

Benchmarking and Industry Performance

Topic: Productivity and efficiency I

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Benchmarking is formalized by a linear program that determines the efficiency of a firm relative to its peers and is used to determine the efficiency of an industry. The overall efficiency is shown to be underestimated by mean firm efficiency and the bias is zero if and only if the firm shadow prices of the inputs and outputs generated by the benchmarking programs are equal across firms. Otherwise the bias provides an efficiency measure for the organization of the industry.

A main contribution of this paper is the interrelation of productivity analysis and the theory of industrial organization. A proposition proves that an industrial organization is efficient in the sense of productivity analysis if and only if it is supportable in the entry-proofness sense of Sharkey and Telser (1978).

The known decomposition of performance in efficiency change and technical change is augmented with a term for the industrial organization efficiency change. The performance measure is shown to be consistent with the Solow residual and Malmquist indices for its components are given. An analysis of the Japanese banking industry illustrates and the dynamic effects of entry and exit can be accommodated.