Economia Aziendale Online

Business and Management Sciences
International Quarterly Review

SPECIAL ISSUE
THE MULTIDIMENSIONAL CONTENT OF
ECONOMIA AZIENDALE
Exploring Theories and Applications
of Business Economics and Management
[1 of 3]

The impact of human development in corruption mitigation: a comparative analysis between Macedonia and Albania

Jeton Mazllami

Pavia, Aprile 2019
Vol. 10 - N. 1/2019

www.ea2000.it
www.economiaaziendale.it

PaviaUniversityPress

Electronic ISSN 2038-5498
Reg. Trib. Pavia n. 685/2007 R.S.P.

Economia Aziendale Online – Business and Management Sciences International Quarterly Review
Vol. 10.1/2019:191-202 - DOI: 10.13132/2038-5498/10.1.1942

The impact of human development in corruption mitigation: a comparative analysis between Macedonia and Albania

Jeton Mazllami[1]

[1] *Associate Professor*
South East European University

Corresponding Author:

Jeton Mazllami
South East European University, Ilindenska 335, Tetovo 1200, Macedonia del Nord
Email: j.mazllami@seeu.edu.mk

Cite as:

Mazllami, J. (2019). The impact of human development in corruption mitigation: a comparative analysis between Macedonia and Albania. *Economia Aziendale Online*, Special Issue, 10(1), 191-202.

Section: *Refereed*

Received: 19 October 2018
Published: 30 April 2019

ABSTRACT

La Repubblica di Macedonia come economia di transizione non è un paese ben sviluppato dal punto di vista economico, sociale e politico. È caratterizzato da una bassa crescita economica, scarsa attrazione degli investimenti esteri e alto livello di corruzione, alto tasso di disoccupazione e problemi con i paesi vicini. L'obiettivo principale di questo studio è quello di valutare l'impatto dell'indice HD nella riduzione della corruzione come un modo per stabilire le condizioni per lo sviluppo economico. Il periodo di valutazione sarà dal 2006 al 2016. La Repubblica di Macedonia dal 2006 al 2016 ha registrato un miglioramento in termini di CPI (Corruption Perception Index), dalla 105° è salita alla 90° posizione in classifica, ma, allo stesso tempo, questa non è una posizione soddisfacente rispetto agli altri paesi dei Balcani occidentali. Pensiamo che migliorando la salute della vita, il livello di istruzione e il tenore di vita dignitoso possano contribuire alla mitigazione della corruzione. Utilizzando il modello di regressione multipla (OLS) cercheremo di determinare l'effetto dell'aumento dell'indice HD alla riduzione degli effetti di corruzione e di confrontare i risultati tra Macedonia e Albania. La limitazione di questo articolo è il ridotto numero di osservazioni a seguito del breve periodo di analisi a causa della mancanza di dati analitici adeguati per i paesi che sono oggetto di valutazione.

The Republic of Macedonia as a transitional economy is not a well-developed country from the economic, social and political points of view. It is characterized by low economic growth, low attraction of foreign investments, and high level of corruption, high unemployment rate and issues with the neighbouring countries. The main goal of this study is to assess the impact of HD index in the reduction of corruption as a way to establish conditions for economic development. The period of assessment will be from 2006 till 2016. The Republic of Macedonia from 2006 till 2016 has witnessed improvement in terms of CPI (Corruption Perception Index), from the 105th position it has risen to the 90th position on ranking, but on the same time this is not a satisfying position compared to the other Western Balkans countries. We think that by improving health of life, level of education and having a decent standard of living can contribute to corruption mitigation. Using the multiple regression model (OLS) we will try to determine the effect of increasing HD index to reduction of the corruption effects and to compare the results between Macedonia and Albania. The limitation of this paper is the smaller number of observations as a result of the short period of analysis because of the lack of adequate analytical data for the countries that are object of this assessment.

Keywords: CPI, HDI, economic growth, GDP, economic freedom

1 – In search of an interpretive model for all seasons

Corruption as a phenomenon has taken a large scale, not only in countries that are in transition but also in developed countries. Bribery and corruption are recognized as the greatest evil of any society, therefore the scales of devastating effects that corruption brings are high in the global level. Corruption always extends its metastasis in all areas of life; political, economic, social and others, while becoming a major obstacle for the economy, risking the functioning of democracy (Bushi, 2015). The development and economic growth present the main goals of every nation where the economic progress in the same time expresses the well-being of a country. While the fight against corruption represents a challenge to outdo it trying to avoid its consequences, one of the main challenges for the country leaders is identifying the ways to achieve economic growth, improve the living standard of people by enabling them to consume more goods and services.

Living in a country like Macedonia and Albania, we often face the word "corruption". Unfortunately, this concept is present in every part of social and economic life. The standard of living, level of education, level of income and many other factors have the potential of effect in reducing or increasing corruption. Given that the consequences of corruption are numerous, it is important to find the factors that can reduce it, we think that and one of them is human development index. The aim of this paper is to measure the impact of Human development index to the reduction of corruption, with special emphasis in Macedonia and Albania through a comparative analysis during the period 2006-2016.

2 – Literature review

2.1 – *Human Development Index and its impact on economy*

People are the real wealth of a nation. With these words the 1990 Human Development Report (HDR) began a forceful case for a new approach on thinking about development. The fact that the objective of development should be to create an enabling environment for people to enjoy long, healthy and creative lives may appear self-evident today. But that has not always been the case. A central objective of the HDR for the past 20 years has been to emphasize that development is primarily and fundamentally about people (HDR, 2010). The Human Development Index (HDI) is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions.

Peyton and Belasen (2010) in their study examined the factors that influence corruption perceptions in 127 developing countries and 32 developed countries using 2SLS approach. Specifically, the results obtained from the regression models used in this study suggest that the factors which comprise the Economic Freedom and Human Development indices can be significant predictors of corruption perceptions in cross-country studies. Moreover, the study suggests that several of these factors affect corruption perceptions in developing countries differently from their developed counterparts. Hysa (2011) in her study identifies the relationship between corruption level and human development. A regression analysis and a comparison of the degree of this relationship are performed for each Western Balkan county during years 2002-2010. The main result of this study is that the relationship between corruption and human development is found to be strong in Former Yugoslav Republic of Macedonia, Serbia, Montenegro and Albania. Croatia shows a weak relationship whereas the relationship in Bosnia and Herzegovina's case is meaningless.

According to Human Development in Asia (1999) the basic message is clear: the lower the level of human development in a country, the less likely will its people and government be able to combat corruption or improve governance. This is because well-educated and knowledgeable

people are more capable of combating corruption at all levels—whether personal, regional, or national. Unfortunately, the prospects of combating corruption through a vibrant and aware civil society and a highly educated and competent government are somewhat bleak at present. In fact, as the last two Reports on Human Development in South Asia clearly demonstrate, the region has emerged as the poorest, the most malnourished, the least gender-sensitive, and the most illiterate in the world.

According to Alves at al (2017) the countries with high corruption rates tend to have lower human development and countries with high levels of violence tend to have lower human development.

The Western Balkan countries are characterized by a series of obstacles in economic, politics and social aspects. A country's progress is measured by different components but the most important one is the economic growth which in the Western Balkans is not very satisfactory. In these last years, instead of economic growth, the economic development is found to be a better index since it includes not only the quantitative issue (income level) but also the qualitative one (health and education level) (Hysa, 2011). In the below table we present HDI in Western Balkan countries and their trend during the period 2006-2016 (see **Table 1**).

Country	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Rank
Albania	0.70	0.71	0.72	0.73	0.74	0.75	0.76	0.76	0.76	0.76	0.76	**75**
Bosn.& H.	0.71	0.72	0.72	0.71	0.73	0.74	0.74	0.75	0.75	0.70	0.75	**81**
Croatia	0.79	0.80	0.80	0.80	0.81	0.82	0.82	0.82	0.82	0.83	0.82	**45**
Macedonia	0.71	0.71	0.73	0.73	0.74	0.74	0.74	0.74	0.75	0.75	0.74	**82**
Montenegro	0.76	0.77	0.79	0.79	0.79	0.80	0.80	0.80	0.80	0.81	0.80	**48**
Kosovo	/	/	/	/	/	/	/	/	/	/	0.74	**n/a**
Serbia	0.74	0.75	0.75	0.76	0.76	0.77	0.77	0.77	0.78	0.78	0.77	**66**
Slovenia	0.87	0.87	0.87	0.87	0.88	0.88	0.88	0.89	0.89	0.89	0.89	**20**

Table 1 – Human Development Index -Western Balkan countries
(Source: Human Development Data 1990-2015, Report 2017)

The values of HDI are found in the interval from 0 as the lowest level to 1 as the maximum level and from all 188 countries that are evaluated by UNDP, Slovenia is in the best place compared to the other Western Balkan countries, which is ranked in 25th position in a group with other countries with high human development index. Between the years 2006 and 2016, HDI value has changed from 0.71 to 0.74. The rank of Republic of Macedonia by HDI for 2016 is 82th and belonging to the high human development countries group, but comparing it with the other Balkan countries Republic of Macedonia is ranked worse. If we will make a comparison in the Human Development index among Republic of Macedonia and Republic of Albania we can conclude that HDI of Albania slightly better than it of Macedonia therefore for year 2016 is ranked 75th.

2.2 – *Corruption and its impact on economy*

Since the past up until today, corruption has become one of the most widespread phenomena in a society. It is a complex nature which could be defined as global disease while every country is facing this phenomenon. It appears in every sphere of life, including: education, science, health, economy, justice, etc., appearing as a normal phenomenon for the completion of any goals. On the other hand, looking at the long term, the price of corruption is very high for all participants in corruption. Recently, the dimensions of corruption are widespread, making it a real threat to the normal functioning democratic state and market economy. To reduce such risks, it is necessary to facilitate productive cooperation and awareness of highest hierarchy people and the society in general. According to Shera et al, (2014) many people misunderstand the term corruption. Some give a closely sense equating the term with bribe and others every action of life associate with corruption. Both attitudes are wrong. So the right definition of corruption would be as follows: Corruption is the deviation from responsibility, law, rule, or ethical standards of an official or public institution in favour of the beneficiaries of such behavior, which is influenced by a reward, promise, preferential treatment, offered, given, required or accepted. Hence the term corruption is not just a term that includes bribes but also includes other forms. According to a general definition from Transparency *International "corruption is the abuse of entrusted power for private gain".*

Seeing that corruption is an inevitable phenomenon, lately many authors and researchers have intensified their empirical research on corruption and how it affects in many areas, especially in economic growth. There are a lot of econometric models which prove that corruption has a negative impact on economic growth and in the same time it lowers the value of the country because corruption ranks the country among the most corrupt countries of the world.

According to Calişkan and Kadiu, (2015) Corruption has a negative impact on economic growth, because of its negative effects on property rights enforcement, leading to barriers to conducting business, having innovation and technology transfer. Another negative effect of corruption is directly due to benefaction, which reduces the effectiveness of official election and lowers the economic growth. The author Nwankwo (2014) in his study for the impact of corruption on growth in Nigerian economy using co-integration test, granger causality test and ordinary least square (OLS) method achieved the empirical results that there is a long run relationship between the level of corruption and economic growth in Nigeria and the impact of corruption on economic growth in Nigeria is negative. Obayelu (2007) in his study "Effects of Corruption and Economic Reforms on Economic Growth and Development: Lessons from Nigeria "Found a negative correlation between levels of corruption and economic growth thereby making it difficult for Nigeria to develop fast. The more corrupt a country is, the slower economic growth rate is. Corruption is a stigma that destroys the reputation of affected country. It lowers investment thereby lowering economic growth of the country. According to Farida (2007) who in his paper assumes that corruption reduces a country's standard of living as measured by the real GDP per worker. He argues that corruption deters economic growth, reduces the productivity of capital and decreases the effect of government expenditure on growth. Using a neoclassical model for Lebanon, he finds empirical support indicating that corruption increases inefficiencies and reduces economic growth. Mauro (1995) finds that corruption lowers private investment, thereby reducing economic growth, even in subsamples of countries in which bureaucratic regulations are very cumbersome. The negative relation between corruption and investment, as well as growth, is significant, both in a statistical and in an economic sense.

According to Mazllami and Selamani (2017), Corruption today represents one of the biggest debates of economists and also of the leaders of the anti-corruption agencies where their aim is to reduce the level of corruption and at the same time to reach the awareness of people that corruption has destructive effects for the country and for an entire society. To have greater

economic growth need to increase the level of HDI and in the same time will decrease corruption level.

Corruption Perception Index is studied by Transparency International (at world level). This index takes values from 0 to 1 or from 0 to 100, where the value 0 indicates that the country is totally corrupt and value 1 or 100 indicates that the country is totally clear. From the table No 1 we see moving trends of CPI how it has moved during the years 2006 - 2016 where we see that Slovenia has had greater development in comparison with the other countries. Comparing Macedonia with the other Western Balkans countries, Macedonia has had improvements in terms of CPI, which from the rank 105th has reached at the 90th rank, but again this is not a very satisfying position because it is still ranked in the group of highly corrupt countries (see **Table 2**).

Country	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	Rank
Albania	26	29	34	32	33	31	33	31	33	36	39	**83**
Bosn.& H.	29	33	32	30	32	32	42	42	39	38	39	**83**
Croatia	34	41	44	41	41	40	46	48	48	51	49	**55**
Macedonia	27	33	36	38	41	33	43	44	45	42	37	**90**
Montenegro	/	33	34	39	37	40	41	44	42	44	45	**64**
Kosovo	/	/	/	/	28	29	34	33	33	33	36	**85**
Serbia	30	34	34	35	35	39	39	42	41	40	42	**72**
Slovenia	64	66	67	66	64	59	61	57	58	61	60	**31**

Table 2 – Corruption Perception Index - Western Balkan Countries (2006-2016)
(Source: Transparency International Report 2006-2016)

If we make a comparison of the CPI among the Republic of Macedonia and the Republic of Albania, we can conclude that CPI of Albania is slightly better than of Macedonia, in which for 2016 it is ranked the 83th while Macedonia is ranked the 90th.

Economic growth is the safest way to lifting countries out of poverty and increases their standard of living. As long as a country's economy grows, the income of its citizens may also rise. Long-term economic growth rate is essential for the living standards. A high level of income (a benefit of economic growth) enables people better to fulfill their material needs. High levels of income (a benefit of economic growth) enables people to better fulfill their material needs. In recent years, the number of countries that have managed to accelerate the growth has decreased, while many countries have been able to sustain a high growth rate. (Balcerowicz, Rzońca, 2015).

Country	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016
Albania	5.43	5.90	3.76	3.35	3.71	2.55	1.42	1.00	1.77	2.22	3.35
Bosn.& H.	5.38	5.73	5.58	-2.99	0.87	0.96	-0.82	2.35	1.15	3.08	3.14

Croatia	4.79	5.15	2.05	-7.38	-1.42	-0.33	-2.24	-0.65	-0.10	2.35	3.17
Macedonia	5.14	6.47	5.47	-0.36	3.36	2.34	-0.46	2.93	3.63	3.84	2.92
Montenegro	8.57	6.81	7.22	-5.80	2.73	3.23	-2.72	3.55	1.78	3.39	2.95
Kosovo	4.50	7.29	2.64	3.34	3.31	4.81	2.90	3.43	1.20	4.09	4.07
Serbia	4.90	5.89	5.37	-3.12	0.58	1.40	-1.02	2.57	-1.83	0.76	2.80
Slovenia	5.66	6.94	3.30	-7.80	1.24	0.65	-2.67	-1.13	2.98	2.26	3.15

Table 3 – Economic Growth in real terms –Western Balkan countries (2006-2016)
(Source: World Bank Report, World Development Indicators 2006-2016)

Table 3 shows economic growth of Western Balkan countries in real terms, where we can clearly realize the changes from year to year for the analyzed period from 2006 to 2016. All countries have had almost the same rate of economic growth where it is noticed that in 2009 as a result of economic crisis has had impact also on the Western Balkan countries. Regarding economic growth, Macedonia does not differ much from those countries, although it is one of the countries with the lowest GDP.

2.3 – *The correlation between corruption (CPI) and human development (HDI)*

The relationship between corruption and human development should be addressed in governance perspective because a good governance intervention is very important here by controlling the misuse of power so as to sustain overall human development (Akcay, 2006). In this way, Gupta, Davoodi and Tiongson (2000) explain how corruption affects human development. They revealed that corruption increases the infant mortality rates, percentage of low birth weight babies, and reduces life expectancy and literacy.

Our assumption is: If the citizens have a higher standard of living, life expectancy and better education, than they will be less motivated for corruption. (see figure 1.).

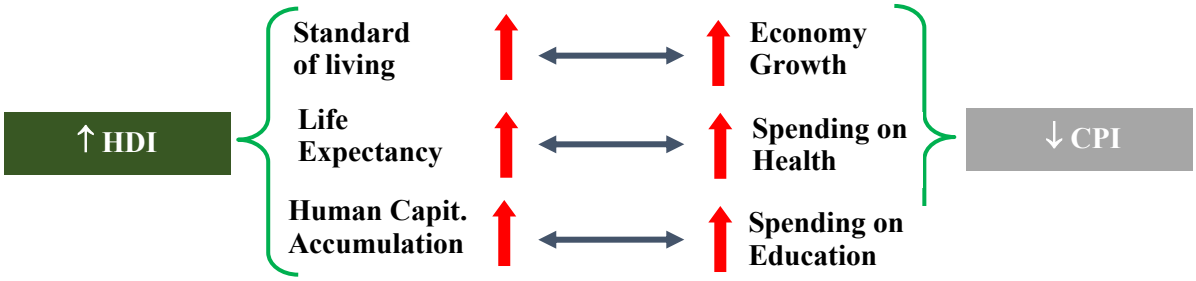

Figure 1 – Human Development v.s. Corruption

According to report from the World Bank (2003, apud Marino et al, 2016), the governance of a country, of which CPI is one of the analysed indicators, is intimately linked to the human development, because at corrupt environments the economic resources are partially diverted rather than be intended to health and education, for example. The governance difference influences not just the economical politics, but the health and education politics too, just as, this services' quality, which contributes directly on the HDI score of respective countries (Gaygizis, 2013, apud Marino et al, 2016).

3 – Data and methodology of research

In this paper we used secondary data because they were more adequate for this study. The analysed period is from 2006 to 2016 for Republic of Macedonia and Albania. The data were collected mainly by the World Bank, Transparency International, Human Development and the Heritage Foundation. In this research will be used multiple regression or OLS model to earn certain hypotheses. This regression will be done by the program STATA 12.

In this research will be tested two hypotheses as a below:

***H_1**: "Increasing the level of human development index (HDI) affects the reduction of the Corruption in Republic of Macedonia"*

***H_2**: "Increasing the level of human development index (HDI) affects the reduction of the Corruption in Albania"*

Using the multiple regression model (OLS) we will try to determine the relationship between the Human Development Index and Corruption Perception Index CPI.

$$\boldsymbol{CP = \beta_0 + \beta_1 HDI + \beta_2 UNP + \beta_3 INF + \beta_4 POV + \beta_5 GOV.S. + \beta_6 C.Acc.Bal + \beta_7 EFI} + \varepsilon$$

Description variables and symbols:

HDI	*Human Development Index*
UNP	*Unemployment rate*
INF	*Inflation rate*
POV	*Poverty rate*
Gov.S	*Government spending as a % of GDP*
BCA	*Current Account Balance*
EFI	*Economic Freedom Index*

According to the above basic model, all of independents variables which we have put in the model have a relevant impact in CPI. Our objective is to measure the impact of HDI and other variables (which we mentioned above) in CPI. Firstly we will make regression of the CPI, and after that we will use the regression of Log-Log model for testing the hypothesis:

$$\boldsymbol{LogCP = \beta_0 + \beta_1 LogHDI + \beta_2 LogUNP + \beta_3 LogINF + \beta_4 LogPOV + \beta_5 LogGOVexp + \beta_6 LogBCA + \beta_7 LogEFI} + \varepsilon$$

The interpretation of β coefficients from results of Log-Log model will be as a follow:

– *Case Macedonia:* Increasing of HDI for 1% will impact increasing of the CPI for $\beta_i(\%)$.

– *Case Albania:* Increasing of HDI for 1% will impact increasing of the CPI for $\beta_i(\%)$.

4 – Discussion of results

In the model, the corruption perception index as a dependent variable and independent variables are such as unemployment, inflation, poverty, government expenditure (% of GDP), current account balance and economic freedom index. Data were analysed for the period of nine years from 2006 to 2016.

Because some independent variables of CPI such as unemployment rate, current account balance have a high correlation, we removed them from the final model. Below we present the regression results of the new model done by the software STATA 12.

4.1 – *The case of Republic of Macedonia*

- From the results of the regression we see that R Square or determination coefficient is 0.9997 which means that independent variables explain the dependent variable 99.97%.

- For evaluating the Model, the significance level is 0.03 or 3%, 5% or 0.05 and 0.1 or 10%. If F critical < F observed, and since the sig < alpha, exactly 0.03 <0.03, we can say that the model is statistically important.

From the results by the software STATA 12, we create the below equation:

$$LogCP = 0.85 - 17.27LogHDI - 0.17LogINF - 5.01LogPOV + 6.74LogGOVexp - 1.82LogEFI + \varepsilon$$

Source	SS	df	MS	Number of obs = 7
Model	.186282063	5	.037256413	F(5, 1) = 596.32
Residual	.000062478	1	.000062478	Prob > F = 0.0311
cTotal	.18634454	6	.031057423	R-squared = 0.9997
				Adj R-squared = 0.9980
				Root MSE = .0079

LnCPI	Coef.	Std.Err.	t	P>|t|	[95% Conf.	Interval]
LnHDI	-17.27275	.807911	-21.38	0.030	-27.53823	-7.007268
LnPOV	-5.016667	.1904726	-26.34	0.024	-7.436851	-2.596484
Lninf	-.1755958	.0090708	-19.36	0.033	-.2908514	-.0603402
LnG	6.744947	.2320808	29.06	0.022	3.796081	9.693813
LnEFI	-1.827629	.2296647	-7.96	0.080	-4.745796	1.090538
_ cons	.8573909	1.294579	0.66	0.628	-15.5918	17.30658

Table 4 – Results of Log-Log regression model

Through this model we will explain the importance of the constant and of each variable that we have incorporated in model. From Table 4 we can see that the constant equation has a positive (0.85), there is no logical explanation.

- P-value of the HDI is 0.03 <0.05 (alpha) and t value is - 21.38, so it is important variable or explanatory variable in a significance level of 5%, than*: If the HDI will rise by 1%, in condition "ceteris paribus" of the other variables, then the Corruption Perception Index will decrease by 17.27%*.

- P-value of the Inflation rate is 0.033 <0.05 (alpha) and t value is - 19.36, so it is important variable or explanatory variable in a significance level of 5%, than*: If the Inflation rate will rise by 1%, in condition "ceteris paribus" of the other variables, CPI will decrease by 0.17%*.

- P-value of the Poverty rate is 0.024 <0.03 (alpha) and t value is - 26.34, so it is important variable or explanatory variable in a significance level of 3%, than*: If the Poverty rate (Laken index) will rise by 1%, in condition "ceteris paribus" of the other variables, CPI will decrease by 5.01%*.

- P-value of the Government expenditure rate is 0.022 <0.03 (alpha) and t value is 29.06, so it is important variable or explanatory variable in a significance level of 3%, than: *If Government expenditure as a % of GDP will rise by 1% in condition "ceteris paribus" of the other variables, CPI will increase by 6.74%*.

- P-value of the Economic Freedom Index is 0.08 <0.1 (alpha) and t value is -7.96, so it is important variable or explanatory variable in a significance level of 10%, than: *If EFI will rise by 1% in condition "ceteris paribus" of the other variables, CPI will decrease by 1.83%*.

From the results that we achieved by multiple regression to the model for Macedonia, we found that this model has high significance and all variables, so we can conclude that "*Increasing the level of human development index (HDI) affects the reduction of corruption in Republic of Macedonia* ", we accept *the hypothesis* H_1

4.2 – *The case of Republic of Albania*

Source	SS	df	MS	Number of obs = 11
Model	.102380512	6	.017063419	F(6, 4) = 6.16
Residual	.011073442	4	.00276836	Prob > F = 0.0500
Total	.113453954	10	.011345395	R-squared = 0.9024
				Adj R-squared = 0.7560
				Root MSE = .05262

LnCPI	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
LnHDI	3.817126	1.476437	2.59	0.061	-.2821194	7.916372
LnLI	-.5368641	.2438303	-2.20	0.092	-1.213845	.1401173
LnGDPp	.1519988	.0587147	2.59	0.061	-.0110193	.315017
LInf	-.1128323	.0957757	-1.18	0.304	-.3787484	.1530838
LnG	-1.6888	1.07451	-1.57	0.191	-4.672117	1.294517
LnIEF	.3731037	.6121962	0.61	0.575	-1.326625	2.072833
_cons	6.844631	4.785416	1.43	0.226	-6.441814	20.13108

Table 5 – Results of Log-Log regression model

If we try to improve the results of the P-value should make a Robust of log-log regression model. In this case we would get the values in the **Table 6.**

Linear regression	Number of obs = 11
	F(6, 4) = 42.61
	Prob > F = 0.0014
	R-squared = 0.9024

```
                                        Root MSE      =  .05262
------------------------------------------------------------------------------
             |               Robust
      LnCPI  |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
      LnHDI  |   3.817126   1.064447     3.59   0.023     .8617474    6.772505
      LnPOV  |  -.5368641   .1743837    -3.08   0.037    -1.021031   -.0526972
    LnGDPp   |   .1519988   .0356081     4.27   0.013      .053135    .2508627
       LInf  |  -.1128323   .0568602    -1.98   0.118    -.2707015    .0450369
        LnG  |    -1.6888   .6591309    -2.56   0.062     -3.51884     .141241
      LnEFI  |   .3731037   .7744856     0.48   0.655    -1.777213     2.52342
      _cons  |   6.844631   4.053153     1.69   0.167    -4.408724    18.09799
------------------------------------------------------------------------------
```

Table 6 – Results of Log-Log regression model (ROBUST)

- From the results of regression we see that R Square or determination coefficient is 0.9024 which means that independent variables explain the dependent variable 90.24%.

- For evaluating the Model, the significance level is 0.001 or 0.1%. If F critical < F observed, and since the sig < alpha, exactly 0.001 <0.03, we can say that the model is statistically important.

From the results by the software STATA 12, we create the below equation:

$$\boldsymbol{LogCP = 6.84 + 3.82LogHDI - 0.11LogINF - 0.53LogPOV - 1.69LogGOVexp + 0.37LogEFI} + \varepsilon$$

Through this model we will explain the importance of the constant and of each variable that we have incorporated in model. From the **Table 6** we can see that the constant equation has a positive (6.85), there is no logical explanation.

- P-value of the HDI is 0.023 <0.03 (alpha) and t value is 3.59, so it is important variable or explanatory variable in a significance level of 3%, than*: If the HDI will rise by 1%, in condition "ceteris paribus" of the other variables, then the Corruption Perception Index will increase by 3.82%*.

- P-value of the Inflation rate is 0.118 >0.10 (alpha) and explanatory variable aren't significance.

- P-value of the Poverty rate is 0.037 <0.05 (alpha) and t value is - 3.08, so it is important variable or explanatory variable in a significance level of 5%, than*: If the Poverty rate (Laken index) will rise by 1%, in condition "ceteris paribus" of the other variables, CPI will decrease by 0.53%*.

- P-value of the Government expenditure rate is 0.062 <0.8 (alpha) and t value is -2.56, so it is important variable or explanatory variable in a significance level of 7%, than: *If Government expenditure as a % of GDP will rise by 1% in condition "ceteris paribus" of the other variables, CPI will decrease by 1.69%*.

- P-value of the GDP percapita (growth rate) is 0.013 <0.03 (alpha) and t value is 4.27, so it is important variable or explanatory variable in a significance level of 3%, than: *If GDP percapita (growth rate) will rise by 1%, in condition "ceteris paribus" of the other variables, CPI will increase by 0.15%.*

- P-value of the Economic Freedom Index is 0.65 >0.10 (alpha) and explanatory variable aren't significance.

From the results that we achieved by multiple regression to the model for Albania, we found that this model has high significance for most of variables accepted inflation rate (Inf) and Economic freedom index (EFI), so we can conclude that *" Increasing the level of human development index (HDI) affects positive relation with corruption in Republic of Albania ". In this case we can reject the hypothesis* H_2

5 – Conclusion

Corruption today represents one of the biggest debates of economists around of the world. The aims of the every government is how to reduce the level of corruption and at the same time to raise the awareness of people that corruption has destructive effects for the country and for an entire society. Corruption and inefficient bureaucracy are challenges companies may face when doing business in Macedonia and Albania. There is a high risk of corruption in most of the country's sectors such are private and public sector, judicial and polis system, ect. Private businesses frequently complain about burdensome administrative processes that create operational delays and opportunities for corruption. Public sector with procurement, the customs administration, the building and construction sectors are some of the areas where corruption and bribery are most prevalent.

A widely quoted estimate by some reports by World Bank underline that the real social costs of corruption is inflicted indirectly by changing individuals' and firms' incentives structures, which can lead to lower productivity of scarce resources, including labor as well as physical and human capital. Corruption's detrimental effect on the efficiency of resource allocation operates through the weakening of market mechanisms, the reduction in the quantity and quality of public goods supplied by governments, the diversion of entrepreneurial talent and real resources to rent seeking, and the subversion of government regulation aimed at mitigating the effects of externalities. It is important to be found the factors that affect the reduction of corruption and one of them is the Human Development Index which in itself contains education index, health index and gross national income. Higher values of this index mean more developed society.

According to macroeconomic equations, to have an economic growth in economy it is necessary to increase the level of FDI and domestic investments, a positive balance of current account and adequate public investments by the government. To achieve this objective each economy should create an adequate business climate with low level of corruption. Our assumption is that an economy with higher HDI need to have a lower corruption and low level of corruption increases opportunities to attract FDI, increasing employment and will have other benefits. It is important to achieve people awareness starting from the top leaders of the state and to the citizens that a country with low corruption has higher benefits than a country with high corruption.

Our achievements from the regression results partly confirmed our expectations in confirmation of hypotheses that human development index is one of the indicators that affect the reduction of corruption in the Republic of Macedonia but not also in the Republic of Albania.

REFERENCES

Akçay, S. (2006). *Corruption and human development*, Cato J. 26(1), 29.

Alves, A., Costa Curta, L., da Silva Dias, L. (2017). Analysis of Correlation Among HDI (Human Development Index), *Violence and Corruption Perceptions Index.*

Balcerowicz, L., Rzońca, A. (2015). *"Puzzles of Economic Growth"*; Directions in Development, Public Sector Governance, International Bank for Reconstruction and Development / The World Bank, DOI: 10.1596/978-1-4648-0325-3, Washington DC, p. 1.

Bushi, P. (2015). *"Impact of Corruption in Governance of the Western Balkan Countries"*; International Journal of Humanities Social Sciences and Education (IJHSSE), 2(5), AAB University, p.78

Calişkan, N., Kadiu, F. (2015). *"Corruption and Economic Development in Albania"*; Interdisciplinary Journal of Research and Development Vol (II), No.1, 2015, "Alexander Moisiu"University, Durrës, Albania, p. 76

Farida, M. (2007). "*The Impact of Corruption on Economic Growth in Lebanon"*; Agricultural and Resource Economics Faculty of Agriculture, Food and Natural Resources, The University of Sydney, Australia, p.1.

Gaygizis, Esma. (2013) *"How are cultural dimensions and governance quality related to socioeconomic development?"* The Journal of Socio-Economics, v. 47, p. 170-179.

Gupta, S., Davoodi, H., Terme, R. (1998) "Does corruption Affect Income Equality and Poverty?", IMF Working Paper 98/76.

Human Development Report (2010). The Real Wealth of Nations: Pathways to Human Development, 20th Anniversary Edition.

Human Development in South Asia (1999). *"The Crisis of Governance"*; Published for The Mahbub ul Haq Human Development Centre, University of Oxford, p.101.

Hysa, E., (2011). "*Corruption and Human Development Correlation in Western Balkan Countries "*, 30(4), Epoka University, Albania, p.148.

Marino, P. D. B. L. P., Soares, R. A., De Luca, M. M. M., & de Vasconcelos, A. C. (2016). *"Indicadores de governança mundial e sua relação com os indicadores socioeconômicos dos países do Brics*". Revista de Administração Pública, 50(5), 721-744.

Mazllami,J., Selmani, A. (2017). *The impact of reducing corruption on economic growth, with special emphasis in Republic of Macedonia,* (ISCBE'17), Tetovo, Macedonia.

Mauro, P.,(1995). *"Corruption and Growth"*; The Quarterly Journal of Economics, 110(3), p. 685.

Nwankwo, O. (2014). "*Impact of Corruption on Economic Growth in Nigeria"*; Mediterranean Journal of Social Sciences, 5(6), *MCSER Publishing, Rome-Italy* p. 45.

Obayelu, A, E. (2007). " Effects of Corruption and Economic Reforms on Economic Growth and Development: Lessons from Nigeria"; For 2007 African Economic Conference, Department of Agricultural Economics, University of Ibadan, Nigeria, p. 1- 21.

Peyton, K., Belasen, A. (2010). *"The case for human development: a cross-country analysis of corruption perceptions"*; MPRA Paper No. 31385, Southern Illinois University Edwardsville, United States, pp. 16-17.

Shera A.,Dosti, B., Grabova, P., (2014). "*Corruption impact on Economic Growth: An empirical analysis",* Journal of Economic Development, Management, IT, Finance & Marketing. Sep2014, Vol. 6 Issue 2, p57-77. 21p.

Transparency International: CPI Annual report 2006-2016.

UNDP: *Human Development Report*, 2006-2016.

World Bank (2001). World development 200/2001: *Attacking poverty*. UK, Oxford.

World Bank: *World Development Indicators 2006-2016.*

World Bank: The Cost of Corruption, accessible at:

http://web.worldbank.org/WBSITE/EXTERNAL/NEWS/0,,contentMDK:20190187~menuPK:34457~pagePK:34370~piPK:34424~theSitePK:4607,00.html.

World Bank (2017): *Global Corruption Barometer: Citizens' Voices From Around the World.*