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### PUBLIC CORRUPTION: INSTITUTIONAL FACTORS AND IMPACTS ON PUBLIC SECTOR

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#### ABSTRACT

First of all, it is necessary to characterize the phenomena of corruption, to explain their specificities in relation to other forms of rent seeking and to distinguish between public and private corruption. This research concentrated on only in public corruption, which refers to the delegation of public office and the power attached to it. In brief, it deals with public corruption in the broad sense and a second distinction is major for this work: that which differentiates corruption with theft and corruption without theft. In this research it was analysed the sources and implications of several forms of administrative and legislative corruption. First analyse the impact of corruption on the structure of public spending, which has so far been the subject of only one or two specific sector studies. It shows that corruption favours physical capital expenditures in contrast to human capital expenditures. These results partially challenge other studies of countries in transition - which we are updating - and Libya. Finally, on the basis of results and the literature, it was proposed a critical reading of the budget management reform process in Libya, and we show that the fight against corruption at the budgetary level is hampered in particular by a weak and effective control an insufficient distribution of powers.

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#### Introduction

Placing the fight against corruption at the heart of aid conditionality raises three main issues. 1) How to define corruption? This question poses the problem of identifying a phenomenon that is secret in essence, its different manifestations and its borders. This lighting is necessary to measure its extent, its implications and its rooting. 2) Does corruption constitute a brake on development? While the new anti-poverty strategies and the resulting conditionality's are based on an affirmative answer to this question, a number of studies have contravened the idea that corruption may, in certain contexts,

favour private investment. 3) What are the sources of corruption? The answer to this question makes it possible to guide anti-corruption policies.

Corruption can occur if an agent has a representation charge and benefits personally. Corruption is therefore intrinsically linked to the mechanism of delegation of responsibility and feeds on the asymmetry of information that characterizes it. The first models of (public) corruption are thus model agencies where an official (the agent) uses the power delegated to him by the community (the principal) to derive a private benefit from the sale of goods or services public (licenses, passports, public contracts ...)<sup>1</sup>. In short, the exercise of discretion and the asymmetry of information related to delegation make corruption possible. It can therefore be generally defined as the use of a delegated power for personal benefit.

Corruption is a form of rent seeking. This refers to the appropriation by some agents of situation rents inducing transfers of collective wealth to these agents through manipulation of the rules of economic activity<sup>2</sup>. If this appropriation of wealth results from the misuse of a delegated power, it is corruption. Corrupt and corrupt may both be income seekers: the former may seek annuities by paying bribes, and the resources that the latter misappropriate may amount to a rent.

Corruption in the strict sense refers only to mutually beneficial monetary transactions between a public official and a private agent. It is therefore characterized by two phenomena: reciprocity and monetary exchange. The most frequent case is where the public official gets remuneration from the briber in exchange for the grant of a favour - a benefit that the bribe-taker should not legally, contractually or ethically- not benefit. But many cases of petty corruption seem, at first glance, to escape this reciprocity. A labour inspector may, for example, increase the actual number of employees of a business unless a bribe is paid, even if that is legally permitted. This form of corruption seems to be a simple racket without reciprocity. Yet this is indeed the granting of a favor. The discretionary nature of the power vested in a public official allows him to question the constraint attached to his office: he may not do what he is supposed to do. If the public official thus denies the coercive dimension of the delegation, the accomplishment of his mission may be the subject of an exchange with the user. This form of corruption, which is close to racketeering, is thus also characterized by a form of reciprocity, which is at the heart of corruption in the strict sense.

A second dimension allows us to distinguish corruption in the broad sense and in the strict sense: the monetary exchange. For example, the notion of influence also defines a relationship between two actors but it is characterized by an exchange of favours (gifts, promise of voices ...). Corruption in the strict sense is distinguished by the fact that it involves a form of exchange in money: the briber bribes a public official by paying a bribe. Only influence peddling, a form of lobbying, is tantamount to corruption in the strict sense. Rent seeking becomes bribery in the strict sense with the intervention of a briber who remunerates a public official to deflect his power and override the rules of his office.

### **Libyan Scenario**

Corruption in Libya is believed to be widespread within the public administration, involving low ranking civil servants as well as major officials. The various forms of corruption to be present across the country, including direct and indirect stealing and embezzlement of public money; nepotism and favouritism in employment and performing personal favours for relatives and friends, and money Laundering as a mean to evade the law. Gaddafi's regime never took serious precautionary procedures against the elements of corruption.

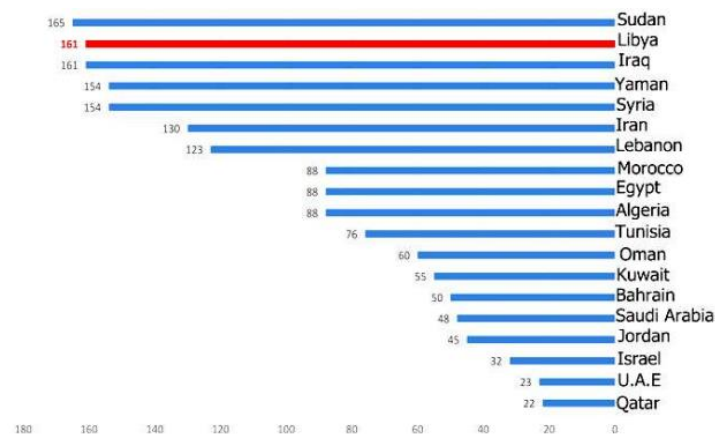
The largely accumulated corruption over the past decades brought Libya to a worsening level. The deteriorated situation in Libya was further aggravated by the administrative chaos that prevailed following the revolution. Libya's rank retreated in corruption indexes reports issued by Transparency International. These reports show significant corruption in the Libyan economy and the government's inability to counter it. The following table shows the evolution of corruption index in Libya between

2007 and 2015<sup>3</sup>. In 2015, Libya ranked 161 among 168 countries. This is a progress compared with the year 2014 when Libya ranked 166. However, in 2014, the Index included fewer countries. Thus, this does not show improvement or increase in the corruption index in Libya. To the contrary, the size of corruption in Libya has been increasing from year to year. In 2014, Libya received 18 of 100 point in the integrity and transparency levels. This level retreated in 2015 when Libya received only 16 points out of 100.

Year	Corruption Perceptions Index (0 - 100)	Rank on the corruption rank	Number of countries that follow Libya
2009	21	160/176	16
2010	22	146/178	32
2011	20	168/183	15
2012	21	160/174	14
2013	16	172/175	3
2014	18	169/175	6
2015	16	161/168	7

(Source: Transparency International's reports, various issues)

The above figure shows scores on the Corruption Perceptions Index by calculating by the arithmetic average of all the standardised values for each country, where (0) shows the highest level of perceived corruption and (100) shows the lowest level of perceived corruption.



Corruption Perceptions Index with States in 2015 Comparing Libya's position on the the Middles East and Northern Africa

(Source: Transparency International's reports, various issues)

### Corruption and distribution of public expenditure

In all countries, and even more so in developing countries like Libya, corruption impedes the ability of the state to act through a number of mechanisms: it reduces the efficiency of spending, induces distortion in its distribution between different budget items and hinders a balanced budget.

Firstly, at the same level and for a given budget item, public spending is less effective in countries with high levels of corruption: corrupt officials will favour investment projects that generate the most bribes and not necessarily the most efficient or the most productive<sup>4</sup>. Corruption mitigates the impact of public spending on education and health on social performance (literacy rate or illiteracy rate, mortality rate or life expectancy) and undermines the quality of services provided<sup>5</sup>. Reducing corruption would lead to significant improvements in infant mortality and primary enrolment rates<sup>6</sup>.

Finally, the budget deficit is likely to widen in a corrupt political context. Corruption reduces state revenues<sup>7</sup>. Its impact on the overall level of public spending is debated. On the one hand, Tanzi and Davoodi (1997) show that corruption inflates public expenditure as a percentage of GDP. On the other hand, Mauro's (1997)<sup>8</sup> analysis reveals that there is no significant effect of corruption on the level of public investment. Corruption thus increases the cost of spending and, for the same level of expenditure, reduces the amount of output provided by the state, as well as the quality of the projects in which the state invests. Alteration of the allocation of public expenditures by corruption is therefore central, not only from an operational point of view - since more and more international loans are conditioned by the budgetary structure of the recipient states - but also scientific point of view. Recent studies on the subject have highlighted the distortions introduced by corruption in the overall amount, and the efficiency of expenditures. But none of them has highlighted the distortion it can introduce into the overall budget structure by looking at all areas of expenditure. However, corruption favours the most rent-generating spending sectors at the expense of other. And the effect on them is uncertain if the corruption tends to increase the overall amount of the budget.

### **Corruption and public spending**

Corruption reduces the state's ability to intervene. When it intervenes in the budget process, it skews public investment decisions in favour of certain sectors or types of expenditure and to the detriment of others. Expenditures that require the award of public contracts are particularly conducive to rent seeking. Corruption at the budgetary level and can influence not only the total amount of public expenditure but also their allocation towards more favourable to corruption sectors.

### **Corruption and public action**

State intervention in the economy has three main functions according to Musgrave (1959)<sup>9</sup>. i) The first (allocation function) is to restore an optimal use of Pareto resources, especially when market failures (imperfect information and competition, limited rationality) lead to a misallocation of resources. ii) The State also has a role of distribution of wealth (distributive or redistributive function) which must make it possible to correct the spontaneous distribution of resources, which requires the definition of a criterion of social justice. (iii) Finally, it seeks to stabilize economic activity and to regulate the economy so as to promote the full use of factors of production and price stability. However, corruption in the public service, by introducing dysfunctions in public decision-making, limits the capacity of the state to fulfil its functions: i) corruption reinforces market failures by introducing preferential bias the allocation of resources; ii) it hampers redistribution mechanisms for the benefit of the actors of corruption; iii) it makes it more difficult to stabilize the economy by strengthening the budget deficit. Since the budget is the government's primary vehicle for action, corruption in the budget process is central to understanding "government failures". Developing countries, where markets are particularly "Defaulters" make public intervention indispensable, and also those with the highest levels of corruption. Among the developing and emerging countries, the least corrupt in the ranking of the World Bank according to the index of control of corruption in 2002, is Chile, which appears only twentieth position on 195 countries. In other words, the 19 least corrupt countries are developed countries.

### **Estimation of the main implications of the model**

In the model presented above, the level of corruption, per capita income and the composition of public investment are endogenous and depend on a set of parameters. Theoretical analysis suggests that these dependency relationships are not the same in the three regimes described above. The different types of steady state identified can be associated with different levels of development. It is more likely that the developed countries are either in the reference regime (with low values of  $v$  and  $\theta$ ), or in the regime with distortion but without corruption (for values of  $v$  higher but  $\theta$  still low). In the latter case, there is no corruption at equilibrium but the public investment is more intense in

expenditures less subject to corruption. We define the ratio  $g / i$  that reports the public investment without corruption to the one that is subject to corruption.

To assess the effect of the possibility of corruption on the composition of public investment, we consider the ratio  $g / i$  to the steady state. Where  $g$  is made up of public spending on education and health and is made up of housing, energy, agriculture, mining, industry and transport (and other economic activities) as a percentage of total public expenditure. Developing countries are more likely to be in the domestic regime (with distortion and corruption), which corresponds to high values of  $v$  and  $\theta$ : then, the level of corruption is high, the structure of investment favours. As a result, the  $g / i$  ratio is low and the growth rate is low.

The theoretical model predicts that the effects of the parameters  $v$  and  $\theta$  on growth and corruption at equilibrium should be lower for developed countries (those in the first two regimes) than for developing countries (those in the first two regimes). Who lie in the inner regime). Another clear prediction is that an improvement in corruption technology ( $v$ ) should lead to an increase in the ratio of  $g / i$  for developed countries in the distorted but non-corrupt regime and a decline in the same ratio for developing countries (in the inner regime).

In this section, we first present the variables corresponding to these parameters and then examine their effects on the three endogenous variables in question. We introduce further interaction terms between the variables  $v$ ,  $\theta$  and the initial richness levels to test the two main predictions presented above.

In the empirical part, we therefore seek to know if a more efficient corruption technology implies a higher level of corruption  $v \times x$  and a lower GDP per capita. We also examine to what extent, in countries where political power  $\theta$  is more concentrated, GDP per capita and the ratio  $g / i$  are lower and the share of corrupt agents in the population higher, as suggested by the coming section. Finally, we estimate the impact of the discount factor, population growth rate, and productivity factors on the three dependent variables.

## Results

### Corruption and breakdown of sectorial expenditure

Corruption in the budget is likely to lead to a distortion of the budget in favor of the most rent-generating sectors. We therefore seek here to estimate the impact of corruption on the share of each sector of expenditure in the total expenditure.

The sample used excludes all countries for which there is at least one missing observation for an area of expenditure. However, those countries that provide partial information or provide none at the IMF's collection of public accounting data are likely to be countries with high levels of corruption with theft. It may be that our analysis does not take into account the most corrupt countries.

If verified, such selection bias would lead to an undervaluation of the distortionary effect of corruption. The effect highlighted below can thus be considered as the minimal distorting effect that corruption can have on the structure of public expenditures.

The results obtained from estimates using the least squares method with instrumentation of corruption and GDP by latitude and explained as follows<sup>10</sup>. First, we estimated the complete model, using as explanatory variables the corruption as well as the control variables. Then, we removed one by one the control variables that were not significantly non-zero at the 10% threshold (from the least significant to the most significant). The specifications selected and presented below are therefore the ones for which the control variables are the most significant. We then introduced indicator variables by area (OECD, Latin America, CEEC, Asia, MENA, and Sub-Saharan Africa) that can influence the budget structure. There were regional specificities important. Similarly, we retained only the dummies that were significant at the 10% level.

**Corruption affects the distribution of expenditure:** for seven sectors out of nine presented above, the coefficient associated with corruption is significant. It is negative for the education and social protection sectors. It is positive for the regressions of expenditure shares devoted to energy, defense, culture, public order and services, as well as to other economic activities, but the coefficient is significant only at the threshold of 10%. High levels of corruption therefore distort the structure of public spending in favor of culture, order and public services, energy, and defense and to the detriment of the social sectors. On the other hand, the coefficient of the degree of corruption is not significant in the case of housing or health.

These results corroborate those obtained by Gupta et al. (2000)<sup>11</sup> on defense expenditures. By controlling the endogeneity bias, they enrich the results of the MCO estimates of Mauro (1997), Mauro (1998) and Gupta et al. (2002) on education and social protection expenditure. On the other hand, they contradict their results on health expenditure by showing that corruption has no significant effect on their share of total expenditure. The positive impact of corruption on energy and fuel expenditures, culture, and public order and services are new results.

Recall that the data used correspond to the expenses incurred in the various sectors: they take into account not only real investments but also misappropriations. Thus, if the share of cultural expenditures increases with the level of corruption, real investment in this sector may decrease and the increase in spending may be due solely to an increase in diversions.

The distortion in the allocation of expenditure induced by corruption is due to the type of markets on which the expenditures in these different sectors are incurred: those of energy and defense are more generators of rents and rents more "generous", commit larger sums of money, thus attract and encourage more bribes. Arms contracts being particularly rare and lucrative, the commissions paid to obtain them are often massive and can reach 5 to 15% of the contract amount. In 1997, the armaments company Giat Industries paid commissions up to 32% of the contract price on public procurement contracts in Indonesia.

In addition, the rules for awarding contracts are probably more opaque in the defense and energy fields than in the social sectors. This reduces the likelihood of "being caught", denounced and punished, and thereby facilitates embezzlement and bribery and makes them more attractive. The case of the Thomson-CSF frigates in Taiwan, that of Elf in Africa and the more recent one of Total in Iran are well-known illustrations of the payment of secret commissions respectively in the sectors of defense, energy and gas, through a system of commissions and retro commissions.

### **Examples of petty corruption in Libya**

Corruption can be practiced by all actors involved in Libya health facilities. It is run mainly in emergencies, then maternity, administrative and financial departments and pharmaceutical depots. It can take the form of rackets from doctors or ambulance workers, misappropriation of drugs for resale. Specifically, during consultations and emergencies, some physicians may require patients to pay for them directly rather than having them pay at the cash desk or require bribes to operate or staff members (nurses, caretakers, stretcher-bearers ...) ask patients for a small amount of money in exchange for which they are passed on to their doctor as a family member. Following a surgical procedure in a public hospital, the patient can be transferred to a private clinic where the doctor also practices, receives minor care and receives payment. For radiological examinations, some nurses claim to lack consumables or that the machine is out of order and present the "solution" to the patient. They can also make the radios out of hours, interpret them and cash the payment. In this case, not only is the cost of the service higher, but the quality of the service rendered is reduced, as the nurses are not competent in this field.

In the same way, some laboratory technicians carry out, for a fee, analyzes outside the hours of service with the equipment of the laboratory. Finally, there are resale practices (often at low prices to traders who sell them in turn) free samples or drugs to be sold (in this case, it is a shortfall for the

national budget), drugs that are stolen from health facilities most often by storekeepers, guards or nurses.

### Education

Firstly, during school recruiting in urban and perturbing areas, parents may initially be "solicited" by the principal or a teacher to obtain the registration of their child in public school (parents will be encouraged to pay the required bribe as long as the amount added to the registration and the bribe does not exceed the amount of the private registration). Parents can also make unofficial payments so that their child is in a single stream class (which has 65 to 67 students) instead of a double stream (which has 90). In the secondary,

There are also legal "supplements" to supplement the institution's under-budget (especially if it is home to student scholars), but the enrollment often exceeds the legal fee and can be up to 150\$. In addition, to enroll a child in school, one can resort to parallel recruitments, which are mostly in the secondary. These are "pirate inscriptions" made by teachers, which come after the complement of manpower. Each of them costs between 200\$ and 250\$ (280 to 350 Libyan Dinar). Children who are registered in this way are in fact "clandestine" status: they may be chased away at any time during a check or, to avoid being fired, be subject to bargaining; they do not have a report card but often do not know anything about this precarious status when they register. Corruption can also take the form of "simulated exclusions": the children who are supposed to repeat are thus excluded at the end of the year in order to solicit the parents' portfolio (the cost of re-enrolment varies between 200 and 250\$). . Some teachers also extort sums of about 100 F CFA per student and quarter on the pretext of buying maintenance equipment. Finally, students can purchase a waiver, a graduation, a graduation, or a successful competition.

### Robustness tests

Since OECD (Organisation for Economic Co-operation and Development) countries are the least exposed to corruption with theft, the most favorable to social protection expenditure and the least favorable to energy and order and public services spending, their presence in the sample may have tend to overestimate the distorting effect of corruption on the pattern of public spending. The introduction of a dummy variable for OECD countries and a controlling variable for the level of GDP per capita should help to isolate this specific effect for OECD countries. However, in order to establish the robustness of our results, we also present the results of the estimation of the same system but remove from the sample the OECD countries. In developing countries, the distortion of the budget composition induced by corruption is not significantly favorable to public order and service expenditures, unlike what has been shown previously for all the countries of the world. Sample. On the other hand, it is favorable to health expenditure. This can be explained by the fact that the health budget covers a larger share of infrastructure and equipment expenditures in developing countries than in developed countries, for which the infrastructure is already larger and devotes more a large part of the health expenditure to pay salaries - post less subject to corruption.

### Corruption and non-sectoral expenditures

The sum of expenditures broken down across all the sectors described above is, for most countries, less than the total expenditure. In other words, the addition of the share of expenditure on education, housing, defence, etc. in total expenditure does not generally reach 100%. It even accounts for less than half of spending in Moldova, Poland, China, Turkey, Sudan and Jamaica.

We explain it first of all only by the extent of corruption. The coefficient associated with the level of corruption is significant at the threshold of 5% and positive: greater corruption would therefore encourage the allocation of expenditure to categories that are difficult to identify in terms of sectors or which escape the binding rules of public accounting. But this effect of the level of corruption is no longer significant as soon as we control for the standard of living of the countries. On the other hand,

the level of GDP negatively and significantly affects the share of non-disaggregated expenditure. In fact, low-income countries have higher levels of corruption than higher-income countries. The positive effect of corruption on the previously unseparated share of expenditures is therefore probably due to the fact that countries with low levels of economic development are more prone to both corruption and measurement errors, and that interdepartmental expenditures represent a share of total expenses. This leads us to reject the hypothesis of a causal relationship between the level of corruption and the share of unallocated expenditures.

### **Corruption, concentration of power and expenditure structure**

We estimate the same model but include an indicator of concentration of political power among the repressors when its coefficient is significant, in order to control for the institutional counterweight to corruption. Economically, the deficit of political rights affects both directly<sup>12</sup> and indirectly<sup>13</sup>- via increased corruption - the budget structure. The existence of this direct effect makes it an inappropriate external instrument for the level of corruption, which is why we introduce it as an explanatory factor for the distortion of the structure of public expenditure. Taking this range of political rights variable into account can reduce, but not eliminate, the omitted variables bias due to the non-observance of certain factors correlated with both corruption and the pattern of public spending. For example, unobservable government characteristics may favor both corruption and prestige spending<sup>37</sup>. Moreover, the measurement errors that the political rights indicator suffers as well as the simultaneity bias that taints its relationship with the composition of public expenditure make its instrumentation necessary. For this we use the same instrument as for corruption and GDP: absolute latitude.

### **Effect of corruption on the share of public expenditure in GDP**

In the previous section, we empirically show in what sense corruption alters the allocation of the budget (distribution effect). High levels of corruption lead to more favorable spending allocations to defense, energy, culture, public order and services, and other economic activities. Conversely, corruption reduces the share of the budget devoted to education and social protection. But, while corruption tends to inflate all public spending (effect level), these two combined effects of corruption will make uncertain its overall effect on the amount of social spending. We therefore seek in this section to highlight the impact of corruption first of all on the total amount of public expenditure, then on the amount of each sectoral expenditure, beyond its effect on the distribution of these expenses.

### **Amount of total expenditure: effect level**

We first estimate the impact of the level of corruption and a number of control variables on total government expenditure as a percentage of GDP. The first hypothesis that we seek to test is that widespread public corruption contributes to artificially increasing the total amount of expenditure, since both actual expenditure and misappropriated expenditure are accounted for.

Only Mauro (1997) attempted to provide empirical proof of this hypothesis. Its results show that corruption would not have a significant effect on total expenditures. However, the coefficients obtained from ordinary least squares estimates are biased in the presence of endogeneity. We therefore present the results of estimates obtained using the double least squares method. Corruption and GDP are instrumented by the latitude in absolute value.

Table 1 presents the results of estimates of the impact of corruption on the share of total public expenditure in GDP. Only the explanatory variables whose coefficient is significant at the 10% level are included in the regressions, with the exception of the constant PPP GDP per inhabitant which makes it possible to control for the level of economic development. In particular, dummies by year are not significant.



Tab. 1 - Corruption and amount of public expenditure

<i>Dependent variable</i>	<i>Share of public expenditure in GDP</i>	
<i>Corruption</i>	4.33 (17.46)	0.70 (1.43)
<i>GDP.10<sup>-3</sup></i>	0.46 (2.21)	
<i>Impots</i>	0.94 <sup>a</sup> (0.23)	0.90 <sup>a</sup> (0.08)
<i>Depdce.10<sup>1</sup></i>	1.71 <sup>b</sup> (0.66)	1.61 <sup>a</sup> (0.47)
<i>PopUrb.10<sup>-1</sup></i>	0.60 (1.10)	0.81 <sup>b</sup> (0.35)
<i>R<sup>2</sup></i>	0.67	0.69
<i>Observations</i>	133	133

Notes: standard deviations in parentheses: *a* indicates significant coefficients at 1%, *b* at 5% and *c* at 10%.

The coefficients associated with the extent of corruption are not significant in either of the two regressions. High levels of corruption do not lead to a significant increase in the share of public spending in GDP. We thus find the results of Mauro (1997) and we invalidate the hypothesis of a swelling of the overall budget, related to the inclusion in the budget of misappropriations, which could be explained by corruption with theft.

#### Share of sectoral expenditure in GDP: overall effect

In order to allow qualitative comparisons with the analysis of the effect of corruption on the sectoral distribution of expenditure, we keep specifications identical to those in table 2 reports estimates of regressions where corruption and GDP are instrumented by latitude. This econometric analysis shows that corruption increases the amount of spending on public services, energy and defense and reduces the amount of education and social protection expenditure. Thus, the impact of corruption on the amount of different sectors of expenditure (as a percentage of GDP) is similar to its impact on the budget structure. The difference with previous results is that shares of culture and other economic activities are no longer significantly affected by the level of corruption, while their share in the budget is.

Finally, corruption does not seem to influence either the share or the amount of spending in the areas of health and housing. The sectors most favorable to corruption - with or without theft - are not only allocated a percentage but also a higher level of expenditure as the level of corruption is high. In contrast, the social sectors, less exposed to political corruption, see their amount decrease to offset, on the one hand, the additional budgetary cost of diversions in other sectors, on the other hand, the breakdown of resources to these sectors. Sectors generating more bribes.

Thus, rather than the overall amount of the budget, corruption - which includes not only misappropriation of public funds (corruption with theft) but also preferential treatment, monetary interest and other private benefits related in particular to the award of public contracts ( corruption without theft) - affects its composition through the swelling of some types of expense and the amputation of others.

Table 2 - Corruption and share of sectoral expenditure in GDP

Dependent variable	Share of expenditure of different sectors in total public expenditure								
	Education	Social protection	Health	Housing	Other economic activities	Culture	Order and public services	Energy and fuel	Defense
Model	1	2	3	4	5	6	7	8	9
<i>Corruption</i>	-3.93 <sup>a</sup> (0.62)	-6.96 <sup>a</sup> (1.21)	0.28 (0.42)	-0.34 (0.26)	0.23 (0.25)	0.06 (0.04)	0.65 <sup>a</sup> (0.22)	0.41 <sup>a</sup> (0.15)	0.94 <sup>b</sup> (0.39)
<i>GDP.10<sup>-3</sup></i>	-0.23 <sup>a</sup> (0.08)	-0.71 <sup>a</sup> (0.18)	0.12 <sup>a</sup> (0.04)	0.06 <sup>c</sup> (0.03)	-0.12 (0.11)			0.04 <sup>b</sup> (0.02)	0.07 (0.05)
<i>Popo<sub>-14</sub>.10<sup>-1</sup></i>	1.43 <sup>a</sup> (0.24)			0.31 <sup>a</sup> (0.10)					
<i>PopUrb.10<sup>-1</sup></i>		0.54 <sup>a</sup> (0.20)				0.05 <sup>a</sup> (0.01)			
<i>CotSoc</i>		0.20 <sup>a</sup> (0.03)							
<i>Impots.10<sup>-1</sup></i>			1.22 <sup>a</sup> (0.14)				0.25 (0.21)		
<i>Dette.10<sup>-2</sup></i>			-0.53 <sup>b</sup> (0.27)			-0.09 (0.06)		-0.28 <sup>a</sup> (0.11)	
<i>Militaires</i>									0.82 <sup>a</sup> (0.06)
<i>OCDE</i>	-2.96 <sup>a</sup> (0.78)	1.74 (1.62)		-1.77 <sup>a</sup> (0.32)					
<i>Am. Latine</i>	0.89 <sup>c</sup> (0.50)					-0.28 <sup>a</sup> (0.08)			
<i>PECO</i>		2.14 <sup>a</sup> (0.82)				0.18 <sup>a</sup> (0.06)			-0.86 <sup>a</sup> (0.24)
<i>Asie</i>				0.50 <sup>a</sup> (0.17)	0.28 (0.53)		-1.53 <sup>a</sup> (0.48)		0.20 (0.33)
<i>MENA</i>							1.73 <sup>a</sup> (0.46)	0.74 <sup>a</sup> (0.12)	
<i>Afrique subs.</i>							2.00 <sup>a</sup> (0.52)		
<i>R<sup>2</sup></i>	0.13	0.57	0.66	0.14	0.14	0.29	0.28	0.25	0.62
Observations	133								

Notes: Standard deviations are in parentheses. *a*, *b* and *c* indicate that if the null hypothesis is true, the probability of obtaining a value at least as large as the value obtained is less than or equal to 0.01, 0.05 and 0.10, respectively. For simplicity, the coefficients marked *a*, *b* and *c* are significant respectively at the threshold of 1%, 5% or 10%

## Conclusion

This paper contributes to the existing literature by showing, from data on 63 countries between 1996 and 2000, that corruption alters the share of different spending sectors in GDP. This involves two distinct mechanisms: an effect of corruption on the overall level of public spending and an effect on the distribution of these expenditures in the budget. We show here that the effect level is not significant and that only the distribution effect is: the extent of the corruption does not affect the amount of the budget but its sectoral composition. First, corruption affects the sectoral distribution of public spending. Our study differs from previous work on similar issues by examining for the first time the distribution of expenditure allocated to the different budget sectors. Our analysis shows that high levels of corruption are associated with an allocation of spending that is favorable to the energy, defence, public order and services sectors, culture and, to a lesser extent, the economy. "Other economic activities" sector and unfavourable to the social sectors - education and social protection. On the other hand, we show that, when controlling for the standard of living of countries, corruption does not significantly influence the share of expenditure not allocated to a particular sector.

Second, we investigate whether corruption also affects the amount of sectoral expenditure in GDP. Our results imply that corruption does not induce significant variation in the total budget. As a result, the effect of corruption the amount of sectoral expenditure is similar to its effect on their share in the budget. Thus, high levels of corruption lead to a reduction in the share of social spending in GDP and an increase in spending on defense, order and utilities and energy.

Recall however that despite the efforts made to control for many factors explaining the structure of public investment and to propose a method of estimation with instrumentation, the bias of omitted variables which is likely to suffer this econometric study invites to consider carefully the causal relationship between corruption and budget structure. It is possible that these two phenomena are

affected by a third which is unobservable and cannot be taken into account in the estimation. Expenditure allocated to certain sectors in particular is the place of misappropriation or allow public decision-makers to get bribes. Given that other sectors are being cut for the benefit of the first, more rent-generating, upstream of the public expenditure process in spending decisions by sector, corruption has no significant effect on the economy. The overall amount of the budget but tends to change the sectoral structure. The prospect of diversions or pots-divin thus leads public decision-makers to redistribute expenditures to the sectors most exposed to corruption. Corruption is likely to increase the share of public spending allocated to a rent-generating sector through two main mechanisms:

1. When deciding on the allocation of expenses, agents wishing to receive bribes will seek to favor the most profitable sectors from this point of view;
2. When executing public projects incurring expenses and assuming that this project involves the payment of bribes or embezzlement, expenses will increase if the amount of "commission" or misappropriation is taken into account in calculating the cost of the project.

This paper therefore highlights the positive impact of corruption on the share of defense, energy, services and public order expenditures in both the budget and the GDP, and its negative impact on the share of expenditure, health, education and social protection. This confirms the hypothesis that the sectors better endowed in cases of high corruption are the sectors with high capital expenditure, the most generators of rent and where public officials have the greatest margins of manoeuvring.

However, while corruption increases the share of energy, defense and public utilities spending in GDP, our study does not support a conclusion on the amount of real investment in these sectors, some of which is diverted. However, the distinction between corruption with theft (diversions) and corruption without theft (bribes in monetary form, in the form of assets ...) allows us to think that real investment increases even more in these sectors than corruption is without theft rather than embezzlement. Public expenditure is a key instrument of State action, particularly for development, and in particular for human development, through social spending. This paper therefore suggests that the fight against corruption should be one of the main objectives of developing countries, even more so in countries with low human development, which suffer the most from the distortion of public spending due to corruption. This study therefore also invites the corrupt countries to reallocate their defense, law and order and public services and energy budgets to the education and social protection sectors in order to counterbalance distortions of corruption. These results can be particularly useful in debates on the allocation of sectoral assistance. Finally, although this paper discusses the effect of the extent of political rights on the distribution of expenditures alongside that of corruption, it does not take into account its effect on the level of corruption itself. However, as the typologies of Varoudakis (1996)<sup>14</sup> and Coolidge and Rose-Ackerman (1997)<sup>15</sup> suggest, the extent of corruption in a country is undeniably linked to its political system.

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