MODELING CORRUPTION AS A BARRIER TO REVENUES OF SMALL AND MEDIUM BUSINESSES IN UKRAINE: SYSTEMATIC APPROACH AND STATISTICAL ASSESSMENT

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Abstract. *Corruption is considered as an external environmental factor that negatively affects the income of small and medium-sized businesses (SMEs) in Ukraine. An evaluation methodology is proposed by integrating a systems approach, statistical analysis, and econometric modeling. Based on empirical data, computational experiments were conducted and models of the dependence of SME revenues on internal (demand for goods and services) and external (corruption) factors by enterprise size were constructed. As a result, estimates of the impact of corruption on revenues in the context of medium, small and micro businesses were obtained.*

Keywords: *small and medium businesses, supply and demand, income, corruption, systemic approach, statistical analysis, econometric modeling.*

The purpose of the article is to construct estimates of the impact of corruption, as one of the external factors, on the income of small and medium-sized businesses (SMEs) using statistical modeling, taking into account the dynamics of the classical dependence of demand and supply based on empirical data.

The work uses both general and special methods of scientific knowledge. In particular, empirical, graphical, coefficient and comparative methods are used to analyze the dynamics of SME income. To model the impact of corruption on the growth of Ukrainian SMEs' income, it is proposed to integrate the basic classical interaction of supply and demand and external environment parameters. This approach consists of using the classical supply-demand interaction and an additional variable that characterizes the level of corruption in the environment. The corruption persistence index (CPI) was chosen as a quantitative measure of the level of corruption in the environment.

The diagnosis of dependence was carried out using correlation-regression analysis, the approximation of the relationship was performed based on the least squares method in the form of two-dimensional regression using the "Data Analysis" software application of MS Excel.

To avoid overestimated correlation and emphasize the impact on real indicators, all

absolute indicators in monetary units are adjusted for inflation.

As a result of the correlation and regression analysis, a close direct relationship was found between the volumes of SME sales and consumption and corruption, and based on econometric modeling, two-factor regression models were obtained by enterprise size. The idea of a closer connection between the weakening of corruption in the environment and the increase in sales growth per enterprise is confirmed.

It has been proven that a higher CPI score, which is inversely proportional to the prevalence of corruption, is closely related to higher profit indicators.

It has been verified that the hypothesis of corruption as a barrier to business growth is confirmed based on this model, since a certain increase in demand can be negatively compensated by the deterioration of one of the parameters of the external environment, namely corruption.

The theoretical statement that small enterprises are more sensitive to the level of corruption in the external environment is also confirmed. The model that includes corruption more accurately describes the impact of demand and the external environment on micro than on medium-sized enterprises. Therefore, the forecast for small and micro enterprises is more accurate.

The obtained empirical relationships and tested hypotheses deepen theoretical and applied approaches to assessing the impact of corruption on Ukrainian SMEs.

The results of the study can be used by SMEs to conduct analysis, develop forecasts and build business development strategies, as well as by government bodies to evaluate management decision-making in the field of anti-corruption policy.

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