Research Journal of Finance and Accounting
ISSN 2222-1697 (Paper) ISSN 2222-2847 (Online)
Vol.8 No.24 2017

World Corruption Perception Index Analysis

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Abstract
Although corruption is measured and defined by different institutions yet there is no agreement on one perfect definition. In this study attempt to analyze the results of corruption index using the definition and the index of Transparency International and the standard deviation of the scores of its corruption perception index. The study investigates the behavior of the index over time for all countries included in the CPI for the period of 2000-2014. Using a Hierarchical Classification Method, we grouped the countries into high, medium and low corrupt countries and then we investigate the volatility of perception of corruption among the same group and the different groups. We find that countries with low and high CPI are less volatile in terms of perception of corruption while countries with medium score are relatively stable in term of perception of corruption.
Keywords: Corruption, Hierarchical Classification Method, Corruption Perception Index

1. Introduction

Corruption is seen as a major bottleneck for economic development. However, empirical research on corruption is limited because of the difficulty of measuring corruption among countries (Treisman, 2000). Moreover, it is difficult to obtain accurate data on actual levels of corruption (Reinikka & Svensson, 2005). Actual data measuring corruption depend on some kind of efficiency and capacity of the legal system of the country in the prosecution and punishment of corruption (Lambsdorff & Cornelius, 2000). Objective data of corruption mainly reflects the success of anti-corruption initiatives rather than the actual levels of corruption.(Al Qudah, 2009; Azzouz Zouaoui 2017; Badawi & AlQudah, 2014) Several international organizations, including corporate risk analysts and polling organizations, have attempted to measure the level of corruption on the basis of various perceptions. The indices of perception of corruption are built on the basis of survey responses by business people, academics, and residents. However, each of the many different definitions of corruption has its shortcomings.

Corruption Perception Index (CPI), published by "Transparency International" (TI), is considered the index most used in measuring corruption although it is described by some researchers as a subjective index (Abramo, 2008; Razafindrakoto & Roubaud, 2010; Rose & Mishler, 2010). The CPI ranks countries according to the degree of corruption perceived vis-a-vis civil servants and politicians. Note also an important feature of the TI CPI is providing the variance (standard deviation) of the its classification.

Measuring the degree of consensus among the various surveys provides an opportunity to test if consensus evolves over time or not since the values of standard deviation of CPI ranking outline the corruption perceptions that merit deeper analysis.

This study will attempt to analyze the results of the CPI and the standard deviation of the scores in the CPI. The study objective is to study the behavior of the index over time for all countries included in the CPI. For this, the paper will attempt the following:

- First proceeding with the grouping of countries based on their CPI scores over time.
- Then examining the trend of CPI scores over time (upward or downward) through the estimated standard deviations of the CPI.

We will initially define the CPI as it was published by TI; then, we will present the methodology and results.

2. CPI: Index of Corruption Perception

The TI CPI is a composite index taking into account the surveys that reflect the perceptions of business people, academics, country analysts, and the general public, including residents and non-residents. The score in the CPI 1995 for each country takes into consideration a minimum of two sources and they have since increased to 18 sources to reflect reality. A brief overview of the construction of the CPI and the standard deviation of CPI ranking highlights the main issues to be discussed in this paper. The use of the TI CPI as it began in 1995 included the classification of 41 countries and was extended to 175 countries in 2014. The CPI scores countries on a scale from 0 to 10 (International, 2017).

A country with a score of 0 indicates a high level of perceived corruption in which commercial transactions are entirely dominated by corruption, bribery, and extortion, while a CPI score equal to 10 indicates that the country is quite clean. The CPI each year combines assessments of the past two years to reduce abrupt variations in scoring. In addition, the strong correlation between the sources also tends to reduce the differences between the changes of sources (International, 2017).

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3. Methodology

The study focuses on IT database for the period 2000-2014. To meet our goal, we will proceed to calculate the mean and standard deviation of the CPI over the above period for all countries included in the index. Then, we will proceed to country grouping into three categories using hierarchical classification method.

3.1 Setting the Hierarchical Classification Method (Clusters)

The main idea of classification methods is to group the elements of a well-defined group, so it is to make a partition of this set. Several constraints are then imposed, each group must be as homogeneous as possible, and groups should be as different as possible between them (Arabie, Hubert, & De Soete, 1996). The methodology is therefore to seek possible partitions and make a hierarchy of parts which represents a binary tree called dendrogram. Some basic definitions are essential to proceed. A is considered here as a finite set:

$$A= \{a1, a2, \ldots\ldots an\} \Leftrightarrow an \in A \text{ For } 1 \leq j \leq n \quad (1)$$

B is a subset of A:

$$B= \{b1, b2, \ldots\ldots bp\} \subseteq A \Leftrightarrow bk \in A \text{ For } 1 \leq k \leq n \quad (2)$$

If we consider the empty portion and the entire assembly, A includes 2n portions. The set of all A portions is noted P (A). If A is formed of a, b, c, and d, then P (A) includes sixteen (16) elements (empty subgroup included too) which are: {a}{b}{c}{d}; {a,b}{a,c}{a,d}{b,c}{b,d}{c,d} ;{a,b,c}{a,b,d}{a,c,d} {b,c,d} ;{a,b,c,d}

All parties are provided with the partial order and follow the following relationship:

$$X \subseteq Y \Leftrightarrow \quad (x \in X \Rightarrow x \in Y) \quad (3)$$

The order is partial if and only if

$$\{a,d\} \subseteq \{a,c,d\} \quad (4)$$

Four situations are then possible for two parts of the same group; they are either overlapping (not equal and non-null intersection) or disjoint (no common element, null intersection) or one included in the other or equal.

A partition is a subgroup two parts twice disjointed, and their union constitutes the whole group.

$$A_1, A_2, A_3\} \text{ subgroup of A}$$
$$i \neq j \Rightarrow A_i \cap A_j = \varnothing$$
$$U^K_{k=1}\ A_k = A$$

A partition is then a qualitative variable or a factor set of all elements of the group.

The components of a list are the parties; the names of the components are the levels of the factor in question. The ordination techniques provide an ordination of individuals studied and they summarize the data in numerical score. Classification methods summarize the variable data. Finally, partition is obtained.

Hierarchical parts of A are defined as group which respects the following four conditions:

- The empty group is included in A
- The reduced groups into one element are also included in A
- The total set of group belongs to A.
- If X and Y are involved, then either X or Y is disjoint or Y contains X or Y contains X.

For example, the set {{a, b, c, d, e}, {a, b}, {e, d}, {a, b, c, d, e} is a hierarchy of parts or a n-sized tree. A tree is represented by a marbled graph: the leaves are represented by the parties to a single element (belonging to a hierarchy); the root is the entire assembly (belonging to a hierarchy). Each part has one ancestor, excluding the root that does not have one. In the case of binary tree, each part has two descendants, excluding only the leaves that do not have. The hierarchy is also said completely resolved. The hierarchy is assessed if each part can associate a numerical value that satisfies the following definition:

$$X \subseteq Y \Leftrightarrow f(x) \leq f(Y).$$

The search for a valued hierarchy is a hierarchical classification (hierarchical clustering). The method relies on the calculation of distances between individuals resulting in a measure of the heterogeneity of a part based on the distance between individuals who are in and a measure of similarity between two said parts based on the distance between individuals of each part one by one.

4. Results and Analysis

After building the database of all countries based on the Corruption Perceptions Index of "Transparency International" for the period 2000-2014, we have been able to identify the existence of three different classes by method of hierarchical classification and using the software R. Figure 1 shows the dendrogram obtained.

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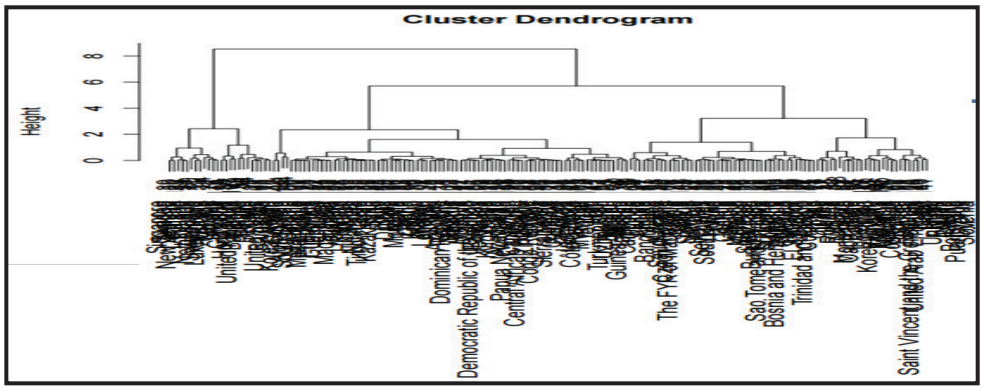

Figure 1: Dendrogram

As per Table 1, the classification done has led us to identify three different groups corresponding to levels of corruption; high, medium, and low for which we have calculated in the second step the standard deviation of the CPI over the period 2000-2014 (Table 2) in order to assess whether there is a particular trend of improvement or deterioration in the perception of corruption over time.

From Table 1, Group 1 is the highest corrupted; we can see that the CPI low values are between 0.85 and 3.2, which point out that in all of these countries the perception of corruption is high. Group 2 combines the highest CPI score to country and between 3.34 and 6.55; otherwise the group is perceived as moderately corrupt. The last group contains all weakly perceived corrupt countries. As we can see the scores awarded have a value between 6.96 and 8.57.

Table 1: Countries Ranking by CPI Average

Group **1**	**CPI**	**Group 1**	**CPI**	**Group 2**	**CPI**	**Group 2**	**CPI**	**Group3**	**CPI**
North Korea	0.85	Ecuador	2.52	Senegal	3.34	Poland	4.59	France	6.96
Somalia	0.86	Nepal	2.56	Switzerland	3.37	Kuwait	4.61	Bahamas	7.13
Southern Sudan	1.15	Iran	2.59	Sao Tome and principle	3.37	Seychelles	4.71	Belgium	7.22
Afghanistan	1.41	Kazakhstan	2.59	Burkina	3.37	Italy	4.71	Chile	7.23
Sudan	1.60	Nicaragua	2.60	Sri Lanka	3.39	Namibia	4.73	The United States	7.23
Myanmar	1.62	Togo	2.61	Suriname	3.41	Jordan	4.82	Barbados	7.29
Iraq	1.73	Syria	2.63	Thailand	3.41	Costa Rica	4.86	Japan	7.33
Turkmenistan	1.78	Guyana	2.65	Panama	3.42	Lithuania	4.91	Ireland	7.43
Haiti	1.78	Viet Nam	2.68	Mexico City	3.43	Malaysia	4.91	Germany	7.79
Chad	1.86	Mauritania	2.74	Romania	3.43	Mauritius	4.91	Ostrich	7.82
Bangladesh	1.95	Mozambique	2.75	Bosnia and Herzegovina	3.46	Hungry	5.08	Hong Kong	8.01
Angola	1.96	Philippines	2.75	China	3.51	Bahrain	5.32	Great Britain	8.13
Uzbekistan	2.02	Bolivia	2.75	Georgia	3.52	Oman	5.33	Luxembourg	8.43
Nigeria	2.05	Gambia	2.76	Morocco	3.55	Cape Verde	5.38	Australia	8.57
Burundi	2.06	Ethiopia	2.81	Jamaica	3.56	South Korea	5.45	Canada	8.63
Guinea	2.07	Niger	2.81	Serbia	3.58	Dominican Republic	5.52	Norway	8.66
Cambodia	2.07	Madagascar	2.82	Colombia	3.67	Bhutan	5.72	Netherlands	8.72
Tajikistan	2.07	Tanzania	2.83	Peru	3.71	Malta	5.77	Switzerland	8.73
Guinea-Bissau	2.08	Guatemala	2.85	Trinidad and Tobago	3.75	Taiwan	5.81	Ireland	8.88
Congo	2.13	Lebanon	2.89	Lesotho	3.75	Puerto Rico	5.93	Singapore	9.12
Paraguay	2.15	Mali	2.93	El Salvador	3.77	Botswana	5.94	Sweden	9.13
Kyrgyzstan	2.17	Albania	2.93	Ghana	3.83	Slovenia	6.04	New Zealand	9.33
Kenya	2.17	Moldova	2.95	Brazil	3.86	Cyprus	6.12	Finland	9.38
Venezuela	2.18	Zambia	2.96	Montenegro	3.86	Emirates	6.19	Denmark	9.38
Libya	2.20	Armenia	2.98	Bulgaria	3.87	Saint Vincent and Grenadines	6.21		
Azerbaijan	2.21	Dominican Republic	3.03	Telecentre	3.90	Estonia	6.24		
New Guinea	2.23	Argentina	3.03	Turkey	3.99	Portugal	6.31		
Republic of Central Africa	2.24	Belarusian	3.04	Croatia	4.03	Uruguay	6.38		
Cameroon	2.25	Algeria	3.04	Saudi Arabia	4.13	Israel	6.38		
Yemen	2.28	Benin	3.10	Greece	4.16	Qatar	6.45		
Zimbabwe	2.32	Liberia	3.10	Cuba	4.27	Spain	6.55		
Congo	2.33	Mongolia	3.12	Latvia	4.37				
Laos	2.33	Kosovo	3.14	Samoa	4.42				

Group 1	CPI	Group 1	CPI	Group 2	CPI	Group 2	CPI	Group3	CPI
Ukraine	2.37	Malawi	3.14	Slovakia	4.43				
Russia	2.43	Gabon	3.16	Czech Republic	4.47				
Uganda	2.44	India	3.18	Tunisia	4.49				
Sierra Leone	2.44	Djibouti	3.19	Macedonia	4.50				
Indonesia	2.47	Egypt	3.20	South Africa	4.56				
Coast ivory	2.47								
Pakistan	2.47								
Eretria	2.49								
Comoros	2.51								

We attempt to assess the trend of the CPI scores for all the countries among time and to explore its movement between groups. The estimated results for the trend of scores in the CPI for the three groups, namely, FAICOR (slightly corrupt) FORCOR (most corrupt), and MOYCOR (moderately corrupt), are presented in Table 2.

A high value of the standard deviation of the CPI in a given country means a significant change in the perception of corruption in the country, while a low value of the standard deviation means that the perception of corruption in this country is relatively stable over time. Table 2 presents the standard deviation of the CPI, which are arranged in increasing order for each group of countries, thus describing a rating from a steady perception of corruption to a more volatile perception.

Table 2: Standard Deviation of the CPI for the period 2000-2014

Group 1	SD	Group 1	SD	Group 2	SD	Group 2	SD	Group 3	SD
Congo	0.058	Venezuela	0.326	Cape Verde	0.055	South Korea	0.476	France	0.126
Southern Sudan	0.071	Yemen	0.327	Malta	0.179	Tunisia	0.484	Chile	0.151
North Korea	0.100	Tanzania	0.333	Suriname	0.188	Slovakia	0.484	Finland	0.204
Cambodia	0.134	Eretria	0.338	Panama	0.198	Czech Republic	0.485	Belgium	0.225s
Nicaragua	0.141	Dominican Republic	0.347	Serbia	0.199	Hungary	0.486	Ireland	0.237
Tajikistan	0.156	Belarus	0.348	Thailand	0.222	Jordan	0.495	Sweden	0.258
Guyana	0.158	Zimbabwe	0.355s	Bosnia and Herzegovina	0.233	Romania	0.505	Singapore	0.271
Honduras	0.173	Iran	0.355s	Taiwan	0.236	S.V and Grenadines	0.508	Netherlands	0.272
Angola	0.183	Gabon	0.373	Estonia	0.237	Senegal	0.517	Luxembourg	0.272
Papua New Guinea	0.186	Zambia	0.376	Lesotho	0.255	Seychelles	0.536	Canada	0.282
Congo	0.189	Mali	0.377	Emirates	0.261	Dominica	0.547	Norway	0.305
Turkmenistan	0.193	Libya	0.379	Mauritius	0.268	Kuwait	0.557	England	0.324
Chad	0.201	Azerbaijan	0.398	Montenegro	0.269	Croatia	0.561	Australia	0.333
Armenia	0.205	Niger	0.401	Burkina Faso	0.272	Uruguay	0.577	Japan	0.337
Lebanon	0.205	Sierra Leone	0.408	Sri Lanka	0.276	Cyprus	0.588	Australia	0.344
Pakistan	0.216	Egypt	0.417	Colombia	0.285	Telecentre	0.603	Denmark	0.346
Guinea-Bissau	0.219	Madagascar	0.419	Lithuania	0.292	Mexico City	0.609	Iceland	0.355s
Togo	0.232	Ethiopia	0.423	Spain	0.300	Israel	0.659	Barbados	0.388
Republic of Central Africa	0.235	Laos	0.427	Ghana	0.301	Cuba	0.664	United States	0.09 S
Kyrgyzstan	0.239	Kosovo	0.429	Macedonia	0.318	Trinidad and Tobago	0.675	New Zealand	0.406
Viet Nam	0.241	Bolivia	0.450	Morocco	0.320	Bahrain	0.686	Bahamas	0.411
Russia	0.241	Moldova	0.452	Puerto Rico	0.327	Swaziland	0.720	Germany	0.524
Comoros	0.242	Algeria	0.452	Namibia	0.347	Portugal	0.795	Hong Kong	0.532
Mozambique	0.244	Uzbekistan	0.452	Sao Tome and principle	0.350	South Africa	0.921	Switzerland	0.699
Haiti	0.244	Albania	0.455	Brazil	0.366	Bulgaria	1.084		
Kenya	0.246	Philippines	0.460	Jamaica	0.380	China	1,212		
Burundi	0.255	Coast ivory	0.461	Georgia	0.386				
Uganda	0.259	Gambia	0.462	Oman	0.388				
Kazakhstan	0.266	Ecuador	0.465	Slovenia	0.095				
Cameroon	0.270	Liberia	0.469	Po Moor	0.394				
Mongolia	0.270	Afghanistan	0.525	Greece	0.408				

Group 1	SD	Group 1	SD	Group 2	SD	Group 2	SD	Group 3	SD
Djibouti	0.273	Indonesia	0.543	Latvia	0.412				
Myanmar	0.292	Sudan	0.553	Costa Rica	0.422				
Nepal	0.295	Syria	0.572	Bhutan	0.424				
Malawi	0.299	Nigeria	0.589	Botswana	0.439				
Ukraine	0.302	Bangladesh	0.688	Saudi Arabia	0.439				
Mauritania	0.305	Benin	0.725	Samoa	0.443				
Guinea	0.308	Somalia	0.725	Italy	0.450				
India	0.314	Argentina	0.924	Turkey	0.451				
Guatemala	0.318			Malaysia	0.456				
Timor-Leste	0.322			Qatar	0.456				
Iraq	0.323			El Salvador	0.462				
Paraguay	0.323			Peru	0.474				

A first glimpse of Table 2 shows that the CPI varies for all groups over the period 2000-2014 with a different intensity. Countries with certain stability are the Democratic Republic of Congo, South Sudan, and Cape Verde having respective standard deviation values of 5.8%, 7.1%, and 5.5%; while those who experienced strong variability in the perception of corruption are primarily China and Bulgaria and the respective standard deviations are 121.2% and 108.4%. Note also that the average standard deviations for the three groups are, respectively, 34%, 44.3%, and 33.3%, which leads us to believe that countries with low and high CPI are less volatile in terms of perception of corruption. However, within each group we find some disparity that leaves us to assume that there are effects of migration and this is more pronounced in the second group. This is what we will attempt to explore in the next stage.

The movement between groups of countries for the period 2000-2014 is described in Table 3 and it appears that the CPI has improved in time for the following countries: Saudi Arabia, Morocco, Romania, Gabon, Algeria, Bolivia, Benin, Djibouti, Liberia, Moldova, Mongolia, Ecuador, and the Philippines and the moving of the most corrupt countries group (FORCOR) to moderately corrupt countries group (MOYCOR). Other countries have showed a deterioration due to their migration from MOYCOR group and FORCOR group such as Belarus, Sri Lanka, Uruguay, and Niger.

Other countries have showed improvement rather than deterioration in the CPI, and move from FORCOR group to MOYCOR group, or from MOYCOR group to FORCOR group, more than one time such as Panama, Burkina Faso, Senegal, Trinidad, Swaziland, Malawi, Mexico, Bosnia, Argentina, India, Madagascar, China, Ghana, and Peru.

Table 3: The most / least Volatile Countries According to the Standard Deviation of the CPI

	Group 1		Group 2		Group 3	
	Country	SD	Country	SD	Country	SD
Less volatile	Congo South Sudan	0.058 0.071	Cape Verde	0.05	France	0.126
More volatile	Argentina Somalia Benin	0.924 0.725 0.725	China Bulgaria S. Africa	1,212 1.084 0.921	Switzerland	0.699
Average		34%		44.3%		33.3%

What is also remarkable is that Estonia has recorded three movements during the period 2000-2014 from group MOYCOR and group FAICOR between 2005 and 2006 and then in the opposite direction between 2006 and 2007, to regain the group FAICOR between 2011 and 2012.The improvement experienced by India, for example, between 2006 and 2007 to switch from Group 1 to Group 2, turned into deterioration between 2009 and 2010 to regain Group 1. The same thing happened with Sri Lanka but in the opposite direction (Group 2 to Group 1) between 2011 and 2012.The other group of countries (MOYCOR) left group FAICOR, thus achieving an improvement in the CPI as Japan, Belgium, and UAE, while the other group of countries (FAICOR) showed a worsening CPI such as France, Israel, Spain, and Slovenia.

By analyzing the movements of all the groups in terms of movements between groups of numbers for the period 2000-2014, we find that the countries belonging to group MOYCOR are more volatile than the other two and FORCOR and FAICOR groups. This is consistent with the calculation result of the average and standard deviations in Table 3

To better examine the direction of movement of the least stable countries between the groups in time we opted for the estimation of an auto- regressive model AR (1), for all countries and for the period 2000-2014.

The autoregressive model p ordered, denoted by AR (p), is given by the following:

$$AR(p): \quad X_t = c + 1 + \varphi_1 X_t - \varphi_1 + \varphi_2 X_t - \varphi_2 + \ldots + \varphi p X_t - \varphi_p + \mathcal{E}_t, \qquad (5)$$

where φ1, ... φp are the model parameters, c is a constant, and Ɛt is white noise.

A Ɛt process is called white noise if

E (Ɛt) = 0
E (Ɛt2) = δ2
E (Ɛt ƐT) = 0.
Using the operator delays, we can write

$$(1-\varphi 1L- \varphi 2L2- \dots \varphi pLp)\, Xt = c + Ɛt. \quad (6)$$

Autoregressive process of order 1 is

$$Xt = c + 1 + \varphi 1Xt\text{-}1 + Ɛt \quad (7)$$

The model is as follows:

$$IPC_{i,t} = \delta_0 + \delta_1 t + \mu_{i,t}$$

With $\mu_{i,t} = e\mu_{i,t-1} + e\mu_{i,t}$,

where i is the country and t is the period from 2000 to 2014.

Table 4: Results of the Regression (Deterioration of the CPI)

Countries with deterioration of the CPI	Coefficient
Thailand2	-0.074
Panama2	-0.147
Trinidad 2	-0.086

Table 5: Results of the Regression (Improvement of the CPI)

Countries with improvement of the CPI	Coefficient	Countries with improvement of the CPI	Coefficient
France[3]	0.51	Tunisia[2]	0.837
Japan[3]	0.485	Bosnia[2]	0.665
Belgium[3]	0.516	Georgia[2]	0.975
China[2]	1,033	Uraguay[2]	0.896
Mexico[2]	0.458	Russia[1]	0.577
Senegal[2]	0.836	Niger[1]	0.722
Swaziland[2]	0.708	Madagascar[1]	0.325
Burkina-Fasso[2]	0.325	Moldova[1]	0.538
Sirilanka[2]	0.582	Zambia	0.875
Romania[2]	0.933	Argentina[1]	0.662
Morocco[2]	0.551	Belarusian	0.626
Peru[2]	0.578	Mongolia[1]	0.892
Ghana[2]	0.843	Philippine[1]	1.123
Turkey[2]	0.863	Malaoui[1]	0.413
Saudi Arabia[2]	0.677	Gabon[1]	0.729
Emirates[2]	0.648	India[1]	0.917
Estonia[2]	0.84	Djibouti[1]	0.484
Spain[2]	0.951	Egypt[1]	0.561
Telecentre[2]	0.923	Benin[1]	0.945
Israel[2]	0.783	Ecuador[1]	0.968
Slovenia[2]	0.668	Bolivia[1]	0.89

According to the results presented in Tables 4 and 5, a positive sign/negative trend of the coefficient, respectively, indicates an improvement/deterioration in perceived corruption over time. A negative sign of the coefficient shows a significant drop in the CPI for these countries such as Panama, Trinidad, and Thailand. On the contrary, a positive sign of the coefficient reflects an improvement in the CPI, as in the case of China, Mexico, Niger, and so forth.

Based on the results of the estimation of equation (1) we find that the greatest negative amplitude is that of Panama and that the greatest positive amplitude is that of the Philippines. For this purpose, we can show that Panama has experienced the highest level in terms of deterioration while the Philippines presents the greatest improvement in the CPI over time, among all countries. These results are consistent with the results of calculating the standard deviation of the CPI (Table 3) for both countries (Panama and the Philippines). Significant changes to these two countries (Table 4) suggest that the perception of corruption is very volatile. The results in Table 5 also confirm the hypothesis that the group of countries belonging to the class MOYCOR are relatively more volatile than those of FAICOR and FORCOR group. The number of countries with significant changes in scores is higher for MOYCOR group and the trends of the coefficients values of these countries are relatively high

compared to the other two groups.

5. Conclusion

This paper explored the relevant literature review that is giving several different definitions and forms of corruption. The definition of corruption is therefore very complicated and depends on the time and space in which acts of corruption have been undertaken. Several international organizations are also interested in the phenomenon and gave themselves different definitions (World Bank, IMF, IT).

Subsequently the paper developed a reading in the corruption quantification tools internationally. In this respect, a number of tools have treated the quantization problem of corruption such as the CPI, the index of the World Bank, and CGRI. This paper conducted a descriptive quantitative analysis of the CPI and succeeded to classify countries into three groups, strongly, medium, and less corrupted. Then, the paper calculated the standard deviation of the CPI over the period 2000-2014 (Table 2) and found particular trend of improvement or deterioration in the perception of corruption over time for each group. We found that countries with low and high CPI are less volatile in terms of perception of corruption while countries with medium score are relatively stable in term of perception of corruption. The results lead to the next stage of hypotheses to be tested if the scores in the CPI reflect a movement leading to a general consensus of perception of corruption over time.

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