

Title: *The Theory of Benchmarking and the Measurement of Industrial Organization*

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If more productive firms grow relatively fast, an industry performs better, even when no firm exhibits technical or efficiency change. In other words, the two well-known sources of productivity growth: technology and efficiency can be augmented by a third one, namely the industrial organization effect. In this paper the efficiency of an industrial organization and its contribution to performance are measured by benchmarking all firms on the industry. More precisely, efficiency is measured by the proximity between a firm and the best practices. Aggregation of firm efficiencies is imperfect. The bias is used to measure the efficiency of the industrial organization. In benchmarking, change transmitted by a firm represents productivity growth and change transmitted by the best practices represents technical change. Although I use a nonparametric framework, which requires only input and output information, duality analysis reveals the Solow residual. In discrete time Malmquist indices capture the measurement of the industrial organization effect, efficiency changes, and technical change. The industrial organization of Japanese banking is analyzed. The dynamic industrial organization effect of entry and exit can be accommodated.