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Nonprofits with distributional objectives: price discrimination and corner solutions[☆]

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Abstract

We characterize the patterns of pricing and rationing when paternalistic nonprofit organizations (either private or governmental) care about the level and distribution of consumer surplus provided to their clients. Equilibrium depends upon marginal cost, the organization's distributional weights, exogenous income levels, and cream-skimming by competing for-profit firms. In equilibrium, some consumers pay their reservation price or a lower price above marginal cost, some pay less than marginal cost, some obtain the good for free, and some are not permitted to buy the good at any acceptable price. Comparative statics here differs from that for output or profit maximizers, with discontinuous price schedules shifting abruptly when exogenous income changes.

JEL classification: L31; L32; D40
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1. Introduction

Hospitals provide charity care to a limited group of patients. Day care centers and YMCAs offer sliding-scale fees. Selective universities and colleges offer some students

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need-based financial aid while refusing to admit other students that would happily pay full tuition. Food stamps are given to some eligible recipients, whereas others pay a price that varies with recipient income. In each of these examples, the price charged to some customers is below the marginal cost of serving them, behavior that is hard to explain in a profit-maximizing context.[1] In each, there are restrictions on who is eligible for a below-marginal-cost price, which leads to "rationing" in the sense that some who are willing to pay more than successful purchasers will not obtain the good in question. The issues we study apply to both public and private nonprofit agencies, as the food stamp and day care examples make clear. The issues we study apply to monopolies in either sector but also to organizations that face competition from other nonprofit (public and private) and for-profit firms, as in the day care, education, or hospital industries.

In this paper, we take a positive approach to the study of pricing policy by governmental and private nonprofit agencies that provide their consumers with a merit good and have the power to set different prices for different consumers. These organizations care about the consumer surplus realized by their clientele, but may care more about some than others. Organizational welfare is maximized, subject to a budget constraint, by choosing a set of personalized prices. We pay careful attention to corner solutions involving rationing, where the equilibrium personalized price exceeds the reservation price for some consumers. As the exogenous parameters of the model change, organizations may choose to make the good available to different sets of consumers, to switch from giving it away to charging, or to make certain types of consumers ineligible for purchases. We also consider the impact of a single and cost-disadvantaged for-profit competitor on the prices and rationing behavior of public and nonprofit organizations concerned with distribution. We thus provide a framework for the empirical analysis of price discrimination by public and private nonprofit agencies with distributional objectives and develop testable hypotheses (although we do not test them here).

Because for-profit firms are forced, by the market for control, to ignore distributional preferences except insofar as they coincide with profit goals, we look at nonprofit organizations—organizations, whether governmental or private, that cannot lawfully distribute their financial surplus to those in control of the organization. Because we wish to focus on the key relationships between generating revenue and serving clients in a "best case," we make two assumptions. First, we assume that any net revenues obtained by the organization must be used to subsidize consumption by a target clientele (that is, to set prices below marginal cost), rather than to increase managerial perks, increase the organization's endowment, serve other aspects of the organization's mission, or covertly enrich owners. Second, we assume the organization has complete information about customer reservation prices and can price discriminate accordingly. Were we to make contrary assumptions, the tradeoff between serving

[1] Alternative explanations are possible. For example, Epple and Romano (1998) show that profit-maximizing private schools would offer tuition discounts to high-ability, low-income students and impose tuition premia on low-ability, high-income students. However, organizations like ours that incorporate distributional preferences into their decisions will offer need-based aid independent from ability.