Groupe d'économie
Lare-Efi
du développement

Université Montesquieu-Bordeaux IV

Working paper

DT/160/2010

Assessing Corruption: Expert Surveys versus Household Surveys, Filling the Gap

Thomas Roca
PhD student – Lare-Efi, Groupe d'Economie du Développement – Université Montesquieu-Bordeaux IV

Avenue Léon Duguit - 33608 Pessac (France) - tél : 0556848539 - fax : 0556848534
larefi@u-bordeaux4.fr – lachaud@u-bordeaux4.fr
http://lare-efi.u-bordeaux4.fr – http://ged.u-bordeaux4.fr

Groupe d'économie
Lare-Efi
du développement

Université Montesquieu-Bordeaux IV

Assessing Corruption: Expert Surveys versus Household Surveys, Filling the Gap

Thomas Roca
PhD student – Lare-Efi, Groupe d'Economie du Développement – Université Montesquieu-Bordeaux IV
(roca.thomas@gmail.com)

Abstract:

Governance measurement is a relatively new source of entertainment for economists. The *World Bank Institute* paved the way in the late 90`s with the now famous suite "Governance Matters", I, II, III, IV… The little imagination of KKZ[1], regarding the choice of their publications title, hides the most popular aggregated governance indicators.

Corruption focus could also claim World Bank parenthood since *Transparency International* birth was the fruit of a former "affair" between James Wolfensohn and Peter Eigen.

With the prelude to household surveys systematization, a new way to measure governance and corruption saw the day. If household surveys may stand for an interesting tool for institutional assessment, populations' opinions also introduce new pitfalls.

This study aims to investigate the gap between expert and household surveys regarding corruption measurement. Indeed, experts and populations barely agree on their estimations of corruption extent. We suggest that press freedom, culture, permissiveness and leadership approval may cover one's track.

Résumé:

La mesure de la gouvernance est une source d'occupation relativement nouvelle pour les économistes. Le *World Bank Institute* a ouvert la voie à la fin des années 90 avec la désormais célèbre suite "Governance Matters", I, II, III, IV… Le peu d'imagination de KKZ[1] dans le choix du titre de leurs publications cache, en réalité, les plus populaires des indicateurs de gouvernance.

L'accent mis sur la corruption pourrait, lui aussi, revendiquer la paternité de la Banque mondiale dans la mesure où l'on doit la création de *Transparency International* à Peter Eigen ancien cadre de la Banque, mais également, à James Wolfensohn, premier directeur de la Banque à s'intéresser au fléau de la corruption, dans un contexte de « de-géopolitisation » de l'aide au développement. Avec les prémices de la systématisation des enquêtes ménages, une nouvelle manière de mesurer la gouvernance voit le jour. Si les enquêtes menées auprès de la population peuvent constituer un outil intéressant pour évaluer la qualité des institutions, cette prise en compte de l'opinion des populations introduit de nouveaux écueils.

Cette étude vise à analyser l'écart de perception entre experts et populations, en matière de corruption. En effet, les enquêtes d'experts et les enquêtes ménages s'accordent difficilement dans leurs estimations de l'étendue de la corruption. Nous suggérons que la liberté de la presse, la culture, la tolérance et la confiance envers les dirigeants puissent venir fausser les pistes.

Keywords: Corruption, Governance, Corruption perception index, CPI, Transparency International, corruption measurement, perception indicators, expert surveys, household surveys, press freedom, freedom house.

JEL classification: O11, O17, O19

[1] Kaufman, D. Kraay, A. and Zoido-Lobatón, P.

Table of content

TABLE OF CONTENT **2**

1. INTRODUCTION **3**

2. CONCEPTUAL FRAMEWORK **4**

A. EXPERT SURVEY, THE MAINSTREAM WAY TO MEASURE CORRUPTION 6
B. HOUSEHOLD SURVEYS: CAPTURING POPULATIONS' PERCEPTIONS 6

3. POPULATIONS VS. EXPERTS, A GAP TO INVESTIGATE **7**

A. PREPARATORY ANALYSIS 7
B. INTRODUCING INFORMATION AND CONFIDENCE 11
C. APPROACHING THE GAP 19

4. CORRUPTION PERCEPTION, FILLING THE GAP. **23**

A. MODELING THE SPREAD. 23
B. MODEL ESTIMATIONS 24
C. RESULTS INTERPRETATION 25

5. BIBLIOGRAPHY **31**

6. ANNEX **33**

1. Introduction

Mid-90s, *Washington Consensus* ebbing away, the World Bank decided to focus more on governance to explain the failure of *structural adjustment*. With James Wolfensohn appointment as President of the World Bank, corruption arrived to the agenda of the IDA, and a partnership was built with Peter Eigen, Transparency International creator and former World Bank staff member.

With the plummet of Berlin Wall, geostrategic aid allocation gave way to good governance criteria. Thus, World Bank developed in 2000 an aid allocation formula, using two criteria: poverty struggle and politico-institutional context. This formula was described by Ravi Kanbur in 2004:

Aid/ capita = f(CP^2, GDP/t-0.125)
CP = politico-institutional criteria
CP = (FG/3.5)1.5 x [0.8CPIA + 0.2ARP]
FG = Governance Factor = [ΣgCPIAg + ARPPg]/7
CPIA = Country Policy Institutional Assessment. World Bank Indicator
ARPP = Annual Review of Portfolio Performance.

To assess governance, the World Bank Institute developed the KKZ indicators, (Kaufmann, Kraay, and Zoidon-Lobatón) constructed using expert surveys.
This kind of survey is based on investigations lead by experts using mainly qualitative assessment and surveys to describe the different aspects of governance. Thus, governance evaluation is based on experts' perceptions.

Recently, a new way to measure governance emerged using household surveys to measure institutional progress. This way, governance evaluation is no longer based on expert's perceptions but on population views. While this methodology may stand for a more accurate tool to assess the reality of governance, we suggest that household surveys, especially in corruption measurement, may be biased by information dysfunctions and government leadership approval.

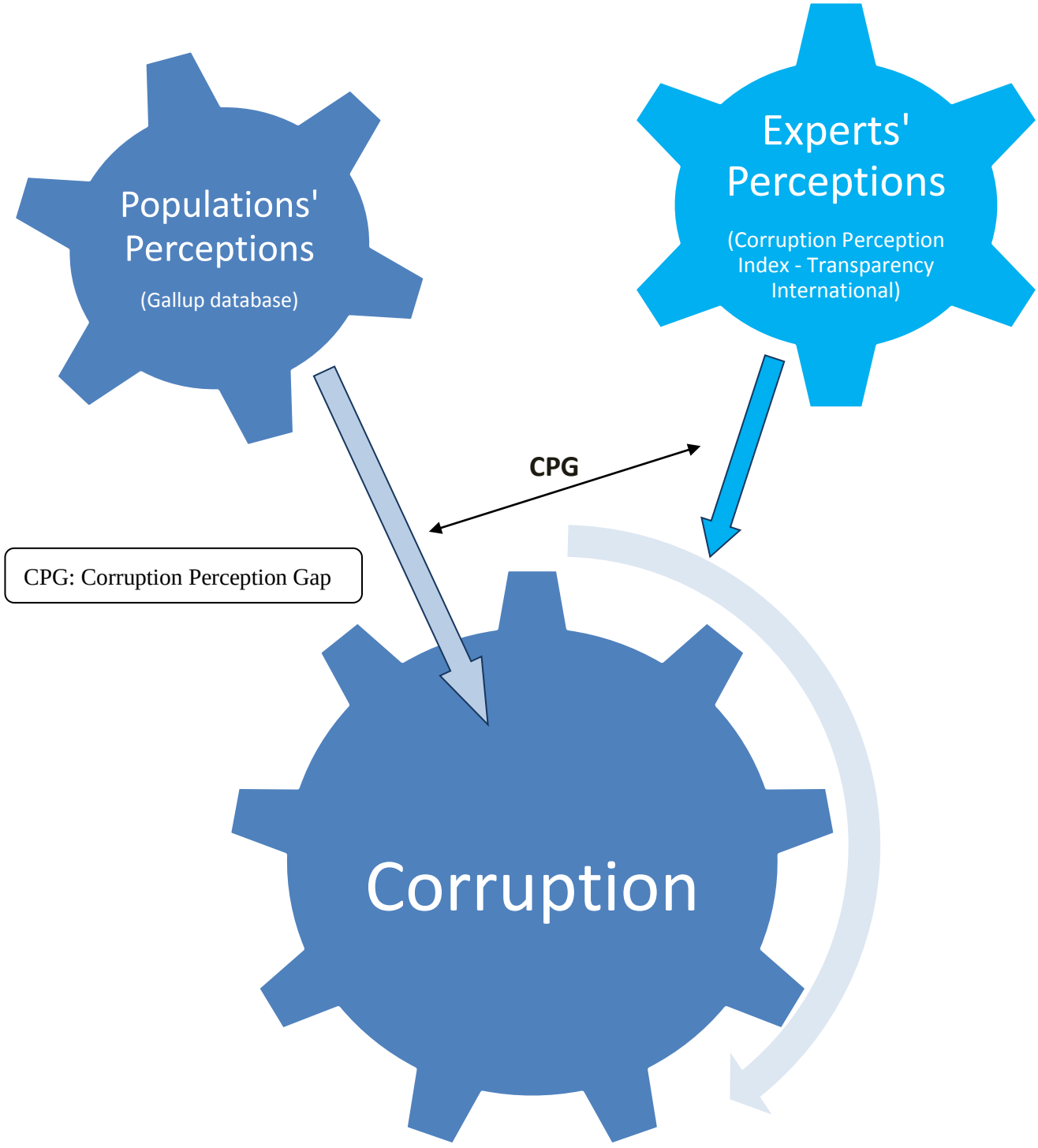
Observing a gap between experts' and populations' perceptions of corruption, we suggest that information may explain a part of this spread. This paper aims to inform this assumption and tries to fill the gap between experts' and people's perceptions on corruption.

Our first analysis tends to show that this gap is correlated to information accessibility (measured by Freedom House- Freedom of press) and confidence in government. Trying to complete our analysis, we will question other factors that may explain better this gap.

Acknowledgments: this paper only informs the spread of perception between expert surveys and household survey (Gallup) on corruption evaluation. It gives little clue regarding the assessment quality of each methodology. Nevertheless, this study shows robust evidences regarding population's and experts' perception bias. However, this kind of macro analysis will never replace a field study. Corruption organic features are much more complex and hard to summarize at such a global level with the currently available data.

2. Conceptual Framework

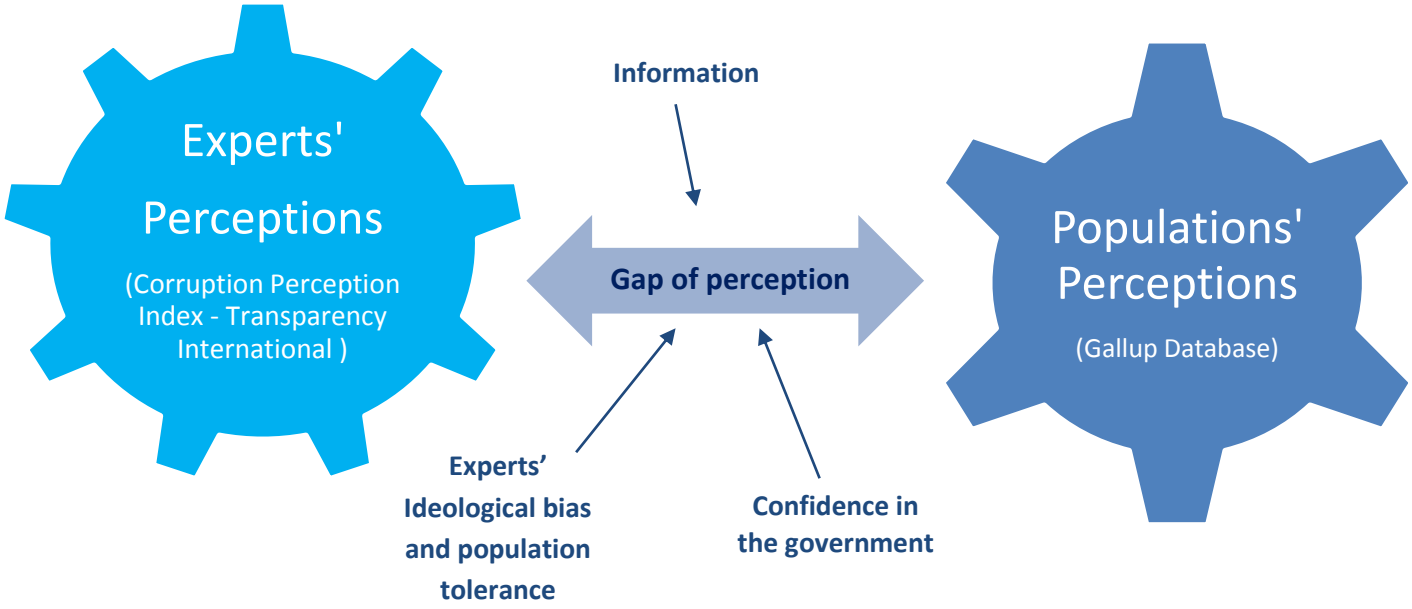
Diagram 1. Conceptual framework



Questions we propose to analyze.

1. First of all, are populations' and experts' perceptions strongly correlated?
2. We suggest that populations' perceptions about corruption may be affected by the amount of information individuals possess. What is the influence of media freedom in corruption perception?
3. We also suggest that the gap of perception between household surveys and expert's perceptions depends likewise on the overall level of corruption in a country, but also on the confidence populations place in their country leadership.
4. Moreover, the gap we observe between household surveys and expert surveys doesn't always have the same direction, in certain countries population overestimates corruption while in others, population underestimates it. Is there any factor leading to a misestimation of corruption?

Diagram 2. Work assumption



To analyze the gap between populations' and experts' perceptions, we used various data from mainly six different sources: Transparency International (TI), Gallup World Poll (household surveys), World Bank (WGI and WDI), Freedom House, Amnesty International and UNDP. Data description is available in annex 1, page 33. Moreover, our cross country analysis covers 146 countries. (Country list available in annex 2, p. 35).

Since corruption measurement is at the center of this analysis, we were very careful in the choice of corruption indicators. Experts' evaluations are mainly composite indicators gathering different sources. Thus, we first analyzed the methodologies used for their construction, in order to avoid methodological issues but also to flag actors at stake.

As corruption measure, we chose two different sources: Gallup World Poll and Transparency International (TI). The Gallup Database gathers worldwide answers to household surveys from 2006 to 2009. We selected the "Corruption in Government" indicator. (Cf. details available in annex 1).

A. Expert Surveys, the mainstream way to measure corruption

In this study, we draw a distinction between populations' and experts' perceptions. Therefore, we avoided the use of the *Control of Corruption (CC)* index, provided by the World Bank, as expert's evaluation, to compare with populations' perceptions of corruption. As a matter of fact, Gallup surveys appear in the list of World Bank CC sub-component. Thereby, *Worldwide Bank Institute Control of Corruption* is not entirely constructed with expert surveys. Thus, we decided to use the *Corruption Perception Index* (CPI), provided by *Transparency International*, which only encompasses expert's evaluations.

To compare rigorously population perception with expert's assessment, we decided to consolidate our dataset using CPI older surveys to match with the population data. Indeed, our experts' survey uses 2009 data, whereas the selected variable in Gallup World Poll gathered data from 2006 to 2009.
Once consolidated, for each country, all our corruption data have the same collecting date.
However, our analysis shows that if this consolidation is more rigorous, the CPI is quite stable during this time period. CPI 2006 and CPI 2009 are extremely correlated (Adjusted $R^2 = 0.989$, analysis in annex 3, p. 36). Analyzing the gap between expert surveys and population surveys, we used in the consolidated CPI.

B. Household surveys: capturing populations' perceptions

"Corruption in Government", as defined by Gallup World Poll, perception of Government corruption measures the share of people claiming that the government of their country is corrupted.
Albeit Gallup corruption surveys are currently used in the *Transparency International Corruption* Barometer, Gallup World Poll is not used in TI *Corruption Perception Index* (CPI). However, since 2006, World Bank Worldwide Governance Indicators (WGI) use Gallup corruption surveys for its "Control of Corruption" index.

Transparency International Corruption Barometer is entirely based on Gallup surveys and represents the mean of "corruption in Government" and "Corruption in Business" (also from Gallup). Therefore, TI Barometer is not an expert assessment but an alternative measure of corruption, distinct from the well-known "Corruption Perception Index", which does not use household surveys. This way, to study the perception gap, we chose *Gallup household surveys* and TI *Corruption Perception Index*.

Measuring populations' perceptions of corruption in government, we use Gallup *latest data available,* gathering surveys handled between 2006 and 2009. These measures seem more accurate considering that the 2009 wave covers only 85 countries whereas "last data available" compilation covers 146 countries (Cf. Annex 2, page 35). We present above the decomposition of the data encompassed in the "latest available" for Gallup variables:

Table 1. Decomposition per year of the label "*latest*" in Gallup World poll (April 2010)

Year of the survey	2009	2008	2007	2006
Percentage of the observations	57.8%	27.9%	4.7%	9.5%

NB. *If we consolidated our dataset for GDP growth and unemployment rate, for more structural data like press freedom, inequality or migration, we assumed that institutional stability on such a short run, allows us not to perform this exercise.*

To complete our analysis and understand better corruption reality, we used two other Gallup variables "Faced bribe situation" and "gave bribe". These indicators refer to two successive questions:
Faced bribe situation: "In the last 12 months, were you, personally, faced with this kind of situation, or not (regardless of whether you gave a bribe/present or not)?". The *Faced bribe situation* variable measures the share of population saying "Yes". If the answer is positive then a second question is answered, asking if, in this case, the respondent gave any bribe. The measure of the share of people saying "Yes" is the *gave bribe* variable.

3. Populations vs. experts, a gap to investigate

Population surveys systematization is relatively recent on such a scope. If household surveys were used once in a while to control experts' assessments accuracy [Olken, B. (2009); Razafindrakoto M., Roubaud F. (2005)], as far as we know, there are very few studies systematically confronting experts' and populations' perceptions. In the following section, we present the different steps followed to analyze the gap of corruption perceptions between populations and experts. To start properly, we performed a first verification of the correlation levels between experts' and population's perceptions.

A. Preparatory analysis

1. Are population and experts' perceptions on corruption correlated?

Table 2. Correlations matrix, corruption variables

		Corruption Perception Index (TI-consolidated)	*Control of Corruption (World Bank 2008)*	*Population perception of government corruption (Gallup - Latest)*	*Faced bribe situation (Gallup-Latest)*
Corruption Perception Index (TI- consolidated)	Pearson Correlation	1	.977**	.606**	.527**
	Sig. (2-tailed)	.	.000	.000	.000
	N	177	177	142	128
Control of corruption (World Bank 2008)	Pearson Correlation		1	.580**	.543**
	Sig. (2-tailed)		.	.000	.000
	N		191	143	128
Population perception of government corruption (Gallup - Latest)	Pearson Correlation			1	.427**
	Sig. (2-tailed)			.	.000
	N			146	126
Faced bribe situation (Gallup - Latest)	Pearson Correlation				1
	Sig. (2-tailed)				.
	N				130

**. Correlation is significant at the 0.01 level (2-tailed)

The correlation between populations' and experts' perceptions is pretty significant, albeit not strong. Although World Bank Control of Corruption (CC) encompasses Gallup World Poll data, it seems that CC is less correlated with Gallup "Corruption in Government", than Transparency International CPI.
Overall, the lack of correlation suggests that, indeed, a gap of perception between experts and population exists and is worth being investigated.

2. Corruption perception in a glance

We first decided to draw a quick snapshot of the variables involved to better describe the issue. Therefore, we first use a continent distinction then decided to use Human Development levels (measured by the Human Development Index 2009 - using 2007 data). In these representations we also display, the World Bank Control of Corruption Index to see if there were noticeable differences among continents.

Chart 1. Experts vs. households' perceptions, contients comparison

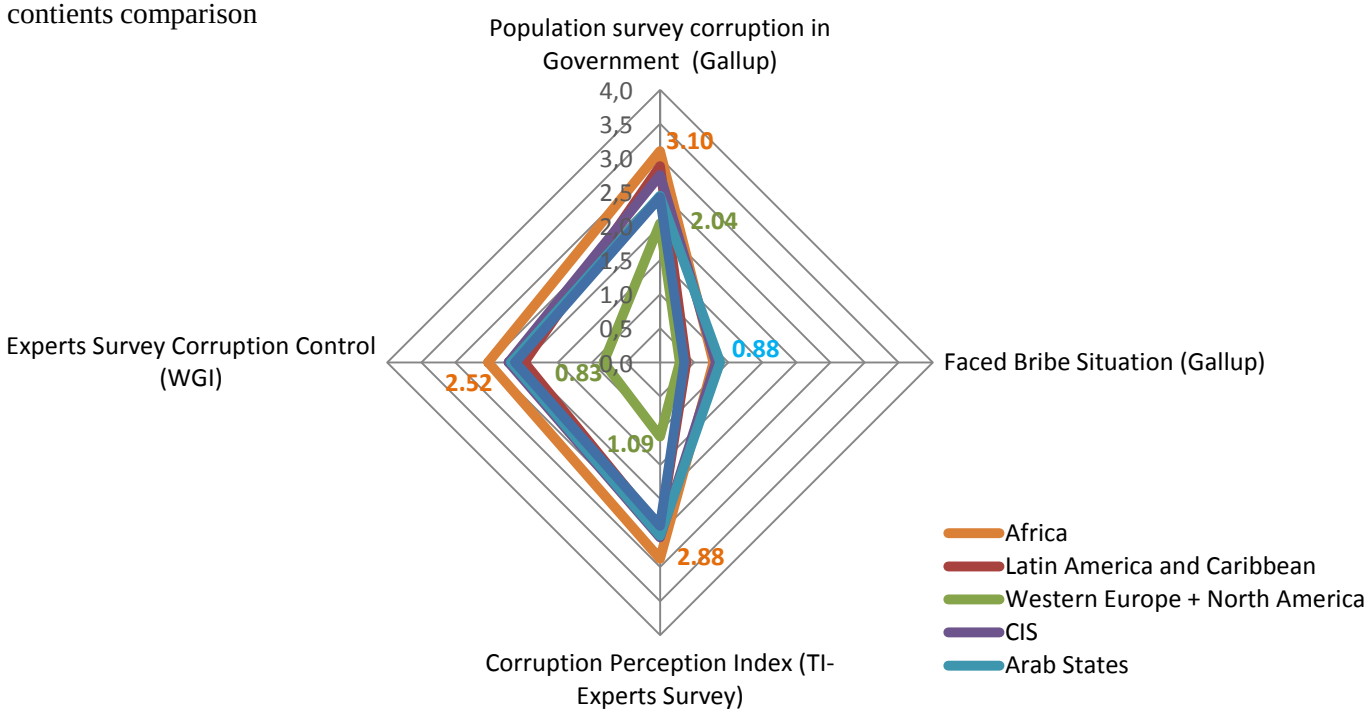
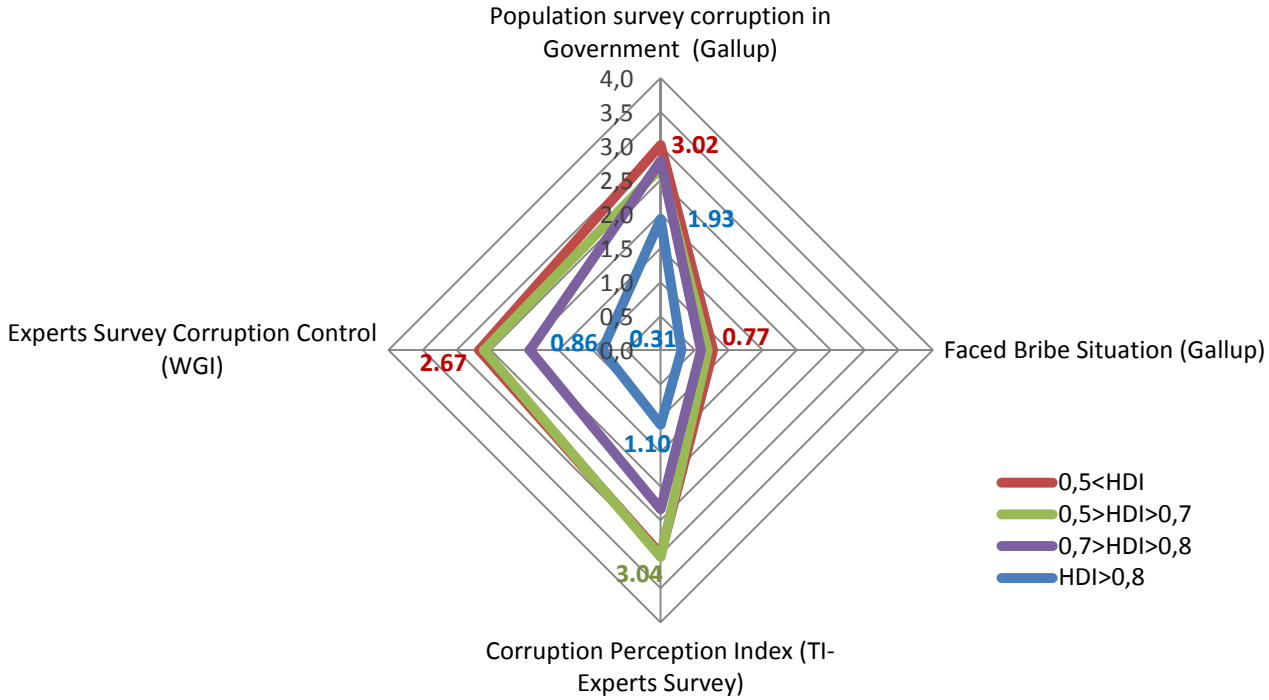


Chart 2. Experts vs. households' perceptions, HDI ranking comparison



To construct the previous charts, we calculated the means for the selected indexes. We rescaled our variables from 0 to 4 in order to facilitate their representation.

These charts show in fact two different gaps: the perception gap between experts and populations, but also the gap among populations regarding perceptions and corruption events declarations ("Faced bribe situation" variable). This last spread appears even wider.
Thus, we assume that population views on corruption are not only the results of their experimentation but also depend on an overall impression. Therefore, we suggest that media and confidence in government strongly condition populations' judgment on corruption.

Before studying the gap among populations' statements, we propose to explore the gap between experts' and populations' perceptions. The previous representations give first clues regarding forces at stake and differences among continents and Human Development levels.

We do observe that overall, Africa seems to face corruption the more, both from expert's findings and populations' perceptions. Nevertheless, it seems that Arab States populations face bribe situations the more. We also notice that the gap between populations' and experts' perceptions widens in Western Europe and North America (or in HDI > 0.8, high and very high HDI level).

Aiming to analyze more precisely these perception disparities, we created an index capturing the strength of perception spreads.

3. The Corruption Perception Gap index (CPG)

The CPG measures the gap between household surveys and expert surveys about corruption, for each country i observed (i = 1,.., 146).

if $\boldsymbol{PPC > EPC}$

$$\mathrm{CPG} = \left(\frac{\mathrm{PPC} - \mathrm{EPC})}{PPC}\right) x4$$

if no, $\mathrm{CPG} = -1\, x \left(\frac{EPC - PPC}{EPC}\right) x4$

With:
PPC*= Population's Perception of Corruption (household Survey-Gallup Corruption in government - latest);*
EPC *= Expert's Perception of Corruption (CPI consolidated).*

NB. *We multiple by 4 this gap to facilitate charts representation. This linear transformation doesn't affect the results of these*

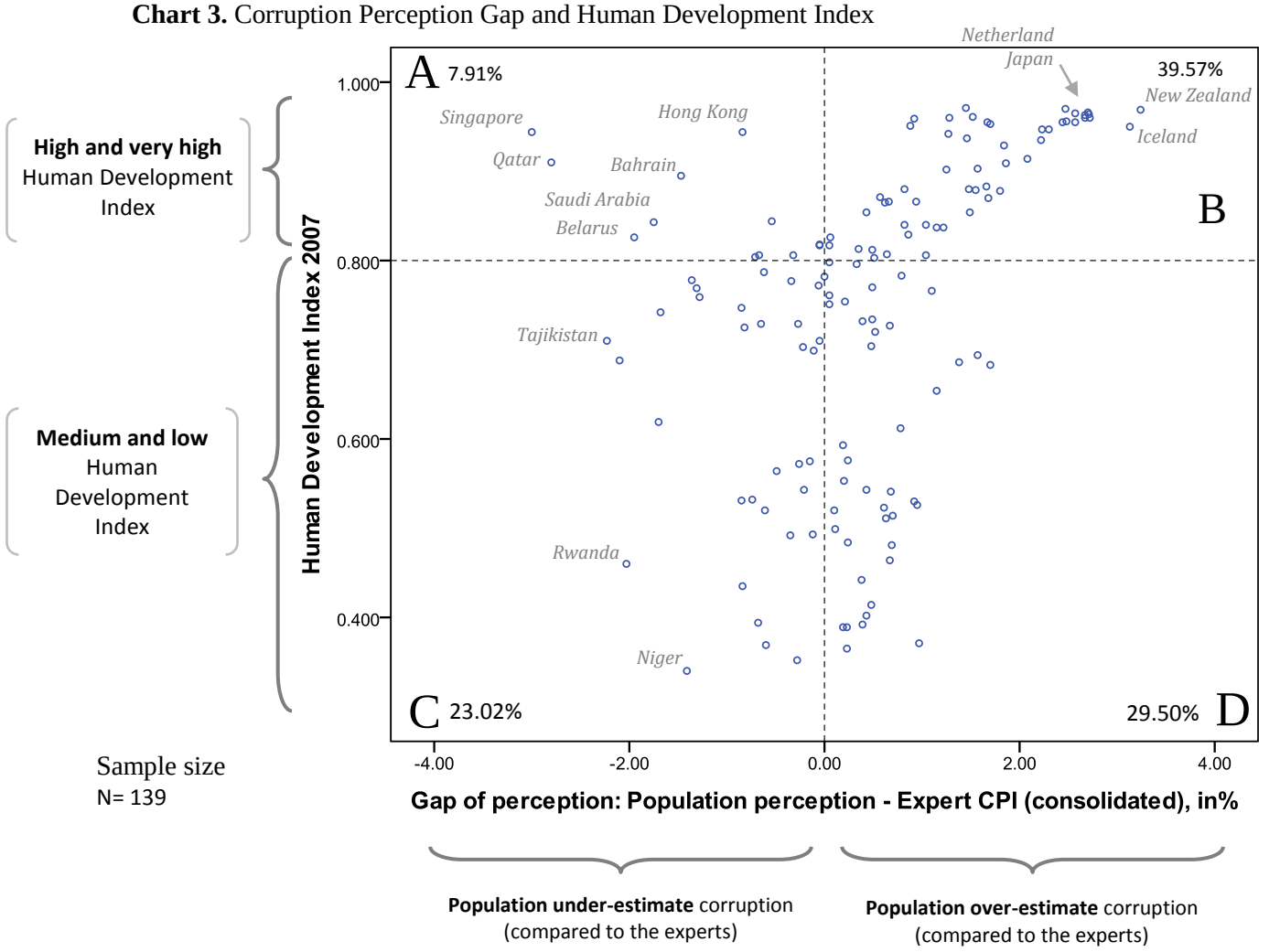
Thus, the CPG is positive if population overestimates corruption (comparing to experts), and negative if population underestimates corruption (comparing to experts).

Readers will notice that we decided to use a relative measure instead of an absolute difference. This choice has an impact on the size of the gap for countries with very low perceptions of corruption (both from population and experts). This way, the error percentage could be important even if the absolute difference is small, this is the case for only a few countries, outliers, on the very upper-west side of the following representation.

4. Corruption Perception Gap distribution across Human Development levels

To have a first idea of the gap distribution, we represented the perception gap relatively to Human Development

Chart 3. Corruption Perception Gap and Human Development Index



Sample size
N= 139

As first observation, we notice that the gap of perception clearly expend with Human Development. In low and medium HDI countries, there is no remarkable trend of corruption under-estimation (nor over-estimation), thus, experts and populations' perceptions appear quite similar.

Assuming that "in reality" there is less corruption in developed countries, we can state that the more corruption, the more experts and population agree on its evaluation. We suppose that widespread corruption is not a well kept secret in a country, and such a situation is therefore easier to inform. This way, perceptions tend to converge.

On the other hand in developed countries, where we may assume that there is little corruption, the spread is much more significant, suggesting that either populations or experts misevaluate corruption reality.

Flagging the 'extreme' cases, we can oppose two facts:
1. In highly both democratic and developed countries, (New Zealand, Iceland, Netherlands, etc.) populations strongly over-estimate corruption.
2. Whereas in both non-democratic and high-developed countries (Singapore, Hong Kong + Gulf countries) populations strongly under-estimate corruption (regarding to experts).

We suggest that this observation may be more linked to freedom of press that characterizes democracies, rather than democracy itself. However, this assumption seems hard to assess rigorously as democracy and freedom of press are strongly associated. (Cf. analysis page 13).
Our hypothesis is that media affect a lot people whereas corruption experiments hit only a few. One corruption event, flagged on mass media touches a very large population. This way, in high freedom of press countries, population tends to overestimate corruption. Media amplification mechanism may explain the difference between experience of corruption measure by "faced bribe" and populations' perceptions of corruption in government.
NB. As the existing data on corruption in administration suffers from a narrow coverage, we were bound to use "Corruption in Government" as a proxy.

B. Introducing information and confidence

Charting corruption perceptions, we've suggested that information and confidence should be the main factors impacting both experts' and populations' perceptions. In order to test this assumption, we used different explanatory variables.

1. Freedom of press

To measure press freedom, two indicators are mainly used by researchers:
- "Freedom of Press", provided by Freedom House.
- "Press Freedom Index" provided by *Reporter Sans Frontière*.

Another dataset, the Institutional Profiles Database, also provides a measure of press freedom.

In order to test the robustness of these indicators, we first decided to compare them to facts.
We therefore collected data from the Committed to Protect Journalists (CPJ), inventorying journalist imprisoned from 2000 to 2009. Thus, we created a dummy variable coded this way:
1: this country had at least one journalist imprisoned during the period 2000 to 2009;
0: it did not

We display above the results of correlation among these different indicators:

Table 3. Media freedom comparison matrix

		Freedom of Press (Freedom house 2009)	*Worldwide Press Freedom Index* (RSF 2009)*	*Freedom Press (IPD 2009)*	Journalists imprisoned (CPJ 2000-09)	*Confidence in press (World Values Survey last wave 2005-08)*	*Confidence in media (Gallup 2008)*
Freedom of Press (Freedom house 2009)	Pearson Correlation	1	-.845**	.837**	-.531**	-.269	-.063
	Sig. (2-tailed)		.000	.000	.000	.052	.509
	N	192	168	122	192	53	113
Worldwide Press Freedom Index (RSF 2009)*	Pearson Correlation		1	-.783**	.484**	.217	.099
	Sig. (2-tailed)			.000	.000	.119	.292
	N		172	122	172	53	115
Freedom Press (IPD 2009)	Pearson Correlation			1	-.419**	-.418**	-.089
	Sig. (2-tailed)				.000	.004	.393
	N			122	122	46	95
Journalists imprisoned (CPJ 2000-09)	Pearson Correlation				1	.173	.013
	Sig. (2-tailed)					.211	.886
	N				197	54	115
Confidence in press (World Value Survey last wave, 2005-08)	Pearson Correlation					1	.103
	Sig. (2-tailed)						.487
	N					54	48
Confidence in media (Gallup 2008)	Pearson Correlation						1
	Sig. (2-tailed)						
	N						115

**. Correlation is significant at the 0.01 level (2-tailed)

**. The sign of Freedom of press Index (Reporter without border) is negative because of the inverse scale used.*

Correlations among experts' freedom of press indicators (3 first columns) are significant and quite strong whatever their sources. Moreover, experts' assessments seem confirmed by facts. The existence of journalists imprisoned decreases with press freedom level for all these indexes. Observing these results we assume that these 3 indicators are relevant measures of press freedom reality.

All previous indicators are based on experts' assessments, working on the field. Nevertheless, in order to have a first flavor of populations' perceptions, we also confront experts' findings to populations' perceptions' of press freedom (two last columns).

Observing these results, one can notice that populations' perceptions are not correlated to experts' views. The significance is low and in the three cases it reaches 5%, the results seem counter-intuitive or even contradictory. Indeed, regarding populations' perceptions, the more experts evaluate the press as free, the less population trust media.
We may explain these results by the reflective feature of media and press. As media and press are the only sources that might inform the public of a possible control by the state, people's assessment of media freedom extent may be biased. Since expert's evaluations seem to be validated by facts, we suggest that assessing freedom of press, expert's evaluations are more reliable sources.

However, we should be careful not to generalize these findings to other dimensions or stating that household surveys are not relevant or useful assessments. We suggest that freedom of press illustrates a particular case, due to its reflective characteristic.

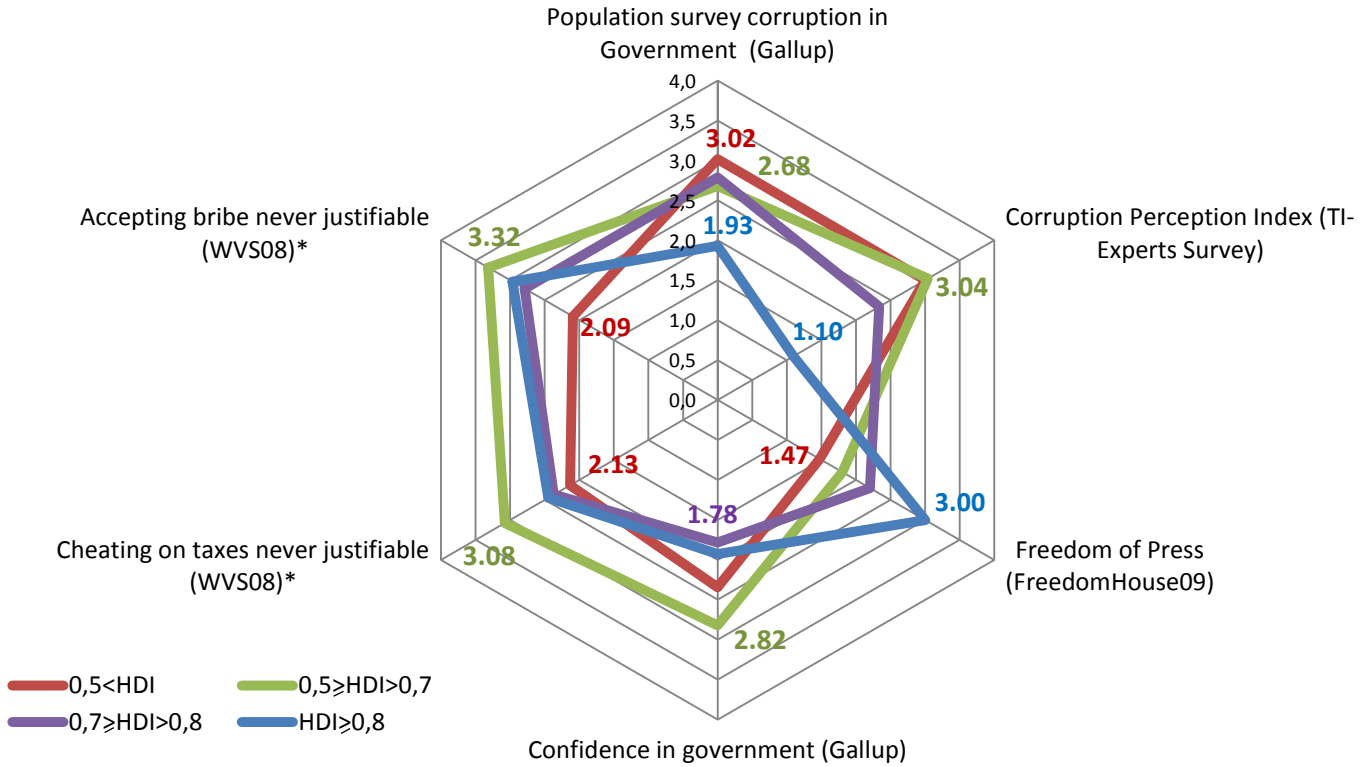
2. Population confidence in Government

To understand better populations' perceptions of government corruption, we decided to analyze their faith in their government, suggesting that this perception may inter-act with their opinions regarding corruption. Nevertheless, since we showed that populations declare facing less corruption situations than it seems to perceive it overall, we suggest that populations mistrust in government is not mainly the consequence of corruption exposure. This way, we support a causality direction going from government disbelief to suspicious evaluations of corruption.
We also suggest that this bias has no reason to affect in the same extent (or at all) expert's assessments. Therefore, population confidence in government may explain a good share of the perception gap between experts and populations.

To measure people's confidence in authority, we used the variable "Confidence in Government" provided by Gallup World Poll (household surveys). This variable represents the share of the population in the country i, trusting government.

We present above descriptive statistics displaying our different variables, relatively to Human Development Index levels. We also added "permissiveness" measures gathered from the World Value Survey (last wave 2005-2008).

Chart 4. Freedom of Press, confidence in government, population perceptions of government corruption and permissivness



The medium HDI level (between 0.5 and 0.7) is the only scope where populations underestimate corruption (relatively to experts). This group of countries is also characterized by the highest level of confidence in government and the lowest permissiveness level ("Accepting bribe" and "Cheating on taxes" never justifiable). Nevertheless, medium Human Development countries face, on average, the worst corruption scores given by experts and also face low performances in press freedom.

Observing high and very high Human Development countries (HDI above 0.8), we notice a low government approval associated with the highest freedom of press level. The previous chart confirms that these countries also have the widest gap of corruption perceptions.

Table 4. Corruption environment among Human Development Index levels

Human Development level HDI 2007	**Population perception on corruption**[1] (Gallup latest)	**Corruption Perception Index**[2] (Transparency International)	**Freedom of press**[2] (Freedom House 2009)	**Confidence in Government**[1] (Gallup latest)	**Accepting bribe never justifiable**[1] (WVS - 08)
HDH ≥ 0.8	**48.3%**	**27.5**	**75**	**48.3%**	**74.5%**
0.7 ≤IDH< 0.8	**67.5%**	**58.5**	**55**	**44.5%**	**69.8%**
0.5 ≤IDH< 0.7	**67.0%**	**76**	**45**	**70.5%**	**83.0%**
0.5< IDH	**75.5%**	**75**	**36**	**58.8%**	**52.3%**

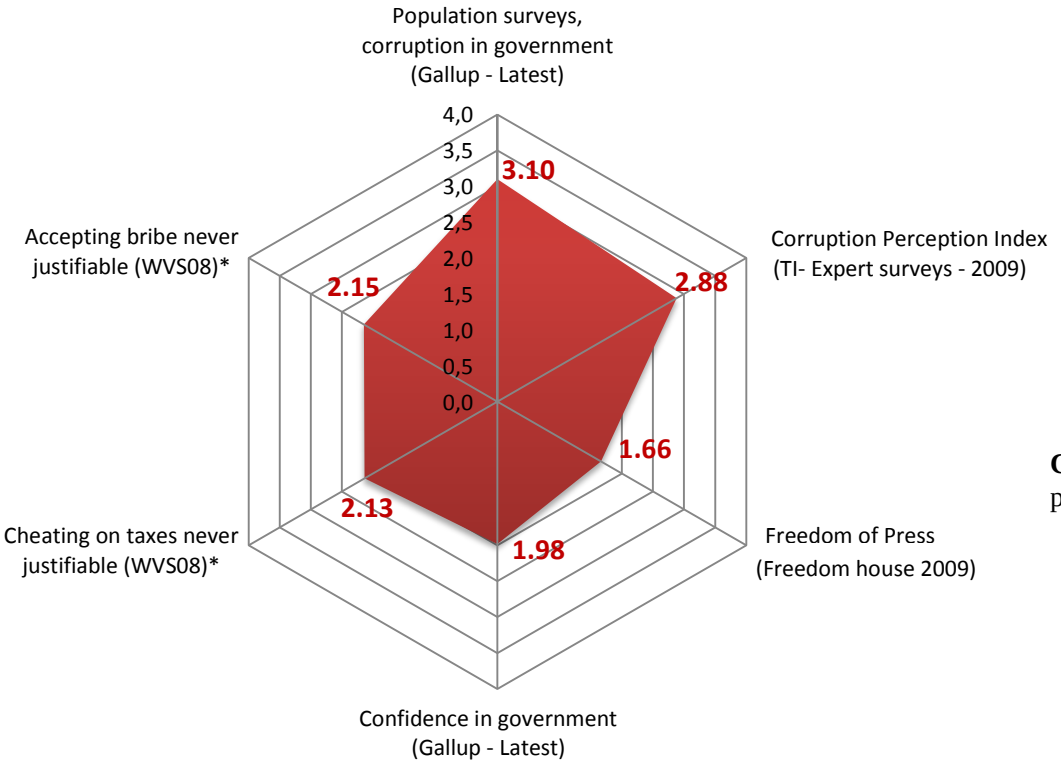
[1] *Average (re-scaled from 0 to 4) of the share of the population saying: corruption is widespread, they have confidence and that accepting bribe is never justifiable.*

[2] *These indicators have been rescaled from 0 to 100. With 100 referring to widespread corruption (CPI) / or Free press.*

Assuming this study implies more cultural factors than development characteristics, we also represented below continents profiles. These new representations confirm our intuition on medium HDI countries features. Arab states are the only countries where, on average, populations underestimate corruption (or experts overestimate corruption). These countries seem to possess a strong leadership approval, combined with a low freedom of press and the lowest permissive temper (cheating on taxes and accepting bribe variables).

Analyzing Asia-pacific characteristics, we don't notice particular trends. Population and experts' evaluations of corruption appear fairly close and this region flag average scores for all these indexes.

Chart 5. Press freedom, confidence in Government, Corruption perceptions and fraud tolerance **(Africa)**



*** Country coverage for this continent:** **Africa**

"*Cheating on taxes never justifiable*" (WVS08): 12.8%

"*Accepting bribe never justifiable*" (WVS08): 14.9%

Africa globally presents **the lowest scores** for most of these indicators. Only Arab States score lower for the press freedom index.

Paradoxically, Africa seems to trust its leader. Observed scores for **the confidence in Government variable belong to upper average:** Africa ranks 3rd, behind Arab States.

It seems that press freedom and confidence in government are not good bedfellows.

With a limited coverage, the *World Values Survey,* gives little clue to evaluate population tolerance toward fraud in Africa

Asia-Pacific presents quiet **homogeneous scores** for most **of these indicators.** Nevertheless, this continent is characterized by a strong population confidence in governments. (It shows the best score for this index. 67.5% of the population of this sub-group declares having faith in its government). Moreover the **corruption perception gap** between populations and experts **is very thin** in Asia-Pacific.

*** Country coverage for this continent:**

"*Cheating on taxes never justifiable*" (WVS08): 35.5%

"*Accepting bribe never justifiable*" (WVS08): 35.5%

Asia Pacific

Chart 6. Press freedom, confidence in Government, Corruption perceptions and fraud tolerance **(Asia-Pacific)**

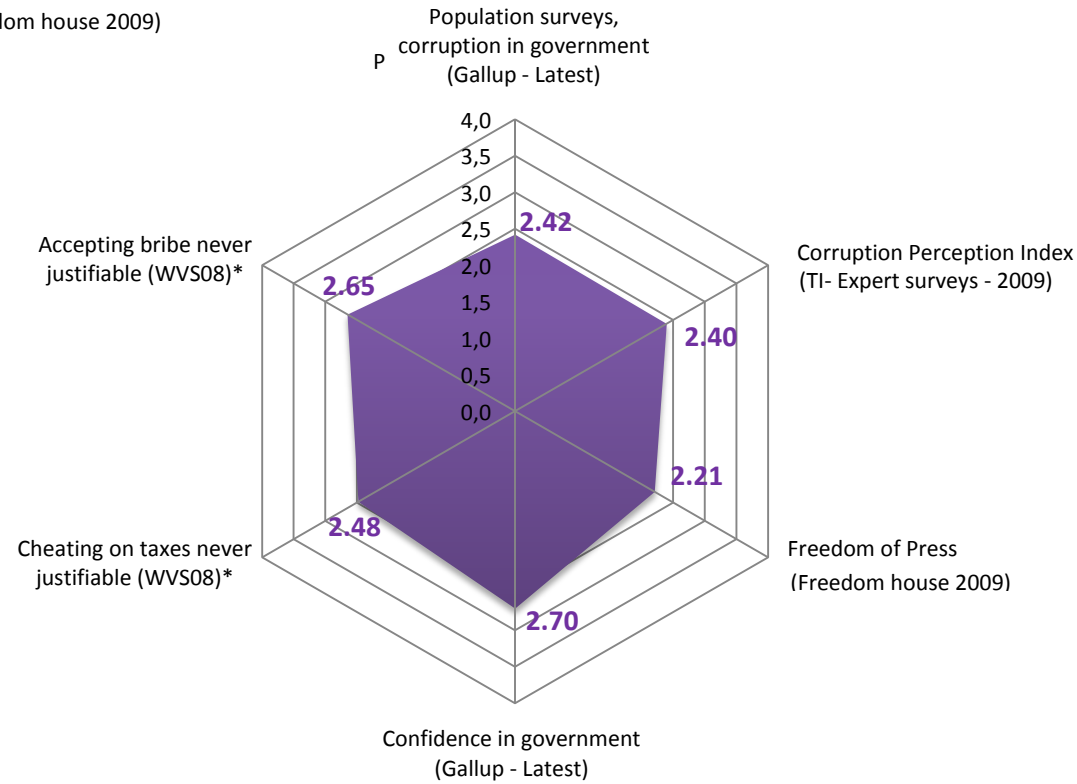
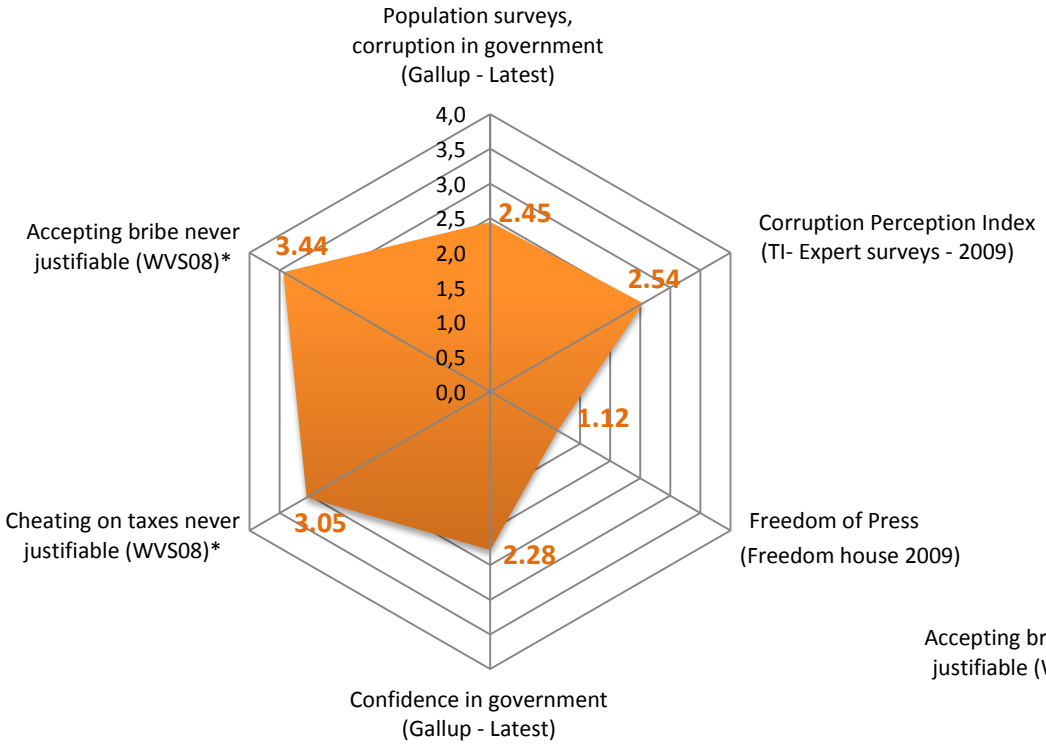


Chart 7. Press freedom, confidence in Government, Corruption perceptions and fraud tolerance **(Arab states)**



Arab States

*** Country coverage for this continent:**
"Cheating on taxes never justifiable" (WVS08): 16.7%
"Accepting bribe never justifiable" (WVS08): 23.8%

Three major features are shared by **Arab states:** the **lowest scores of press freedom,** associated with high **confidence in leadership** (2nd after Asia-Pacific) and the lowest tolerance toward fraud. Nevertheless, given the limited coverage of the *World Value Surveys* for this region, this last feature must be taken cautiously.

Former Soviet countries are characterized by the lowest level of confidence populations place in their government. These countries also record high level of corruption perceptions. Considering experts' perceptions this sub-group ranks just after Africa.

*** Country coverage for this continent:**
"Cheating on taxes never justifiable" (WVS08): 29.6%
"Accepting bribe never justifiable" (WVS08): 29.6%

CIS

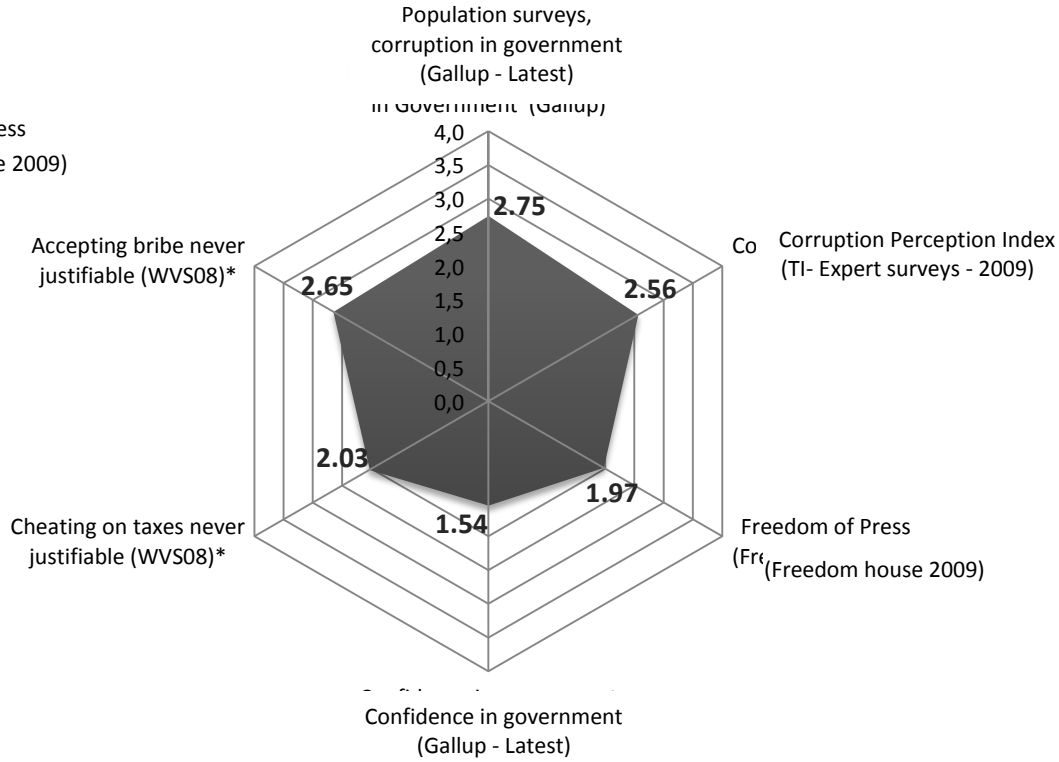
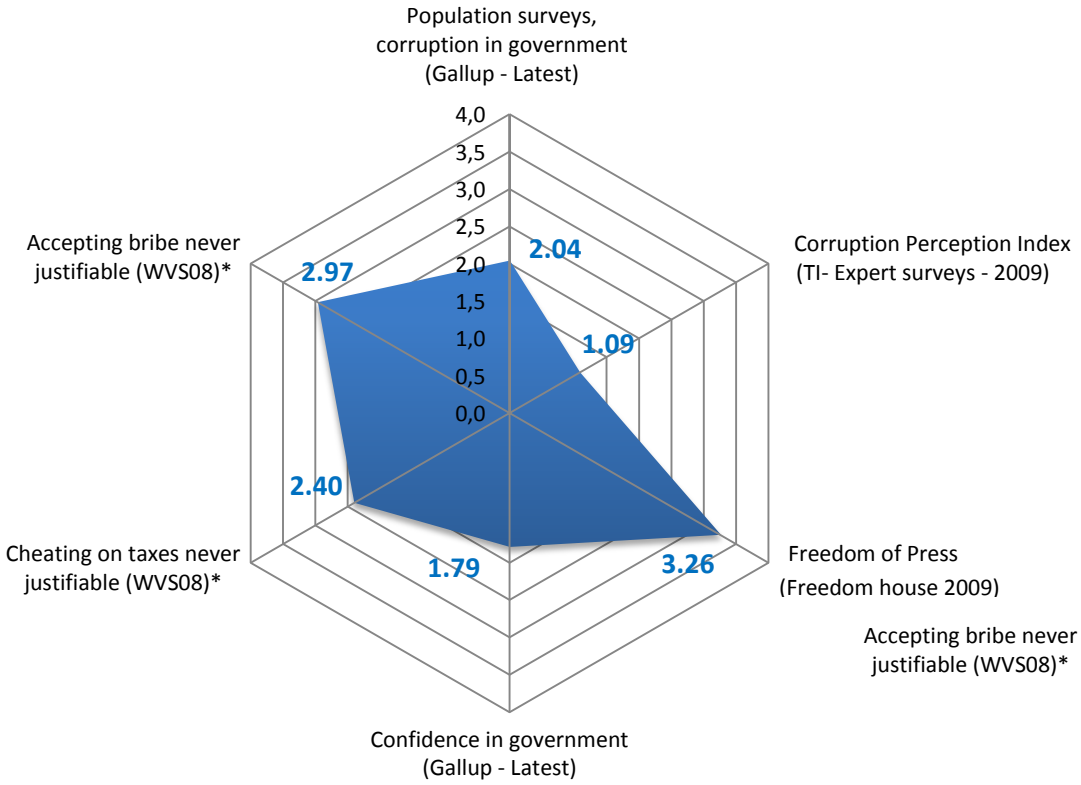


Chart 8. Press freedom, confidence in Government, Corruption perceptions and fraud tolerance **(CIS)**

Chart 9. Press freedom, confidence in Government, Corruption perceptions and fraud tolerance **(Western Europe and North America)**



Western Europe + North America

*** Country coverage for this continent:**

"Cheating on taxes never justifiable" (WVS08): 57.7%

"Accepting bribe never justifiable" (WVS08): 57.7%

Western Europe and North America, show the **best scores regarding both** experts' and populations' **corruption perceptions.** Paradoxically, this sub-group shows one of the **lowest government confidence levels**. Once again this lack of faith is associated with a high level of press freedom (The highest scores).

This continent is also characterized by the **bigger perception gap** regarding corruption.

Latin America and the Caribbean also present homogeneous scores for these indicators. However, populations of this continent show the **highest distrust toward their leaders**. This **lack of confidence** is also associated **to high levels of press freedom** (this continent ranks 2nd).

Furthermore, we observe important levels of **populations' perceptions of corruption** (penultimate, ahead Africa).

*** Country coverage for this continent:**

"Cheating on taxes never justifiable" (WVS08): 24.2%

"Accepting bribe never justifiable" (WVS08): 24.2%

Latin America and Caribbean

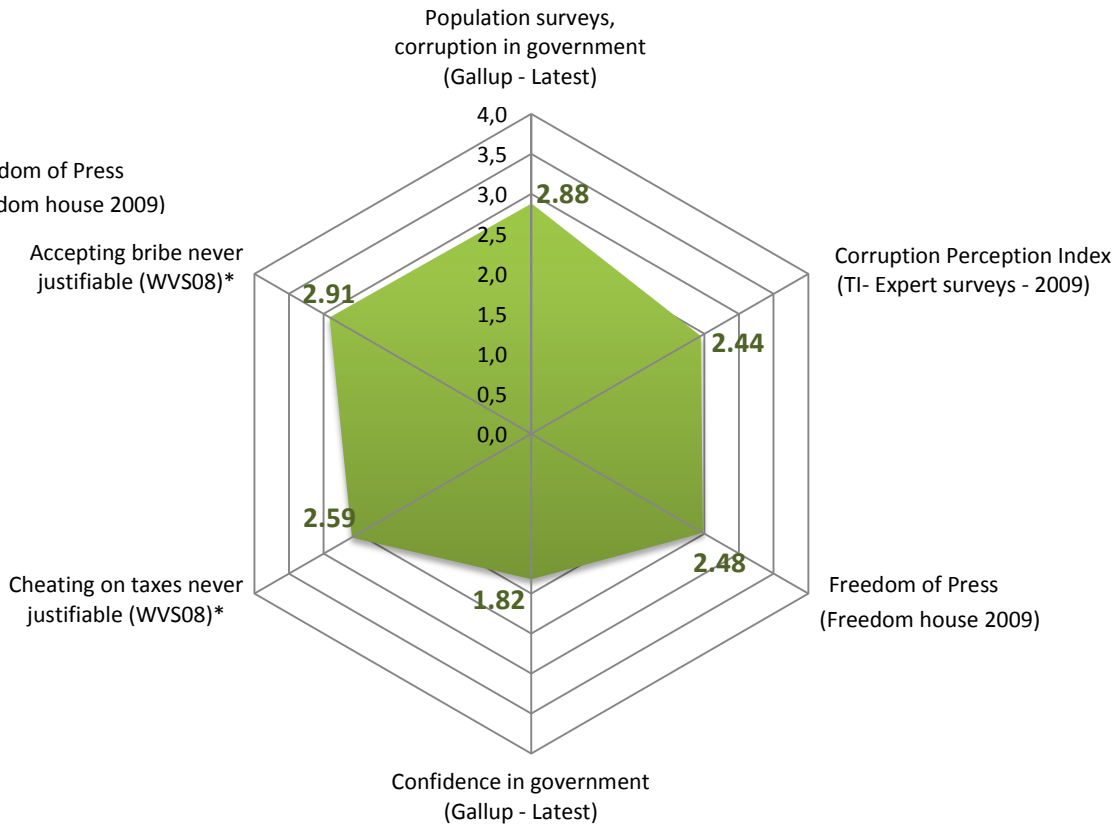


Chart 10. Press freedom, confidence in Government, Corruption perceptions and fraud tolerance (Latin America and the Caribbean)

In order to inform more precisely the impact of continent belonging on each variable, we constructed a correlation matrix with the different factors involved. We display above the results of these estimations:

Table 5. Press freedom, confidence in government and cultural variables across continents

		Not being an African country	*Not being an Arab States*	*Not being a Western European or North American country*	*Not being a CIS country*	*Not being a Latin American or Caribbean country*	*Not being an Asia Pacific country*
Freedom of Press (Freedom house 2009)	Pearson correlation	.272**	.354**	-.484**	.066	-.165*	-.039
	Sig. (2-tailed)	.000	.000	.000	.363	.022	.588
	N	192	192	192	192	192	192
Confidence in government (Gallup - latest)	Pearson correlation	-.072	-.171*	.027	.255**	.163	-.268**
	Sig. (2-tailed)	.390	.040	.749	.002	.050	.001
	N	145	145	145	145	145	145
Religiosity Index (Gallup - latest)	Pearson correlation	-.549**	-.219**	.434**	.409**	-.001	.016
	Sig. (2-tailed)	.000	.010	.000	.000	.990	.856
	N	138	138	138	138	138	138
Accepting bribe - Never justifiable (WVS 2005-08)	Pearson correlation	.415**	-.354**	-.188	.096	-.090	.113
	Sig. (2-tailed)	.002	.009	.173	.491	.518	.416
	N	54	54	54	54	54	54
Corruption in government (Gallup - latest)	Pearson correlation	-.301**	.095	.346**	-.051	-.117	.103
	Sig. (2-tailed)	.000	.253	.000	.537	.158	.214
	N	146	146	146	146	146	146
Corruption Perception Index (TI-consolidated)	Pearson correlation	-.339**	-.057	.623**	-.102	-.027	.004
	Sig. (2-tailed)	.000	.453	.000	.176	.717	.961
	N	177	177	177	177	177	177

**. Correlation is significant at the 0.01 level (2-tailed) *. Correlation is significant at the 0.05 level (2-tailed).

NB. To highlight continent singularities we created a dummy variable for each continent coded this way:
Not being continent J variable take the value 0 if country $i_{1,..,n}$ belongs to continent J; 1 if it does not.
We underlined in light grey significant results and in dark grey, "honest" correlations.

These results confirm the previous representations, putting the light on differences among continents. For example, this table informs that "Not being an **Arab country**" decreases a population confidence in government (feature shared with "**Asia Pacific**",) religiosity and increases tolerance toward fraud.
"Not being a **Western European - North American country" or "CIS"**, increases a population religiosity (contrarily to Africa or Arab States).

Regarding corruption variables, Western Europe or North America, clearly score better either regarding experts' or populations' evaluations, whereas Africa seems the continent where corruption is widespread the more.

These results are obviously not astonishing revelations, but underline clear trends. Once again, it seems reaching a consensus on corruption perception is much easier on the bottom of the ladder.
"Accepting bribe" variable tends to confirm that continent belonging and underneath, culture, seems to affect population tolerance toward fraud and probably corruption perception.

C. Approaching the gap

We previously described different factors able to affect populations' perceptions of corruption. We now need to assess more precisely the way these factors interact with populations' perceptions. We will first analyze the link between populations' perceptions of corruption and press freedom. Then, we will describe the role of populations' faith in their government.

1. The curious case of freedom of press

Our main hypothesis is that corruption perception gap (between experts and populations) may be explained by press freedom. Indeed, populations' perceptions should be affected by the extent of information the public has access about their government behavior.
As first step, we studied the link between populations' perceptions of corruption and freedom of press.

Chart 11. Population perception of corruption and press freedom

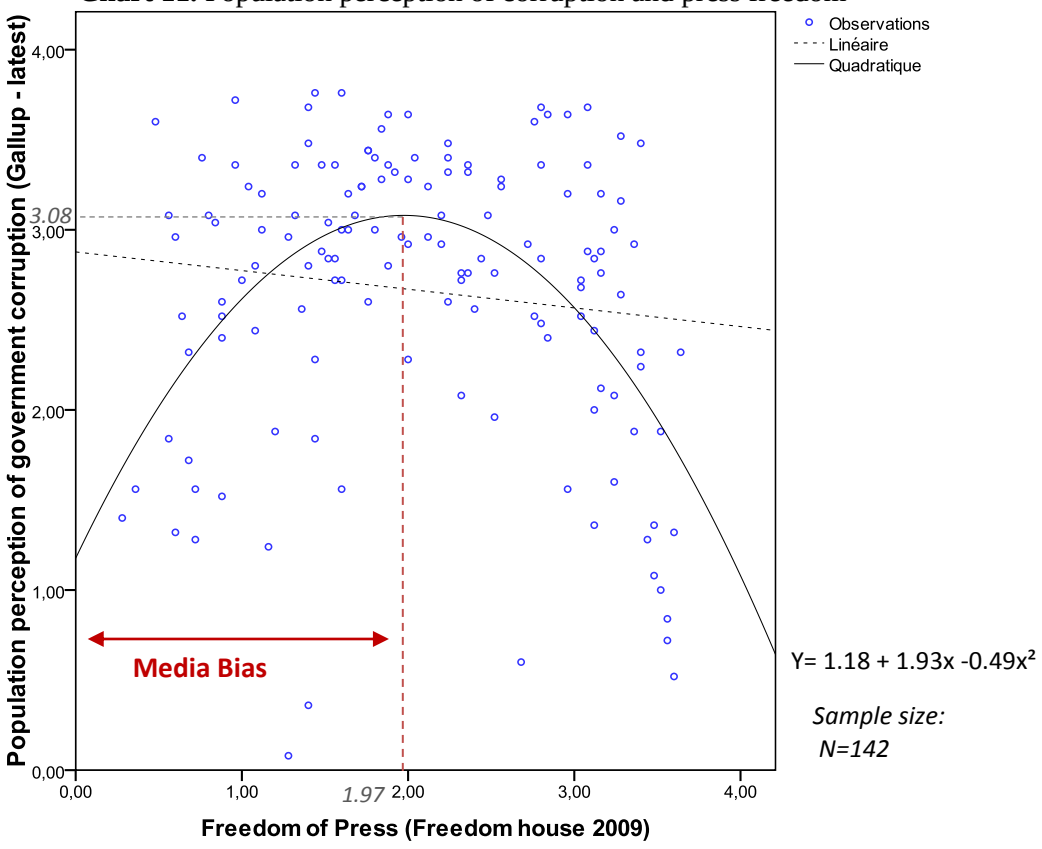


Table 6. Adjustment curves, freedom of press and population perception of government corruption

Quadratic Adjustment		**Coefficients**
Variables	*Freedom of Press*	1.927***
	t	(5.873)
	Freedom of Press²	-0.488***
	t	(-6.314)
	R^2	0.232
	adjusted R^2	0.222
	Sample size (N)	143
Linear Adjustment		
Variable	*Freedom of Press*	-0.104
	t	(-1.408)
	R^2	0.014
	adjusted R^2	0.007
	Sample size (N)	143

Dependant variable: *population perception of government corruption* (Gallup)

The obvious characteristic of this relation is its non linearity. We do observe that this correlation is quite significant on both directions of the relation. It seems that freedom of press explains 23% of populations' perceptions of corruption variation.

Interpretation

The relation between freedom of press and populations' perceptions of corruption is thus non linear.
We suggest that three mechanisms may actually be involved:

- Media reflective feature;
- Democracy;
- Corruption reality.

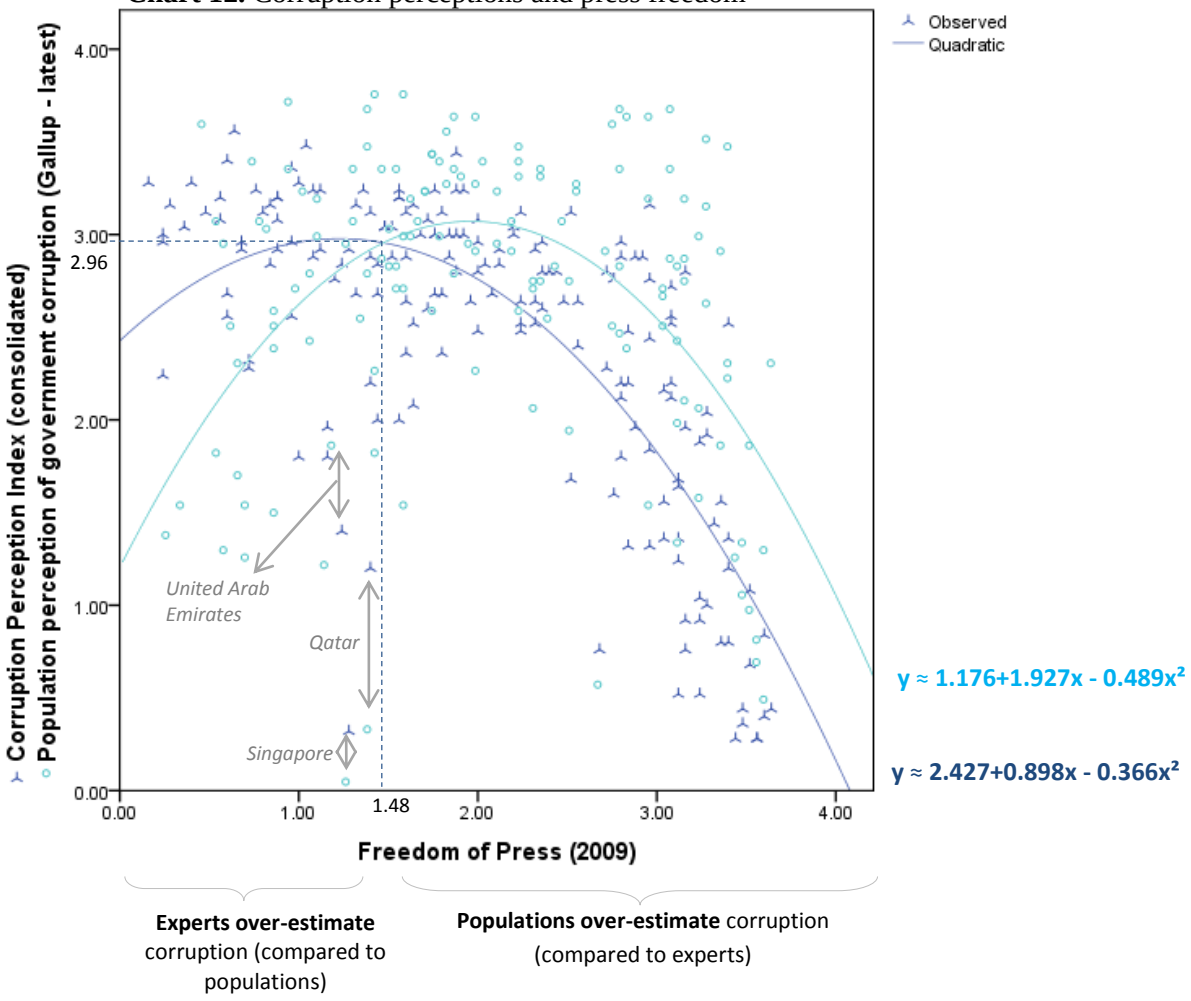
Until a certain level of press freedom (or democracy) the more press freedom increases, the more populations perceive corruption. Indeed, we suggest that the more the press becomes free the more it reports corruption facts and the more populations perceive corruption (that probably existed before but was not reported).

The decreasing part of the curve suggests that the more the press is free, the less populations perceive corruption. We suggest that with development and democracy, corruption behaviors decrease whereas freedom of press continues enhancing. Within this framework, we may conceive this quadratic association between freedom of press and populations' perceptions of corruption.

2. Freedom of press and corruption perceptions, approaching the gap

We have demonstrated previously that populations' perceptions of corruption and freedom of press were associated following a quadratic curve. We now propose to check whether or not, experts' perceptions of corruption are also associated with freedom of press within this kind of non linear relation. Therefore, we constructed a scatter-plot displaying press freedom index relatively to both experts' and populations' perceptions of corruption:

Chart 12. Corruption perceptions and press freedom



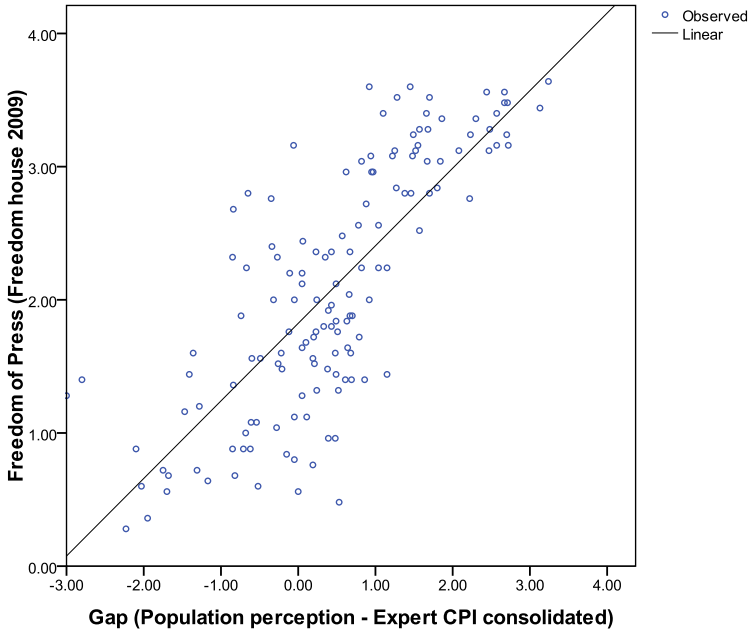
We do observe that the relation between experts' perceptions of corruption and freedom of press also obey to a quadratic adjustment, albeit its increasing section appears less pronounced

The difference between the dark and light blue marks, for each freedom of press level, represents the gap of corruption perceptions.

We also notice that in low freedom of press countries, populations tend to under-estimate corruption (or experts over-estimate) whereas in freer countries, this tendency reverses.

Before modeling the perception gap determinants, we represented the single correlation between this gap and freedom of press.

Chart 13. Press freedom and Corruption Perception Gap Index



This representation confirms our previous observations, the more the press is free, the more the gap of perception expands. Moreover, it seems that press freedom and the perception gap index are quite correlated.

4. Corruption perception, filling the Gap

Aiming to analyze the relative importance of the factors we previously analyzed, we constructed 8 different models to fill the gap of perceptions between experts (CPI-Transparency International) and populations (Corruption in government - Gallup World Poll).

D. Modeling the spread

Model (A):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government} + \beta_3 \text{Faced Bribe Situation}_i + \beta_4 \text{Non Western Europe or North American country} + \beta_5 \text{Emigration Rate}_i + \varepsilon_i$

Model (B):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government}_i + \beta_3 \text{Emigration Rate}_i + \beta_4 \text{Citizen Engagement Index}_i + \beta_5 \text{Gini}_i + \varepsilon_i$

Model (C):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government} + \beta_3 \text{Happiness} + \beta_4 \text{Faced Bribe Situation}_i + \beta_5 \text{Religiosity Index}_i + \varepsilon_i$

Model (D):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government} + \beta_3 \text{Emigration Rate}_i + \beta_4 \text{Citizen Engagement}_i + \beta_5 \text{Gini} + \beta_6 \text{GDP Growth Rate}_i + \varepsilon_i$

Model (D1):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government} + \beta_3 \text{Emigration Rate}_i + \beta_4 \text{Gini}_i + \beta_5 \text{ GDP Growth Rate}_i + \beta_6 \text{ Faced Bribe Situation} + \varepsilon_i$

Model (D2):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Emigration Rate}_i + \beta_3 \text{ Gini}_i + \beta_4 \text{GDP Growth Rate}_i + \beta_5 \text{ Faced Bribe Situation } \varepsilon_i$

Model (E):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government} + \beta_3 \text{Citizen Engagment}_i + \beta_4 \text{Happiness} + \beta_5 \text{Gini}_i + \beta_6 \text{ law and order}_i + \beta_7 \text{ Non African countries}_i + \varepsilon_i$

Model (F):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government}_i + \beta_3 \text{ GDP per capita}_i + \beta_4 \text{ square GDP per capita}_i + \varepsilon_i$

Model (G):

$\mathbf{CPG}_i = \alpha + \beta_1 \text{Freedom of press}_i + \beta_2 \text{Confidence in Government} + \beta_3 \text{Happiness} + \beta_4 \text{Gini}_i + \beta_5 \text{ law and order}_i + \beta_6 \text{ Non African countries}_i + \beta_7 \text{ GDP per capita}_i + \beta_8 \text{ square GDP/capita}_i + \varepsilon_i$

B. Model parameters estimation

Table 7. Corruption perception, filling the gap, model parameter estimations (OLS method)

	Tested models	(A)[1]	(B)	(C)	(D)	(D1)	(D2)	(E)[1]	(F)	(G)
Variables	Freedom of Press	0.856***	0.762***	0.848***	0.777***	0.912***	1.020***	0.737***	0.756***	0,740***
	t	(8.685)	(9.654)	(8.870)	(9.378)	(10.148)	(11.816)	(8.471)	(7.328)	(6,756)
	Confidence in Government	-0.333***	-0.385***	-0.305***	-0.357***	-0.257***		-0.316***	-0.232***	-0,246**
	t	(-3.766)	(-4.954)	(-3.495)	(-4.342)	(-2.712)		(-3.216)	(-2.766)	(-2,468)
	Emigration rate	-0.857***	-1.145***		-1.138**	-1.080***	-1.036***			
	t	(-2.645)	(-4.624)		(-4.570)	(-3.113)	(-2.914)			
	Faced Bribe Situation	0.390*		0.680***		0.232	0.520**			
	t	(1.844)		(2.998)		(1.015)	(2.498)			
	Religiosity Index			-0.221**						
	t			(-2.258)						
	Citizen Engagement Index		0.615***		0.562***			0.497**		
	t		(3.283)		(2.915)			(2.028)		
	Happiness			0.510***				0.348**		0,451***
	t			(3.953)				(2.454)		(3,676)
	Law and order							-0.375*		-0,391*
	t							(-1.722)		(-1,752)
	Gini		-0.13**		-0.14**	-0.018**	-0.014*	-0.034***		-0,034***
	t		(-2.098)		(-2.156)	(-2.426)	(-1.784)	(-3.654)		(-3,602)
	GDP Growth rate Consolidated				-0.10	-0.022	-0.046**			
	t				(-0.497)	(-0.978)	(-2.093)			
	Non Western Europe or Nth Am.	-0.634***								
	t	(-3.037)								
	Non African country							-0.340**		-0,404**
	t							(-2.205)		(-2,347)
	GDP per capita, PPP								0.003***	0,003**
	t								(2.684)	(2,080)
	square GDP per capita, PPP								-4.213E-	-4,678E-6**
	t								(-1.962)	(-2,136)
R^2		0,691	0.698	0.699	0.704	0.689	0.672	0.707	0.642	0.721
Adjusted R^2		0,678	0.686	0.686	0.689	0.671	0.656	0.687	0.631	0.698
Sample size (N)		119	125	118	123	109	111	111	131	110
Colinearity test [(*)]		2,048	1.511	1.956	1.608	1.557	1.357	2.155	2.215	2.516

Dependent variable: CPG, Corruption Perception Gap index (gap between populations and experts).

(*) Maximum for the VIF value (SPSS), Test rejected if the VIF value overpass 5. [GDP and square GDP except].

C. Results Interpretation

The different models we constructed show a quite strong explanatory power. The selected variables explain around 70% of the CPG variations. Moreover, depending of the variables involved, our panel covers between 109 to 137 countries.

The way we measure the Corruption Perception Gap implies that the spread increases when population overestimates corruption (relatively to experts).

Intuitive results are thus statistically demonstrated:

1. Freedom of press

As assumed previously, we find out that the more the press is free the more population overestimates corruption. We suggest that the underlying reasoning is that media have the ability to broadly affect population's perceptions. This way, one corruption act, flagged on the media, may modify durably and widely populations' perceptions. We already informed the non linear relation between freedom of press and populations perception. However, this quadratic association disappears in the perception gap.

2. Confidence in government

Population approval of sitting government clearly influences public views on corruption. The less population trusts its government, the more the populations express bad opinions in corruption surveys. Our results show that the less population has faith in their country leadership, the more it overestimates corruptions (comparatively to experts.)

3. GDP per capita and GDP growth

The association between GDP per capita and our CPG index is quadratic. Our results show that, until a certain level, the more GDP increases, the more population overestimates corruption, once reached this level, the relation get reversed. However, it seems that the decreasing side of this curve is less pronounced.

If GDP per capita is conceived as a gap repartition indicator within incomes, we understand GDP growth as a consumer sentiment indicator. We therefore suppose that recession would lead to population dissatisfaction able to influence population's opinion toward the sitting government.
If we tested this variable in three models, it only appears significant in the model D2. Ultimately, its influence is weak even if stronger than the one of GDP per capita. Nevertheless, the direction of the relation seems to confirm intuition, recession would encourage population overestimation of corruption.

Economics literature, regularly underlines the link between economics crisis and corruption, declining revenues, leading to corruption behavior increase. However, the use of time series would help to identify better this phenomenon.

4. Faced bribe situation

Faced bribe situation refers to respondent experiments with corruption. Therefore, this variable could be considered as a more accurate corruption measure. However, the single use of this variable may lead to corruption overall underestimation, this may explain why the World Bank preferred the use of the other Gallup World Poll indicator, "Corruption in Government". Moreover touching survey respondent more directly, we assume that some of them choose not to respond honestly to this kind of question, especially if paying bribes is punished by their country law.

As observed in Charts 1 and 2, page 8, bribery experiment statements always appear lower than corruption perceptions, letting the debate on the accuracy of corruption evaluation, wide open.

However, we presumed that "Faced bribe situation" variable may explain a share of the perception gap between experts and populations, as we suppose that people's opinion on government corruption may be affected by corruption events population daily faced.
Our study confirms that the more population has faced bribe situations, the more it reports corruption (comparing to experts).

The previous variables provide intuitive results informing experts and population divergence on corruption evaluation. However, we also observe less intuitive economic and cultural results:

5. Gini Index, the impact of income inequality

Gini Index describes the income distribution. We use data provided by UNDP in the 2009 Human Development Report, backed on 2007 data. Gini index is scaled from 0 to 100, with 0 standing for perfect equality in income distribution.
We suppose that income distribution is globally stable enough in short run to allow the kind of analysis we perform.

Our findings show that if income distribution explains a share of the perception gap, its impact is limited.
Moreover, we come-up with results we consider counter-intuitive. Indeed, we expected income inequality would impact negatively populations' perceptions of corruption, following two mechanisms:
- Corruption seems wider in unequal countries. (As we suggested previously, wider corruption implies slighter gap of perception Cf. Chart 3 page 10);
- Inequality seems to be a strong vector of human dissatisfaction.

Therefore, we expected populations' perceptions of corruption would increase with inequality. Our results actually demonstrate the opposite.

This counter intuitive result may be explained by a third contradictory factor. Income equality seems to be a feature of very low HDI countries or very high HDI countries where populations seem also overestimating corruption the more (relatively to experts). This overestimation distribution effect may, this way, drives our results.

6. Religiosity Index

In the first place, we expected "Religiosity Index" to inform population tolerance toward corruption. As main religions strictly blame corruption behaviors we expected that the more the population is religious the less corruption. However the story appears less simplistic and we suppose that freedom of press also interact in this process. Actually, we assume that two contradictory mechanisms should be involved.
Religious society might be less tolerant toward corruption so they would more easily claim government as corrupted if they observe corruption in the media or in their daily life. On the other hand, if religion is institutionalized and participate to the political system, it would be reasonable to think that corruption behaviors would not be widespread. Thus, population would not perceive corruption too much.
On the other hand, we may also suppose that a stronger social constrain due to religious environment could lead corruption authors to hide better their misdeeds, controlling the media for example. For instance, the more religious countries are also the ones that control the more freedom of press, the case of Arab States is quite significant of this reality.

Finally, our results inform that a strong religiosity[2], implies less populations' over-estimation (or more experts' over-estimation.). These results may be driven by Arab States and European or North American countries in which we observed previously that these continents were respectively:

- one of the more (Arab states) and one of the less religious (Western Europe and North America);
- the ones where populations underestimate corruption the more (Arab States) or where populations overestimate the more (Western Europe and North America).

7. Contestation variables: Citizen Engagement, Happiness Index and Emigration rate

The indicators we gathered to test population contestation finally did not confirm their role.
"Citizen engagement" (Gallup) describes the respondents' satisfaction with their community and their social inclusion. As satisfaction variable, we also used Gallup "Happiness index" and UNDP "Emigration rate", expecting roughly the same impact.
We expected these variables to behave as satisfaction assessment: the less people are satisfied the more they express negative opinions against the sitting government.
Our results did not reflect this intuition, actually they flag the opposite. As suggested previously regarding Religiosity Index, results might be driven by external facts. It seems that engagement, happiness and emigration rate are positively correlated with HDI levels. Therefore Western Europe countries and North America may lead our results. As we informed already, in high HDI levels countries (or Western Europe and North American countries) populations widely overestimate corruption.

[2] measured by Gallup Religiosity Index (definition in annex 1).

8. Continental differences

In order to better inform the cultural impact of continents on the previous contestation variables, we constructed a correlation matrix with dummy variables, assuming that continent belonging, approaches better cultural homogeneity than Human Development level:

Table 8. Cultural variables, press freedom and continents

		Non African	*Non Arab states*	*Non Western Europe or North American*	*Non CIS*	*Non Latin America Caribbean*	*Non Asia Pacific*	*HDI 2007*
Citizen Engagment (Gallup latest)	Pearson correlation	.321**	-.068	-.479**	.197*	-.005	-.046	.529**
	Sig. (2-tailed)	.000	.407	.000	.016	.947	.574	.000
	N	150	150	150	150	150	150	147
Happiness (Gallup latest)	Pearson correlation	.156	.171*	-.303**	.470**	-.333**	-.167	.283**
	Sig. (2-tailed)	.073	.048	.000	.000	.000	.055	.001
	N	133	133	133	133	133	133	130
Religiosity Index (Gallup)	Pearson correlation	-.549**	-.219**	.434**	.409**	-.001	.016	-.702**
	Sig. (2-tailed)	.000	.010	.000	.000	.990	.856	.000
	N	138	138	138	138	138	138	135
Freedom of Press (2009)	Pearson correlation	.272**	.354**	-.484**	.066	-.165*	-.039	.469**
	Sig. (2-tailed)	.000	.000	.000	.363	.022	.588	.000
	N	192	192	192	192	192	192	18

**. Correlation is significant at the 0.01 level (2-tailed) *. Correlation is significant at the 0.05 level (2-tailed)

These results confirm the previous analysis. Belonging to Africa or Western Europe and North America, rationally leads opposite tendencies. Human Development level is also correlated to *Citizen Engagement*, *Happiness*, *Religiosity* and Press freedom.

Moreover, we do observe a strong decreasing relation between religiosity and Human Development.
This matrix lightens our contestation variable distribution and show that the Happiness index increases in Western Europe/ North America and Latin America. More generally, it seems that Happiness Index grows with Human Development.

5. Conclusion

The different analysis performed so far demonstrated the crucial role played by press freedom in corruption perceptions. We also described the underlying dynamics: the transition from controlled press to free media leads to broader media coverage of corruption cases, thereby increasing corruption perceptions (even if these perceptions are not backed by a real increase of corruption cases).
In a previous paper [Brown, J. Orme, W. Roca, T. (2010)], we already demonstrated the existence of a media bias affecting populations' perceptions and, to a lower extent, TI Corruption Perception Index.

Theoretically, press freedom (and democracy) reduces corruption. The widespread reasoning is that freedom of press - and its corollary, democracy - may reduce corruption, within the game of electoral process and vote sanction, making politician accountable toward citizens. "Roughly, it is argued that within the democratic game, "bad behaviors" - experienced or flagged in the media - are punished at the ballot box"[3]. The accountability and vote mechanisms are hence said to prevent corruption.

This way, the relation between press freedom and corruption perception should be linear. We suggest that the observation of a quadratic association reveals the media bias affecting both experts' and populations' judgment.

Our results also inform that populations' perceptions seem equally affected by people trust towards State representatives. We have sought to show that if a share of population mistrust may be the results of corruption exposures, these confrontations were always limited comparing to the population widespread feeling of leadership corruption, suggesting that the causality direction goes mainly from mistrust to corruption suspicions.
Moreover, the fact that, in both developed and democratic countries - where corruption should be lower -, populations systematically overestimate corruption seems to support the causality direction we defend.

Overall, our study reveals that experts and populations barely agree on corruption estimation. Evidences show that the corruption perception gap results of the combination of at least 4 factors:

Factors leading populations to overestimate[4] the extent of corruption:

1. Low level of corruption;
2. High freedom of press;
3. Low confidence in Government;
4. Low tolerance or permissiveness[5].

Factors leading populations to underestimate[6] the extent of corruption:

1. Controlled media;
2. High level of confidence in government;

[3] Brown, J. Orme, W. Roca, T. (2010) p.8.
[4] Or experts to underestimate corruption/
[5] This last aspect doesn't appear in our models as the country coverage of World Value Surveys doesn't allow us to lead robust analysis. However permissiveness link with population opinion on ethical or unethical behavior seems quite arguable theoretically.
[6] Or experts to overestimate corruption.

Testing economic variables, we observed that overall, economic events seem to have little influence on the perception gap. We suggest that our *Confidence in Government* indicator captures a share of population economic dissatisfaction.

In light of this analysis we suggest that neither experts' nor populations' perceptions succeed in properly evaluate corruption extent. Nevertheless it seems that expert's assessments would be less biased. However, these results remain worrying as the CPI is so much taken seriously by investors and funders, even if Transparency International regularly warns about the misuse of its index.

6. Bibliography

Bardhan, P. 1997, "Corruption and Development: A Review of Issues." *Journal of Economic Literature* 35 (1997): 1020-1046.

Brown, J. Orme, W. Roca, T. "Fear and Loathing of the Corruption Perception Index: Does Transparency International Penalize Press Freedom?" Development Economics Group (GED) Lare-efi, Université Montesquieu Bordeaux IV, available at: http://ged.u-bordeaux4.fr/ceddt158.pdf

Chong, A, and Calderon, C. "On the Causality and Feedback Between Institutional Measures and Economic Growth." *Economics and Politics* 12(1) (2000): 69-81.

Clague, C., *Institutions and Economic Development: Growth and Governance in Less Developed and Post-Socialist Countries*. Baltimore. The John Hopkins University Press, 1997.

Freedom House, 2009a, "Freedom in the World Methodology Summary", available at: http://www.freedomhouse.org/uploads/fiw09/FIW_MethodologySummary_ForWeb.pdf

Freedom House, 2009b, "Freedom in the World 2009 Checklist Questions", available at: http://www.freedomhouse.org/uploads/fiw09/FIW09_ChecklistQuestions_ForWeb.pdf

Gallup Database, World poll 2010, http://www.gallup.com/consulting/worldpoll/24046/About.aspx

Institutional Profiles Database (IPD), 2009, http://www.cepii.fr/francgraph/bdd/institutions.htm

Jonathan, I. Kaufmann D, and Pritchett, L.H. 1997, "Civil Liberties, Democracy, and the Performance of Government Projects". *World Bank Economic Review*, Vol. 11, No. 2

Johnson, S. Kaufmann, D. Zoido-Lobaton P. 1999, Corruption, *Public Finances, and the Unofficial Economy*. World Bank Policy Research Working Paper #2169,1999

Kanbur, R. 2004, "Reforming the Formula: A Modest Proposal for Introducing Development Outcomes in IDA Allocation Procedures": http://www.arts.cornell.edu/poverty/kanbur/IDAForm.pdf

Kaufmann, D. Kraay, A et Zoidon-Lobaton, P. 1999 (A.), "Aggregating Governance Indicators", Policy Research Working Paper 2195, The World Bank Development Research Group Macroeconomics and Growth and World Bank Institute Governance.

Kaufmann, D. Kraay, A et Zoidon-Lobaton, P. 1999 (B.), "Governance Matters", Policy Research Working Paper 2196, The World Bank Development Research Group Macroeconomics and Growth and World Bank Institute Governance.

Kaufmann, D. "Rethinking Governance: Empirical Lessons Challenge Orthodoxy." In *Global Competitiveness Report 2002-03*, World Economic Forum. Washington, D.C.

Kaufmann, D. Kraay, A. "A Growth without Governance" in *Economía*, Winter 2002.

Kaufmann, D. Kraay, A, and Mastruzzi, M. "Governance Matters III: Governance Indicators for 1996-2002." *World Bank Economic Review*, Vol. 18, No. 4 (2004): pp. 253-87

Kaufmann, D. Kraay, A. 2002 "Growth without Governance", Policy Research Paper 2928-World Bank Institute.

Knack, S. and P. Keefer. "Institutions and Economic Performance: Cross-Country Tests Using Alternative Institutional Measures." *Economics and Politics* 7 (1995): 207-27.

North, D. 1990, *Institutions, Institutional Change and Economic Performance*, Cambridge University Press.

OCDE 2006, *Les indicateurs de gouvernance, usages et abus*, Étude du centre de développement, C. Arndt C. et Oman C.P.

Olken, B.A. 2009, Corruption Perceptions vs. Corruption Reality, MIT and NBER, March 11, 2009

Razafindrakoto M., Roubaud F. 2005, "How far can we trust the experts' opinion on corruption? An experiment based on surveys in francophone Africa ", Transparency International, Pluto Press, London / Ann Arbor, pp.292-295.

Roca, T. Orme, W. and Brown, J. 2010, "Fear and Loathing of the Corruption Perception Index: Does Transparency International Penalize Press Freedom?" (October 18, 2010). Development Economic Group (GED), Université Montesquieu Bordeaux IV, available at: http://ged.u-bordeaux4.fr/ceddt158.pdf

Transparency International, 2009, "A short methodological note", available at: http://www.transparency.org/content/download/36189/568652

World Bank, 2004, *Making Services Work for Poor People, World Development Report 2004*.

World Bank, 2010, "*Corruption and Governance, World Bank website:"* http://lnweb90.worldbank.org/eca/eca.nsf/0/e9ac26bae82d37d685256a940073f4e9?OpenDocument

7. Annex

Annex 1. Data

Table 1. Data used in this paper

Indicator name	Provider	Nature	Date	Methodology or Survey question (Household surveys)
Corruption				
Corruption Perception Index	Transparency International	Expert surveys	2009 + Consolidated	http://www.transparency.org/policy_research/surveys_indices/cpi/2009
Corruption control	World Bank, Worldwide Governance Indicators, World Bank Institute	Expert surveys	2008	http://info.worldbank.org/governance/wgi/index.asp
"Corruption in Government"	Gallup International http://www.gallup.com/	Household surveys	latest	"Measure is share of people who believe corruption is widespread in government in their country"
"Faced Bribe Situation"	Gallup International http://www.gallup.com/	Household surveys	latest	"In the last 12 months, were you, personally, faced with this kind of situation, or not (regardless of whether you gave a bribe/present or not)? (Yes)"
Information - Media				
Freedom of the Press	Freedom house	Expert surveys	2009	http://www.freedomhouse.org/template.cfm?page=16
Freedom of Press Index	*Reporter Sans Frontière* (Reporter Without Border)	Expert surveys	2009	http://en.rsf.org/
Freedom of Press	Institutional Profile Database (IPD)	Expert surveys	2009	http://www.cepii.fr/anglaisgraph/bdd/institutions.htm
Journalist imprisoned	Committee to Protect Journalist	Objective variable measuring facts	2009 to 2000	We constructed this variable as a dummy variable, coded 1 if the country had at least a journalist imprisoned between 2000 and 2009. 0 if no.
"Confidence in Media"	Gallup International http://www.gallup.com/	Household surveys	2008	"In this country, do you have confidence in each of the following, or not? How about quality and integrity of the media?" (Share of the people that answered yes)"
Confidence in Press	World Values Survey	Household surveys	Last wave 2005-2008	http://www.worldvaluessurvey.org
Democracy and liberty				
Polity Index	Integrated Network for Societal Conflict Research. (INSCR)	Experts surveys	2008	Composite Index measuring democracy depth. http://www.systemicpeace.org/inscr/inscr.htm
Political Pluralism and Participation (Freedom House 2009)	Freedom house	Experts surveys	2009	http://www.freedomhouse.org
Political Terror Scale	Amnesty International	Experts surveys	2008	http://www.politicalterrorscale.org/

"Confidence in government"	Gallup International http://www.gallup.com/	Household surveys	Latest	"In this country, do you have confidence in national government?" (Share of the people that answered yes)
"Afraid to express political view"	Gallup International http://www.gallup.com/	Household surveys	Latest	"In your opinion, how many people in this country, if any, are afraid to openly express their political views?" (Measure is share of people who believe most of people are afraid)
"Freedom to choose"	Gallup International http://www.gallup.com/	Household surveys	Latest	"In this country, are you satisfied or dissatisfied with Your freedom to choose what you do with your life?" (Share of the people that answered yes)
"Voiced your opinion"	Gallup International http://www.gallup.com/	Household surveys	Latest	"Have you voiced your opinion to a public official in the past month "
"Law and order"	Gallup International http://www.gallup.com/	Household surveys	latest	"The Law and Order Index measures security levels that respondents report for themselves and their families. Two elements make up this index: one composed of respondents' reported confidence in local police and feeling safe walking alone at night, and the other of two questions about respondents' experiences with crime."
Voter Turn out	International IDEA http://www.idea.int/	Objective variable	Latest available	This variable gathers the parliamentary election voter turnout. For the case of Gabon parliamentary data were not available, we used instead president voter turnout. We used the last data available. The oldest data we have are for Chad (2002), Guinea (2002), Jordan (2003) and Yemen (2003). For all the other countries we have data from 2004 to 2009.
Culture and continents				
Continents		Objective variable		We created 6 dummy variables representing the fact not to belong to a specific continent.
"Religiosity Index"	Gallup International http://www.gallup.com/	Household surveys	Latest	The Religiosity Index is a measure of the importance of religion for respondents and their self-reported attendance of religious services. For religions in which attendance at services is limited, care must be used in interpreting the data
« Citizen Engagment Index »	Gallup International http://www.gallup.com/	Household surveys	Latest	The Citizen Engagement Index assesses respondents' satisfaction with their communities, and their inclination to volunteer their time, money, and assistance to others. Engaged citizens are positive about the communities they live in and actively give back to them.
«Happiness »	Gallup International http://www.gallup.com/	Household surveys	latest	"Did you experiment happiness feelings a lot of the day yesterday?" (Share of the people that answered yes)
Economic variables and other indicators				
Human Development Index (HDI)	UNDP, Human Development Report 2009	Objective variable	2007	http://hdr.undp.org/en/
Migration rate	UNDP, Human Development Report 2009	Objective variable	2007	http://hdr.undp.org/en/
Gini index	UNDP, Human Development Report 2009	Objective variable	2007	http://hdr.undp.org/en/

GDP Annual Growth	World Bank World Development Indicators 2010	Objective variable	Consolidated	World Bank WDI 2010 http://data.worldbank.org/data-catalog/world-development-indicators/wdi-2010
Unemployment Rate	International Labor Organization,	Objective variable	Average between available data for 2005 to 2008.	KILM dataset http://www.ilo.org/empelm/what/lang--en/WCMS_114240
Unemployment Rate Variation	International Labor Organization, KILM dataset http://www.ilo.org/empelm/what/lang--en/WCMS_114240	Objective variable	2005 to 2008	This variable is the absolute difference between the oldest and the latest data available (between 2005 and 2008)

Annex 2. Countries covered by Gallup "Corruption in Government variable"

Table 2. «*Corruption in government*» (Gallup – *Latest available*)

Country	Date[1]	Country	Date[1]	Country	Date[1]	Country	Date[1]	Country	Date[1]
Afghanistan	2009	Congo (DRC)	2007	Iran	2008	Namibia	2007	Sri Lanka	2009
Albania	2006	Costa Rica	2009	Iraq	2009	Nepal	2009	Sudan	2006
Algeria	2009	Cote d'Ivoire	2009	Ireland	2009	Netherlands	2008	Sweden	2008
Angola	2008	Croatia	2006	Israel	2008	New Zealand	2008	Switzerland	2006
Argentina	2009	Cyprus	2009	Italy	2009	Nicaragua	2009	Syrian Arab Republic	2009
Armenia	2009	Czech Republic	2007	Jamaica	2006	Niger	2009	Tajikistan	2009
Australia	2008	Denmark	2008	Japan	2009	Nigeria	2009	Tanzania	2008
Austria	2008	Djibouti	2009	Jordan	2009	Norway	2008	Thailand	2008
Azerbaijan	2009	Dominican Rep.	2008	Kazakhstan	2009	Palestinian Territories	2009	Macedonia (FYR)	2006
Bahrain	2009	Ecuador	2009	Kenya	2009	Pakistan	2009	Togo	2008
Bangladesh	2009	Egypt	2009	Korea (Republic of)	2009	Panama	2009	Trinidad and Tobago	2008
Belarus	2009	El Salvador	2009	Kyrgyzstan	2009	Paraguay	2009	Tunisia	2009
Belgium	2008	Estonia	2009	Laos	2008	Peru	2009	Turkey	2006
Belize	2007	Ethiopia	2008	Latvia	2009	Philippines	2009	Uganda	2009
Benin	2008	Finland	2008	Lebanon	2009	Poland	2008	Ukraine	2009
Bolivia	2009	France	2009	Liberia	2008	Portugal	2008	United Kingdom	2009
Bosnia and Hz	2006	Georgia	2009	Lithuania	2009	Qatar	2009	United States	2009
Botswana	2008	Germany	2009	Luxembourg	2008	Romania	2009	Uruguay	2009
Brazil	2009	Ghana	2009	Madagascar	2008	Russian Fed.	2009	Uzbekistan	2006
Bulgaria	2006	Greece	2009	Malawi	2009	Rwanda	2009	Venezuela	2009
Burkina Faso	2008	Guatemala	2009	Malaysia	2009	Saudi Arabia	2009	Viet Nam	2009
Burundi	2009	Guinea	2007	Mali	2008	Senegal	2009	Yemen	2009
Cambodia	2009	Guyana	2007	Malta	2008	Serbia	2006	Zambia	2008
Cameroon	2009	Haiti	2008	Mauritania	2009	Sierra Leone	2008	Zimbabwe	2009
Canada	2009	Honduras	2009	Mexico	2009	Singapore	2009	Kosovo	2008
Central African Republic	2007	Hong Kong	2008	Moldova	2009	Slovakia	2006	Puerto Rico	2006
Chad	2008	Hungary	2008	Mongolia	2008	Slovenia	2009	Taiwan	2008
Chile	2009	Iceland	2008	Montenegro	2006	Somalia	2009		
Colombia	2009	India	2008	Morocco	2009	South Africa	2009		

[1]**Date of the survey for the concerning country**

Annex 3. CPI time stability

Table 3. Time comparison of the CPI correlation matrix

		CPI2009	CPI2008	CPI2007	CPI2006
CPI2009	Pearson correlation	1	.998**	.995**	.989**
	Sig. (2- tailed)		.000	.000	.000
	N	195	195	195	166
CPI2008	Pearson correlation		1	.998**	.992**
	Sig. (2- tailed)			.000	.000
	N		195	195	166
CPI2007	Pearson correlation			1	.994**
	Sig. (2- tailed)				.000
	N			195	166
CPI2006	Pearson correlation				1
	Sig. (2- tailed)				
	N				166

**. Correlation is significant at the 0.01 level (2-tailed)