Accuracy of Linear Valuation Rules in Industry-Segmented Environments
Industry- vs. Economy-Weighted Indexes

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The comparative ability of valuation rules using economy-weighted versus industry-weighted price indexes to estimate the unobserved economic value of a basket of assets is modelled. Industry-weighted indexes do not necessarily provide valuations of higher accuracy than economy-weighted indexes. Dominance depends on (1) the relative magnitude of the mean and variability of price changes and (2) the magnitude of errors of measurement in the current price data. Larger measurement errors favor economy-weighted indexes; larger mean and variability of prices changes favor industry-weighted indexes.

Accounting valuation rules can be modelled as linear aggregations and comparisons between different valuation rules can be made using a classical econometrics approach. This study extends linear aggregation model of asset valuation to industry-segmented economies. We specifically model and discuss the comparative accuracy of two valuation systems, one with economy-weighted price indexes and a second with industry-weighted price indexes.

When Statement of Financial Accounting Standards No. 33 (SFAS 33) was in effect, many firms used industry-weighted price indexes instead of economy-weighted price indexes to estimate the current cost of their assets [Arthur Young (1980), Perry and Searfoss (1984)]. This choice might have been driven by an intuitive belief that price indexes constructed by the use of industry-specific weights should yield more accurate valuation of firms’ assets. An analysis of the statistical accuracy of such valuation rules in this paper reveals that the industry-weighted indexes do not necessarily improve accuracy.