

# Estimating Hospital Costs: A Case Study of Hospitals under Medicare's Prospective Payment System in the U.S.

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## ABSTRACT

This paper examines hospitals' financial performance under Medicare's Prospective Payment System (PPS) in the U.S. during 1988-1990. It applies the economic theory of cost to a firm that produces multiple outputs. The theory provides a rigorous framework for the empirical analysis for understanding why some hospitals win and others lose under Medicare's PPS.

## 1. Introduction

Responding to high and rising hospital costs, the U.S. government replaced the Medicare program's retrospective payment system with the prospective payment system (PPS) in fiscal years 1983 and 1984. PPS reimburses the same set of basic Diagnosis Related Group (DRG) operating costs for all hospitals. A hospital keeps the difference between the payment rate and its costs of providing the service. However, the hospital is at risk if its cost exceeds allowed PPS reimbursements. Hence, PPS rewards those hospitals that operate more efficiently and penalizes those whose costs are excessive. Hospitals' PPS margins (the difference between PPS payments and Medicare's portion of hospital inpatient operating costs) have declined sharply since the early years of PPS. Many critical questions remain regarding hospitals' financial performance under Medicare's PPS. For instance, are some hospitals profitable mainly because they are advantaged by the PPS design features? , or are they more productive and efficient? Conversely, are other hospitals losing money under PPS because they are unproductive and inefficient? , or are they disadvantaged by the PPS design features?

This study hypothesizes that, given a set of PPS design features and hospital characteristics, hospitals with better production and management efficiencies are likely to outperform their more poorly managed counterparts. Hospitals which can maintain or increase volumes are likely to be winning hospitals. This means winners can achieve substantial low unit cost from economies of scale. According to the economic theory, volume of production depends in part on the comparison between the long-run marginal cost of a unit of output and the average revenue per unit , or price, that the firm expects to receive, If marginal cost is less than price, the theory predicts that firms will undertake actions to expand more volume of outputs. Thus, given a lower marginal cost, hospitals are able to maintain or increase volume and can make greater use of equipment, facilities, and staff. Results from the analysis of hospital financial performance under Medicare's PPS helps policy makers understand how or why some hospitals do better than others. This information is important to

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10240. The research underlying this paper was a dissertation presented for the Doctor of Philosophy Degree at The University of Memphis August 1994.