay more for exclusivity, the higher the demand, that is precisely when competition yields the highest benefits. At the optimum, the incumbent's information is not used to determine market structure. We further investigate the implications of this basic result: In a dynamic context, we show that the monopoly franchise policy is time-consistent while an open access policy is not; we also demonstrate that a threat of regulatory capture creates an open access presumption. Last, we show that when the decision involves multiple projects, monopoly segments should cross-subsidize open access ones.
© 2002 Elsevier B.V. All rights reserved.

JEL classification: D4; L5
Keywords: Essential facility; Market structure; Exclusive franchise; Open access

1. Introduction

1.1. Scope of the analysis

The last 20 years have witnessed the large scale deregulation of sectors such as telecommunications, transportation and energy.[1] Activities with no significant returns to

* Corresponding author. Tel.: +33-1-4458-2875; fax: +33-1-4458-2880.
E-mail addresses: caillaud@enpc.fr (B. Caillaud), tirole@cict.fr (J. Tirole).

[1] See, e.g., Armstrong et al. (1994), and Laffont and Tirole (1999).

0047-2727/$ - see front matter © 2002 Elsevier B.V. All rights reserved.
doi:10.1016/S0047-2727(02)00189-5

scale have been opened to competition and are now subject only to light regulation. By contrast, the other, "infrastructure" activities with significant returns to scale, large sunk costs and/or network externalities (e.g. cable, narrow-and-broadband copper local loops, transmission grids, harbors, regional airports, pipelines, intermodal platforms, high-speed train lines, Eurotunnel), are often deemed to be essential facilities and are then regulated as public utilities or awarded exclusive franchising contracts.[2]

Focusing on investment in infrastructure projects and their funding, this paper studies the conflict between social optimality and financial viability. When infrastructure projects cannot be financed by direct subsidies (transfers from taxpayers), revenues from downstream service providers are the sole source of funding. For example, a railroad infrastructure owner may be required to invest only in projects that generate enough maintenance cost savings or raise enough access revenues to be financially viable.[3] In our model, the downstream segment that makes use of the upstream infrastructure is populated by one incumbent and one (or several) entrant. The incumbent operator and the infrastructure owner are taken to be a single vertically integrated actor;[4] but they can indifferently be considered as separate entities, which allows for a wide range of applications. For example, while incumbent railroad operators in Europe (respectively, electricity generators in the US) have been forced to divest the essential facilities, they are still vertically integrated in the US (respectively, in Europe).

The downstream market is potentially competitive, but the regulator can cut special deals to limit competition if that is what it takes to make the infrastructure financially viable. Such deals range from an outright monopoly franchise to moderation of competition (like in the case of British rail franchises, or the Australian broadcast cable infrastructure builder who was provided with an "access holiday" for 5 years).[5] Since investment profitability is driven by expected future revenues from charging for access, the incentives to invest in infrastructure are related to market design at the downstream level.

[2] The reader will find useful material on franchises in the transportation sector in several World Bank reports (Campos and Cantos, 1999; Estache, 1999; Kerf et al., 1998).

[3] As is the case in France for RFF, the public infrastructure owner (Article 4, Order 97-444).

[4] Except in Sections 6.2 and 7.3.

[5] To think about the link between downstream market design and upstream investment financing, two examples related to railways are worth keeping in mind. First, most of the new tracks that have been installed lately in France are high-speed tracks, that meet mechanical and safety standards to allow the French high-speed train TGV to run at maximum efficiency. These tracks are specifically reserved to TGV traffic, although ordinary long-distance trains could run on them as well and compete with the TGV. Furthermore, the technical specifications of railbeds were selected so as to be incompatible with the German high-speed train. Such decisions involve a monopolistic market design.

The second example is Eurotunnel. Financing the tunnel was complex, and negotiations ended up with the following arrangement for access. Half of the slots were reserved to the Shuttle (operated by Eurotunnel), the other half was allocated to the British and French incumbent operators. This controversial policy was relaxed by European competition authorities, which imposed the release of slots for potential entrants.

We do not pretend that our analysis rationalizes or invalidates these decisions, all the more as these policies date back to the pre-liberalization epoch. It proposes, however, a basic formulation of the potential trade-offs that can help us think about future infrastructure projects.

دریافت فوری ← متن کامل مقاله

ISIArticles
مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات