Background Paper to the 2000 Corruption Perceptions Index

The Precision and Regional
Comparison of Perceived
Levels of Corruption
— Interpreting the Results

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Subjective indicators include an unavoidable level of imprecision. The resulting confidence ranges are presented here. Small ranges indicate that countries are measured with large precision.

Regional rankings are provided here so as to portray countries in their regional context.

Also, this study provides an analysis of trends. Taking into account some caveats, these can be observed for some countries

There has been repeated request among academics and journalists that Transparency International should attempt to reveal how precise the Corruption Perceptions Index is. Indeed, a ranking of countries may easily be misunderstood as measuring the perceived performance of a country with absolute precision. This is certainly not true. Since its start in 1995 TI has provided data on the standard deviation and the amount of sources contributing to the index. These data already serve to illustrate the inherent imprecision. In addition to these data, the confidence intervals for each country's score will be provided here.

For the media, a country's score is commonly compared to important neighbors, while a country's overall ranking in the world is of less importance. In order to present the performance relative to a country's region, we provide regional rankings.

Also, a note on year-to-year comparisons and potential trends in the performance of countries will be provided here.

This background paper complements the press material provided by TI and another background paper, the framework document, which explains in detail the sources used and the aggregation methodology.

Reliability and Precision

While the country scores reported in the main table to the CPI provide a useful piece of information for the average perception of a country, individual experience can diverge considerably. This carries over also to our sources exhibiting some significant differences in their assessments. In order to adequately illustrate this, this year for the first time 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 11 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.

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. The idea of combining data is that the nonperformance of one source can be balanced out by the inclusion of at least two other sources. This way, the probability of misrepresenting a country is seriously lowered. This is valid even in case the sources are not totally independent from 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.

An indicator for the overall reliability of the 2000 CPI can be drawn from the high correlation between the sources. Relating to those countries included in the index, this data is in table 1. As most correlations are around 0.8, the sources do not differ considerably in their assessment of levels of corruption.

In addition to these correlations, the reliability of each individual country score can be determined. The main table reports on the results for each country, including data on the number of sources that assessed a country and the standard deviation between the sources. There exist a variety of reasons why sources may have divergent viewpoints with regard to the level of corruption in a country. Difficulties may, on the one hand, result from subjective problems, for example limited experience among respondents. On the other hand, objective difficulties may contribute to this. Assessing the overall level of corruption may be troublesome in countries where some institutions openly engage in corruption while others strongly resist and fight corruption. A large standard deviation may in this respect also reflect a heterogeneous state of a society. Essential to the CPI is that the larger the number of sources and the lower the standard deviation between the sources, the more reliable is the value for a country. The relatively large standard deviation for Bolivia of 1.3 signifies that 95% of the sources ranged between a value of 0.1 and 5.3. In contrast, the low stan-

Table 1: Correlation Coefficients	ACR 1998	ACR 2000	EIU	FH	GCR1998	GCR1999	GCR 2000	ICVS	IMD 1998	IMD 1999	IMD 2000	PERC 1998	PERC 1999	PERC 2000	PRS	WB
ACR 1998	1,00	0,87	0,73												0,69	
ACR 2000	0,87	1,00	0,74												0,65	
EIU	0,73	0,74	1,00	0,85	0,90	0,85	0,87	0,45	0,86	0,87	0,88	0,91	0,89	0,88	0,77	0,70
FH			0,85	1,00	0,86	0,87	0,86								0,74	0,64
GCR 1998			0,90	0,86	1,00	0,96	0,96	0,78	0,87	0,92	0,93	0,90	0,86	0,92	0,70	0,95
GCR 1999			0,85	0,87	0,96	1,00	0,98	0,64	0,83	0,90	0,90	0,93	0,84	0,91	0,64	0,90
GCR2000			0,87	0,86	0,96	0,98	1,00	0,76	0,84	0,91	0,91	0,91	0,83	0,91	0,67	0,82
ICVS			0,45		0,78	0,64	0,76	1,00	0,64	0,65	0,72			1,00	0,41	
IMD 1998			0,86		0,87	0,83	0,84	0,64	1,00	0,97	0,96	0,95	0,83	0,85	0,72	
IMD 1999			0,87		0,92	0,90	0,91	0,65	0,97	1,00	0,98	0,97	0,91	0,93	0,72	
IMD 2000			0,88		0,93	0,90	0,91	0,72	0,96	0,98	1,00	0,96	0,94	0,93	0,74	
PERC 1998			0,91		0,90	0,93	0,91		0,95	0,97	0,96	1,00	0,90	0,95	0,67	
PERC 1999			0,89		0,86	0,84	0,83		0,83	0,91	0,94	0,90	1,00	0,95	0,66	
PERC 2000			0,88		0,92	0,91	0,91		0,85	0,93	0,93	0,95	0,95	1,00	0,68	
PRS	0,69	0,65	0,77	0,74	0,70	0,64	0,67	0,41	0,72	0,72	0,74	0,67	0,66	0,68	1,00	0,69
WB			0,70	0,64	0,95	0,90	0,82								0,69	1,00
	Correlations which relate to less than 6 common countries are unreliable and not reported															

dard deviation for Brazil of 0.3 means that 95% of the scores range between 3.3 and 4.5.²

A measure of precision for the countries' scores can be derived from these data. Dividing the standard deviation by the square root of the number of sources minus one yields an unbiased measure which represents the standard error of the mean score. Brazil, with 8 sources, shows a value of 0.11, while a value of 0.75 is obtained for Bolivia. How-

ever, determining this standard error requires the assumption that there is no imprecision associated with the values given by the individual sources (i.e., when IMD provides a score of 5.5 this is not in reality a score which ranges between 5.3 and 5.7) and that these values are independent from each other. These assumptions are not necessarily realistic and should rather be described as a first-best scenario. Relaxing these assumptions is difficult to carry out practically, but it would clearly bring about standard errors which are even larger than the ones determined here. Thus, these standard errors are imperfect but still a helpful measure of precision for the individual country scores.

Subtracting 1.96 times the standard error from a country's mean score and also adding the same value to the mean score yields a confidence range. The true mean score can be said to be within this interval with a 95 percent probability. For all countries in the CPI these confidence ranges are reported in appendix 1.

There are some countries for which precision is rather weak, while it is strong for other countries. For countries with less than three sources the level of precision is poor. As a result, TI rejects to lend its name to such un-

¹ The abbreviations have the following meaning: ACR: Africa Competitiveness Report of the World Economic Forum, EIU: Economist Intelligence Unit, FH: Freedom House, GCR: Global Competitiveness Report by the World Economic Forum, ICVS: International Crime Victim Survey, IMD: Institute for Management Development, PERC: Political and Economic Risk Consultancy, Hong Kong, PRS: Political Risk Services, East Syracuse, WB: Business Enrironment and Enterprise Survey of the World Bank and the European Bank for Reconstruction and Development. An extensive description of the sources is provided in another background paper to the CPI, the framework document. 2 For the data see pages 6-7.

reliable values and does not include these countries in the CPI. Still, even for some of the countries in the index it must be stressed, that they have rather large standard errors. Particularly these are Bolivia, Botswana, Burkina Faso, Costa Rica, El Salvador, Estonia, Ireland, Kazakhstan, Latvia, Tunisia, Yugoslavia and Zambia. Following the established rule not to exclude countries when at least three sources are available, it was decided to also include these countries.

Trends

The CPI incorporates as many reliable and upto-date sources as possible. One drawback of this approach is that year-to-year changes may not only result from a changing performance of a country. Since some older sources used for last year's CPI were not used again this year, and new sources have been included, changes can result from the different methodologies used by the sources and not necessarily from actual changes. But to the extent that some changes can be traced back to an upgrading or downgrading by individual sources, trends can cautiously be identified. Remarkable examples for a downward trend are Zimbabwe. Ukraine and the Philippines. Their score drops considerably as compared to last year. These countries were also considered by respondents to one of our sources, the Global Competitiveness Report of the World Economic Forum (WEF), as belonging to those where corruption has dramatically increased in the last three years.

Remarkable is also the worse performance of Germany and Ireland. This seems to reflect recent revelations of political scandals. But respondents to the survey by WEF did not perceive a deterioration in the last three years. This may suggest that the recent revelations of political scandals have rather convinced respondents that these two countries did not deserve the good rating of recent years.

Remarkable is also the position of Nigeria, again the worst performing country in the CPI. But it would indeed be unjustified to single this country out. There are also measur-

able signs of an upward trend. Respondents to the Africa Competitiveness Report of the World Economic Forum (WEF) were particularly optimistic for the future, considering this country to perform better than Zimbabwe in two years from now.³

For some other countries TI was able to notice remarkable improvements. Croatia, Belgium, Spain and Japan are noteworthy in this respect. This also correlates to responses obtained by the WEF, where these countries are perceived to having reduced corruption in the last three years.

There exist further changes in countries' scores in the CPI between 1999 and 2000. But for these the new score cannot be fully compared to last year's score. The slightly changing composition of sources contributing to the CPI may in this case be the source of these changes.

Regional Comparisons

Newspapers commonly do not report on all countries in the CPI. They focus on their home country and provide comparisons within the regional context. It is more informative to the public in how far their home country scores relative to its neighbors, rather than to remote places.

TI picked up this viewpoint and provides such a regional presentation in appendix 2. While countries are grouped into regions, it was decided that not all countries should be presented. Some regions, such as North America or Oceania, are just too small to deliver a meaningful ranking of countries. For others, such as North Africa and the Middle East, insufficient countries were in the CPI. The same applies to Central Asia. As a conse-

³ See Lambsdorff, J. Graf and P. Cornelius (2000) Corruption, Foreign Investment and Growth. In: *Africa Competitiveness Report*, ed. by K. Schwab, D.J. Sachs et al., joint publication of the World Economic Forum and the Institute for International Development, Harvard. Oxford University Press 2000.

quence, some countries are not included in a regional ranking.

Rankings are given for Latin America, Sub-Saharan Africa, Asia, Western Europe and Central and Eastern Europe. For each of these regions an average is determined and included in the table. This should serve as a benchmark to indicate which countries score above and which ones below the regional average.

Appendix 1: Confidence Intervals

Cour	n- Country	2000	Surveys	Standard	Standard	95 percent
try		CPI	Used	Deviation	Error of	confidence
Ranl	k	Score			the Mean	range
					Score	
1	Finland	10,0	8	0,6	0,23	10,4 -9,6
	Denmark	9,8		/		10,4 -9,2
	New Zealand	9,4	8			10,0 -8,8
	Sweden	9,4	9		0,25	9,9 -8,9
	Canada	9,2	9		0,25	
	Iceland	9,1	7	1,1	0,45	10,0 -8,2
6	Norway	9,1	8		0,26	9,6 -8,6
	Singapore	9,1	11		0,32	9,7 -8,5
9	Netherlands	8,9	9	0,6	0,21	9,3 -8,5
10	United Kingdom	8,7	9	0,6	0,21	9,1 -8,3
11	Luxembourg	8,6	7	0,7	0,29	9,2 -8,0
11	Switzerland	8,6	8	0,3	0,11	8,8 -8,4
13	Australia	8,3	10	1,0	0,33	9,0 -7,6
14	USA	7,8	10	0,8	0,27	8,3 -7,3
15	Austria	7,7	8		0,26	8,2 -7,2
15	Hong Kong	7,7	11	1,2	0,38	8,4 -7,0
17	Germany	7,6	8	0,8	0,30	8,2 -7,0
18	Chile	7,4			0,34	8,1 -6,7
19	Ireland	7,2		,	0,72	8,6 -5,8
20	Spain	7,0			0,26	7,5 -6,5
	France	6,7	9		0,35	7,4 -6,0
	Israel	6,6		,	0,49	7,6 -5,6
23	Japan	6,4	11	1,3	0,41	7,2 -5,6
	Portugal	6,4	9		0,32	7,0 -5,8
25	Belgium	6,1	9	1,3	0,46	7,0 -5,2
	Botswana	6,0	4		0,92	7,8 -4,2
	Estonia	5,7		1,0	0,92	7,5 -3,9
	Slovenia	5,5			0,49	6,5 -4,5
	Taiwan	5,5			0,44	6,4 -4,6
	Costa Rica	5,4			1,10	7,6-3,2
	Namibia	5,4		- , -		6,3 -4,5
	Hungary	5,2			0,40	6,0 -4,4
	Tunisia	5,2	4		0,87	6,9 -3,5
	South Africa	5,0			0,30	5,6-4,4
	Greece	4,9	8		0,64	6,2 - 3,6
	Malaysia	4,8				5,2 -4,4
	Mauritius	4,7	5			5,5 -3,9
	Morocco	4,7	4	- , -	0,40	5,5 -3,9
	Italy	4,6			0,23	5,0 -4,2
	Jordan –	4,6			0,40	5,4 -3,8
	Peru	4,4	5		0,25	4,9 -3,9
42	Czech Republic	4,3	10	0,9	0,30	4,9 -3,7

43 Belar	110	4,1	3	0,8	0,57	5,2 -3,0
43 El Sa		4,1	4	1,7		6,0 -2,2
43 Lithu		4,1	4	0,3		4,4 -3,8
43 Mala		4,1	4			4,4 - 3,6
43 Polan		4,1	11	0,4		4,6-3,6
48 South			11			
		4,0		0,6	0,19	4,4 - 3,6
49 Brazi		3,9 3,8	8 8	0,3		4,1 -3,7
50 Turke			4			4,4 - 3,2
51 Croat		3,7		0,4	0,23	4,2 -3,2
52 Arger		3,5	8	0,6		3,9 -3,1
52 Bulga		3,5	6	0,4	0,18	3,9 -3,1
52 Ghan		3,5	4	0,9		4,5 -2,5
52 Sene		3,5	3	0,8		4,6-2,4
	k Republic	3,5	7	1,2		4,5 -2,5
57 Latvi		3,4	3	1,3		5,2-1,6
57 Zamb		3,4	4	1,4		5,0 -1,8
59 Mexi		3,3	8	0,5		3,7 -2,9
60 Color		3,2	8	0,8	0,30	3,8 -2,6
60 Ethio		3,2	3	0,8		4,3 -2,1
60 Thail		3,2	11	0,6		3,6-2,8
63 China		3,1	11	1,0		3,7 -2,5
63 Egyp		3,1	7	0,7	0,29	3,7 -2,5
65 Burki		3,0	3	1,0		4,4 - 1,6
65 Kaza		3,0	4	1,2		4,4 - 1,6
65 Zimb		3,0	7	1,5		4,2 -1,8
68 Roma	nnia	2,9	4	1,0		4,0 -1,8
69 India	_	2,8	11	0,7	0,22	3,2 -2,4
69 Philip		2,8	11	1,0		3,4 -2,2
71 Boliv		2,7	4	1,3	0,75	4,2 -1,2
71 Cote		2,7	4	0,8		3,6-1,8
71 Vene	zuela	2,7	8	0,7	0,26	3,2 -2,2
74 Ecua		2,6	4	1,0		3,7 -1,5
74 Mold		2,6	4	0,9		3,6-1,6
76 Arme		2,5	3	0,6		3,3 -1,7
76 Tanza		2,5	4	0,6		3,2 -1,8
76 Vietr		2,5	8	0,6		2,9 -2,1
79 Uzbe		2,4	3	0,9		3,6-1,2
80 Ugan		2,3	4	0,6		3,0 -1,6
81 Moza		2,2	3	0,2	0,14	2,5 -1,9
82 Keny		2,1	4	0,3	0,17	2,4 -1,8
82 Russi		2,1	10	1,1	0,37	2,8 -1,4
84 Came		2,0	4	0,6		2,7 -1,3
85 Ango		1,7	3	0,4	0,28	2,3 -1,1
85 Indor	esia	1,7	11	0,8		2,2 -1,2
87 Azerl		1,5	4	0,9		2,5 -0,5
87 Ukrai	ne	1,5	7	0,7	0,29	2,1 -0,9
89 Yugo	slavia	1,3	3	0,9	0,64	2,5 -0,1
90 Niger	ia	1,2	4	0,6	0,35	1,9 -0,5

Appendix 2: Regional Presentation

Asia

Regional Rank	Country	2000 CPI Score	Surveys Used	Standard Deviation	High-Low Range
1	Singapore	9,1	11	1,0	6,2 -9,7
2	Hong Kong	7,7	11	1,2	4,3 -8,6
3	Japan	6,4	11	1,3	4,3 -7,8
4	Taiwan	5,5	11	1,4	2,5 -7,2
5	Malaysia	4,8	11	0,6	3,8 -5,9
		— Reg	ional Ave	rage —	
6	South Korea	4,0	11	0,6	3,4 -5,6
7	Thailand	3,2	11	0,6	2,4 -4,0
8	China	3,1	11	1,0	0,6 -4,3
9	India	2,8	11	0,7	2,3 -4,3
	Philippines	2,8	11	1,0	1,7 -4,7
11	Vietnam	2,5	8	0,6	2,1 -3,8
12	Indonesia	1,7	11	0,8	0,5 -3,2

Central and Eastern Europe

Regional Rank	Country	2000 CPI Score	Surveys Used	Standard Deviation	High-Low Range
1	Estonia	5,7	4	1,6	4,4 -8,1
2	Slovenia	5,5	6	1,1	4,1 -7,3
3	Hungary	5,2	10	1,2	3,9 -8,1
4	Czech Republic	4,3	10	0,9	3,3 -6,2
5	Belarus	4,1	3	0,8	3,4 -4,9
5	Lithuania	4,1	4	0,3	3,8 -4,4
5	Poland	4,1	11	0,8	2,8 -5,6
8	Croatia	3,7	4	0,4	3,4 -4,3
		— Reg	ional Ave	rage —	
9	Bulgaria	3,5	6	0,4	3,3 -4,3
9	Slovak Republic	3,5	7	1,2	2,2 -6,2
11	Latvia	3,4	3	1,3	2,1 -4,4
12	Romania	2,9	4	1,0	2,1 -4,3
13	Moldova	2,6	4	0,9	1,8 -3,8
14	Russia	2,1	10	1,1	0,6 -4,1
15	Ukraine	1,5	7	0,7	0,5 -2,5
16	Yugoslavia	1,3	3	0,9	0,6 -2,4

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Notes

2000 CPI Score -relates to perceptions of the degree of corruption as seen by business people, risk analysts and the general public and ranges between 10 (highly clean) and 0 (highly corrupt).

Surveys Used refers to the number of
surveys that assessed a
country's performance. 16
surveys were used and at
least 3 surveys were required for a country to be
included into the 2000 CPI.

Standard Deviation

indicates differences in the values of the sources: the greater the standard deviation, the greater the differences of perceptions of a country among the sources. **High-Low Range** provides the largest and smallest values of the sources. And, because of statistical factors it is possible, as seen in the top three cases in the CPI, that the highest value exceeds 10.0 in this column.

Regional Average is the mean score of all countries of the region, which were included in the CPI.

Latin America

Regional Rank	Country	2000 CPI Score	Surveys Used	Standard Deviation	High-Low Range
1	Chile	7,4	8	0,9	5,7 -8,4
2	Costa Rica	5,4	4	1,9	3,8 -8,1
3	Peru	4,4	5	0,5	3,8 -5,0
4	El Salvador	4,1	4	1,7	2,1 -6,2
		— Reg	ional Avei	rage —	
5	Brazil	3,9	8	0,3	3,6 -4,5
6	Argentina	3,5	8	0,6	3,0 -4,5
7	Mexico	3,3	8	0,5	2,5 -4,1
8	Colombia	3,2	8	0,8	2,5 -4,5
9	Bolivia	2,7	4	1,3	1,7 -4,3
9	Venezuela	2,7	8	0,7	2,1 -4,3
11	Ecuador	2,6	4	1,0	2,1 -4,3

Sub-Saharan Africa

Regional Rank	Country	2000 CPI Score	Surveys Used	Standard Deviation	High-Low Range
1	Botswana	6,0	4	1,6	4,3 -8,2
2	Namibia	5,4	4	0,8	4,3 -6,1
3	South Africa	5,0	10	0,9	3,8 -6,6
4	Mauritius	4,7	5	0,8	3,9 -5,6
5	Malawi	4,1	4	0,4	3,8 -4,8
6	Ghana	3,5	4	0,9	2,5 -4,7
6	Senegal	3,5	3	0,8	2,8 -4,3
8	Zambia	3,4	4	1,4	2,1 -5,1
		— Reg	ional Avei	rage —	
9	Ethiopia	3,2	3	0,8	2,5 -3,9
10	Burkina Faso	3,0	3	1,0	2,5 -4,4
10	Zimbabwe	3,0	7	1,5	0,6 -4,9
12	Cote d'Ivoire	2,7	4	0,8	2,1 -3,6
13	Tanzania	2,5	4	0,6	2,1 -3,5
14	Uganda	2,3	4	0,6	2,1 -3,5
15	Mozambique	2,2	3	0,2	2,4 -2,7
16	Kenya	2,1	4	0,3	2,1 -2,7
17	Cameroon	2,0	4	0,6	1,6 -3,0
18	Angola	1,7	3	0,4	1,6 -2,5
19	Nigeria	1,2	4	0,6	0,6 -2,1

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Notes

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Regional Average is the mean score of all countries of the region, which were included in the CPI.

Western Europe

Regional Rank	Country	2000 CPI Score	Surveys Used	Standard Deviation	High-Low Range
1	Finland	10,0	8	0,6	9,0 -10,4
2	Denmark	9,8	9	0,8	8,6 -10,6
3	Sweden	9,4	9	0,7	8,1 -9,9
4	Iceland	9,1	7	1,1	7,3 -9,9
4	Norway	9,1	8	0,7	7,6 -9,5
6	Netherlands	8,9	9	0,6	8,1 -9,9
7	United Kingdom	8,7	9	0,6	7,3 -9,7
8	Luxembourg	8,6	7	0,7	7,4 -9,3
8	Switzerland	8,6	8	0,3	8,1 -9,1
		— Reg	ional Avei	rage —	
10	Austria	7,7	8	0,7	6,2 -8,5
11	Germany	7,6	8	0,8	6,2 -8,4
12	Ireland	7,2	8	1,9	2,5 -8,5
13	Spain	7,0	8	0,7	5,9 -8,0
14	France	6,7	9	1,0	4,3 -7,7
15	Portugal	6,4	9	0,9	5,3 -8,1
16	Belgium	6,1	9	1,3	4,3 -8,8
17	Greece	4,9	8	1,7	3,7 -8,1
18	Italy	4,6	8	0,6	4,0 -5,6

The 2000 Transparency International Corruption Perceptions Index (CPI)

Notes

2000 CPI Score -relates to perceptions of the degree of corruption as seen by business people, risk analysts and the general public and ranges between 10 (highly clean) and 0 (highly corrupt).

Surveys Used refers to the number of
surveys that assessed a
country's performance. 16
surveys were used and at
least 3 surveys were required for a country to be
included into the 2000 CPI.
Standard Deviation

indicates differences in the

values of the sources: the greater the standard deviation, the greater the differences of perceptions of a country among the sources. **High-Low Range** provides the largest and smallest values of the sources. And, because of statistical factors it is possible, as seen in the top three cases in the CPI, that the highest value exceeds 10.0 in this column.

Regional Average is the mean score of all countries of the region, which were included in the CPI.