An Application of Data Envelopment Analysis to Public Sector Performance Measurement and Accountability

Peter Chalos, Joseph Cherian

Abstract
Public sector performance measures have been advocated by numerous regulatory bodies (FASB 1980; CCAF 1987; CICA 1988; GASB 1989). Proposed Service Efforts and Accomplishment (SEA) disclosures include measures of inputs and input-output efficiency ratios (GASB 1989). Such metrics, it is argued, improve internal control and external accountability. To date, SEA disclosures are not widely disseminated. Our study examined the potential utility of SEA disclosures in determining public policy in education. Specific concerns of the Illinois State Board of Education and the state legislature with respect to fiscal neutrality and tax referenda in education were examined. As proposed by the GASB (1989, x-xii), educational input and output indicators were compiled for 207 school districts. To overcome specification problems, DEA analysis was used to measure input-output efficiency. Non parametric hypothesis tests…

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8.1 Efficiency measurement in the public sector. Measuring an organisation’s efficiency is about the relationship between the outputs it produces and the inputs it uses. An efficient organisation would be one that produces the maximum possible outputs given its inputs, or one that produces a certain level of output with the minimum amount of inputs. The process of trying to measure an organisation’s efficiency can therefore be broken down into three steps.

Applications of these techniques have illustrated the sensitivity of results to the methods used to measure efficiency. 11 T. Nunamaker, “Using data envelopment analysis to measure the efficiency of non-profit organizations: a critical evaluation,” Managerial and Decision Economics, 1985, vol. 6, pp. 50–60. Application of data envelopment analysis (DEA) to the education sector is natural given these recent concerns. Standard DEA models fail, however, due to the heterogeneity of DMUs arising from socioeconomic differences. Models suitable for application to education have been developed and will be discussed in this chapter. Key words: Chalos, P., and Cherian, J. 1995, An Application of Data Envelopment Analysis to Public Sector Performance Measurement and Accountability, Journal of Accounting and Public Policy, 14, 143–160.CrossRefGoogle Scholar.