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**AN ECONOMETRIC APPROACH TO DETERMINING THE IMPACT
OF INSTITUTIONAL FACTORS INFLUENCING ON NATIONAL
COMPETITIVENESS OF UKRAINE IN THE CONDITIONS
OF SYSTEMIC CRISIS**

Competitiveness of a country is one of the main indicators that characterizes its current state and development prospects, determines its place in the global space, guarantees its economic security and high level of welfare of the population as well as ensures the stability and sustainability of national economic system as a whole. However, because of the systemic crisis, constant military threat, imperfect institutional environment, limited competition and the weakness of the national innovation ecosystem, competitiveness of Ukrainian economy is low enough. In particular, according to statistics published in the IMD World Competitiveness Yearbook [5], Ukraine ranked only 54th among 132 countries. At the same time, in 2023 global leaders in terms of Global Competitiveness Index (GCI) were also advanced countries namely Denmark (rank 1), Ireland (rank 2), Switzerland (rank 3), Singapore (rank 4), Netherlands (rank 5). Therefore, the problems relating to improvement of long-term strategy of national competitiveness of Ukraine based on innovation and environmentalism, post-war economic recovery and sustainable development, improving of the position of Ukraine in international rankings and modernizing the military-industrial potential on new technological basis are an urgent scientific task.

The aim of the research is to determine quantitative impact of institutional factors on national competitiveness of Ukraine in the conditions of systemic crisis (2014-2023) using econometric instruments.

In order to estimate a quantitative impact of (institutional) factors on national competitiveness of Ukraine in the conditions of systemic crisis (2014-2023), the author employed multivariate regression analysis. It has been implemented by three

stages showed on the Figure 1.

At the first stage, based on detailed study of existing writings [1-4], it has been defined regressand represented as World Competitiveness Index (Y) and regressors that are the global indexes that characterizes institutional factors at the national level. Regressors were Democracy Index (x_1), Economic Freedom Index (x_2), International property rights (x_3), Political Rights Index (x_4).

After that it has been formed input data matrix (Table 1) and gathered information was processed using programming environment Excel (module – Regression Analysis, function – CORREL) and was checked for correlation, accuracy, homogeneity and compliance with the law of normal distribution. It was showed that in all obtained regressions there an assymetry in the data distribution about the average value of World Competitiveness Index exists and, in turn, the rates of excess are also close to the average but with more acute peak of distribution.

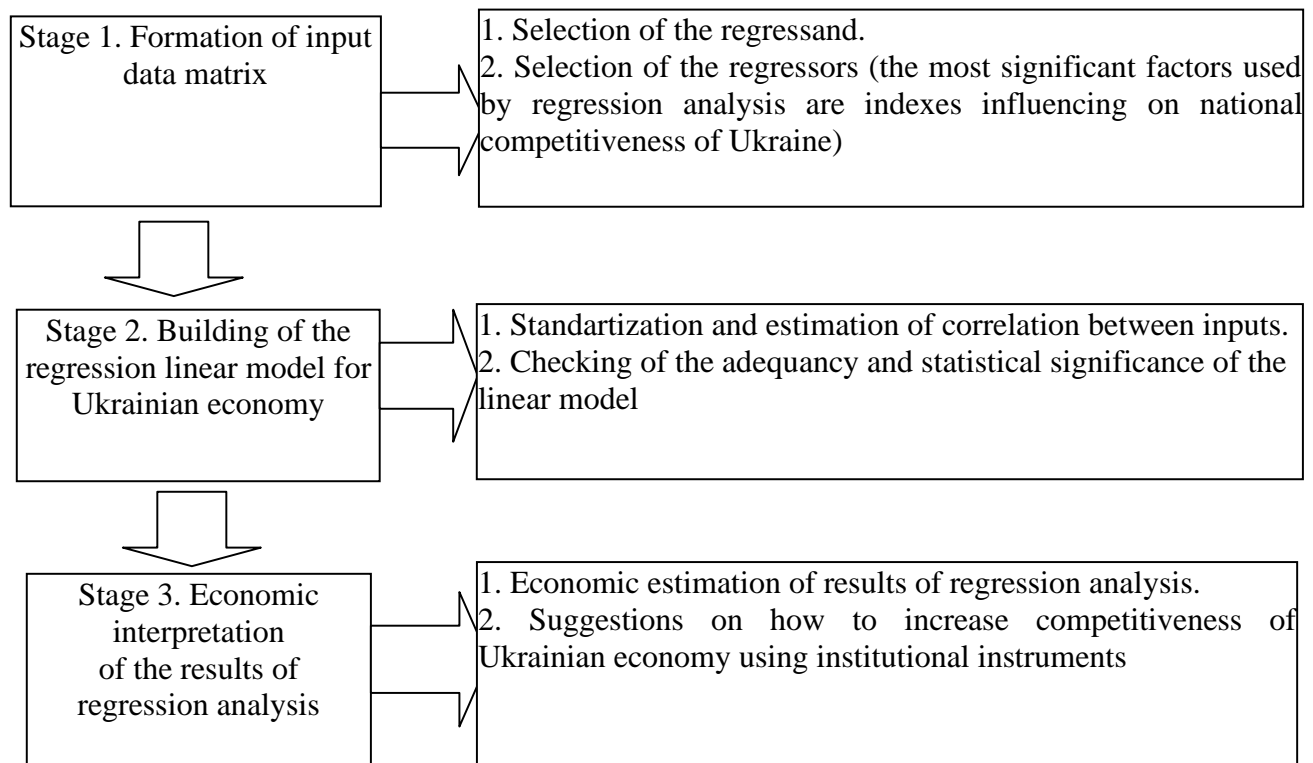


Figure 1 – Scheme of the estimation of quantitive impact of institutional factors influencing on national competitiveness of Ukraine in the conditions of systemic crisis

The statistical significance of the regressions was confirmed by many indicators. First of all, the parametres of t-statistics (T-Stat) were calculated and, in that way, it

was proved that it is expedient to exclude some indexes which exceed the limit values. We know that the law of regression analysis indicates that the interconnected factors must be also excluded. For this purpose, the authors built the matrix of pair coefficients and proved that the factors which will be included in the regressions are not very closely interconnected ($R < 0,85$).

Table 1 – Dynamic of indicators characterizing institutional factors influencing on national competitiveness of Ukraine in the conditions of systemic crisis

Indicator	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
World Competitiveness Index (Y)	45	44	46,51	56,13	56,76	57,1	58	60	61	57
Economic Freedom Index (x_1)	49,3	46,9	46,8	48,1	51,9	52,3	54,9	56,2	54,1	–
Democracy Index (x_2)	5,42	5,17	5,7	5,69	5,69	5,9	5,81	5,57	5,42	5,06
Political Rights Index (x_3)	20	25	25	25	26	26	27	26	26	22
International Property Rights Index (x_4)	4,3	3,93	3,93	3,42	4,28	4,43	4,47	4,5	3,98	4,05

Compiled by the author based on [5-6]

Taking into account that the law of regression analysis indicates that the interconnected factors must be excluded, the author built the matrix of pair coefficients and proved that the factors which will be included in the regression are not very closely interconnected ($R < 0,85$). That statement was also confirmed by the calculations of the criterion of statistical significance of estimated correlation ($P\text{-Value} > 0,05$) (Table 2).

Table 2 – Results of regression analysis

Regressand	Regressors	Coefficient of correlation	Closeness of connection
World Competitiveness Index (Y)	Economic Freedom Index (x_1)	0,7794	Very close
	Democracy Index (x_2)	0,8218	Very close
	Political Rights Index (x_3)	0,5772	Medium

	International Property Rights Index (x_4)	0,1558	Very weak
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So it has been obtained the following regression function:

$$Y = -344,52 + 0,7794x_1 + 0,8218x_2 + 0,5772x_3 + 0,1558x_4. \quad (1)$$

Thus, obtained results allowed to conclude the following. If Economic Freedom Index increases by 1 point, then World Competitiveness Index will increase by 0,7794; if Democracy Index increases by 1 point, then World Competitiveness Index will increase by 0,8218; if Political Rights Index increases by 1 point, then World Competitiveness Index will increase by 0,5772; if International Property Rights Index increases by 1 point, then World Competitiveness Index will increase by 0,1558. In other words, in the study it has been proved that all selected institutional factors impact positively on the level of national competitiveness of Ukraine but Democracy Index mostly. For that reason, the author's further research will be devoted to finding ways how to democratise Ukrainian society more and ensure economic freedom of business entities as key factors for increasing the national competitiveness of Ukraine even in the conditions of systemic crisis.

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