

## Delivered versus mill nonlinear pricing with endogenous market structure

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Received 26 July 2005; received in revised form 5 June 2007; accepted 3 July 2007

Available online 13 July 2007

### Abstract

This paper discusses a model where consumers differ according to one unobservable (preference for quality) and one observable characteristic (location), with nonlinear prices arising in *equilibrium*. The main question addressed is whether firms should be allowed to practice different nonlinear prices at each location (delivered nonlinear pricing) or should be forced to set a unique nonlinear contract (mill nonlinear pricing). Assuming that firms can costless relocate, we show that the free entry long-run number of firms may be smaller, equal, or higher under delivered nonlinear pricing. Moreover, delivered nonlinear pricing yields higher long-run welfare when (i) fixed costs are low and when (ii) fixed costs are intermediate and consumer types are not very similar. © 2007 Elsevier B.V. All rights reserved.

*JEL classification:* D43; D82; L11; L13; L50

*Keywords:* Delivered nonlinear pricing; Mill nonlinear pricing; Asymmetric information; Pricing regulation

### 1. Introduction

Regulation theory has been one of the most active areas of research in the last decade. However, regulation of firms' pricing policies has been almost neglected within this wave of research. This paper revisits the issue of whether regulatory authorities should prohibit firms from practicing price discrimination among consumers who differ according to some observable characteristic.

The currently accepted view that unregulated markets are more competitive has been justified by economic

theory using spatial pricing models. Most of existing studies compare spatial discriminatory pricing with non-discriminatory mill pricing<sup>1</sup> for a given market structure (see, for example, Norman, 1983; Thisse and Vives, 1988). Under spatial discriminatory pricing firms can price discriminate across locations, hence firms compete in each of them. On the other hand if firms have to practice the same price in every location, competition occurs only at the boundary of each firm's market. As a consequence, for a given market structure discriminatory pricing is more

<sup>1</sup> Implicit in this comparison is the idea that without pricing regulation firms will practice discriminatory prices. Thisse and Vives (1988) have shown that if firms are free to choose their pricing policy, in equilibrium, they will in fact price discriminate even though this implies lower profits for all firms.

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