Attempts to estimate basic information for small business in Poland

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The paper presents first attempts to use administrative data sources and indirect estimation techniques to estimate basic economic information about small business in the cross-section of Polish Classification of Economic Activities PKD and voivodships.

The study objective, specified as accounting for and applying tax data for a more effective use of a survey of small businesses with up to 9 employees, was understood in a twofold manner. First of all, it was a verification of the hypothesis concerning the possibility of improving estimation precision in studies available to date. Secondly, it was intended as a possible extension of estimation scope by joint distribution by voivodship and economic activity (PKD division). The basic economic information, for the aim of this study, was limited to the paid employment and revenues.

One of the major problems involved in estimating information about economic activity across domains is the small sample size and incompleteness of tax registers rendering integration of data sources difficult. The distribution of small companies by target variables occurs to be considerably skewed to the right, with high variation, high kurtosis and outliers. To tackle the problem, the following solutions were suggested. One involves moving the analysis up from the unit level to the domain level: territorial units, PKD categories or combined domains. Other methods concern application of robust regression or logarithmic transformation in constructing the models.

The Horvitz-Thompson estimates in the joint cross-sections of PKD and voivodships are presented and compared with the results of indirect: ratio synthetic, regression synthetic and composite estimates. The properties of the estimators are discussed from the domain specific point of view and combining all domains. Estimation precision characterizing economic activity of small enterprises is presented and analyzed for different types of domains: PKD sections, regions and joint cross-section of regions and economic activity.

Results obtained in the study entitle to draw the following conclusion. Application of indirect estimation to small business data requires consideration of the heterogeneity of its distribution. Nevertheless the results of the study present the practical possibilities and benefits of adopting the techniques of small area estimation to small business data in Poland.