

The Methodology of the Corruption Perceptions Index 2008

Prof. Dr. Johann Graf Lambsdorff

Transparency International (TI) and
University of Passau
August 2008

The Corruption Perceptions Index (CPI) is a composite index, using data compiled or published between 2007 and 2008. Thirteen surveys of business people and assessments by country analysts from overall eleven independent institutions enter the CPI.

The strength of the CPI is based on the concept that a combination of data sources combined into a single index increases the reliability of each individual figure.

All sources employ a homogeneous definition of “extent of corruption”. The assessments are gathered from experienced respondents and enhance our understanding of real levels of corruption.

Comparisons to last year’s index should be based on scores. However, such comparisons are not always perfect when changes in the composition of sources occur.

Non-parametric statistics are used for standardizing the data and for determining the precision of the scores.

1. Introduction

The goal of the CPI is to provide data on extensive perceptions of corruption within countries. The CPI is a composite index, making use of surveys of business people and assessments by country analysts. It consists of credible sources using diverse sampling frames and different methodologies. These perceptions enhance our understanding of real levels of corruption from one country to another.

Unbiased, hard data are difficult to obtain and usually raise problematic questions with respect to validity. Comparing the number of prosecutions, for example, does not reflect actual levels of corruption but the quality of prosecutors. International surveys on perceptions therefore serve as the most credible means of compiling a ranking of nations.¹

Overall, 13 sources are included in the CPI 2008, originating from 11 independent institutions. The complete list of sources is presented in the appendix. All in all, with 180 the number of countries in the CPI remained constant as compared to 2007.

The strength of the CPI is based on the concept that a combination of data sources combined into a single index increases the reliability of each individual figure.

Sources in 2008

Guidelines have been set up which govern the decision-making process regarding the selection of sources for the CPI. These guidelines include the actual criteria that a source needs to meet in order to qualify for inclusion as well as how the final decision is reached with the help of the Transparency International Index Advisory Committee. This process aims at making the final

decision on the inclusion of sources as transparent and robust as possible. As a result of this it was decided that the CPI 2008 includes data from the following sources:

- **ADB**, the Country Performance Assessment Ratings by the Asian Development Bank, compiled 2007 and published 2008.
- **AFDB**, the Country Policy and Institutional Assessment by the African Development Bank, compiled in 2007 and published 2008
- **BTI**, the Bertelsmann Transformation Index, Bertelsmann Foundation, compiled 2007 and published 2008.
- **CPIA**, the Country Policy and Institutional Assessment by the IDA and IBRD (World Bank), compiled 2007, published 2008.
- **EIU**, the Economist Intelligence Unit, compiled 2008.
- **FH**, Freedom House Nations in Transit, compiled and published 2008.
- **GI**, Global Insight (formerly World Markets Research Centre), Country Risk Ratings, compiled 2008.
- **IMD**, the International Institute for Management Development, Lausanne. We use the two annual publications from 2007 and 2008.
- **MIG**, Grey Area Dynamics Ratings by the Merchant International Group, compiled 2007.
- **PERC**, the Political and Economic Risk Consultancy, Hong Kong. We use the two annual publications from 2007 and 2008.
- **WEF**, the World Economic Forum. We use a new update of the data from 2007. Data from 2008 was not yet available.

An essential condition for inclusion is that a source must provide a ranking of nations. This condition is not met if a source conducts surveys in a variety of countries but with varying methodologies. Comparison

¹ For a more thorough discussion of this see Lambsdorff, J. Graf (2007) "The New Institutional Economics of Corruption and Reform: Theory, Policy and Evidence", Cambridge University Press, pp: 236-237.

from one country to another would not be feasible in this case.

Another condition is that sources must measure the overall extent of corruption. This is not the case if aspects of corruption are mixed with issues other than corruption, such as political instability, centralization or nationalism, or if changes are measured instead of the extent of corruption. Methodology documents of previous years provide examples of sources that failed to qualify.

The CPIA by the World Bank, the ADB and the AFDB have employed an identical methodological approach (albeit coming to partly different conclusions due to their independent networks of correspondents and experts). It combines corruption with varied aspects of good governance such as transparency, accountability and independence of the media. However, it was judged that these do not add a new aspect to the index but rather describe a variety of methods for anti-corruption and provide wording for “absence of corruption”.²

The CPI 2008 combines assessments from the past two years to reduce abrupt variations in scoring that might arise due to random effects. IMD and PERC conduct annual surveys and data from 2007 and 2008 are included.

While this averaging is valuable for the inclusion of surveys, it is inappropriate for application to the data compiled by professional risk agencies and expert panels. Such assessments as compiled by ADB, AFDB, CPIA, EIU, FH, and GI³ are conducted by a small number of country experts who regularly analyze a country's performance, cross-checking their conclusions with peer discussions. Following this systematic evaluation, they then consider a potential upgrading or downgrading. Changing scores in this case are the result of a

considered judgment and less due to random effects. Therefore, for these sources only the most recent update is included and an averaging is not carried out.

Year-to-year comparisons

Comparisons to the results from previous years should be based on a country's score, not its rank. A country's rank can change simply because new countries enter the index and others drop out. However, this caveat is less relevant this year because the number of countries remained unchanged, with only Puerto Rica entering the CPI and Grenada dropping out.

A higher score is an indicator that respondents provided better ratings, while a lower score suggests that respondents revised their perception downwards. However, year-to-year comparisons of a country's score may not only result from a changing perception of a country's performance, but also from a changing sample and methodology. If the composition of sources reporting on a country changes the country's score may change. Such a change would then not relate to an actual improvement or deterioration but rather to small differences between sources in arriving at a final score. This year, in particular, the data by the United Nations Economic Commission for Africa dropped out of the index. Their data still used in 2007 was dated and their new report was not available in time. With this source dropping out, but also with some sources changing and expanding their coverage of countries, some countries were affected by slight changes in the composition of sources.

The index primarily provides a snapshot of the views of business people and country analysts, with less of a focus on year-to-year trends. However, to the extent that changes can be traced to a change in the assessments provided by individual sources, trends can be identified. For this purpose we compare older data (that is, data

² A detailed description can be found at <http://siteresources.worldbank.org/IDA/Resources/CPIA2007Questionnaire.pdf>.

³ For BTI and MIG only the 2007 data was available, so that an averaging would not have been possible anyways.

that was used for the CPI 2007⁴ but no longer used this year) with their respective updates. Countries whose CPI 2008 score decreased relative to the CPI 2007 and where this deterioration is not the result of technical factors are Bulgaria, Burundi, Finland, France, Italy, Macao, Maldives, Norway, Portugal, Somalia, Timor-Leste and United Kingdom. The considerable decline in scores of at least 0.3 does not result from technical factors – actual changes in perceptions are responsible for the drop in the score.

With the same caveats applied, on the basis of data from sources that have been consistently used for the index, improvements of at least 0.3 can be observed for Albania, Bahrain, Benin, Cyprus, Dominica, Georgia, Indonesia, Jordan, Mauritius, Nigeria, Oman, Poland, Qatar, Saint Lucia, Saint Vincent and the Grenadines, South Korea, Tonga and Turkey.

More elaborated investigations on long-term trends are currently undertaken and will be published shortly.

2. Validity

All sources generally apply a definition of corruption such as the misuse of public power for private benefit, for example bribing of public officials, kickbacks in public procurement, or embezzlement of public funds. Each of the sources also assesses the “extent” of corruption among public officials and politicians in the countries in question:

- ADB, AFDB and the CPIA by the World Bank ask for ineffective audits, conflicts of interest, policies being biased towards narrow interests, policies distorted by corruption, and public resources diverted to private gain on a scale from 1 (bad) to 6 (good).

- BTI asks members of its network of local correspondents to quantitatively assess two issues related to corruption: “to what extent are there legal or political consequences for officeholders who abuse their positions?” and “to what extent can the government successfully contain corruption”? For both issues assessment on a scale from 10 to 1 are provided.
- EIU asks its panel of expert to assess the incidence of corruption and defines corruption as the misuse of public office for personal (or party political) financial gain. Integers between 0 (denoting a “very low” incidence of corruption) and 4 (denoting a “very high” incidence) are provided.
- GI provides an assessment of the likelihood of encountering corrupt officials. Corruption can range from petty bureaucratic corruption (such as the paying of bribes to low-level officials) right through to grand political corruption (such as the paying of large kickbacks in return for the awarding of contracts). Scores take the following values: 1; 1.5; 2; 2.5; 3; 3.5; 4; 4.5; 5. They have the following meaning:
 1. This country will have an excellent business environment and corruption will be virtually unknown.
 2. This country will have a good and transparent business environment. Corruption - official and otherwise - may occur occasionally, but most businesses will not encounter this.
 3. This country will have some significant operational obstacles, including corruption. However, whilst official corruption may be relatively common, it should not affect business in an overly negative manner.
 4. This country will have a poor business environment. Corruption is likely to be endemic in the business world and officialdom, and it will not be uncommon for kick-backs or bribes to be demanded in return for the awarding of contracts.
 5. This country will have severe opera-

⁴ These data are ADB 2006, AFDB 2005, CPIA 2006, EIU 2007, FH 2007, IMD 2006, PERC 2006 and GI 2007.

tional obstacles, which in practice make business impossible. Corruption will be pervasive and will reach the highest levels of government.

- FH asks its panel of expert to assess the following questions: 1. Has the government implemented effective anticorruption initiatives? 2. Is the country's economy free of excessive state involvement? 3. Is the government free from excessive bureaucratic regulations, registration requirements, and other controls that increase opportunities for corruption? 4. Are there significant limitations on the participation of government officials in economic life? 5. Are there adequate laws requiring financial disclosure and disallowing conflict of interest? 6. Does the government advertise jobs and contracts? 7. Does the state enforce an effective legislative or administrative process—particularly one that is free of prejudice against one's political opponents—to prevent, investigate, and prosecute the corruption of government officials and civil servants? 8. Do whistle-blowers, anticorruption activists, investigators, and journalists enjoy legal protections that make them feel secure about reporting cases of bribery and corruption? 9. Are allegations of corruption given wide and extensive airing in the media? 10. Does the public display a high intolerance for official corruption?
- IMD surveys elite business people and asks in the category "Institutional Framework - State Efficiency" to assess whether "bribing and corruption exist or do not exist."
- MIG asks its panel of correspondents to assess levels of corruption. Corruption in their definition ranges from bribery of government ministers to inducements payable to the "humblest clerk".
- PERC asks expatriate business people to rate on a scale of zero to 10 "how serious do you consider the problem of corruption to be in the public sector?" and to provide such an assessment for the

country in which they are working as well as in their home country.

- WEF asks: "In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with:"
 - 1 – exports and imports
Common 1|1|2|3|4|5|6|7| Never occur
 - 2 – public utilities (e.g. telephone or electricity)
Common 1|1|2|3|4|5|6|7| Never occur
 - 3 – annual tax payments
Common 1|1|2|3|4|5|6|7| Never occur
 - 4 – public contracts
Common 1|1|2|3|4|5|6|7| Never occur
 - 5 – influencing laws and policies, regulations, or decrees to favor selected business interests?
Common 1|1|2|3|4|5|6|7| Never occur
 - 6 – getting favorable judicial decisions
Common 1|1|2|3|4|5|6|7| Never occur

From these questions the simple average has been determined.

The various terms used by the sources such as "extent", "high incidence", "occasional vs. endemic", "free from opportunities for corruption", "exist or do not exist", "level", "seriousness of the problem", "common vs. never occur" are closely related. This common feature of the various sources is particularly important in view of the fact that corruption comes in different forms. It has been suggested in numerous publications that distinctions should be made between different forms of corruption, e.g. between nepotism and corruption in the form of monetary transfers. Yet, none of the data included in the CPI emphasize one form of corruption at the expense of other forms. The sources can be said to aim at measuring the same broad phenomenon. As has been emphasized in the background documents of previous years, the sources do not distinguish between administrative and political corruption.

3. Samples, perceptions and reality

While the sources all aim at measuring the extent of corruption, the sample design differs considerably. Basically, two different types of samples are used.

A first group of sources, namely ADB, AFDB, BTI, CPIA EIU, MIG and GI, establish a network of local correspondents and guide the resulting quantitative assessments by coordination and discussion with staff members at their headquarters. These non-residents, often located in the western hemisphere such as North America and Western Europe, are influential in turning in their experienced perception with regard to foreign countries.

There is an advantage to perceptions vis-à-vis foreign countries because they are not vulnerable to a “home-country bias”. Such a type of bias would be relevant if respondents assess their home country purely according to local standards. Such a standard would be problematic because it can differ from one country to another, impairing the validity of cross-country comparisons.

A second group of sources, namely IMD, FH, PERC and WEF, gather assessments made by residents with respect to the performance of their home country. These respondents are partly nationals but sometimes also resident expatriates from multinational firms. While such data might be susceptible to the aforementioned “home-country bias”, they are not susceptible to introducing an undue dominance of “western business people’s” viewpoint. Such a viewpoint would be inadequate if foreigners lack a proper understanding of a country’s culture.

The data correlate well with each other, irrespective of these different methodologies. The high correlations ameliorate fears that any of the aforementioned concerns are important to the results. The residents sampled for the respective purpose may have a rather universal ethical standard and adequately position their country as compared to foreign countries. Likewise,

those respondents who assess foreign countries seem to have a good grasp of a country’s culture and appear free of prejudice.

Critics raised concern that the CPI might reproduce what it has in the past been propagating. The Transparency International Corruption Perceptions Index has gained wide prominence in the international media since 1995. This might introduce a problem of circularity. Respondents might “go with the herd” instead of submitting their experienced judgment. This hypothesis was tested and rejected in 2006, the results being reported in the 2006 background paper on methodology.

In sum, the perceptions gathered are a helpful contribution to the understanding of real levels of corruption.⁵

4. The index

Standardizing

Each of the sources uses its own scaling system, requiring that the data be standardized before each country’s mean value can be determined. This standardization is carried out in two steps.

Older sources that were already standardized for the CPI of a previous year enter the CPI 2008 with the same values. New sources are standardized using matching percentiles. The *ranks* (and not the scores) of countries as reported by each source is the only piece of information that is used. For this technique the common sub-samples of a new source and a master list are determined, meaning that countries that appear only either in the new source or in the master list are disregarded. We use the previous year’s CPI, that is that of 2007, for the master list.⁶

⁵ The perceptions gathered relate to actual experience and less to hearsay. For a discussion see Lambsdorff, J. Graf (2007) “The New Institutional Economics of Corruption and Reform: Theory, Policy and Evidence”, Cambridge University Press, p. 24-26.

⁶ It was decided in 2007 that the functional form of the CPI (that is, the shape of the curve shown in figure 3) should be responsive to that proposed by the sources. For this purpose, the 2007 CPI is re-shaped

Matching percentiles then implies that the largest value in the master list is taken as the standardized value for the country ranked best by the new source. The second largest value is given to the country ranked second best, etc.⁷ To illustrate this, imagine that a new source ranks only five countries: UK (4.2), Singapore (3.9), China (2.8), Malaysia (2.7) and Viet Nam (2.4). In the master list, that is, the 2007 CPI, these countries obtained the scores 8.4, 9.3, 3.5, 5.1 and 2.6, respectively. Matching percentiles would now assign UK the best score of 9.3, Singapore second best with 8.4, China 5.1, Malaysia 3.5 and Viet Nam 2.6.

Matching percentiles is superior in combining indices that have different distributions. For example, in some sources the countries' scores cumulate at the bottom while in others they are mostly at the top of their respective scales. When applying matching percentiles this aspect is immaterial to the standardization procedure as only the ranks of countries are processed. The alternative usage of a parametric standardization (one that adjusts means and standard deviations of sources) would be problematic, however, because it requires a multitude of assumptions, some of which may not be realistic.

However, as matching percentiles makes use of the ranks and not the scores of sources, this method loses some of the information inherent in the sources. What tips

according to a procedure outlined in the 2007 methodology paper prior to being used as the master list.

⁷ If two countries share the same rank, their standardized value is the simple mean of the two respective scores in the CPI. The scores for countries where no CPI value was available are determined by referring to the two countries scoring higher and lower in the source's ranking. Linear interpolation is applied to their scores, suggesting that if a source assigns such a country a score close to the upper neighbor, also its standardized value is closer to that of this neighbor. If such a country is ranked best (or worst) by a source it would have only one neighbor, not two. The second neighbor is constructed by using the highest (or lowest) attainable score by the source and the CPI value 10 (or 0). This approach guarantees that all values remain within the range between 10 and 0.

the balance in favor of this technique is its capacity to keep all reported values within the bounds from 0 to 10. This results because any standardized value is taken from the previous year's CPI, which by definition is restricted to the aforementioned range. Such a characteristic is not obtained by various alternative techniques, e.g. one that standardizes the mean and standard deviation of the joint sub-samples of countries.

Step 2

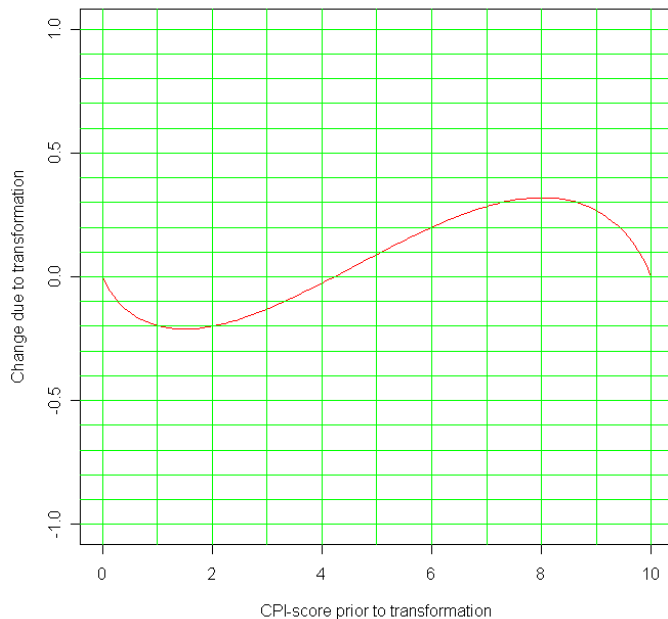
Having obtained standardized values that are all within the reported range, a simple average from these standardized values can be determined. However, the resulting index has a standard deviation that is smaller than that of the master list. Without a second adjustment there would be a trend towards a continuously smaller diversity of scores. If, for example, Denmark were to repeat its score from the previous year, it would have to score best in all sources. If it scores second to best in any source, the standardized value it obtains after using matching percentiles and aggregation would be lower than its current score. Thus, given some heterogeneity among sources, it seems inevitable that Denmark's score would deteriorate over time. The opposite would be true of Somalia, which would obtain a better score if it is not consistently rated worst by all its sources. A second standardization is required in order to avoid a continuous trend to less diversity among scores.

However, simply stretching the scores (by applying a simple mean and standard deviation technique) might bring about values that are beyond our range from 0 to 10. A more complicated standardization is required for the second step: A beta-transformation. The idea behind this monotonous transformation is to increase the standard deviation to the previous year's value, while preserving the range from 0 to 10. Each value (X) is therefore transformed according to the following function:

$$10 * \int_0^1 (X/10)^{\alpha-1} (1-X/10)^{\beta-1} dX$$

This beta-transformation is available in standard statistics programs. The crucial task is to find the parameters α and β so that the resulting mean and standard deviation of the index have the desired values, that is, values that are equal to that of the master list for a joint subsample of countries. An algorithm has been determined that carries out this task. Applying this approach to the CPI 2008, the change in the scores is depicted by figure 1. The parameters are $\alpha=1.184$ and $\beta=1.214$. As shown in the figure, scores between 4 and 10 are increased slightly, while those between 0 and

Figure 1: Beta Transformation



4 are lowered.

The beta transformation is first applied to all values that were standardized in step 1. Afterwards the average of these are computed to determine a country's score. In our publication we also report the high-low range. This refers to all standardized values after carrying out the beta-transformation. This procedure ensures that the high-low range is consistently related to a country's mean value.

Global Trends

The CPI is not capable of answering whether the world as a whole has improved or not. First, it is difficult to find respondents who are capable of answering such a question. Those who contribute to the CPI are primarily supposed to have local experience. This experience is systematically processed to find out whether one country has improved relative to other countries. Absolute improvements are therefore outside the scope of the CPI. This is comparable to finding out whether worldwide soccer has improved. Given that we are unable to let the 1986 team from Argentina play against the 2006 team from Italy there is no direct approach to answering this question.

Reliability and Precision

A ranking of countries may easily be misunderstood as measuring the performance of a country with absolute precision. This is certainly not true. Since the first CPI was produced in 1995, TI has provided data on the standard deviation and the number of sources contributing to the index. This data serves to illustrate the inherent imprecision. Also, the high-low range is provided in the main table. This depicts the highest and the lowest values provided by our sources, so as to portray the whole range of assessments. However, no quick conclusions should be derived from this range to the underlying precision with which countries are measured. Countries which were assessed by 3 or 10 sources can have the same minimum and maximum values, but in the latter case we can feel much more confident about the country's score. In order to arrive at such measures of precision, other statistical methods are required.

An indicator for the overall reliability of the CPI 2008 can be drawn from the high correlation between the sources. This can be depicted from the Pearson correlation in table 1, determined for all sources after ap-

Table 1: Pearson Correlation	ADB CIA 2007	AFDB CIA 2007	BTI 2007	CPIA 2007	EIU 2008	FH 2008	IMD 2007	IMD 2008	MIG 2007	PERC2007	PERC2008	WEF 2007	WMRC 2008
ADB CIA 2007	1.00		0.61	0.79	-0.01	0.98			0.61			0.21	0.50
AFDB CIA 2007		1.00	0.78	0.82	0.62				0.67			0.59	0.59
BTI 2007	0.61	0.78	1.00	0.67	0.76	0.91	0.71	0.62	0.77	0.75	0.90	0.67	0.77
CPIA 2007	0.79	0.82	0.67	1.00	0.61	0.70			0.70			0.02	0.68
EIU 2008	-0.01	0.62	0.75	0.61	1.00	0.87	0.90	0.89	0.89	0.88	0.94	0.83	0.85
FH 2008	0.98		0.91	0.70	0.87	1.00	0.91	0.92	0.90			0.63	0.91
IMD 2007			0.71		0.90	0.91	1.00	0.97	0.93	0.86	0.93	0.94	0.88
IMD 2008			0.62		0.89	0.92	0.97	1.00	0.92	0.90	0.96	0.92	0.87
MIG 2007	0.61	0.67	0.77	0.70	0.89	0.90	0.93	0.92	1.00	0.85	0.97	0.90	0.91
PERC2007			0.75		0.88		0.86	0.90	0.85	1.00	0.88	0.76	0.79
PERC2008			0.90		0.94		0.93	0.96	0.97	0.88	1.00	0.89	0.93
WEF 2007	0.21	0.59	0.67	0.02	0.83	0.63	0.94	0.92	0.90	0.76	0.89	1.00	0.87
WMRC 2008	0.50	0.59	0.76	0.68	0.85	0.91	0.88	0.87	0.91	0.79	0.93	0.87	1.00

plying matching percentiles.⁸ The correlations on average are 0.78. This suggests that the sources do not differ considerably in their assessments. The values for ADB, AFDB, CPIA and BTI are lower as compared to those of other sources. This relates to their focus on only less-developed countries. As evidenced also by other sources, measurement precision is generally lower for less-developed countries. Remarkable is a negative correlation between EIU and ADB for a few less developed countries assessed there. Also the lack of correlation between CPIA 2007 and WEF 2007 is noteworthy. A reason may be that still limited information is available on the respective countries. The discrepancies between these sources will have to be closely monitored in the future.

Confidence range

The confidence range is determined by help of a bootstrap methodology. The principal idea of such a bootstrap confidence range is to resample the sources of a country with replacement. Imagine a country with the five source values (3.0; 5.0; 3.9; 4.4; 4.2).

⁸ The correlations refer to all countries, even those not included in the CPI. An nonparametric correlation coefficient (Kendall's tau) tends to be on average 0.15 lower.

An example of such a sample with replacement would be (5.0; 5.0; 4.2; 4.4; 4.4). While the mean value of the original data is 4.1, that of our sample with replacement is 4.6. This value portrays how diverse the mean could have been if a different random selection of values were drawn from of the original pool of data.

A sufficiently large number of such samples (in our case 10,000) are drawn from the available vector of sources and the sample mean is determined in each case. Based on the distribution of the resulting 10,000 mean values, inferences on the underlying precision can be drawn. The lower (upper) bound of a 90% confidence range is then determined as the value where 5% of the sample's means are below (above) this critical value.⁹

There are two interesting characteristics of the resulting confidence range.¹⁰

⁹ There can arise boundary effects when only 3 or 4 sources exist. Only 10 different combinations are possible in the case of 3 sources, suggesting that a 5% confidence point can "hit" the boundary. If this is the case, the BC-approach could produce at random two different values for the upper (or the lower) confidence point. These boundary effects have been identified and, if existent, the more conservative range is reported in the table.

¹⁰ In addition to the "percentile" method just described, more complicated approaches exist. First,

- 1) When requiring a 90% confidence range (which allows with 5% probability that the true value is below and with 5% probability that the value is above the determined confidence range) the upper (lower) bound will not be higher (lower) than the highest (lowest) value provided by a source. This implies that our range from 0 to 10 will never be violated.
- 2) The confidence range remains valid even if the data (i.e. the standardized values for a given country) are not normally distributed. The range is even free of assumptions with regard to the distribution of these data.

However, with only few sources being used, there is a downward bias in the confidence range thus reported. When only few sources are available these do not fully capture the whole range of possible values. This misrepresentation becomes larger the fewer sources are available. This issue is part of a general statistical problem that is not specific to our application: One simply cannot expect accurate estimates of a confidence interval from few observations.

An unbiased coverage probability is lower than its nominal value of 90%. The accuracy of the confidence interval estimates increases with a growing number of sources (n). The mean coverage probability is 65.3% for $n=3$; 73.6% for $n=4$; 78.4% for

$n=5$; 80.2% for $n=6$ and 81.8% for $n=7$. While the confidence range nominally relates to a 90% level, an unbiased estimate of the confidence level is lower. When interpreting the confidence range these results have to be borne in mind. Figure 3 portrays the confidence ranges alongside with the scores.

Concluding Remark

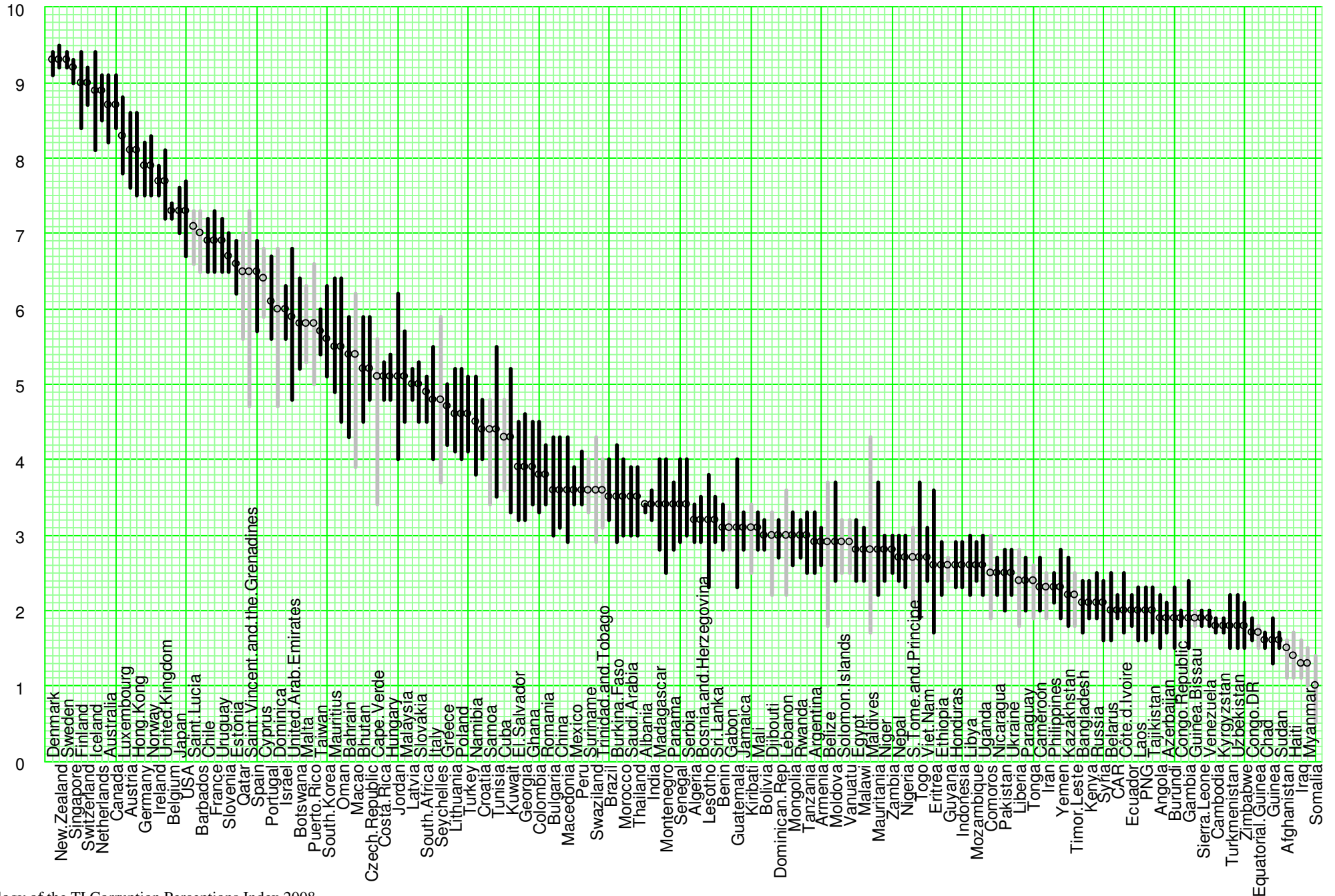
The strength of the CPI is based on the concept that a combination of data sources, solidly combined into a single index, increases the reliability of each individual country score. The idea of combining data is that the non-performance of one source can be balanced out by the inclusion of at least two other sources.¹¹ This way, the probability of misrepresenting a country is seriously lowered.

As in previous years, the CPI 2008 includes all countries for which at least three sources had been available. Overall, the CPI is a solid assessment of perceived levels of corruption, helping our understanding of real levels of corruption.

the confidence levels can be adjusted if (on average) the mean of a bootstrap sample is smaller than the observed mean. The relevant parameter is called z_0 . Another adjustment is to assume the standard deviation also to be dependent on the mean of the bootstrap sample. The relevant parameter is a . If both these adjustments are considered, the resulting approach is called a bootstrap- BC_a -method (bias-corrected-accelerated). A description of this approach can be obtained from Efron, B. and R. Tibshirani (1993), *An Introduction to the Bootstrap*, Chapman & Hall: New York and London: 202-219, chap. 14.3, 22.4 and 22.5. One concern with the BC_a approach is that it is throwing a lot of machinery at very few observations. Due to statistical considerations, a simple method might prove superior. Brad Efron had therefore suggested the use of a BC -approach for our purpose. In this case, z_0 is determined endogenously from the bootstrap sample but a is set equal to zero.

¹¹ This argument is valid even in case the sources are not totally independent of each other. Such partial dependency may arise if some respondents are aware of other people's perception of the level of corruption, or of other sources contributing to the CPI.

Figure 3: 2008 CPI and approximate confidence intervals
 The coverage probability is 65%-75% (gray lines) or 80%-90% (black lines)



Appendix: Sources for the TI Corruption Perceptions Index (CPI) 2008

Number	1	2	3
Abbreviation	ADB	AFDB	BTI
Source	Asian Development Bank	African Development Bank	Bertelsmann Foundation
Name	Country Performance Assessment Ratings	Country Policy and Institutional Assessments	Bertelsmann Transformation Index
Compiled / published	2007/2008	2007/08	2007/2008
Internet	http://www.adb.org/Documents/Reports/ADF/2007-ADF-PBA.pdf	http://www.afdb.org/pls/portal/url/ITEM/5008432D529957FAE040C00A0C3D3A86	http://www.bertelsmann-transformation-index.de/11.0.html?&L=1
Who was surveyed?	Country teams, experts inside and outside the bank	Country teams, experts inside and outside the bank	Network of local correspondents and experts inside and outside the organization
Subject asked	Corruption, conflicts of interest, diversion of funds as well as anti-corruption efforts and achievements	Corruption, conflicts of interest, diversion of funds as well as anti-corruption efforts and achievements	The government's capacity to punish and contain corruption
Number of replies	Not applicable	Not applicable	Not applicable
Coverage	29 countries (eligible for ADF funding)	52 countries	125 less developed and transition countries

Number	4	5	6
Abbreviation	CPIA	EIU	FH
Source	World Bank (IDA and IBRD)	Economist Intelligence Unit	Freedom House
Name	Country Policy and Institutional Assessment	Country Risk Service and Country Forecast	Nations in Transit
Compiled / published	2007/2008	2008	2008
Internet	http://web.worldbank.org/WBSITE/EXTERNAL/EXTABOUTUS/IDA/0,contentMDK:20933600-menuPK:2626968-pagePK:51236175-piPK:437394-theSitePK:73154.00.html	www.eiu.com	http://www.freedomhouse.hu/index.php?option=com_content&task=view&id=196
Who was surveyed?	Country teams, experts inside and outside the bank	Expert staff assessment	Assessment by experts originating or resident in the respective country.
Subject asked	Corruption, conflicts of interest, diversion of funds as well as anti-corruption efforts and achievements	The misuse of public office for private (or political party) gain	Extent of corruption as practiced in governments, as perceived by the public and as reported in the media, as well as the implementation of anticorruption initiatives
Number of replies	Not applicable	Not applicable	Not applicable
Coverage	75 countries (eligible for IDA funding)	170 countries	29 countries/territories

Number	7	8	9
Abbreviation	GI	IMD	
Source	Global Insight	IMD International, Switzerland, World Competitiveness Center	
Name	Country Risk Ratings	IMD World Competitiveness Yearbook	
Compiled / published	2008	2007	2008
Internet	http://www.globalinsight.com	www.imd.ch/wcc	
Who was surveyed?	Expert staff assessment	Executives in top and middle management; domestic and international companies	
Subject asked	The likelihood of encountering corrupt officials, ranging from petty bureaucratic corruption to grand political corruption	Category Institutional Framework - State Efficiency: "Bribing and corruption exist/do not exist"	
Number of replies	Not applicable	More than 4000	
Coverage	203 countries	55 countries	55 countries

Number	10	11	12
Abbreviation	MIG	PERC	
Source	Merchant International Group	Political & Economic Risk Consultancy	
Name	Grey Area Dynamics	Asian Intelligence Newsletter	
Compiled / published	2007	2007	2008
Internet	www.merchantinternational.com	www.asiarisk.com/	
Who was surveyed?	Expert staff and network of local correspondents	Expatriate business executives	
Subject asked	Corruption, ranging from bribery of government ministers to inducements payable to the "humblest clerk"	How serious do you consider the problem of corruption to be in the public sector?	
Number of replies	Not applicable	1476	1400
Coverage	155 countries	15 countries	15 countries

Number	13
Abbreviation	WEF
Source	World Economic Forum
Name	Global Competitiveness Report
Compiled / published	2007/2008
Internet	www.weforum.org
Who was surveyed?	Senior business leaders; domestic and international companies
Subject asked	Undocumented extra payments or bribes connected with 1) exports and imports, 2) public utilities, 3) tax collection, 4) public contracts and 5) judicial decisions are common/never occur
Number of replies	11,406
Coverage	131 countries