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Regulation with non-price discrimination

Jan Y. Sand*

Department of Economics and Management, University of Tromso, N-9037 Tromso, Norway

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Abstract

This paper considers the optimal regulation of access charges, and the effect such regulation has on incentives for non-price discrimination. I show that when a vertically integrated firm is able to discriminate against rivals by means of non-price measures, optimal access charges must be set higher than in the case when no discrimination is possible since the level of the access charge affects incentives to practice foreclosure. Furthermore, I show that whether the access charge should be used to level or tilt the playing field in favour of the more efficient firm depends on the cost associated with non-price discrimination.

JEL classification: D82; L13; L22; L51

Keywords: Regulation; Vertical relations; Duopoly; Non-price discrimination

1. Introduction

In vertically related markets, the production of final products makes use of (essential) inputs produced in complementary markets. The producers of these essential inputs usually have opportunities to earn positive economic profits. The extent to which this is possible depends, among other things, both on regulatory and competition policy. In the communications industry, firms offering, e.g. Internet access to end-users must purchase

* Tel.: +47 776 45540; fax: +47 776 46020.
E-mail address: Jan.Sand@nfh.uit.no.

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access to consumers from local access providers, and the pricing of local access is often subject to regulation.[1] The main reason for regulating access charges is to stimulate competition by ensuring that rival firms can obtain access to end-users at reasonable terms. This means setting a low access charge. Allowing vertical integration opens up the possibility for non-price discrimination by the vertically integrated firm, and restricting the integrated firm's earning potential upstream results in an increased incentive to discriminate against its rivals (as is pointed out by, e.g., Sibley and Weisman, 1998). By restricting local access providers' opportunity to serve long-distance markets (i.e., refusing vertical integration), competition authorities may restrict the potential for earning monopoly rent upstream without resorting to the regulation of access charges.[2] This is a result well known in the literature on vertical relations.[3]

The contribution of the present paper to the theory of access charge regulation is to provide an analysis of how the opportunity for non-price discrimination, or damaging, of independent rivals affects the socially optimal access charges. The discrimination may be thought of either as degrading the quality of network inputs, or equivalently, as increasing the cost of purchasing such inputs (in addition to the access price). The increased costs for the rivals could be due to legal expenses incurred when attempting to obtain access on equal terms with the network owner's downstream subsidiary, or more direct costs due to lower quality of access.

The access terms offered to rival firms consist of two main elements—the price paid for access and the quality of access. I assume that the access charge is subject to regulation. The issue of access charge regulation has been examined by a number of other authors (e.g., Armstrong et al. (1996); Laffont and Tirole (1990, 1996)). In contrast to their work, I focus on the relation between the regulated access charge and the vertically integrated firm's incentive to discriminate against its rival along other dimensions. The network provider has ample opportunities to degrade the quality of access offered to its competitors. The decision of the network provider (the vertically integrated firm) on access quality is not regulated in the model, and may affect competition in the downstream market. The incentive to damage rival firms in a complementary market segment is considered by, e.g., Economides (1998a,b), Sibley and Weisman (1998), Mandy (2000), Weisman and Kang (2001), Reiffen and Ward (2002) and Beard et al. (2001). These authors have all identified the level of the access charge as a determinant for non-price discrimination. Contrary to their work, the present paper considers an endogenous access charge and investigates how access charges should be set in this context to achieve the social optimum. The issue of raising rivals' costs is the focus of Economides (1998a,b), and his model is extended in the present paper to incorporate the optimal regulation of access charges.

The issue analysed in the present paper is also related to optimal price regulation when firms provide unverifiable quality, which is dealt with by, e.g., Laffont and Tirole (1991)

[1] The local access providers are often the incumbent telecommunications companies.

[2] In the case of U.S. legislation, restrictions are to some extent imposed on which firms are allowed into the long-distance markets. However, in the present paper vertical separation is not considered.

[3] This result is a consequence of the upstream firm's inability to credibly commit to charging monopoly prices (Rey and Tirole, 1997).