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Decomposition for Judgmental Forecasting and Estimation

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ABSTRACT

Forecasters often need to estimate uncertain quantities, but with limited time and resources. Decomposition is a method for dealing with such problems by breaking down (decomposing) the estimation task down into a set of components that can be more readily estimated, and then combining the component estimates to produce a target estimate. Estimators can effectively apply decomposition to either multiplicative or segmented forecasts, though multiplicative decomposition is especially sensitive to correlated errors in component values. Decomposition is most used for highly uncertain estimates, such as ones having a large numerical value (e.g., millions or more) or quantities in an unfamiliar metric. When possible, multiple estimations should be used and the results aggregated. In addition, multiple decompositions can be applied to the same estimation problem and the results resolved into a single estimate. Decomposition should be used only when the estimation can make component estimates more accurately or more confidently than the target estimate.

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