The Sustainable Development Goals for Eastern Partnership Countries: Impact of Institutions[1]

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Abstract

In 2015 UN established 17 Sustainable Development Goals (SDGs) as priorities for further development for 193 member countries. SDGs include 169 targets, which cover all issues of sustainability. Governments require specific researches to elaborate adequate strategies considering current parameters of social and economic development of countries. Eastern Partnership countries and the Russian Federation are classified as countries in transition with not really powerful economies. Therefore it's very important to increase the efficiency of expenditures through enhancing institutions. This study attempts to research dependencies between changes in quality of institutions and SDGs performance for countries in transition. Panel data regression with offered Composite Index of Sustainable development Goals as dependent variable defines significance of links and can be used to define priorities in national policies.

Keywords: the Sustainable Development Goals, Eastern Partnership countries, composite index SDGs, institutions.

JEL Classification: Q01, Q56.

Introduction

The Sustainable Development Goals (SDGs) have replaced the Millennium Development Goals and covered wider range of development tasks at global level: social, environmental, economic. 17 Sustainable Development Goals (SDGs) comprising 169 targets, that need to be met by 2030. It's obvious that various targets are relevant in varying degrees for countries with differences in development. Some goals and targets were stipulated with needs and challenges that developing countries meet. Others goals are relevant for developed countries and define the responsibility to foster SDGs achievement by countries with developing economics. Such diversities define the distinction of approaches to identify and imply different priorities into macroeconomic policy of countries. In August 2014, an UN Intergovernmental Committee of Experts estimated the total cost of the SDGs to be "trillions of dollars a year". While this provides an indicative global estimate, it does not directly translate into how much the SDGs will cost in each country or whether they are affordable [2].

Thus, design and implementation of SDGs strategy contain very important issues of reaching a balance between economic, politic and social efforts and two interconnected problems arise at this context:

- Tools of measurement – social, environmental, economic indicators are able to assess progress in SDGs.
- Defining the relevant factors to reach SDGs considering social conditions and economic abilities of a specific country with aim to concentrate efforts and resources at the most important areas.

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Literature review

A number of contemporary researches are aimed to find solution of mentioned problems. Some analysis are performed to expose major transformational challenges which the SDGs present to developed countries [3], and status of SDG implementation in OECD countries [1, 3, 9]. Approaches to assessment of SDGs performance are being elaborated too. Non-profit organization Bertelsmann Stiftung and the UN Sustainable Development Solutions Network have created a prototype index that measures performance of countries [11, 12, 17]. Authors have offered a complex methodology for index structure, countries ranking and dashboards to show how each country perform in specific sustainable goal. But such calculations cover last three year period. Specific features of implementation of SDGs in developing countries are of interest for researches too. Hernán Muñoz (2016) discusses the affordability of the targets in developing countries (at least first three SDGs – poverty, health and education). The author tries to answer the questions about how much SDG will cost, the potential of public finance and possible aid to fulfil basic needs [2].

Countries of Eastern Partnership as countries in transition by UN classification also have their own specifics. There is a big but important issue to design a new economic model based on effective institutions. It is commonly accepted that institution play a great role in social, economic and political progress of the country. In 2016 meeting of the High-Level Political Forum (HLPF), mandated to follow up and review the implementation of the 2030 Agenda for Sustainable Development took place in New York. Several speakers noted that "institutions matter"– with some stating that strong, stable and mature institutions are crucial for the implementation of the SDGs. Countries integrating the SDGs into national policies and programs, and an increasing number of countries put institutional mechanisms in place; giving new mandates to existing mechanisms, or establishing new high-level commissions, councils, coordination bodies and mechanisms for the implementation of the 2030 Agenda [10].

That is why we consider that the formation of new institution and transformation of existing institutions to be a fundamental precondition for economy transition in way to achieve progress in SDGs. We are aiming our paper at research of hypotheses that SDGs performance depends on a quality of institutions. We conduct our study for countries in transition based on data and considering specific national circumstances of Eastern Partnership countries.

Methods

The key aims of our research are the investigation of interdependence between performance in institutions development and achievements of UN Sustainable Development Goals. At the first stage, we should create a composite index, which can be used to compare countries on wide range of aspects of social development and allow identifying areas of good or weak performance between countries-members of Eastern Partnership. Despite wide discussions about applicability of aggregated indexes, they are recommended to be useful tool of scientific research. International organizations permanently improve methodology of composite indexes constructing. We establish our index according to Handbook on Constructing Composite Indicators by OECD [7].

The common approach to constructing of any composite index is to sum selected indicators taken with their weights. We use the following formula to calculate the Composite index of SDG (CISDG):

$$CISDG^c = \sum_{q=1}^{n} \check{I}_q^c \times w_q \quad (1)$$

$CISDG^c -$ Composite index of Sustainable Development Goals for country *c*;

$\check{I}_q^c -$ normalized value of individual indicator q for country *c*;

$w_q -$ weight associated to individual indicator *q*.

Weights can be assigned as equal or varied according to the importance of indicator in index. The strength of influence of indicator on index is traditionally defined by experts or calculated with formal statistical methods.

The algorithm for constructing of integrated indicators goes through several stages:

Selection of a set of indicators

Selection of indicators is to based on their ability to reflect changes in processes that take place in SDG concerned areas. We need to admit that data collection is a particular challenge for researches. The important demands to data are to be of the area of interest, reasonably current and presented by a reputable open source. According to [7] the volume of data we are allowed to omit may not exceed 5%. Mentioned conditions have significantly impacted on our set and we were forced to reject some useful indicators or periods.

Initial data processing

We engage indicators of different nature into CISDG constructing concerned both social and economic processes in researched countries. The first problem of quantitative incompatibility arises due to differences in the volatility and the scale of the measurement. The second problem is the difference in a course of changes for the "better". We have to convert indicators into another scale in a manner that growth of indicator on this scale means an improvement, and a decrease means deterioration. Therefore, we conducted data normalization of data using min-max method. Min-max normalization could widen the range of indicators lying within a small interval, increasing the effect on the composite indicator more than the z-score transformation [7]. As the result, all values were put on scale 0-1.

Weights assignment

Based on OSCE references, we conduct principle component analysis (PCA) as a formal method of weighting.

Principal component analysis (PCA) is a statistical technique used for data reduction. The leading eigenvectors from the eigen decomposition of the correlation or covariance matrix of the variables describe a series of uncorrelated linear combinations of the variables that contain most of the variance. In addition to data reduction, the eigenvectors from a PCA are often inspected to learn more about the underlying structure of the data [13].

The interpretation of the main components is based on the matrix of factor loadings, which is the correlation between the primary indicators and the corresponding component.

After choosing the number of factors to keep, it is a standard practice to perform rotation so as to enhance the interpretability of the results. The sum of eigenvalues is not affected by rotation, but changing the axes will alter the eigenvalues of particular factors and will change the factor loadings. Various rotational strategies have been proposed. The goal of all of these strategies is to obtain a clear pattern of loadings. However, different rotations imply different loadings, and thus different meanings of principal components – a problem some cite as a drawback to the method. The most common rotation method is the "varimax rotation" [13].

We build indexes for countries based on calculated weights, which become dependent variables in panel data regression.

Panel data are two-dimensional arrays. Data on an economic variable that include both multiple economic units and multiple time periods, thus displaying both cross sectional variation and time series variation.

Traditionally, regression will be analyzed by using fixed effects and random effects techniques:

$$y_{it} = \alpha + X'_{it}\beta + z'_i\gamma + c_i + u_{it} \quad (2)$$

where z_i — vector invariant in time,

c_i, u_{it} — error terms, $E(c_i) = 0,\ E(u_{it}) = 0$.

Random Effects (RE) model allows $E(c_i|z_i, X_i) = 0$.

Fixed Effects (FE) model allows $E(c_i|\ X_i)$ depends on X_i.

FE model can't help to estimate α and γ.

We consider six indices of Worldwide Governance Indicators by The World Bank to be repressors reflecting changes in institutional performance. We include indicator of economic development into the model also to increase its descriptiveness and reduce endogeneity.

Therefore our model is:

$$CISDG_{it} = \alpha + \beta_1 voicacc_{it} + \beta_2 polstabilnoviol_{it} + \beta_3 govereffect_{it} + \beta_4 regqual_{it} + \beta_5 contrcorr_{it} + \beta_6 ruleoflaw_{it} + \beta_7 gdppercap_{it} + c_i + u_{it} \quad (3)$$

where $CISDG_{it}$ – estimated composite index of social development goal for countries of Eastern Partnership.

$voicacc_{it}$ – Voice and Accountability – capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

$polstabilnoviol_{it}$ – Political Stability and Absence of Violence/Terrorism – capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

$govereffect_{it}$ – Government Effectiveness – capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

$regqual_{it}$ – Regulatory Quality – capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development. The respect of citizens and the state for the institutions that govern economic and social interactions among them:

$ruleoflaw_{it}$ – Rule of Law – capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

$contrcorr_{it}$ – Control of Corruption – capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests [19].

$gdppercap_{it}$ – log of gross domestic product converted to international dollars using purchasing power parity rates.

Results

To build index, we use data from various sources. First, we downloaded all the data provided by the World Bank for the period 2006-2014, through the World Bank Data API. This includes Food and Agriculture Organization, World Bank, World Health Organization, Inter-Parliamentary Union, International Labor Organization, United Nations Educational, Scientific, and Cultural Organization, which meet the estimated requirenments.

Indicators are shown in Table 1.

Table 1. Indicators for principal component analysis

Goal	Indicator	Abbreviation
Goal1. End poverty in all its forms everywhere	Poverty headcount ratio at $1.90 a day (2011 PPP) (% of population)	G1Pove190
Goal 2. End hunger, achieve food security and improved nutrition and promote sustainable agriculture.	Prevalence of undernourishment (% of population)	G2Suffnour
Goal 3. Ensure healthy lives and promote well-being for all at all ages.	Maternal mortality ratio (modeled estimate, per 100,000 live births)	G3Matemort
Goal 4. Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.	Adolescents out of school (% of lower secondary school age)	G4Adoutsch
Goal 5. Achieve gender equality and empower all women and girls.	Proportion of seats held by women in national parliaments (%)	G5Seatswom
Goal 6. Ensure availability and sustainable management of water and sanitation for all.	Improved water source (% of population with access)	G6Impwater
Goal 7 Ensure access to affordable, reliable, sustainable and modern energy for all.	Renewable energy consumption (% of total final energy consumption)	G7Renencons
Goal 8. Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.	Unemployment, total (% of total labor force) (modeled ILO estimate)	G8Unempl

Table 1 (cont.). Indicators for principal component analysis

Goal	Indicator	Abbreviation
Goal 9. Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.	Research and development expenditure (% of GDP)	G9RaD
Goal 10. Reduce inequality within and among countries.	GINI index (World Bank estimate)	G10GINI
Goal 11. Make cities and human settlements inclusive, safe, resilient and sustainable.	Improved sanitation facilities (% of population with access)	G11Impsani
Goal 12. Ensure sustainable consumption and production patterns.	Adjusted net savings, excluding particulate emission damage (% of GNI)	G12Adjnetsav
Goal 13. Take urgent action to combat climate change and its impacts.	CO2 emissions (kg per 2011 PPP $ of GDP)	G13CO2emi
Goal 14. Conserve and sustainably use the oceans, seas and marine resources for sustainable development.	Marine protected areas (% of territorial waters)	G14Marprotec
Goal 15. Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.	Terrestrial protected areas (% of total land area)	G15Terrprotec
Goal 16. Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.	Intentional homicides (per 100,000 people)	G16homic

Internal consistency of data, that is, how closely related a set of items are as a group, is checked by Cronbach's alpha. The Cronbach's alpha and further calculations will be implemented through the Data Analysis and Statistical Software STATA 13.0 (Figure 1).

```
Average interitem covariance:     .0311798
Number of items in the scale:           16
Scale reliability coefficient:     0.8192
```

Figure 1. Cronbach's alpha calculations

Calculated α = 0.8192 reflects sufficient level of internal consistency of data set.

At the first step of PCA, principal components and their characteristic (eigenvalue, difference, proportion, cumulative) were determined. Based on the Kaiser criterion, we can retain only factors with eigenvalues greater than 1. In essence this is like saying that, unless a factor extracts at least as much as the equivalent of one original variable, we drop it.

A graphical method is the scree test shown on Figure 2.

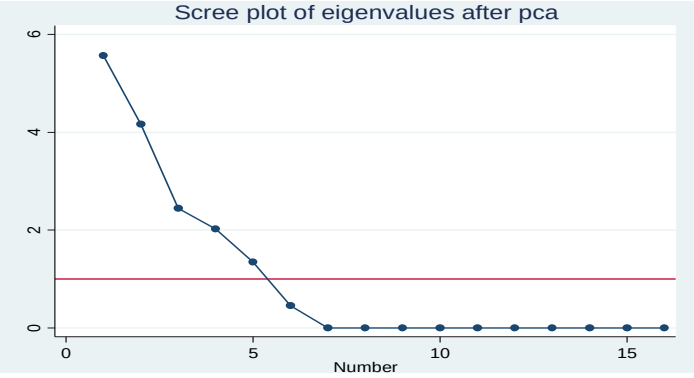

Figure 2. Graphical method of principal component determination

We retain five components which cumulatively explain 80.26% of variance. After the number of components has been determined, and in order to facilitate the interpretation of the analysis, we involve a rotation of the components that were retained. Component loadings are analogous to correlation coefficients, squaring them give the amount of explained variation. Therefore the component loadings tell us how much of the

variation in a variable is explained by the component. After rotation VARIMAX we obtained component loadings shown on figure 3 (correlations less then 0.35 are considered unimportant and dropped).

The features of CISDG constructing for countries in transition are as follows.

The first component explaining 35 of variance is defined by Goal 1 (End poverty) and Goal 2 (End hunger). It is also very important to provide innovations and public security. The negative correlation between component 1 and indicator Goal 7 (Renewable energy consumption) can be explained by internal contradiction within SDGs [16].

The second component explaining next 22% of variance is defined by progress in Goal 5 (Achieve gender equality), Goal 3 (Ensure healthy lives) and Goal 12 (Ensure sustainable consumption).

The factor loading on the rest of components is shown on Figure 3.

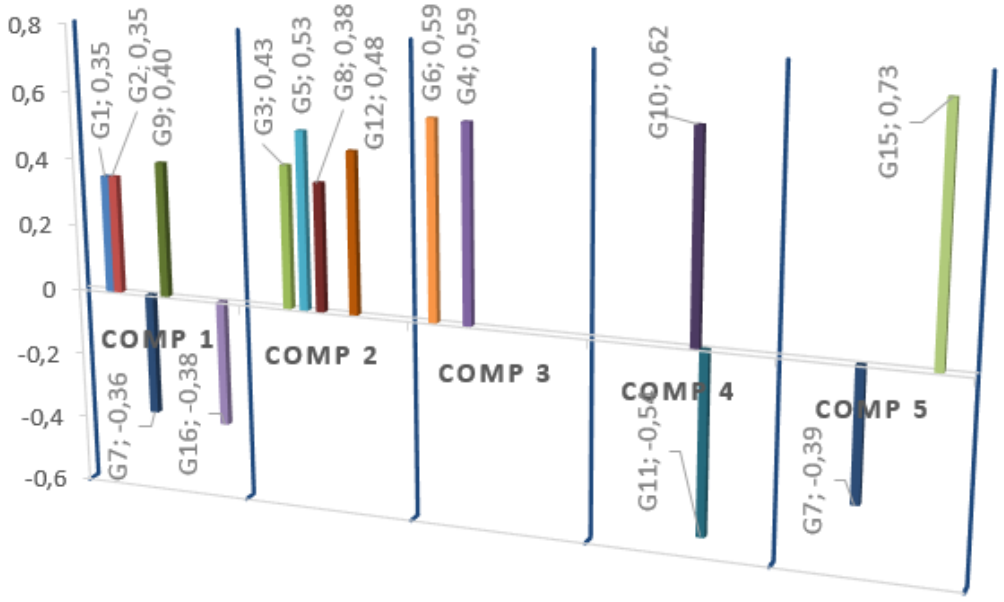

Figure 3. Factor loadings on principal component after rotation VARIMAX

Based on PCA, we defined weights and calculated composite indices of Sustainable Development Goals for Eastern Partnership countries (Table 2).

Table 2. Composite index SDGs

	2006	2007	2008	2009	2010	2011	2012	2013	2014
Armenia	2.1926	2.3426	2.1828	2.2736	2.2543	2.0237	2.3312	2.2420	2.0336
Azerbaijan	2.1445	2.4838	2.5519	2.7476	2.9683	2.8686	2.8608	2.9924	2.8741
Belarus	5.9913	6.0348	5.9574	5.8742	5.9496	6.0490	6.0081	5.9894	6.00
Georgia	1.2408	0.9265	0.7845	1.0984	1.3833	1.3541	1.9814	1.9411	2.0112
Moldova	2.9305	3.2842	3.1046	3.040	2.6085	2.7722	3.0699	3.1346	2.9685
Russian Federation	2.4735	2.9417	3.1567	2.9325	3.1176	3.1229	3.0866	2.9737	2.8761
Ukraine	2.7184	2.5331	2.7216	2.5809	2.5154	2.4095	2.3115	2.4055	2.3544

Results show us the distinctions in SDGs performance by Eastern Partnership countries and the Russia Federation. Belarus a is leader and demonstrates a high level of permanence.

The index values are the highest due to the fact that 8 Goals (Goals 1-6, 8 and 12) are estimated by the maximum score. These goals are considered to be achieved for Belarus by 2014 (Figure 1).

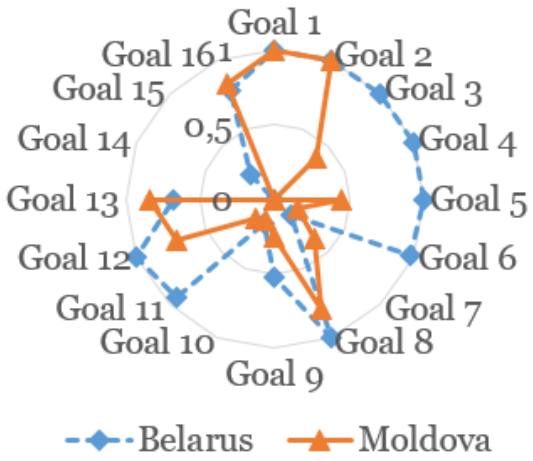

Figure 4. The SDGs composite index for Belarus and Moldova in 2014

The rest of the countries show almost the same because of the similar initial structure of economy, social features, development of institutions. Moldova has good results but index is quite unstable (Figure 4). Goals 1 and 2 have been achieved. But some of goals (Goals 7, 9, 10) asks for more attention from authorities and government. Certainly, achievement of each specific goal, on one hand, requires a large expenditure of public and private funds and resources and, on the other hand, the return is expected in the long run.

The middle position of Ukraine between Eastern Partnership countries can be exlained by insufficient activity of economic and social reforms during the period of research. Despite four goals are reached (1, 2, 4 and 11), there are goals with low grades. Unfortunately, we can't expect significant changes in the near future. The annexation of Crimea and war actions in Donbass restrict Ukraine much in SDGs achievements. Nevertheless, even under mentioned condition, Ukraine can succeed in civil society development and make some steps toward to SDG.

We can assume that in the period after 2014 the situation will be worsen for the Russian Federation due to International sanctions and a drop in oil prices affect negatively the Russian economy.

In 2014 the Russia Federation had the third position in groups of countries being researched. 5 goals of 16 have maximum grades, but grades of environmental goals are quite low. Including into analysis the level of economic development of countries shows that efforts of the Russia Federation is not high enough. Therefore, despite the highest level of GDP per capita, the Russia Federation has SDG progress at the level similar to Moldova which has 5 times lower GDP per capita.

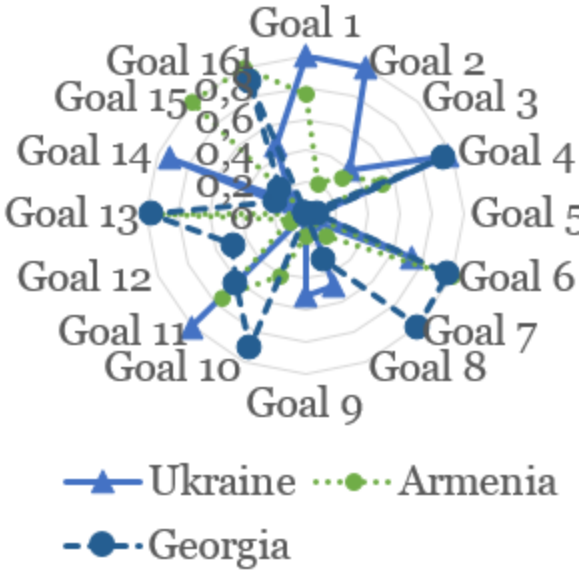

Figure 5. The SDGs composite index for Armenia, Georgia and Ukraine in 2014

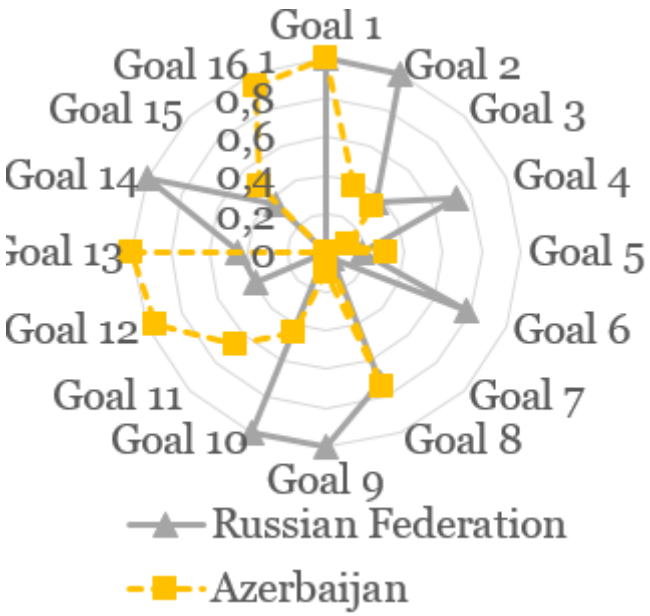

Figure 6. The SDGs composite index for Armenia, Georgia and Ukraine in 2014

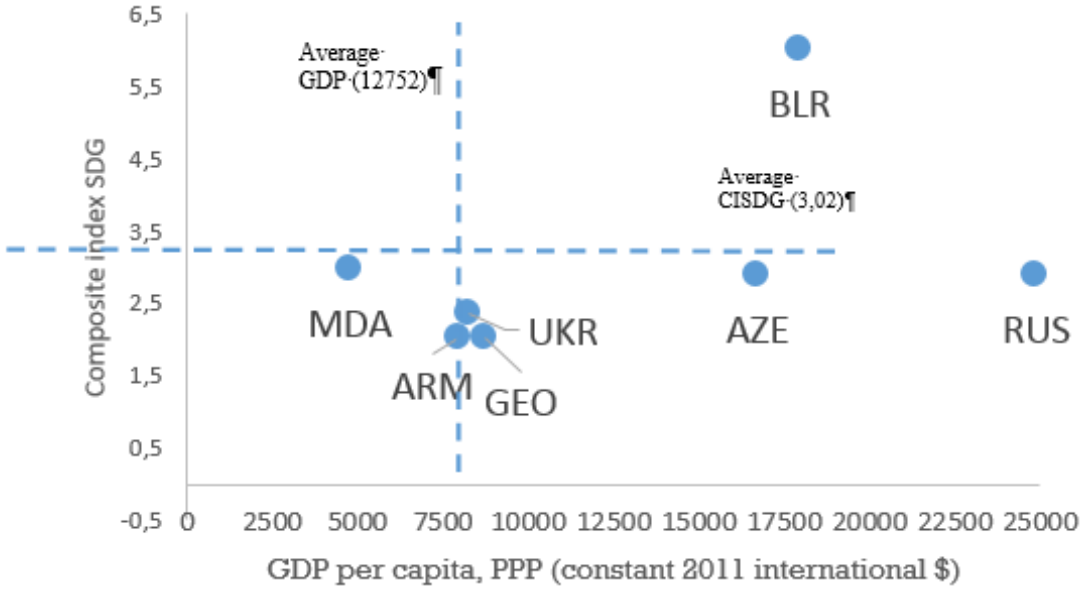

Figure 7. The SDGs composite index and GDP per capita, 2014

Georgia stands out from all the countries. It has the worst position in the group under review, but has been showing positive dynamics since 2008. Georgia has activated domestic reforms. Serious institutional changes fighting corruption were made. Georgia is the 44 least corrupt nation out of 175 countries, according to the 2016 Corruption Perceptions Index reported by Transparency International. Corruption Rank in Georgia averaged 77.94 from 1999 to 2016, reaching all time the high of 133 in 2004 and a record low of 44 in 2016 [5]. This fact confirms the relevance of our hypothesis about the relationship between progress in achieving SDGs and the quality of institutions. However, the GDP per capita factor also requires research within the framework of the task of assessing the achievements of SDGs by countries.

Three types of models are viewed in the paper, considering the panel structure of the data, namely the time-averaged model for each i-th object of the variables, a model with deterministic variables and a model with random individual effects.

```
. summarize $id $t $ylist $xlist
```

Variable	Obs	Mean	Std. Dev.	Min	Max
countrynmbr	63	4	2.016065	1	7
time	63	2010	2.602728	2006	2014
sdgi	63	2.969703	1.359528	.7845742	6.049082
voicacc	63	-.6939622	.5736918	-1.745788	.2397981
polstabnov~l	63	-.3612634	.4536487	-1.987586	.5004297
govereffect	63	-.4433211	.4441853	-1.170184	.6036629
regqual	63	-.2662603	.5549337	-1.639836	.9253338
contrcorr	63	-.6749178	.3825761	-1.178198	.7420264
ruleoflaw	63	-.6269789	.302634	-1.291235	.2017659
gdppercap	63	3.992217	.250831	3.541084	4.400436

Figure 8. Characteristics of the data panel

The choice of the most adequate model was carried out by pairwise comparison of the models evaluated in the works using the appropriate tests.

The first model is a pooled regression for all years and countries is characterized by a high level of quality (R^2 = 0.9008), F-test allows us to reject the null hypothesis. The coefficients for regressors are statistically significant except for the variable Government Effectiveness (*govereffect*) and the constant of which p-value > 0.05.

However, the pooled model does not consider the panel structure of the data, and is estimated using the ordinary least square method, therefore it is advisable to test PE and FE models.

Having estimated the regression with Random Effects, which will allow us to consider the real heterogeneity of the sample in the covariance matrix of random errors. In the RE model, the measure of regression quality is not R^2, but the Wald test, since a generalized OLS is used. In our case, WALD *chi*2 (7) = 499.17, which also indicates a high quality of the model. As in the previous model, all coefficients for independent variables, except for Government Effectiveness (*govereffect*), are statistically significant.

The quality of adjustment of the fixed effects model should be judged by the determination coefficient. It is 0.4884, which is generally not bad, although the significance of regression is not very high: F (6.68) = 3.94 and Prob> F = 0.0000.

RHO (0.975) differences are more pronounced than he dynamic ones. This indicates the need to consider individual effects and against the model of cross-cutting assessment.

However, this is just a hypothesis, which we still should verify statistically.

a) The regression model with random effects is comparable with the pooled regression (the Breusch-Pagan test).

```
Breusch and Pagan Lagrangian multiplier test for random effects

        sdgi[countrynmbr,t] = Xb + u[countrynmbr] + e[countrynmbr,t]

        Estimated results:
                             |       Var     sd = sqrt(Var)
                             -------------------------------
                        sdgi |   1.848316       1.359528
                           e |   .0347203       .1863337
                           u |         0              0

        Test:   Var(u) = 0
                                 chibar2(01) =      0.00
                              Prob > chibar2 =    1.0000
```

Figure 9. The Breusch-Pagan test

Since the p-level> 0.01, the main hypothesis is accepted. Thus, the model with random effects describes our data worse than the model with a pooled regression.

b) The regression model with fixed effects is comparable with the pooled regression (the Wald test).

```
F test that all u_i=0:     F(6, 49) =     46.43                 Prob > F = 0.0000
```

Since the p-level is <0.01, the main hypothesis is rejected. Thus, a regression model with fixed effects is better suited for describing data than a simple regression model.

c) The regression model with random effects is comparable with the regression model with fixed effects (the Hausman test).

```
. hausman fixed random

                 ---- Coefficients ----
             |      (b)          (B)            (b-B)     sqrt(diag(V_b-V_B))
             |    fixed        random       Difference          S.E.
-------------+----------------------------------------------------------------
     voicacc |   -.1908738    -.6017639        .4108901        .2059318
polstabnov~l |    .1140519     .5732348       -.4591829              .
 govereffect |   -.1852634    -.6068739        .4216105              .
     regqual |    .0721675    -2.539785        2.611953              .
   contrcorr |    .7588401     .7938835       -.0350434              .
   ruleoflaw |   -.619986      2.774097       -3.394083              .
   gdppercap |    3.216285     1.199942        2.016343        .7551233
------------------------------------------------------------------------------
                           b = consistent under Ho and Ha; obtained from xtreg
            B = inconsistent under Ha, efficient under Ho; obtained from xtreg

    Test:  Ho:  difference in coefficients not systematic

                  chi2(7) = (b-B)'[(V_b-V_B)^(-1)](b-B)
                          =      245.33
                Prob>chi2 =      0.0000
                (V_b-V_B is not positive definite)
```

Figure 10. The Hausman test

Since the p-level is <0.01, the main hypothesis is rejected. The results obtained make it possible to conclude that in our case a model with fixed individual effects is suitable.

Thus, because of all the tests, we concluded that the model with deterministic individual effects is the most adequate to the data. Individual features explain most of the variation. The values of the regression coefficients are presented in the results of constructing the regression (Figure 10).

```
Fixed-effects (within) regression               Number of obs      =        63
Group variable: countrynmbr                     Number of groups   =         7

R-sq:  within  = 0.4884                         Obs per group: min =         9
       between = 0.3370                                        avg =       9.0
       overall = 0.3412                                        max =         9

                                                F(7,49)            =      6.68
corr(u_i, Xb)  = -0.1056                        Prob > F           =    0.0000

------------------------------------------------------------------------------
       sdgi |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
------------+----------------------------------------------------------------
     voicacc |  -.1908738   .2689518    -0.71   0.481    -.7313528    .3496051
polstabnov~l |   .1140519   .0897735     1.27   0.210    -.0663547    .2944586
 govereffect |  -.1852634   .2209524    -0.84   0.406    -.6292838     .258757
     regqual |   .0721675   .3098988     0.23   0.817    -.5505975    .6949324
   contrcorr |   .7588401   .2223543     3.41   0.001     .3120024    1.205678
   ruleoflaw |   -.619986   .4693398    -1.32   0.193     -1.56316    .3231876
   gdppercap |   3.216285   .8860275     3.63   0.001     1.435746    4.996824
       _cons |  -9.901141   3.696249    -2.68   0.010    -17.32903    -2.47325
-------------+----------------------------------------------------------------
     sigma_u |  1.1756148
     sigma_e |   .18633371
         rho |   .97549373   (fraction of variance due to u_i)
------------------------------------------------------------------------------
F test that all u_i=0:     F(6, 49) =     46.43                 Prob > F = 0.0000
```

Figure 10. The regression model with fixed individual effects

It should be noted that at a given level of significance the control of corruption and GDP per capita are statistically significant.

Thus, the regression model of the relationship between progress in achieving SDG goals and the development of institutions looks like this:

$$CISDG = -9.9011 + 0.7588contrcorr + 3.2162gdppercap_{it}$$

Conclusions

The scale of Sustainable Development Goals requires a large amount of resources. All cannot be implemented immediately, so it is necessary to identify the key factors for success. The results of the study show that at this stage the Eastern Partnership countries need to formulate an effective policy of economic development and effective institutions for fighting corruption to make progress in SDG. The direction of further research should be how to improve the indicators – the SDGs indexes, and the rationale for the strategy of achieving SDGs for each country, considering its economic and social characteristics.

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