

Title: Sampling Design Enhancements for the Quarterly Survey of Philippine Business and Industry

Author: Gloria A. Cubinar

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Abstract:

This study proposes nonparametric bootstrap and model-based estimation procedures to provide estimates for the Quarterly Survey of Philippine Business and Industry (QSPBI). The current design does not exactly produce a true probability sample. Only “large” establishments that are expected to lead their respective sectors are included in the sample. Nonparametric bootstrap confirms the severe bias in the sample in representing the population of establishments.

Of the four regression models considered in model-based estimation, a generalized linear model with Gamma distribution and logarithmic link function consistently exhibits better fit to the data and provide estimates with high precision for all the variables.

Intensive stratification (industry and employment size), probability proportional to size sampling (pps) and the current design are simulated assuming the results of 2005 QSPBI first quarter as frame. Estimates from the current design and probability proportional to size (pps) sampling with ATE as the measure of size, gave estimates with higher precision especially when the sample size is small. However, as the sample size increases, the behavior of estimates from these sampling strategies do not differ much.

The non-sampled and nonresponding segments of the population are best predicted through Gamma regression or time Series Cross Sectional regression.