Professor Ioan RADU, PhD
E-mail: iradu13@gmail.com
Senior Lecturer Monica SABAU, PhD
E-mail: emsabau@gmail.com
Associate Professor Cleopatra ŞENDROIU, PhD
E-mail: cleosendroiu@gmail.com
The Bucharest University of Economic Studies
Associate Professor Stefan PETE
Babes-Bolyai University, Cluj-Napoca

COERCIVE ECONOMIC DIPLOMACY – CORRUPTION TRIGGER OR DETERRENT

Abstract. *Establishing international sanctioning regimes is an important tool for maintaining peace and international security. Our approach for assessing the degree of corruption in a country while determining the correlations with coercive diplomacy and economic sanctions starts from analyzing the general economic factors affecting the level of corruption and its results. This study provides an analysis of the impact of coercive instruments of foreign policy (in the form of economic sanctions) on the level of corruption in the target countries. The results offer a support for the fact that sanctions cause more extensive damages to the economic environment and the public perception, more important than the limited sanctions.*

Keywords: *corruption deterrence, international infringements, economic sanctions, coercive diplomacy, SPSS software package.*

JEL Classification: F51, M48, N44

1. INTRODUCTION

Visible and very present in the emerging markets, corruption is not a peripheral social phenomenon which can be ignored by business operators, it is a first-line threat, directly affecting the competitive economic environment. As a social phenomenon, corruption is regarded as misuse of power in order to achieve a personal gain, taking various forms from bribery to fraudulent misuse of funds.

Today the phenomenon of corruption is not addressed tacitly anymore and managed only at national level, but it is subject to international anti-corruption movements involving many organizations and companies. The international commitment against corruption is mainly represented by the Organization of International Transparency (TI), the Organization for Economic Co-operation and

Development (OECD), the World Bank Institute (WBI) and the United Nations Convention against Corruption. Their collective actions generate resources every year (as studies, professional guides, indicators), which can be used by companies, the public or the official institutions in order to promote ethics and integrity policies and to condemn corruption and build integrated systems for preventing and detecting any acts of fraud.

The international organizations have at their disposal a number of tools, such as sanctions and embargoes, which may result in a change of the government attitude, when they don't have the will or capacity to provide the political goods or the multilateral humanitarian relief funds.

The public diplomacy has been used by the US government since World War I, but the term was used for the first time only in 1965, by Edmund Gullion, an American diplomat [5], in order to describe the process through which the international actors were trying to achieve their foreign policy objectives, based on the interaction with foreign countries audience. Nowadays, the public diplomacy is one of the most important concepts of the political communication.

Political scientist Joseph Nye [26] described the public diplomacy as a political expression of soft power, a concept which he introduced in early 1990. In international politics, power is the ability of an actor to influence another one to perform certain actions that have not taken place otherwise. Therefore, the hard power is the ability of an actor to compel another to perform certain actions and to include as tactics the military intervention, the coercive diplomacy and the economic sanctions. On the other side, the soft power is the ability to persuade an actor to take those actions. The combination of these two is the power of smart, strategic approach, using the most appropriate tactics in the two dimensions of power mentioned above.

The coercive diplomacy term designates an attempt to reach a target, to convince a state, a group (or groups) within a state, or a non-state actor to change their unacceptable behavior either by threatening to use force or actual use limited forces. The coercive diplomacy is a diplomatic strategy, based on force threat rather than its use. If force should be used to strengthen diplomatic efforts to persuade, it will be engaged in an exemplary manner in the form of a military/economic action rather limited, in order to demonstrate the availability of having enlarged military/economic actions if necessary.

The economic diplomacy is the foreign policy function linking the foreign policy approaches and the citizens economic welfare of a country and aims to use all the instruments of foreign policy in order to promote the business interests of the Romanian entrepreneurs and the Romanian state. The economic diplomacy provides an effective framework for the institutional cooperation in order to achieve certain ways to promote the Romanian economic goals abroad and support the foreign investments in Romania. The main responsibilities relate to: promoting the Romanian economic interests abroad; support and promotion of energy security, cooperation with international economic organizations; inter-institutional cooperation for economic issues.

2. ECONOMIC SANCTIONS AND RELATED CONSEQUENCES

Establishing international sanctioning regimes is an important tool for maintaining peace and international security. The sanctions are adopted in order to determine the change of activities or policies inconsistent with certain standards of conduct shared by the international community.

After the Cold War ended, the sanctions adopted by ONU and subsequently also by the European Union began to be increasingly more frequently used as an "intermediate" tool between negotiations and coercive actions seeking to induce the desired behavior in order to avoid using armed force. With this increasingly common usage, the penalties features have changed in order to avoid their side effects and increase their efficiency on certain target groups.

Therefore, the need to protect the most vulnerable segments of the population in countries with too restrictive measures regimes has determined avoiding the imposition of complete prohibition regimes, such as the ones specified in art. 41 of ONU Charter. Progressively, certain restrictive measures have been identified, such as arms embargoes, travel bans, freezing of funds per persons or entities. Also, certain provisions have been included in the documents establishing sanctioning regimes stipulating the humanitarian exceptions for such sanctions.

These changes of the sanctions have been motivated by the need of increasing their efficiency as political instruments in the service of diplomacy, in order to affect directly and immediately those groups, among which, most often, the ruling elites, whose conduct is sought to be influenced.

The types of sanctions used internationally by the ONU, EU and OSCE are economical (restrictions on imports, exports, investment, arms embargoes), financial (freezing of funds and other economic resources), travel restrictions, restrictions on transport (road , air, sea), penalties cultural, sporting, diplomatic.

In developing and implementing these individualized sanctions, the main purpose is to have into consideration the human rights and the fundamental freedoms, in particular the right of individuals or entities sanctioned to a fair trial and their access to effective remedies. It also seeks to ensure that measures are proportionate to the aim pursued and accompanied by a system of exceptions that take into account the basic needs of those sanctioned.

A significant part of the literature on economic sanctions treats the functioning of economic sanctions [7] [8] [9] [10] [11] [18] [19] [20] [25]. The overall conclusion is that economic sanctions rarely induce behavioral changes in the desired direction [27]. It is shown that economic coercion could cause serious political and humanitarian costs in the target countries. Research shows that economic sanctions cause problems for civil society by disrupting the ability of government (economic, demographic, amounts allocated to health and education) in target countries [1] [2] [4] [16] [24] [28] [31].

Penalties can lead to serious political consequences which were not originally intended by the sender countries, such as worsening of the human rights and

democratic freedoms in the sanctioned countries [13] [16] [31]. Due to the fact that the economic sanctions disrupt the economic and political stability, the external economic pressures may become a major threat to the country's political leadership mandate target, increasing the likelihood of political violence [24] [1] and violation of basic human rights for the citizens of the countries sanctioned [28] [29] [32] [16]. None of these studies relate to the effect of external economic constraints based on the level of corruption.

The countries determining the sanctions initially apply an external economic pressure against a target state, in the hope that the economic turmoil caused by the constraint would endanger the legitimacy and authority of the target regime. The purpose of applying sanctions is to force the state to respond to the consigning country target [20]. The consequences of the economic constraints are not limited to the economic and political impact on the ability of specific schemes, as they also have significant affects on the socio-economic and political well-being of civilians [4] [16] [31].

Therefore, an economic constraint will be unlikely to affect the major repressive capacity and legitimacy of political leadership target, but certainly will not promote more freedom of association, expression and communication, especially in a less democratic system.

Instead, the focus on undesirable political repercussions and economic disruptions caused by the applied constraint indicates that sanctions are likely to aggravate the freedom of opinion and the level of democracy in the countries sanctioned.

3. CONSIDERATIONS FOR DATA SELECTION

Our approach for assessing the degree of corruption in a country while determining the correlations with coercive diplomacy and economic sanctions starts from analyzing the general economic factors affecting the level of corruption and its results.

In developing the research study, the mimics equation structural model - Multiple Indicators Multiple Causes (eng. Multiple Indicators Multiple Causes) will be used. The model was introduced in 1970 in the economic research by Zellner, then it was mentioned in 1983 in Weck's research [14], developed by Loayza [23], Giles [17]. It is used successfully in determining the level of the underground economy for the institutional changes in the countries of Eastern Europe, in order to quantify the welfare of citizens [21]. It has been recently used by Bajada and Schneider [3] for the study of corruption in the Australia and Pacific region and by Dell'Anno and Schneider [30] for determining the shadow economy of Italy.

According tot he MIMIC model, the latent variable is the degree of corruption and the observable variables are divided into causes and indicators, reflecting the economic dependence and influence on the processes of this phenomenon.

The information has been taken from the database of World Bank and Eurostat for the period between 2010-2011, and its actual values are presented in Appendix 1. For the normalization and the econometric analyzes, the IBM SPSS software package has been used.

The following data have been chosen as cases for the model: the access to credit (1 low -183 high), the opening of the national economy ((% Imports in Gross Domestic Product - GDP), the index of democracy (1 low - 10 high), the index of business facility (1 Low - 183 high), the education (secondary school completed by % of the population, at ages of 20-24 years), the rate of taxes (% of the total revenues of a company).

a. the access to credit – if it is reduced, it influences the degree of corruption through the pressure created for the economic agents to modify their financial statements in order to apparently meet the financial indicators required by the credit institutions;

b. the opening of the national economy - the higher the share of imports in GDP, the higher is for the national economy the influx of foreign capital (as money or property) and also a new series of regulations harmonized with the international laws;

c. the democracy index - or the political rights index - it was included due to the lack of political competition associated with a high degree of corruption;

d. the index of business facility - the more investors will find easy ways to conduct business, the less opportunities will be linked to bribery and pressure;

e. the level of education - the lack of funds for the education sector is a characteristic of countries with high levels of corruption (in this case the data indicate a proportion of 20-24 years population with completed secondary school – with high school a total population of 20- 24 years);

f. the level of taxation - in countries with a high level of taxation, the business agents will find solutions either for tax evasion, or for bribing the state officials in order to establish lower taxes.

The effect variables selected for this study are related to the following data: GDP / capita (1) foreign investment in GDP (2) (%), unemployment rate, credit rate for the private sector, the level of taxes collection (as% of GDP).

a. GDP / capita – the corruption generates a money transfer from the state to various illegal destinations, thus depriving important sectors of the needed amounts and affecting the living standards of the population;

b. the rate of foreign investment in GDP - the more corrupt a country is, the more it will be avoided by foreign investors, who are unwilling to expose themselves and their reputation financially;

c. the unemployment rate – being directly related to the standard of living, the unemployment rate is a result of a corrupt system based on the diversion of funds needed for the economy;

d. the crediting rate for the private sector – it is influenced by corruption in two ways, either by the corrupt system which generates low living standards and economic development (not a large number of applicants for funding), or the existing credit institutions (especially the foreign ones) impose international conditions for financial loans granting and monitoring (which are difficult to fulfill by the national economic agents or by the population);

e. the taxes collection - a corrupt system does not seek a fair collection of taxes, thus creating a justification for population and small and medium agencies to find ways of circumventing the law and having a creative and illegal taxes mitigating for the state.

The motivation for choosing these variables lies in their validity as a result of factors of influence or the corruption or the underground economy, three of them being regarded as coercive diplomacy elements [6] [12] [22]. Any macroeconomic imbalances in direct relationship with the external environment have been considered as economic sanctions (coercive diplomacy), expressed by the following indicators: the rate of foreign investment in GDP - if the target country is sanctioned, the indicator will be low; the open economy (IMP / GDP); the private sector lending rate - a country with economic sanctions will present a restraint of the financial companies to credit the private sector.

4. MAPPING EU-CORRUPTION AND ECONOMIC SANCTIONS CORRELATIONS

For a better and detailed understanding of the degree of corruption in each country, it is necessary to analyze the causal factors and results of this phenomenon – the factor analysis, according to which countries will be grouped for subsequent cluster analysis. The factor analysis also provides the correlation matrix between variables, thus meeting the need for information for the developments of certain indicators and the influence of these developments based on the level of corruption.

The factors analyzed are those listed above as main causes and indicators: the access to credit (ACCES_CR), the open economy (IMP_GDP), the Democracy Index (DEMO), the business feature index (FACIL_BUS), the education (EDU), the level of taxation (R_TAX), the GDP / capita (GDP_CAP), the rate of foreign investment in GDP (R_FOR_INVEST), the unemployment rate(R_UNEMPL), the private sector lending rate (R_CREDIT), the collection of taxes (R_C_TAX).

Principal component analysis is performed using IBM-SPSS-Statistics19.0.0, as shown in Figure 1 and according to standard Principal component analysis' formula (1):

$$y_{ij} = w_{1i}x_{ij} + w_{2i}x_{2j} + ... + w_{pi}x_{pj} \qquad (1)$$

The weights obtained *W* are deployed based on the maximized variance of *y1, y2, Var (y1), Var (y2),* subject to he constraint that the covariance between *yi* and *yj* is zero. The weights matrix is determined from the variance-covariance matrix using formula (2) :

$$s_{ij} = \frac{\sum_{k=1}^{n}(x_{ik} - \overline{x_i})(x_{jk} - \overline{x_j})}{n-1} \qquad (2)$$

Figure 1. Principal component analysis using SPSS - screenshot

The analysis of all the correlation matrix of all 11 variables considered in Table 1 allows extracting a first set of information on the causal factors and results of the level of corruption. We can notice that the variable R_UNEMPL (unemployment rate) is negatively correlated with the access to credit, the degree of democracy, the business facility, the education, the GDP / capita lending rate and the rate of tax collection, is directly and positively related to the openness of the economy and the level of taxation in a country. The R_C_Tax variable rate (tax collection) is positively related to the access to credit, the democracy index, the GDP / capita foreign investment rate and the lending rate, and there are negative correlations in the unemployment rate, the rate of economic openness , the business facility index and the rate of taxation. Bartlett sphericity test results reject the null hypothesis (the correlation matrix of the variables is an identity matrix), and the Kaiser-Meyer-Olkin (KMO) test results are greater than the minimum of 0.05, thus showing that the method chosen is appropriate.

Varimax rotation method is used for interpretation of the rotated factors, according formula (3):

$$Q_1 = \sum_{j=1}^{k} \left(\frac{p\sum_{i=1}^{p} b_{ij}^4 - p\sum_{i=1}^{p} b_{ij}^2}{p} \right) \qquad (3)$$

Table 1 – Correlation Matrix

Variables	ACCES_CR	IMP_GDP	DEMO	FACIL_BUS	EDU	R_TAX	PIB_CAP	R_FOR_INVEST	R_UNEMPL	R_CREDIT	R_C_TAX
ACCES_CR	1	0.006	0.129	0.186	-0.313	0.114	-0.086	0.433	-0.112	-0.034	0.043
IMP_GDP	0.006	1	-0.193	-0.064	0.157	0.013	-0.273	-0.51	0.203	-0.209	-0.058
DEMO	0.129	-0.193	1	-0.461	0.087	-0.041	0.784	0.209	-0.352	0.563	0.353
FACIL_BUS	0.186	-0.064	-0.461	1	-0.046	0.216	-0.461	0.049	-0.019	-0.444	-0.236
EDU	-0.313	0.157	0.087	-0.046	1	-0.026	0.004	-0.121	-0.231	-0.237	-0.083
R_TAX	0.114	0.013	-0.041	0.216	-0.026	1	0.175	-0.422	0.227	-0.412	-0.311
PIB_CAP	-0.86	-0.273	0.784	-0.461	0.004	0.175	1	-0.212	-0.330	0.548	0.418
R_FOR_INVEST	0.433	-0.51	0.209	0.049	-0.121	-0.422	-0.212	1	-0.245	0.212	0.188
R_UNEMPL	-0.112	0.203	-0.352	-0.019	-0.231	0.227	-0.330	-0.245	1	-0.181	-0.589
R_CREDIT	-0.34	-0.209	0.563	-0.444	-0.237	-0.412	0.548	0.212	-0.181	1	0.459
R_C_TAX	0.43	-0.058	0.353	-0.236	-0.083	-0.311	0.418	0.188	-0.589	0.459	1

The values for the correlation matrix using Varimax indicate the fact that 5 main components will be kept for the analysis, with a cumulated content of 80.975%, as mentioned in Table 2. The association among the factors scores is obtained with the factor-matrix, which offers information related to the relation between the initial variables taken into account and the main factors identified, as indicated in Table 3.

Table 2. Eigen Values and Total Variance Explained

Components	Eigen Value	Variance (%)	Total variance (%)
1	3.297	29.975	29.975
2	1.854	16.854	46.829
3	1.433	13.031	59.860
4	1.292	11.742	71.602
5	1.031	9.373	*80.975*
6	0.823	7.479	88.454
7	0.433	3.935	92.389
8	0.323	2.936	95.325
9	0.250	2.277	97.602
10	0.189	1.718	99.319
11	0.750	0.681	100.000

Table 3. Principal components correlation matrix

Variables	Factors				
	1	2	3	4	5
ACCES_CR	0.038	0.617	0.532	0.126	0.431
IMP_GDP	-0.295	-0.026	-0.385	-0.178	0.733
DEMO	0.819	-0.161	0.195	0.093	0.285
FACIL_BUS	-0.556	0.370	0.185	0.455	-0.270
EDU	-0.043	-0.334	-0.604	0.523	0.207
R_TAX	-0.348	-0.457	0.635	0.323	0.233
PIB_CAP	0.772	-0.488	0.302	0.122	0.540
R_FOR_INVEST	0.262	0.810	-0.076	-0.039	0.167
R_UNEMPL	-0.561	-0.241	0.196	-0.667	0.082
R_CREDIT	0.795	0.037	0.022	-0.404	-0.126
R_C_TAX	0.704	0.188	-0.164	0.166	-0.047

The 5 factors identified are being correlated with the initial variables taken into consideration for the analysis of the corruption level, as cause and result, and can be explained such as:

Factor 1 – named ***the level of civic and fiscal education*** is correlated in a strongly positive way with the taxes collection rate, with the credit rate, with the democracy rate, with the GDP/capita and in a negative way with the taxation rate and the population education level.

Factor 2 – named as **collecting and owning of operations by foreign capital**, is correlated in a positive way with the credit access and the foreign investments rate and in a negative way with the population education level and the GDP/capita.

Factor 3 –named **taxation versus poor taxes collecting**, is correlated in a positive way with the access to credits and the level of taxation and in a negative way with the economy openness level, the population education level and the taxes collection level.

Factor 4 – named **national entrepreneurship**, is correlated in a positive way with the business facilitation index, the credit access, as incentive measures, with the national population education level and in a negative way with the foreign investments rate, the economy openness level and the unemployment rate.

Factor 5 –named **strongly bureaucratic economic openness**, has positive correlations with the economy openness and the credit access, with GDP/capita, and negative correlations with the business facilitation index (as an index of operations bureaucracy).

The analysis of the main components allows establishing the scores for the main factors for each country assessed. The ranking based on which the total score is determined is indicated in Annex 2.

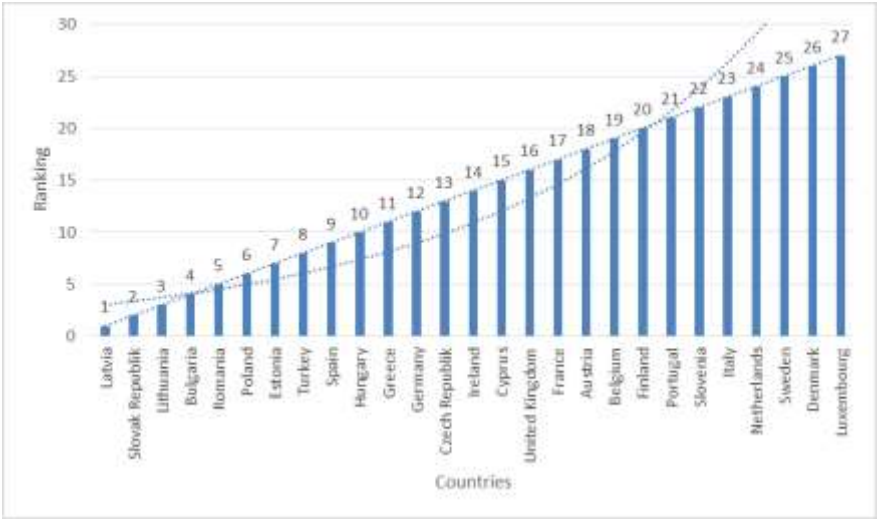

Figure 2. Ranking corruption using influence factors scores

From Figure 2, we notice that Romania has the 5th position, based on the main factors or the corruption level, correlated with coercive diplomacy elements and also taking into consideration the main trends for the group with countries such as: Bulgaria, Slovakia, Turkey, Estonia. The group is the same even if independent rankings are being done, based on each type of factor.

Applying the data mining techniques (eng. Data mining) in order to obtain homogeneous classes for the objects analyzed (27 countries) was achieved using the K-means clustering. K-means clustering method uses non-hierarchical algorithms in order to divide various n observations into k homogeneous classes. To obtain homogeneous classes, five main factors have been taken into account in the analysis and the principal component used as a method of determining the level of similarities between countries was the Euclidean distance.

Using k-means clustering in the IBM SPSS vers.19.0.0 involved placing orders Analyze-Classify-K-means Cluster and parameter setting of group (6 clusters, variant ANOVA), as shown in Figure 3.

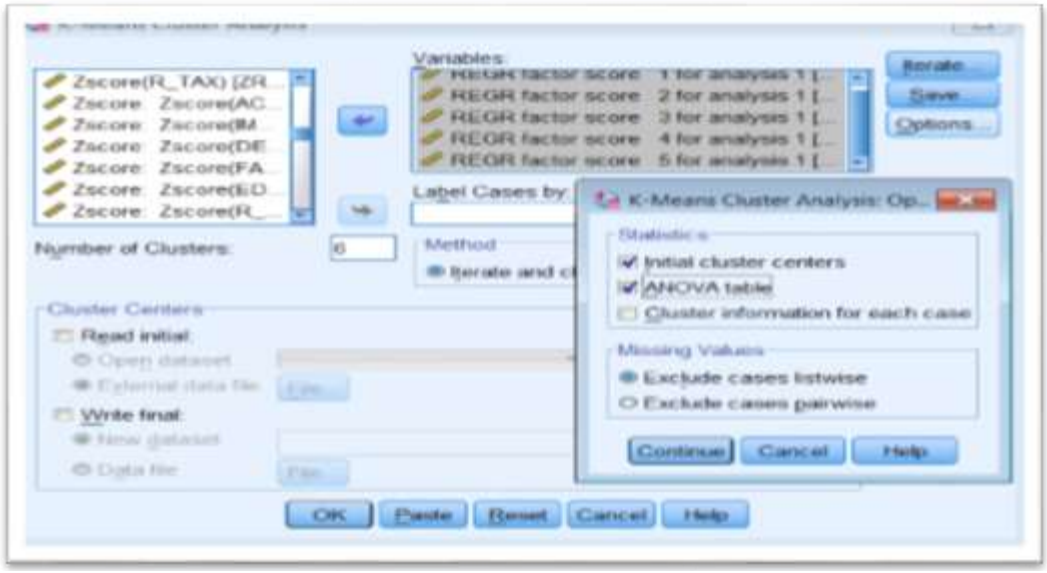

Figure 3. K-means Cluster in IBM SPSS – screenshot

Figure 4. Cluster objects using K-means algorithm

Table 4. Final centroid-based clusters

Factors	Clusters					
	1	2	3	4	5	6
REGR factor score 1	1.21871	-0.88506	-1.10962	1.41680	0.22706	-0.61798
REGR factor score 2	4.04739	-0.11630	-0.11332	-0.32474	-0.31902	0.56175
REGR factor score 3	-0.21087	-0.67104	-1.29802	-0.87565	0.49156	1.64286
REGR factor score 4	-0.14941	-0.03957	-0.58510	-0.69691	0.79179	-1.45499
REGR factor score 5	0.97511	-0.69397	2.48644	-0.70621	0.22854	-0.49109

The complete interpretation of Figure 4 and of the final centroid based clusters from table 4 indicates as a strong positive average for the elements from cluster 1, factor 2, the owning of the operations by the foreign capital; since Luxembourg is not a country very much focused on its own industry, this fact generates the external big openness and the existence of the major economic players on the market for the most part of capitals.

The 2nd Cluster represents a negative average of Factor 1, since certain countries, such as Romania, Bulgaria, Estonia, Latvia, Poland, Slovakia have a low level of fiscal and civic education, which the corruption risk, generating this way a reduction of taxes collection rate, of the GPD/capita and an increase of the unemployment rate and the taxation level (measure taken in order to maintain the budget balance). These observations are validated also by the negative influence of factor 3, taxation versus tax collection. Also, the average influence of 5th Factor indicates a strong bureaucracy and a reduction of the business facilitation index, even though there are legal stipulations in this regard.

The 3rd Cluster reflects a negative average of 3rd Factor, taxation versus low taxes collection, since Hungary and Lithuania have such a high tax level on a market with a relative small openness and a low taxes collection level.

The countries from the 4th Cluster, Cyprus, Denmark, Ireland and United Kingdom, have as a positive influence the average of 1st factor, the fiscal and civic education level, which result in a low corruption risk, due to the fact that the population and the economic operators have a great level of fiscal responsibility, based on a superior taxes collection rate.
The 5th Cluster contains 11 countries (Austria, Belgium, Czech Republic, Finland, France, Germany, Greece, Italy, the Netherlands, Slovenia, Sweden), influenced by the average of 4th Factor, the national entrepreneurship, and 3th Factor, the taxation versus the low taxes collection rate, in a positive way. There is an increased level of business facilitation and credit access, taxation rates relatively steady and a low economy openness, since these countries rely a lot on developing economic operations and national industries. The corruption risk is low due to the increased education level of the population and the superior GDP/capita.
The 6th Cluster represents, as main influence factors, the 3rd Factor, taxation versus low taxes collection, in a positive way, and also the 4th Factor, the national entrepreneurship, in a negative way, which indicates that in countries such as Portugal, Spain and Turkey, there is a big corruption risk, influenced by the limited access to credits and the low business facilitations, the level of education and the general living standards.

CONCLUSIONS

The external economic pressure and the increasing exclusion of certain countries will probably create new incentives for political leadership to commit state censorship, media repression and thus they will create a polluted environment inside a country territory. The international isolation will lead to long-term extremely low confidence of the foreign investors for that country, which will generate a vicious circle favoring a corrupt environment. A closed economy
does not only represents minimum capital sources, but also a lack of access to international trade standards and practices.
Since the economic sanctions aim at reducing the flow of economic and diplomatic relations between the sender and the target countries [18], the sanctioned regimes perceive foreign economic pressures from external actors as a threat to their survival [13] [15] [25]. This causes the creation of a class of corrupt leadership, externally opaque any proposal or possibility to change.
This study provides an analysis of the impact of coercive instruments of foreign policy (in the form of economic sanctions) on the level of corruption in the target countries. The results offer a support for the fact that sanctions cause more extensive damages to the economic environment and the public perception, more important than the limited sanctions.
The frequent use of sanctions as a foreign policy instrument suggests that the application of economic constraints is a classic instrument of international politics. Although the decision makers often use this non-violent political tool as an alternative to other policy instruments (diplomacy, foreign economic assistance and

military force), the fact that an economical constraint causes unintended consequences for the countries concerned remains a certain fact. While the decision makers are aware of the low success rate and the potential humanitarian consequences, there have been very few studies showing unwanted political consequences of economic constraints.

The economic sanctions, especially the sanctions extended throughout the economy, often hit the target with no or very few discriminatory measures to reduce their potential impact on ordinary citizens. Therefore, the sanctions "targeted", such as the freezing of financial assets, reduction or suspension of sales of military weapons and travel bans for officials, could be better strategies for decision makers, in order to put a direct pressure on the management target and reduce costs by constraining the target subjects.

In order to avoid the negative consequences of the coercive economic diplomacy, the policy makers should consider alternative ways of action in relation to a hostile regime, such as the commitment through diplomatic communications and providing economic incentives (external aid and low-interest loans). These strategies are less likely to determine an isolation of the target country and at the same time to lead to an infusion of capital. A financially stable company is less likely to commit acts of corruption, rather than another one at subsistence. Such policies may also have a success rate higher than the sanctions, meaning that they could induce a change of behavior / mentality in the countries concerned, by creating incentives to target leaders which would make them take positive actions towards the requirements of foreign powers.

Appendix 1 - Original Values for Variables

Countries	GDP/CAP - 2010 USD	FOREIGN INVESTMEST RATE % GDP	UNEMPLOYMENT RATE	PRIVATE SECTOR CREDIT % GDP	TAX COLECTION RATE % GDP
Austria	44,878.55	2.28%	4.80%	126.86%	18.72
Belgium	43,019.27	-8.24%	7.90%	97.92%	24.02
Bulgaria	6,309.85	9.43%	6.80%	75.63%	20.94
Cyprus	30,003.00	23.59%	5.30%	269.59%	25.77
Czech Rep.	18,239.49	1.40%	6.70%	55.26%	13.46
Denmark	55,778.00	1.40%	6.00%	231.62%	34.48
Estonia	13,933.67	0.91%	13.80%	110.19%	17.58
Finland	44,530.80	0.03%	8.20%	94.39%	21.33
France	39,459.55	2.26%	9.50%	110.27%	19.62
Germany	40,541.99	11.70%	7.50%	112.33%	12.04
Greece	26,909.74	0.73%	9.50%	91.69%	19.13

Hungary	13,035.40	2.15%	10.00%	71.34%	23.50
Ireland	45,804.99	11.10%	11.90%	230.31%	20.78
Italy	33,865.92	1.37%	7.80%	110.82%	22.97
Latvia	10,705.08	0.35%	17.10%	107.75%	12.56
Lithuania	10,939.05	0.61%	13.70%	70.85%	13.84
Luxembourg	10,874.00	372.00%	5.20%	186.03%	24.36
Netherlands	47,129.52	4.20%	3.40%	215.28%	22.67
Poland	12,273.72	3.20%	8.20%	52.93%	16.36
Portugal	21,475.70	1.20%	9.60%	187.87%	19.66
Romania	7,534.91	3.91%	6.90%	47.07%	17.88
Slovak Rep.	16,396.87	-0.03%	12.00%	50.00%	12.39
Slovenia	23,128.53	-1.19%	5.90%	93.99%	18.29
Spain	30,451.85	0.44%	18.00%	211.44%	8.54
Sweden	48,754.23	2.84%	8.30%	139.34%	21.53
Turkey	9,712.20	1.36%	12.50%	36.48%	18.91
United Kingdom	36,083.56	3.38%	7.60%	213.52%	25.95

Appendix 1 - Original Values for Variables (2)

Countries	CREDIT ACCESS FOR BUSINESS	ECONOMY OPENESS (IMPORTS /GDP)	DEMOCRACY INDEX	BUSINESS FACILITY INDEX	EDU % TOTAL POP.	TAX RATE
Austria	15.00	45.99%	8.49	32	85.6%	55.5
Belgium	46.00	70.22%	8.05	25	82.5%	57
Bulgaria	6.00	55.75%	6.84	51	84.4%	29
Cyprus	5.00	59.75%	7.29	37	86.3%	23.2
Czech Rep.	46.00	63.79%	8.19	63	91.9%	48.8
Denmark	15.00	43.96%	9.52	6	68.3%	29.2
Estonia	32.00	65.23%	7.68	17	83.2%	49.6
Finland	32.00	34.91%	9.19	13	84.2%	44.6
France	46.00	24.99%	7.77	26	82.8%	65.8
Germany	15.00	35.88%	8.38	22	74.4%	48.2
Greece	26.00	29.26%	7.92	109	83.4%	47.2
Hungary	32.00	42.50%	7.21	46	84%	53.3
Ireland	15.00	73.60%	8.79	9	88%	26.5

Italy	87.00	24.36%	7.83	80	76.3%	68.6
Latvia	6.00	43.11%	7.05	24	79.9%	38.5
Lithuania	46.00	51.2%	7.24	23	86.9%	38.7
Luxembourg	116.00	136.16%	8.88	45	73.4%	21.1
Netherlands	46.00	621.80%	8.99	30	77.6%	40.5
Poland	15.00	38.77%	7.05	70	91.1%	42.3
Portugal	89.00	35.63%	8.02	31	58.7%	43.3
Romania	15.00	40.24%	6.60	56	78.2%	44.9
Slovak Rep.	15.00	103.74%	7.35	41	93.2%	48.7
Slovenia	116.00	57.39%	7.69	42	89.1%	35.4
Spain	46.00	25.59%	8.16	49	61.2%	56.5
Sweden	72.00	41.63%	9.50	14	85.9%	54.6
Turkey	72.00	24.41%	5.73	65	51.1%	44.5
United Kingdom	2.00	30.03%	8.16	4	80.4%	37.3

Appendix 2 - Principal components Z-Scores Matrix

Countries	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Total Score	Rankings
Austria	0.52476	-0.93870	0.15788	1.05098	-0.01760	0.14142	18
Belgium	0.37914	-0.66060	0.55730	0.74599	0.34010	0.19440	19
Bulgaria	-0.59480	0.50865	-1.54060	0.33338	-1.35690	-0.38134	4
Cyprus	1.02875	0.33158	-1.67020	-0.24750	-1.47370	-0.02059	15
Czech Rep.	-0.67450	-0.05880	-0.08140	1.43707	0.08643	-0.04585	13
Denmark	2.35655	-0.30370	-0.20240	-0.66000	-0.53180	0.50147	26
Estonia	-0.52920	-0.46740	-0.04260	-0.79640	0.08740	-0.32827	7
Finland	0.79035	-0.81210	0.05802	0.39752	0.47179	0.19850	20
France	-0.04520	-0.83880	0.95655	0.47201	0.45869	0.06814	17
Germany	0.13149	-0.76170	0.46632	-0.23580	-0.15340	-0.07026	12
Greece	-0.69300	0.18420	0.31244	1.24378	-0.97930	-0.08170	11
Hungary	-0.92650	-0.06230	-1.05770	0.10119	2.05156	-0.22188	10
Ireland	1.16663	-0.73960	-0.84800	-1.17440	-0.19590	-0.04172	14
Italy	-0.25890	0.28877	1.86254	1.49209	0.25164	0.41257	23
Latvia	-1.04960	-0.47810	-0.48870	-1.73220	-0.70030	-0.72792	1
Lithuania	-1.29270	-0.16440	-1.53830	-1.27140	2.92132	-0.49112	3

Luxembourg	1.21871	4.04739	-0.21090	-0.14940	0.97511	1.09383	27
Netherlands	1.38728	-0.10220	0.11538	0.43773	0.21503	0.48520	24
Poland	-1.01360	0.07504	-0.87470	1.09089	-0.89860	-0.36131	6
Portugal	0.23796	0.82581	1.43827	-1.20730	-0.07240	0.24939	21
Romania	-1.03430	0.32827	-0.52380	0.57134	-1.12930	-0.36173	5
Slovak Rep.	-1.08890	-0.66420	-0.55590	0.29558	-0.16620	-0.49164	2
Slovenia	-0.07260	0.89266	0.08244	1.01821	0.61280	0.31643	22
Spain	-0.57040	-0.43640	2.11680	-2.12530	-0.22250	-0.23909	9
Sweden	1.02873	-0.70200	0.91977	0.65004	1.22779	0.50131	25
Turkey	-1.52150	1.29586	1.37353	-1.03240	-1.17840	-0.29036	8
United Kingdom	1.11528	-0.58720	-0.78210	-0.70570	-0.62350	-0.00787	16

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