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IS THERE A “CONSENSUS” TOWARDS TRANSPARENCY INTERNATIONAL’S CORRUPTION PERCEPTIONS INDEX?

Shrabani Saha^{*}, Rukmani Gounder^{**} and Jen-Je Su^{***}

Given the clandestine nature, corruption is intrinsically a complex phenomenon and hard to measure. This paper examines whether Transparency International’s corruption perception index converges towards consensus over time? Furthermore, we estimate the speed of adjustment towards general agreement. The results indicate differences in the degree of concordance, i.e. high level of agreement for the mostly-clean and most-corrupt countries but disagreement remains high for the medium-corrupt countries. The speed of converge is high for the most-corrupt and mostly-clean countries and a decline for the medium corrupt countries.

Keywords: corruption, Perception Index, panel data

I. INTRODUCTION

Studies on corruption have been cautious in interpreting their empirical results given the nature of the definition of corruption and measurement of such corrupt behaviours and activities. While the studies have noted harmful effects of corruption on economic growth, development and its detrimental nature to all societies, but the difficulties in the measures have queried the risk of analysing individual organisations.¹ Until recently, research on corruption has been more illustrative than empirical due to the difficulty in measuring relative corruption across countries. Given its clandestine nature, corruption is intrinsically a complex phenomenon and hard to measure due to its actual and perceived notions.

The actual data on corruption to a large extent depend on the effectiveness and capacity of a country’s judiciary system in prosecuting corrupt behaviours. Moreover, the objective data of corruption mostly reflects the success of anti-corruption initiatives rather than the actual levels of corruption.² In order to address measurement problems several organisations (e.g. business risks analysts, polling organisations) have computed the level of corruption based on various perceptions. The perceived corruption indices have been constructed on the basis of survey responses of business people, academics and local residents. Studies have utilised the perception-based-

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¹ See Klitgaard, 1988; Shleifer and Vishny, 1993; Mauro, 1995; and Bardhan, 1997.

² The crime prevention and criminal justice division of the United Nations Office in Vienna assembles hard data of corruption.

indices as a quantitative measure of corruption, amongst that Transparency International’s (TI) corruption perceptions index (CPI) is the most widely used measure in economic studies.³ TI’s corruption perception index is highly correlated with other perceived measures of corruption (e.g. World Bank’s control of corruption index and International Country Risk Guide’s corruption index). This paper analyses an intriguing stylised fact about Transparency International’s corruption perceptions index using the standard deviation of CPI rankings and links this to the concordance of the perception over time.

The paper is structure as follows: the next section discusses the Transparency International’s corruption perceptions index and section III presents the trends in the standard deviation of the CPI rankings. Section IV explains the findings in terms of the mostly-clean countries, the medium corrupt countries and the mostly-corrupt countries. We examine two issues, first, whether the CPI scores converge towards a degree of concordance, i.e. does the degree of disagreement among the polls decline over time? Second, we estimate the speed of adjustment towards general agreement. The results obtained for 180 countries from 1995 to 2008 suggest that CPI tends towards a higher degree of concordance over time and the speed of convergence is high for the mostly-clean and most-corrupt countries but the degree of disagreement remains high for the middle-range countries (i.e. medium corrupt countries). We attempt some possible explanations for these results. The final section presents the conclusion.

II. CORRUPTION PERCEPTIONS INDEX (CPI): AN OVERVIEW

Transparency International’s CPI is a composite index based on individual surveys from various sources. The strength of CPI is the use of multiple sources of data and multi-year averages which increases the reliability of the index (Seligson, 2006). The use of multiple sources is aimed to reduce measurement error by averaging different sources. Moreover, TI requires a minimum of three sources for a country to be included, which increases the precision of the index. However, there have been debates about the reliability of TI’s CPI – especially the sources used in constructing the change in CPI over time, and the sources also vary from country to country in a given year.⁴ On the reliability and precision of CPI, Lambsdorff (2006) responds that high correlation of the CPI values between the sources indicates an overall reliability. TI reports that amongst the 12 sources used for 2006 computation the CPI average correlation values is 0.82, which suggests that the sources do not differ considerably in their assessment of level of corruption. Galtung (2005) argues that a degree of variance is evidently acceptable in the context of CPI measurement. He suggests that the variance within and between sources contain valuable information. In this context, a change in the level of consensus in a country can be a useful barometer for an evolution in the public understanding of corruption for a given country.

³ Some of the recent studies that use TI’s CPI are notably that of Sandholtz and Koetzle (2000), Triesman (2000, 2007), Fisman and Gatti (2002), Pellegrini and Gerlagh (2008), and Saha *et al.* (2009) who also consider several aspects of the causes of corruption.

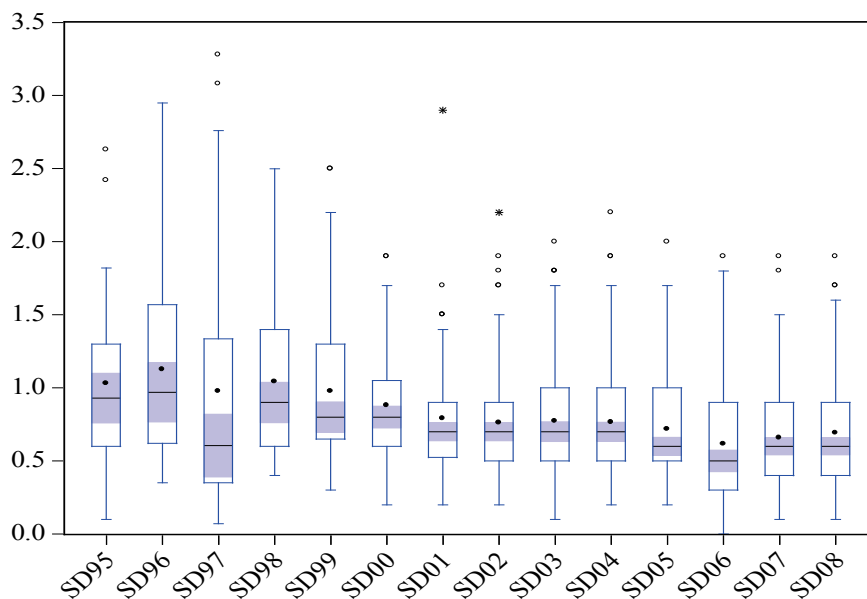
⁴ See studies by Galtung, 2005; Seligson, 2006; Knack, 2006; Treisman, 2007; and You, 2009.

A unique feature of TI's CPI is that it provides the variance/standard deviation of the rankings of CPI scores that reflect disagreement in the degree of corruption perceptions from various surveys used for constructing CPI.⁵ The higher the standard deviation value the greater is the disagreement in perceptions about a country. The disagreement in perceptions may be due to different interpretation of corrupt activities and to diverse experiences in different countries. It can also be due to the objective difficulties in assessing the right score (Lambsdorff, 1999). Standard deviation of CPI score can be a good indicator in measuring investment risk and uncertainty as the general consensus about corruption perception signifies a greater predictability which in turn reduces the risk and uncertainty about investment decision. Thus, examining the standard deviation of CPI provides a deeper insight into the perceptions of corruption.

III. TRENDS IN STANDARD DEVIATION OF CPI RANKINGS

The TI's standard deviation of the CPI rankings is utilised for convergence of perceived corruption level for the period 1995-2008. We first present the boxplot diagram (Figure 1) displaying the summary data of standard deviation values for the upper, middle and lower quartiles (i.e. 75th, 50th and 25th percentile), and its minimum and maximum values. The decline in the inter-quartile range from 1995 to 2008 illustrates that opinion polls about the corruption perception in a country tend towards general agreement. The median value depicted by the line in the box decreases sharply during the 1995-2001 period (i.e. from 0.93 to 0.70) and is moderate since then (i.e. 0.60 in 2008). Also, the confidence intervals of the median (denoted by the shaded range) become narrower over time, which supports the declining trend of the standard deviation of CPI rankings.

**FIGURE 1:
BOXPLOTS OF STANDARD DEVIATION OF CPI RANKINGS, 1995-2008**



⁵ For details of these sources see http://www.transparency.org/policy_research/surveys_indices/cpi

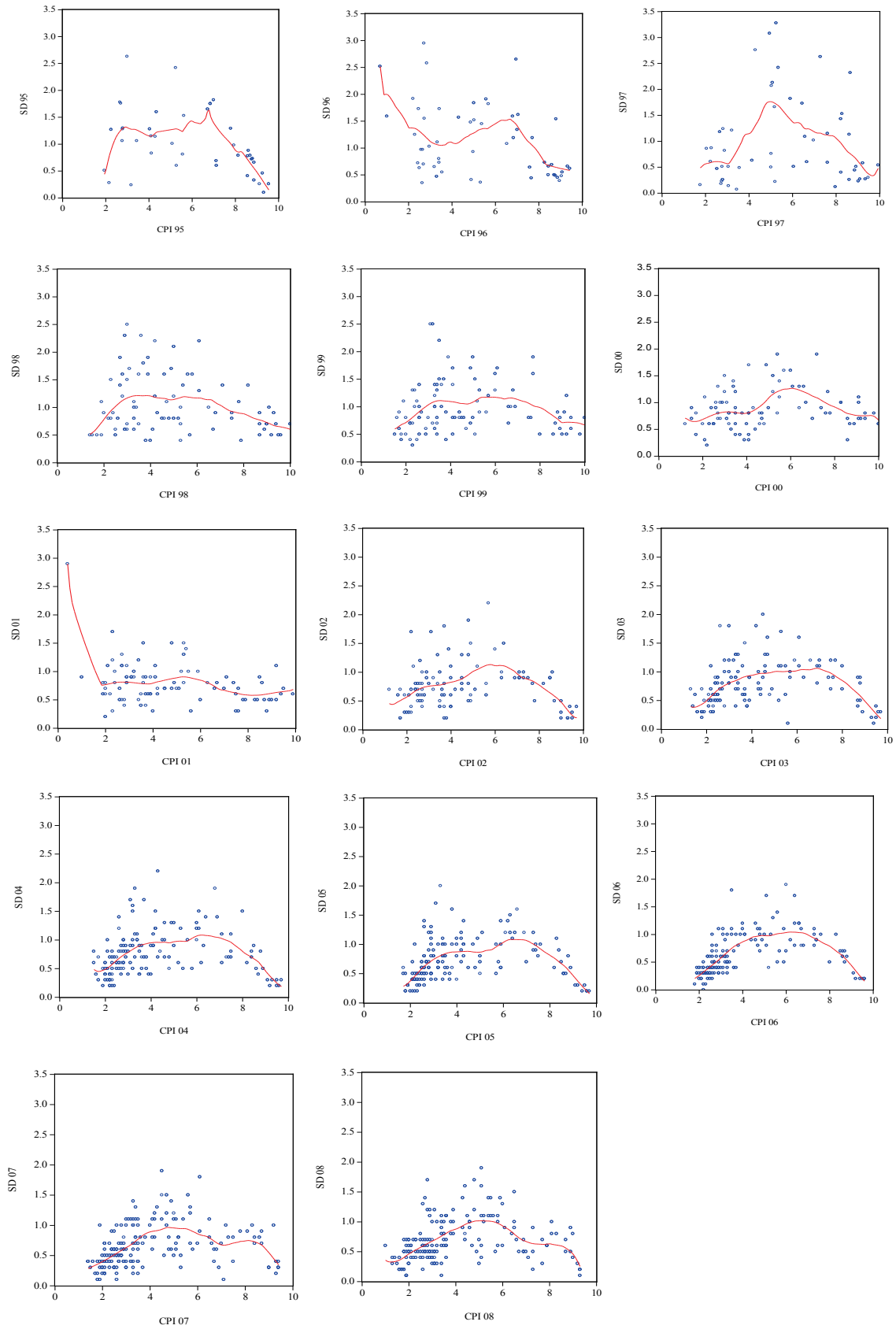
In further examining the scatter plots of the CPI scores and its standard deviation of the CPI rankings we utilise the Kernel regression methodology, i.e. the fitted local polynomial Kernel regressions for each year are between 1995 and 2008 (Figure 2). The two key observations noted are, first that the best fitted Kernel curves become smoother and closer to the X-axis over time. The smoothness of the plots reflects a less degree of deviation in the opinions about the perceptions of corruption for a country. This provides support to the view that corruption perceptions move towards general agreement over time. Second, the plots are widely scattered in 1995, 1996 and 1997 over the range of 0.10 to 2.63, 0.35 to 2.65 and 0.07 to 3.28, respectively, with an average standard deviation value of greater than 1 for these years. The widely scattered range explains the existence of a higher level of diversion in the opinion about corruption perceptions in this period. However, the average variation of the CPI ranking is less than 0.8 after 2000, which confirms that the deviation in the opinions declines over time with few exceptions.

The exceptions noted in the opinion deviation represent outliers in the rankings of CPI which are mainly due to inclusion of some countries ranked by TI for the first time and that exhibit higher standard deviation values of the CPI rankings. For example, Bangladesh, Cameroon, Kenya, Nigeria and Uganda have been included in the CPI ranking list starting in 1996. These countries show higher standard deviation values, thus increasing the overall average standard deviation value of the CPI rankings.

The second observation noted is that the Kernel fit curves take the shape of inverted-U over time. This demonstrates that at the low CPI values (i.e. most-corrupt countries) and the high values of CPI (i.e. mostly-clean countries) there is a higher degree of agreement about the incidence of corruption. Whereas, there is a greater degree of disparity amongst various opinion polls in the middle range of CPI values (i.e. medium-corrupt countries). This implies that most-corrupt and mostly-clean countries reflect consensus in the polar cases.

Close observations of CPI values for the mostly-clean countries (e.g. Singapore, Sweden, Netherland, Luxemburg), and most-corrupt countries (e.g. Argentina, Egypt, India, Nigeria, Thailand) show that the standard deviation values of CPI rankings decrease over time. For the mostly-clean countries the standard deviation values of CPI rankings decrease from 0.5 to 0.3 in the case of Singapore, from 0.3 to 0.1 for Sweden, from 0.8 to 0.5 for the Netherland and from 1.8 to 0.8 for Luxemburg during the period 1995 to 2008. For example, in the case of most-corrupt countries the standard deviation values decrease from 2.42 to 0.7 for Argentina, from 1.28 to 0.3 for India, from 1.3 to 0.8 for Thailand, and from 1.78 to 0.1 for Venezuela. Whereas the medium-corrupt countries like Italy, Portugal and Spain experienced high level of volatility in the standard deviation values, for example, in the case of Portugal the standard deviation value increases from 0.8 to 1.01 over this period.

FIGURE 2: KERNEL FITS OF STANDARD DEVIATIONS OF CPI RANKING AND CPI SCORES



In the next step we estimate the relationship between standard deviation and CPI values for 180 countries for the period 1995 to 2008.⁶ The empirical result from a panel regression analysis, after controlling for country effect, is as follows:

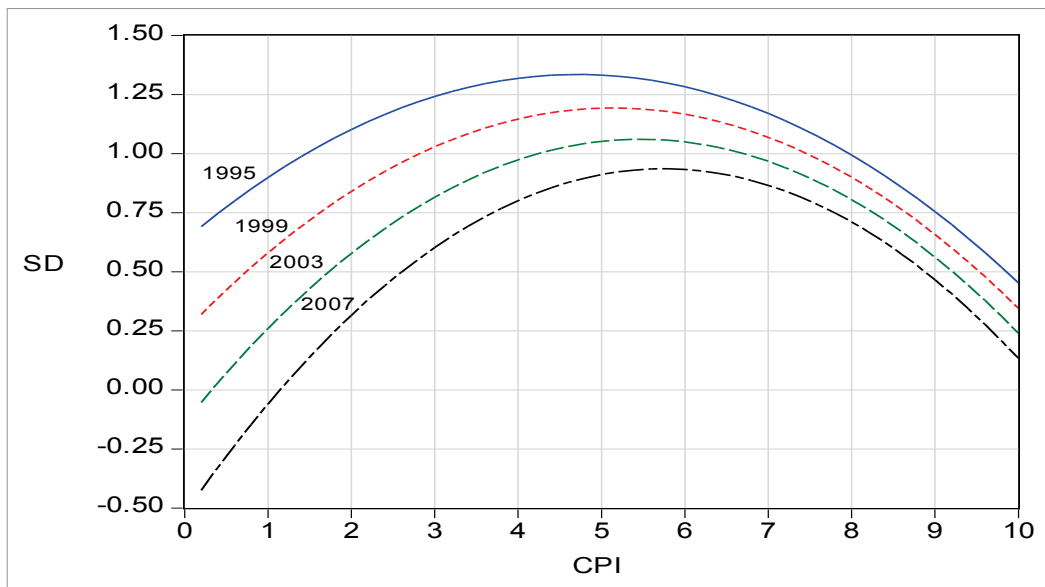
$$SD_{i,t} = -0.0964t + 0.2803CPI_{i,t} - 0.0305(CPI_{i,t})^2 + 0.0175CPI_{i,t} * t - 0.0011(CPI_{i,t})^2 * t$$

(-6.396)
(3.671)
(-4.184)
(2.757)
(-1.869)

where SD is the standard deviation of corruption perception index, *i* is country, *t* is year, and *t*-statistics are in parentheses.

The results illustrate that there is a significant non-linear relationship between standard deviation of CPI rankings and CPI values. The estimated inverted-U relationship is illustrated in Figure 3. The turning point level at which the CPI value reaches the maximum level of disagreement is between 5 and 6 and the curve moves downward over the years, implying agreement toward consensus. The relationship between the change in standard deviation (i.e. d(SD)/dt) and CPI over time is depicted in Figure 4.⁷ Since the change in standard deviation (i.e. d(SD)/dt) values are negative for all the levels of CPI values, this suggests a higher degree of consensus reached over time. Also, the higher the degree of corruption the higher is the speed of achieving consensus, i.e. the speed of convergence towards a general level of agreement is high in the case of most-corrupt countries, but it then slows down at around the CPI value of 8, and marginally speeds up for the mostly-clean countries where the level of agreement is high.

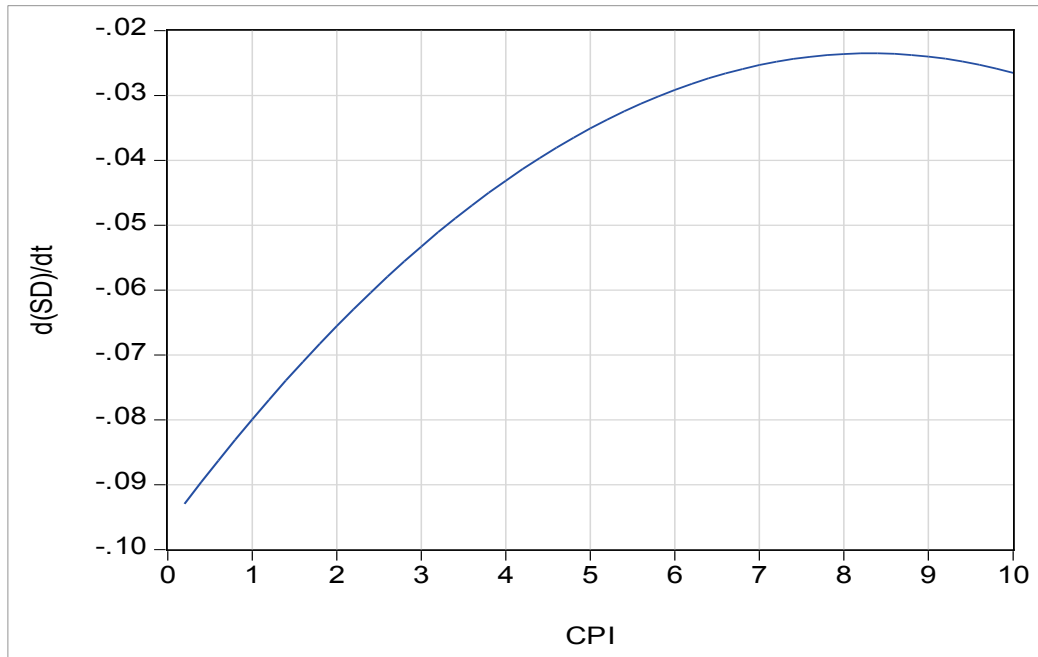
**FIGURE 3:
THE RELATIONSHIP BETWEEN CHANGE IN SD AND CPI OVER TIME**



⁶ The country dummies were omitted in the regression analysis.

⁷ $d(SD)/dt = -0.0964 + 0.0175CPI - 0.0011CPI^2$.

**FIGURE 4:
THE SPEED OF CONSENSUS PROCESS (D(SD)/DT) AGAINST CPI**



IV. EXPLANATION FOR PERCEPTIONS OF CORRUPTION

The results discussed in the above section show a higher level of consensus and speed of convergence for the most-corrupt and mostly-clean countries. However, the divergence of opinion in the medium-corrupt countries can be explained as mainly due to instability in the survey sources. An observation of the CPI survey sources reveals that fewer sources have been used for the mostly-clean and most-corrupt countries compared to that for the medium-corrupt countries. For example, the number of surveys used in 2001 for a mostly-clean country like Denmark is 7, and for Bangladesh, a most-corrupt country, is 3, while the medium-corrupt countries like Malaysia and Thailand have 11 and 12 survey sources, respectively. In comparison to 2008 the number of surveys used for Denmark is 6, and for Somalia (i.e. a most-corrupt country) is 4, while Malaysia and India have 9 and 10 surveys, respectively (i.e. medium-corrupt countries).

As the sources used for the mostly-clean countries are consistent over the years there is less divergence and a greater degree of consensus. The sources used for the mostly-clean countries include Economic Intelligence Unit (EIU), Institute for Management Development (IMD), Merchant International Group (MIG) and Global Competitiveness Report (GCR) of World Economic Forum (WEF). Thus, a large diversity in the sources used for the medium-corrupt countries increase the standard deviation of CPI rankings. As a consequence a high level of disagreement in the opinions polls persist. The diversity of survey sources used for Malaysia and India in 2001 and 2008 are different. For example, the IMD, Political and Economic Consultancy (PERC), GCR, World Business Environment Survey (WBES), EIU and Pricewaterhouse Coopers have been used in 2001. A change in the sources is noted in 2008, where Bertelsmann Transformation Index (BTI), EIU, Global Insight (GI),

PERC, Country Policy and Institutional Assessment (CPIA), MIG and GCR of WEF have been utilised to construct the CPI score for 2008.

The variance within and between the sources questions the reliability of information which also limit the possible reliability of frequent changes of sources. A higher degree of disagreement for the medium-corrupt countries also reflects the problem of perceptions. The sensitivity of corruption can be a psychological notion in some countries that suggest that it is easier to agree on the polar cases, i.e. what is black and what is white but it is more difficult about the grey areas. However, the overall convergence towards general agreement improves the reliability of perceptions indices. As Treisman (2000, p.240) notes that the consistency of CPI ratings across time period, sources and the methodology of CPI construction reduces the risk of analysing individual organisations and also that pairwise ratings are highly correlated. Lambsdorff (2002, 2008) finds a high correlation of CPI values between the sources and indicates an overall reliability of the index.

V. CONCLUSION

This article explores if the Transparency International’s corruption perception index moves towards a consensus by analysing the standard deviation of CPI rankings across countries and over time. The results show that standard deviation is declining in general and this occurs for the mostly-clean and most-corrupt countries in particular. The declining trend in the standard deviation value of corruption perceptions supports convergence towards a general consensus and where a greater predictability reduces the risk and uncertainty of business decision making. Controlling corruption is crucial through all aspects of a well-functioning democratic system as it increases the chances of being caught. Thus, there is a need for well-developed operating institutions to curb corruption. The policy implications of the results suggest that a concordance in perceptions can accelerate the process of decision making for either foreign investors or domestic investors for the ease of doing businesses in a country.

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