

Efficiency and productivity change in Taiwan' s hospitals: a non-radial
quality-adjusted measurement

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Abstract

This study measures the quality-adjusted hospital efficiency and productivity index of a production unit. We propose a non-radial output-oriented directional distance function approach to analyze Taiwan' s hospital productivity, which embeds the quality of care and environment variables simultaneously. There are two major advantages of this model. First, it considers all the radial and non-radial slacks that the model can identify, and hence is able to provide a more accurate performance measure and improve the discriminating power of the analysis. Second, it allows us to identify the source of the inefficiency. Our results show that the productivity indices of most of Taiwan' s hospitals got worse during the 2002 - 2004 period, during which both technology and efficiency performance deteriorated, but divergence appeared among different types of hospitals. We confirmed the need to incorporate quality factors while measuring a hospital' s efficiency and productivity. Nevertheless, there is no evidence to support the idea that healthcare quality is undermined by the cost-saving efforts by the care providers after the implantation of a global budget system.

Keyword : Data envelopment analysis · Directional distance function ·
Russell measure · Slacks-based measures · Malmquist-Luenberger index ·
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