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Between Two Evils
– Investors Prefer Grand Corruption!

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Abstract

Recent empirical studies claim that, in addition to levels of corruption, investors are deterred by its unpredictability. I claim instead that it is petty corruption that deters investors. I employ seven subcomponents of corruption for a sample of 102 countries that appear in the 2003 Global Competitiveness Report of the WEF. The second principal component of this data depicts a grand, political type, embracing corruption in government policymaking and in judicial decisions as opposed to corruption in public utilities and loan applications. Grand corruption less deters investors because they might feel belonging to an inner circle of insiders that can profit from hidden arrangements. Grand corruption also entails relatively smaller organizational effort.

JEL-Classification: C21, F21, 017, K42
Keywords: Grand Corruption, Petty Corruption, Extortion, Predictability, Opportunism, Public Utilities, Laws and Policies, Judiciary

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1. Introduction

When I talked to representatives of the German industry some years ago, they proudly mentioned how corruption functioned in Indonesia under Suharto. German investors would just go "top down", involving a high ranking Suharto crony and being safe thereafter from any type of corrupt requests. As opposed to this, corruption in other countries is arduous and time consuming. It is this difference that this paper is about. While the data on FDI confirms the arguments of the representatives, theoretical reasoning suggests that we need not be sympathetic to the investor's calculus.

The adverse impact of corruption, defined as the misuse of public power for private benefit, is empirically well established. There exists strong empirical support for the adverse impact of corruption on the ratio of investment to GDP, [Mauro 1995 and 1997, Campos, Lien and Pradhan 1999, Brunetti, Kisunko and Weder 1997: 23 and 25; Brunetti and Weder 1998; Gymiah-Brempong 2002]. There is equally strong support for corruption lowering the growth of GDP, [Mauro 1997; Tanzi and Davoodi 2001; Leite and Weidmann 1999: 24; Poirson 1998: 16; Pellegrini and Gerlagh 2004; Méon and Sekkat 2003; Gymiah-Brempong 2002]. In some studies this relationship becomes insignificant once controlling for investment, suggesting that corruption largely impedes growth by lowering capital accumulation, [Mauro 1995; Mo 2001]. Other studies revealed a significant adverse impact of corruption on productivity [Lambsdorff 2003a], on government services and health care, [Gupta, Davoodi and Tiongson 2001] on the composition of government expenditures, [Mauro 1998 and 1997; Gupta, Davoodi and Alonso-Terme 2002; Gupta, de Mello and Sharan 2000] and on tax revenues [Friedman, Johnson, Kaufmann and Zoido-Lobaton 2000; Tanzi and Davoodi 2001].

The adverse impact of corruption on foreign direct investments is equally well established. One insignificant finding is reported by Alesina and Weder [1999], however, the authors make use of a variable by ICRG that does not determine levels of corruption but the political instability due to corruption. This variable, however, depends not only on levels of corruption but also on the population's intolerance towards corruption. The insignificant finding should thus not be overrated.[2] Other investigations are clearly supportive to corruption lowering FDI, [Wei 2000b, Smarzynska and Wei 2000; Wei 2000c; Wei and Wu 2001; Habib and Zurawicki 2001; 2002]. Lambsdorff [2003b] shows that overall capital inflows of a country deteriorate with corruption.

However, the extent to which different types of corruption may exert different impacts has hardly been addressed up to now. Corruption embraces a variety of different activities such as the embezzlement of public funds in public utilities, the extortion of speed money in exchange for lowering tax assessments, commissions to parliamentarians in exchange for favorable legislation and bribery in exchange for public contracts. Each of these actions is likely to exert different consequences.

The only difference in types of corruption that has been the subject of research lately relates to predictability and opportunism. The World Bank [1997: 34] argued: "There are two kinds of corruption. The first is one where you pay the regular price and you get

[2] Alesina and Weder (1999) also briefly state estimates using different data on corruption. Due to the brevity it is difficult to judge on the findings. The data on corruption are more recent while the FDI-data refer to 1970-1995, which may have introduced a downward bias to the results.

what you want. The second is one where you pay what you have agreed to pay and you go home and lie awake every night worrying whether you will get it or if somebody is going to blackmail you instead." This idea was picked up in a survey by the World Bank and the University of Basel. In addition to an overall level of corruption also its predictability and the absence of opportunism was determined. This embraced, first, whether the costs of corruption are known in advance and, second, whether after making the payment the service is delivered as promised instead of office holder opportunistically forgetting their promises. The resulting impact of these variables on the ratio of investment to GDP was investigated by the World Bank [1997]. In a sample of 39 industrial and developing countries, it was concluded that for a given level of corruption, countries with more predictable and less opportunistic corruption have higher investment rates. This approach has been extended and corroborated by Campos, Lien and Pradhan [1999]. The authors conclude that the nature of corruption is also crucial to its economic effects. Lambsdorff [2003b: 237] confirms that opportunism, alongside with levels of corruption, reduces a country's annual capital inflows.

But, besides predictability, corruption differs in many further respects. This study argues that it is rather the petty type of corruption that deters investors. This is investigated by focusing on the impact of corruption on foreign direct investments (FDI). I will employ the data on corruption by the World Economic Forum, which provides a more detailed assessment of corruption among various government functions. Section 2 provides theoretical reasoning for an impact of the level and type of corruption on FDI. Section 3 explains the data. Section 4 investigates empirically, how different types of corruption impact on FDI. Corruption in public utilities is found to have the largest deterrent affect on FDI, while corruption in government programs least deters FDI. The data is further investigated with the help of principal component analysis. Section 5 reveals that the second component is related to grand corruption. Section 6 employs the detected components in regressions on FDI. I confirm the significance of the first component and show that also the second component has a significant impact on FDI. This can be related to the increased organizational efforts required for petty corruption in public utilities and loan application, which, I argue, are more likely areas for extortion. In contrast to this, investors may consider engagement in grand corruption as a voluntary decision where they are part of the negotiations. They exert much better control over the outcome, and may even profit personally by defrauding their own firms. Section 7 proposes policy reform based on the findings and concludes.

2. Why is corruption deterring foreign investors?

There are convincing reasons as to why international investors are deterred by corruption. Corruption has been shown to promulgate cumbersome regulation, inducing public office holders to create artificial bottlenecks. Internationals investors are adversely affected due to increasing red tape. For example, market entry has been shown to deteriorate with high levels of corruption, suggesting that FDI are reduced, [Djankov et al. 2000: 40 and 47].

Akin to a standard adverse selection problem, corruption also induces the selection of the wrong firms, that is, those who are more willing to offer bribes and more skilled in arranging hidden payments. International investors would be would be cautious in their entry decisions because their advantages in "know-how" are offset by their ignorance with respect to "know-who". Corruption requires trusted relationships that guarantee the enforcement of the corrupt agreement, [Lambsdorff 2002a]. The necessary trust is more

likely to develop at the local level. Another distortion arises when bribers request bureaucrats and politicians to harass their competitors, [Bardhan 1997: 1322]. Local firms are likely to have an edge over their international competitors in arranging such impediments. Due to this local capture FDI flows would be distorted towards the home market in case of high levels of corruption. Gross FDI inflows would suffer from corruption by deterring international investors.[3]

Another problem faced by international investors relates to the security of their property. This type of security would suffer under kleptocratic rulers. Such a corrupt ruler will not be able to credibly commit himself to policies, [*Stiglitz* 1998: 8-11; *DeLong and Shleifer* 1993; *Rose-Ackerman* 1999: 118; *Grossman and Noh* 1994; *Charap and Harm* 2000]. Once investments are sunk they become vulnerable to extortion because kleptocrats are not motivated to honor their commitments, nor are they sufficiently constrained to do so, [*Ades and Di Tella* 1997: 1026; *Mauro* 1995]. Governments with a reputation for corruption find it difficult to commit to effective policies and to convince investors of their achievements. Corruption therefore deters investors because it goes along with a lacking respect for law, Lambsdorff [2003b].[4]

But the aforementioned arguments relate to corruption in a broad perspective. It remains to be explored, which type of corruption might deter investors the most. Corruption embraces a variety of different government functions, all of which may be of different relevance in the eyes of an international investor. While the issue of predictability has been investigated up to now, in practice corruption can relate to various different government functions. Data on corruption in different government functions is available for 1) export and import permits, 2) getting connected to public utilities (e.g., telephone or electricity), 3) annual tax payments, 4) public contracts, 5) loan applications, 6) influencing laws and policies, regulations, or decrees to favor selected business interests or 7) getting favorable judicial decisions. While this list may not be exhaustive, it captures and groups the most important areas where the government interacts with the business sector. I consider these government functions to differ in two major respects.

Organizational ease. Corruption can be either petty or grand. Petty corruption is the everyday, street-level type of corruption that involves small payments, speed money and tips to people low in the hierarchy. These payments are particularly time consuming, thus imposing additional costs to investors. For example, Kaufmann and Wei [1999] prove that high levels of corruption are positively associated with the time managers waste with bureaucrats. This issue appears particularly relevant for petty corruption.[5] Petty corruption can also involve extortion. Public office holders may charge a fee in addition to the official amount. They may threaten harassment or delays until this payment is made. This type of corruption clearly differs from bribery, which relates to deliberate cooperation. The cooperative type of corruption places third parties at a disadvantage while pleasing those who are directly involved. A country's reputation for

[3] Net FDI inflows may be less affected by corruption because local investors would seize local (corrupt) opportunities rather than invest abroad.

[4] In Lambsdorff [2003b] an index of law and order obtains the expected impact on a country's capital inflows. In this paper, the impact of law and order on FDI has been tested but found to be insignificant. The results are not reported.

[5] Petty corruption might be more frequent and due to repetitive exchange the actors are provided with an instrument for avoiding opportunism, [Pechlivanos 2004]. But grand corruption allows for more sophisticated designs of the corrupt exchange. E.g., politicians are engaged in a multitude of different activities, commercial or non-commercial. They can be compensated by deepening commercial exchange or by supporting their non-commercial interests. Such long-term engagement would disallow them to renege on the terms of an agreement, making opportunism less likely, [Lambsdorff and Teksoz 2004].

extortion is likely to deter investors, because this type of corruption would be beyond the immediate control and voluntary engagement, requiring further organizational safeguards and calculations. A country's reputation for collusion might be lesser of a deterrent for international investors, because it signals to them that their freedom of choice would be honored.

The organizational ease differs from predictability, which has formerly been regarded a crucial aspect of corruption. Frequent payments for licenses might be well predictable but still require immense efforts among investors. On the other hand, the precise benefit of informal relations to high ranking politicians might be unpredictable but still satisfy investors. In this perspective I consider organizational ease to be more important as compared to aspects of predictability.

Opportunities for fraud. Investors sometimes observe possibilities to misuse the secrecy surrounding corrupt deals to increase their own income, defrauding their firm or their shareholders. In this spirit, Alesina and Weder [1999] argue that corruption may also attract FDI once investors belong to the inner circle of those profiting from bribery. While recognizing this impact, I contend that it is not strong enough to outbalance the negative overall effect of corruption on FDI, which is empirically well established. Still, it may be certain types of corruption that are particularly attractive to such fraudulent investors. Those deciding on investment will consider differences between grand and petty corruption. They will be directly involved in arranging deals of grand corruption. But the petty corruption that takes place will be beyond their immediate control and is likely to be delegated to local staff, making it unattractive to fraudsters. Winston [1979: 840-1] and Shleifer and Vishny [1993] argue that the risk associated with corruption increases with the number of transactions, the number of people involved, the duration of the transaction and the simplicity and standardization of the procedure. Because the risk does not clearly increase with the value of a transaction, large, one-shot purchases create a more efficient base for a kickback. Winston argues that public servants therefore bias their decision in favor of capital intensive, technologically sophisticated and custom-built products and technologies. The same can be said about fraudulent investors. Grand corruption, particularly in public contracts as well as in laws and policies, appears to provide a good base for such fraudulent behavior.

Corruption in public utilities and loan applications often involves extortion because there is a clear official service that is requested. Payments to office holders tend to be made in order to avoid harassment and delay, in rare cases to avoid the official fee. Although there are exceptions, petty corruption requires time consuming negotiations over prices, frequent confrontation with requests and additional organizational requirements.

Public contracts are less likely to involve extortion. This is rather a government function where private firms are free to decide by themselves whether to pay bribes or not. Corruption in public utilities often happens after investors have sunk their costs, whereas corruption in public contracts arises during the process of tender, in other words, before investors have committed their resources. At the same time, corruption in public contracts, laws and policies and judicial decisions tends to be rather grand. Those deciding on laws, policies and public contracts tend to be higher in hierarchy. Investors would be directly involved in negotiating the bribe and may observe the opportunity to pocket part of the payment for themselves.

In sum, two types of corruption must be distinguished: A petty type of corruption which is arduous to organize, embracing corruption in public utilities and loan applications. The second sort of corruption is a rather grand, political type, embracing corruption in government policymaking and in judicial decisions. This second type is easier to organize and offers opportunities for fraudulent investors.

3. Description of the Data

The dependent variable for this study is the gross FDI inflows as a percentage of GDP for the period 1995 to 2003. The annual dollar value of FDI are from the IFM International Financial Statistics, code 78BEDZF, each divided by the 2000 GDP in international US dollars (determined on ppp-Basis) from the World Development Indicators. I delete Luxembourg from the sample of countries because FDI data relate partly to the total of Europe, rather than to Luxembourg itself. Theoretically only positive values are possible for such gross data. However, if FDI already calculated in previous periods are withdrawn, in rare cases negative numbers can arise. The data on FDI are best dealt with in logarithmic form. Due to a few values that are close or below zero, I add the constant value 0.01 percent of GDP prior to taking the logarithm.

The detailed data on subcomponents of corruption relating to 102 countries comes from the World Economic Forum's (WEF) Global Competitiveness Report 2003/04.These variables are constructed as the average response (mostly more than 50) from survey questions asking the respondents the following questions:

1. In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with **export and import** permits? (1 = common, 7 = never occurs)
2. In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes when getting connected to **public utilities** (eg, telephone or electricity)? (1 = common, 7 = never occurs)
3. In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with annual **tax payments**? (1 = common, 7 = never occurs)
4. In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with **public contracts** (investment projects)? (1 = common, 7 = never occurs)
5. In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with **loan applications**? (1 = common, 7 = never occurs)
6. In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with influencing **laws and policies**, regulations, or decrees to favor selected business interests? (1 = common, 7 = never occurs)
7. In your industry, how commonly would you estimate that firms make undocumented extra payments or bribes connected with getting favorable **judicial decisions**? (1 = common, 7 = never occurs)

Further data from the same survey has been used to assess the absence of **Legal Political Donations** (WEF 2003; "To what extent do legal contributions to political parties have a direct influence on specific public policy outcomes? 1 = very close link between donations and policy, 7 = little direct influence on policy"), **Public Trust in Politicians** (WEF 2003 "Public trust in the financial honesty of politicians is 1 = very

low, 7 = very high") and the extent of **bureaucratic red tape** (WEF 2003 "How much time does your firm's senior management spend dealing/negotiating with government officials (as a percentage of work time)? 1 = 0%, 2 = 1–10%, 3 = 11–20%, 8 = 81–100%").

Further explanatory variables are **openness** (the sum of imports and exports of goods and services relative to GDP; data from the World Development Indicators, average data 1996-2002), **Population** (data refer to 2001 and are from the World Development Indicators), **export of fuels** relative to merchandise exports (World Development Indicators, average 1994-2003), **growth of GDP** (World Development Indicators, average 1990-1995), the **share of Protestants** (La Porta et al. 1999 and CIA factbook – where the latter provided only qualitative descriptions a quantitative estimate has been provided by the author) and **distance to global investors** (the sum of the distance to Chicago and that to Frankfurt. Data on latitude and longitude is from the CIA factbook and the distances determined according to spherical trigonometry).

4. Simple regression and Principal Component Analysis

Table 1. Ordinary Least Squares, [a)]
Dependent Variable: Average Annual Gross FDI inflows relative to GDP, logged, 1995-2003

Independent Variables	1.	2.	3.	4.	5.	6.	7
Constant	-0.689	0.310	-0.190	-0.701	-0.817	-1.096	-1.032
	(-0.8)	(0.4)	(-0.2)	(-0.8)	(-0.9)	(-1.3)	(-1.2)
GDP per head, log.	0.175	-0.104	0.069	0.251	0.128	0.314	0.346
	(1.4)	(-0.7)	(0.5)	(2.0)	(0.9)	(2.7)	(2.9)
Absence of Corruption, Export and Import	0.374						
	(3.6)						
Absence of Corruption, Public Utilities		0.635					
		(5.2)					
Absence of Corruption, Tax Payments			0.453				
			(4.0)				
Absence of Corruption, Public Contracts				0.281			
				(2.9)			
Absence of Corruption, Loan Applications					0.467		
					(3.7)		
Absence of Corruption, Laws and Policies						0.227	
						(2.3)	
Absence of Corruption, Judicial Decisions							0.134
							(1.6)
Obs.	95	95	95	95	95	95	95
R^2	0.32	0.39	0.35	0.29	0.33	0.28	0.26
Adj. R^2	0.30	0.38	0.33	0.28	0.31	0.26	0.24
Jarque-Bera[b)]	0.4	3.8	0.9	0.4	1.1	0.4	0.1

a) White corrected *t*-statistics are in parenthesis.
b) The Jarque-Bera measures whether a series is normally distributed by considering its skewness and kurtosis. The assumption of a normal distribution can be clearly rejected for levels above 6

Table 1 reports the results of the regressions to establish the simple link between corruption and FDI. The cross-section regressions model is specified in the following way:

$$\ln\left(FDI_i/GDP_i\right) = \beta_0 + \beta_1 Absence\_corruption_i + \beta_2 X_i + \varepsilon_i ,$$

where i is the country subscript. *X* is a vector of all the control variables other than corruption, β_2 is a vector of the corresponding coefficients and ε is a random error term. GDP per capita aims to capture the effect of decreasing returns to scale that induces rich countries to transfer capital to poor countries. I start with a simple specification where further explanatory variables are disregarded.

As shown in table 1, absence of corruption in public utilities has the strongest positive impact on FDI. In contrast, absence of corruption in law and policies and in judicial decisions is considerably lower. This is supportive to the theoretical arguments. Considering all data on corruption simultaneously would not be possible due to severe problems with multicollinearity. But we can determine an index on grand-predictable corruption by applying principal component analysis to the seven indicators. The results are in table 2.

Table 2: Total Variance Explained, Data on Corruption by the WEF 2003

Component	Initial Eigenvalues		
	Total	% of Variance	Cumulative %
1	6,333	90,464	90,464
2	0,325	4,640	95,105

The second component has an Eigenvalue clearly below the Kaiser criterion of 1. It might thus be suspected to represent merely noise. However, such a conclusion is inappropriate. First, the overall perceived level of corruption naturally dominates the results because all questions are similarly phrased. Had questions been asked for differences in types of corruption, the second component is likely to have obtained a higher Eigenvalue.[6] Second, the second factor derived here is obtained almost equally when processing the 2002 or the 2004 data by the WEF. This underscores the robustness of the findings. The coefficients for the two components are provided in table 3. They reveal that corruption in public contracts, government policymaking and judicial decision share the same sign for component 2. On the other hand, corruption in exports and imports, public utilities, tax payments and loan applications has a positive sign. The strongest difference exists between corruption in government policymaking as opposed to corruption in public utilities.

Table 3: Coefficient Matrix, Data on Corruption by the WEF 2003 Extraction method: Principal Component Analysis.

	Component	
	1	2
Absence of Corruption, Export and Import	,972	,059
Absence of Corruption, Public Utilities	,930	,306
Absence of Corruption, Tax Payments	,965	,100
Absence of Corruption, Public Contracts	,958	-,146
Absence of Corruption, Loan Applications	,947	,223
Absence of Corruption, Laws and Policies	,950	-,273
Absence of Corruption, Judicial Decisions	,935	-,269

[6] In this respect the Kaiser criterion is not invariant to matrix operations, such as substituting corruption in public utilities by the difference of this type of corruption to that in government programs.

Component 1 depicts the overall absence of corruption. Component 2 is orthogonal to the first component and relates to the particular type of corruption. High values of component 2 indicate the prevalence of corruption in laws and policies, in judicial decisions and public contracts. These tend to be grand forms of corruption, requiring less organizational hazards and inducements for investors to defraud their own firm. Low values of component 2 indicate the prevalence of corruption in public utilities and loan applications (and to a lower extent in taxes as well as in export and import). This relates to petty corruption that involves additional organizational efforts.

5. Interpreting Components

As shown in table 4, the businesspeople surveyed by the World Economic Forum perceive South America, Central America and the Caribbean and Eastern Europe including countries of the Former Soviet Union to be affected by grand corruption. In particular, this embraces Argentina, Bolivia, Ecuador, El Salvador, Guatemala, Nicaragua, Peru, Philippines, Slovak Republic and Venezuela. On the other hand, Africa is characterized by petty corruption. The countries with the lowest values for component 2 are Bangladesh, Cameroon, Egypt, Gambia, Ghana, Morocco, Tunisia and Zambia.

Regressions 3-5 support my interpretation that component 2 is a grand type of corruption. Additional data from the WEF survey data are used in regression 3 to reveal that component 2 decreases with public trust in politicians, with the absence of legal political donations in exchange for public decisions and with the extent of bureaucratic red tape. All three variables relate to petty rather than grand corruption, because grand corruption would go along with legal political donations, involve little trust in politicians and has little to do with bureaucratic red tape.

Regression 4 and 5 check these findings by using alternative data on types of corruption. The above mentioned survey data on opportunism in corrupt deals by the World Bank and the University of Basel obtains a negative impact on component 2. This suggests that grand corruption is more predictable. However, as I will show in subsequent regressions, component 2 has a stronger impact on FDI as compared to the data on opportunism.

Gallup International incorporated questions on corruption commissioned by Transparency International in its 2004 survey “Voice of the People”, an annual poll of the general public in 54 countries. One question was: “Question1.7: In your opinion, how would you describe the following problem facing your country: Grand or political corruption that is corruption at the highest levels of society, by leading political elites, major companies, etc?” Also petty corruption was asked for: “Petty or administrative corruption that is corruption in ordinary people s daily lives, such as bribes paid for licenses, traffic violations, etc?” From this data I determine the difference as a measure of the prevalence of grand over petty forms of corruption. This assessment must be taken with some skepticism. With the caveat that the public may not be well informed about grand corruption; responses might be biased by the freedom of the media in reporting on grand corruption, this variable might still be regarded as a valid proxy. As shown in table 4, this index obtains the expected sign. Although it fails to reach conventional levels of significance – somewhat due to the small sample – the coefficient is still supportive to my interpretation.

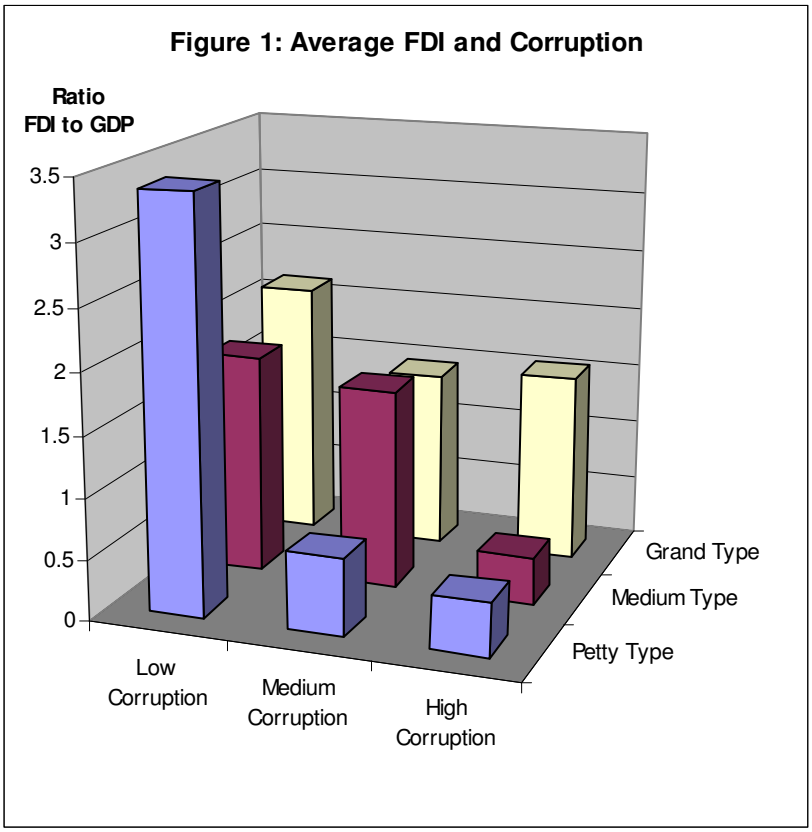
Table 4. OLS, [a] Dependent Variable: Component 2: Grand Type of Corruption					
Independent Variables	1.	2.	3.	4.	5.
Constant	0.36	0.30	1.208	0.15	1.24
	(10.1)	(0.9)	(2.6)	(-0.5)	(1.7)
GDP per head, log.		-0.006	0.041	0.105	-0.017
		(0.2)	(1.3)	(2.8)	(-0.2)
Dummy variable,	-0.19	-0.18	-0.146		
Africa	(-3.1)	(-1.8)	(-1.7)		
Dummy variable,	0.27	0.30	0.105		
Eastern Europe and	(3.4)	(3.3)			
Former Soviet Union			(1.3)		
Dummy variable,	0.69	0.70	0.439		
South America	(6.0)	(5.6)	(3.6)		
Dummy variable,	0.44	0.45	0.196		
Central America and	(3.9)	(3.6)			
Caribbean			(1.6)		
Dummy variable,	-0.07	-0.07	-0.050		
Asia	(-0.6)	(-0.7)	(-0.7)		
Opportunism in corrupt				-0.18	-0.20
deals				(-2.8)	(-2.5)
Grand – petty					0.65
corruption					(1.5)
Absence of Legal			-0.101		
Political Donations,					
WEF 2003			(-2.2)		
Public Trust in			-0.076		
Politicians, WEF 2003			(-2.3)		
Bureaucratic Red Tape,			-0.199		
WEF 2003			(-2.6)		
Obs.	102	100	100	55	31
R^2	0.51	0.52	0.62	0.11	0.17

a) White corrected *t*-statistics are in parenthesis.

6. Grand Corruption and FDI

Figure 1 presents average FDI inflows relative to GDP[7] dependent on the extent of corruption (component 1) and the type of corruption (component 2). This figure reveals that, unsurprisingly, in case of low levels of corruption its type is of little relevance. In case of high levels of corruption grand corruption is preferred to petty corruption.

[7] Since I use logged data in the subsequent regressions I also determined logged values for each individual countries belonging to the respective category. For these logged values the average has been determined and afterwards the value transformed back to the original scale (by using the result as the exponent).



Components 1 and 2 are now incorporated in regressions on FDI in table 5. Both of them enter significantly, as shown in regression 1. Due to construction, absence of corruption (component 1) ranges between 15 and 45 with a standard deviation of 7.5. An improvement in absence of corruption by one standard deviation would increase the logarithm of the ratio of FDI to GDP by 0.67. This represents almost a doubling of FDI. Component 2 has a standard deviation of 0.4. Increasing component 2 (grand corruption as opposed to petty corruption) by one standard deviation could be achieved by decreasing absence of corruption in public utilities by 1.3 (on a scale from 1 to 7) or by increasing absence of corruption in government programs by 1.4 (on a scale from 1 to 7). Such an increase of component 2 would increase the logarithm of the ratio of FDI to GDP by 0.3, which is an increase by 35%.

The results survive the inclusion of further explanatory variables. Two potential variables that emanate from growth theory are the domestic savings rate and the population growth rate. Data from the World Development Indicators were tested, but the variables were found to be insignificant without affecting other coefficients. The results are thus not reported. Countries that are better integrated in the world economy are likely to attract more FDI. This can be proxied by openness, the sum of import and exports relative to GDP. This variable obtains the expected positive impact (regression 2, table 5).[8]

The values on FDI are biased towards smaller countries. The larger a country, the more of the investment flows are from within the borders and not recorded as FDI. Investments from California to New York are not counted as an incoming FDI, but

[8] Openness may capture also a certain fraction of the corruption variable, because corruption tends to reduce a country's openness. The evidence on this link is mixed, however. Ades and Di Tella [1995, 1997 and 1999] provide supportive evidence, Treisman [2000], Wei [2000a] and Knack and Azfar [2003] produce insignificant results.

those from Germany to Portugal are. To account for this bias I include the (logarithm of) population. It obtains the expected sign, alas missing standard significance levels, (regression 3, table 5). This finding is also obtained in other specifications, suggesting the exclusion of this variable from the subsequent regressions.

Exporters of raw materials stand a better chance in attracting gross FDI because extraction offers additional opportunities for investment. As a proxy for this I include a variable on the export of fuels relative to merchandise exports. Indeed, the variable is significant and carries the expected sign. High growth rates at the beginning of the 90s might have provided investors with a promising signal. I include average GDP growth between 1990 and 1995. But the variable is insignificant, as shown in regression 3.

Considering the potential motivation of foreign investors, one cannot ignore the location of a country. The more distant a country to the USA and Western Europe the less likely they might experience incoming FDI. The data on distance can reach up to π=3.14 for one distance. Adding up the distance to Chicago and that to Frankfurt must necessarily be below 2π. The highest value was reached by New Zealand with 5.0. High values are also obtained by other South East Asian countries but also by Madagascar with 3.7. The lowest value is obtained by Ireland with 1.1. Table 5 shows the coefficient for distance to global investors to be around -0.2. This means that Ireland experiences almost double the FDI inflows as compared to Indonesia.

I include a variable on the extent of bureaucratic red tape. The inclusion of this variable tests whether investors are guided by governance indicators other than corruption and whether this variable dominates either component 1 or 2. However, this variable is insignificant, as revealed in regression 4.

Regression 5 controls for opportunism in corrupt deals, as determined by the 1997 survey of the World Bank and the University of Basel. Based on the arguments mentioned in the introduction, I expect international investors to be deterred by this type of opportunism which goes along with little predictability. However, the variable obtains an unexpected positive sign and is even significant. This suggests that, in contrast to the findings by Campos, Lien and Pradhan [1999], international investors are less concerned with predictability. Their perception of grand versus petty corruption is more relevant, at least as far as their FDI decisions are concerned. I drop this variable from subsequent regressions because data is available only for a reduced sample of countries.

Regression 6 employs weighted least squares. Gross FDI are subject to random influences. If a small island recovers from a volcano eruption or profits from the sudden detection of natural resources, FDI could go well beyond the country's GDP. The same shock would have only a small relative impact on a large industrial country. Considering that this measurement error increases with a country's size, I consider the (logarithm) of a country's total population to be an appropriate weight. The resulting regression supports this approach. Absence of corruption and the type of corruption are once again significant.

Including continental dummies would be another possible test. However, I argue below that the reputation of a country's type of corruption might not be well known. Investors are likely to assume countries to perform similarly when they belong to the same continent. In this case, continent dummies would capture too large a share of component 2. Indeed, once controlling for continent dummies component 2 becomes less

significant. I thus introduce the assumption that investor's dislike of some continents is due to their petty type of corruption and not other unobserved factors. Given this, I will use continent dummies as instruments.

Table 5. Ordinary Least Squares and Weighted Least Squares, [a] Dependent Variable: Average Annual Gross FDI inflows relative to GDP, 1995-2003

Independent Variables	1.	2.	3.	4.	5.	6. WLS	7. TSLS[b]
Constant	-0.164	-0.344	0.655	1.078	1.151	1.413	2.146
	(-0.2)	(-0.4)	(0.7)	(0.7)	(1)	(1.2)	(1.4)
GDP per head, log.	-0.035	-0.044	-0.111	-0.175	-0.337	-0.346	-0.760
	(-0.2)	(-0.3)	(-0.7)	(-1.1)	(-1.7)	(-2.0)	(-2.1)
Component 1: Absence	0.089	0.076	0.081	0.090	0.077	0.117	0.200
of Corruption,	(4.5)	(4.0)	(3.9)	(4.6)	(2.4)	(4.9)	(3.4)
Component 2: Grand	0.748	0.793	0.721	0.731	1.031	0.909	1.709
Type of Corruption,	(3.5)	(3.8)	(3.3)	(3.1)	(3.3)	(4.1)	(3.7)
Openness, % of GDP		0.078	0.007	0.008	0.009	0.008	0.007
		(4.9)	(4.5)	(5.6)	(4.7)	(3.9)	(3.9)
Population, log, 2001			-0.063				
			(-1.1)				
Export of Fuels, rel. to			0.012	0.012	0.002	0.009	0.015
merchandise exports, 1994-2003			(3.1)	(3.3)	(0.3)	(2.3)	(3.7)
Growth of GDP, 1990-95			0.025				
			(1.5)				
Distance to Global			-0.226	-0.192	-0.256	-0.261	-0.238
Investors			(-2.5)	(-2.5)	(-2.3)	(-2.5)	(-2.9)
Bureaucratic Red Tape,				-0.136			
WEF 2003				(-0.6)			
Opportunism in corrupt					0.403		
deals					(2.9)		
Obs.	95	95	94	94	54	94	94
R^2	0.39	0.51	0.60	0.59	0.62	0.76	0.36
Adj. R^2	0.37	0.49	0.56	0.55	0.57	0.75	0.32
Jarque-Bera	2.1	2.3	3.4	2.8	0.5	2.2	1.2

a) White corrected *t*-statistics are in parenthesis.
b) Instruments are the share of Protestants and dummies for Africa, Eastern Europe and the Former Soviet Union, Latin America, Central America and the Caribbean.

I check the results by employing the instrumental variables technique in regression 7. The reason is less related to reverse causality; an impact of FDI on perceived levels of corruption does not appear plausible. Even if we think that countries that experienced large FDI inflows might be perceived differently among investors we would not know whether the perceived level of corruption increases or decreases. The reason for using instruments is rather related to measurement errors. The perceptions data on corruption does not perfectly capture reality and is subject to margins of error. With the help of instruments we avoid the resulting biased coefficients. Another concern relates to an omitted variable bias. This problem would be relevant to the results if they correlate with corruption and with FDI inflows at the same time. Again, by making use of instruments this type of bias is avoided – certainly requiring that the instruments are also uncorrelated to omitted variables.

I take the share of Protestants as an instrument for the level of corruption, component 1. The argument is that Protestantism is a less hierarchical religion, where individuals are less embedded in networks that pursue the material benefit of their members at the expense of society at large, [Treisman 2000, Paldam 2001, Lambsdorff 2002b]. Instruments for component 2 are naturally rare. Mo (2001) suggests the use of continental dummies as instruments for corruption. Given their significant impact on component 2, as shown in table 4, I use them as instruments for the type of corruption instead. The underlying assumption is that, given the many other explanatory variables, continents have no other impact on FDI, except through their type of corruption. The reputation of a country may also be relevant to how its neighbors are perceived. This would even strengthen the impact of component 2 when using continents as instruments. Indeed, this is the finding of regression 6. The coefficient for component 2 increases substantially.[9]

However, the significance of component 2 would not survive TSLS when incorporating continental dummies as explanatory variables for FDI. This suggests that the impact of component 2 is closely related to continents being perceived differently among investors. Given that the knowledge on types of corruption is naturally not well developed, it is plausible that continental dummies even surpass component 2 in explaining variations of FDI. In sum, the results survive instrumental variable technique when assuming that investor's dislike of some continents is due to their petty type of corruption and not other unobserved factors.

7. Conclusion

Pointing out once again that corruption deters FDI is easily accepted as an indicator that anti-corruption must be strengthened. Another potential policy recommendation of my findings relates to public utilities. The strong result for public utilities suggests priorities for anti-corruption. Reducing corruption in public utilities could clearly help attract international investors.

One policy recommendation cannot be derived from this paper: There is no reason to turn a blind eye to grand corruption. International investors might legitimately prefer grand corruption as the lesser of two evils because it goes along with less organizational intricacies. But they might also prefer grand corruption as an opportunity for defrauding their own firm. Shame on them? At least we have no reason to believe that such fraudulent investments would also profit society. Thus, unless we know the precise reasons for international investors to prefer grand corruption we are not in a position to set priorities for anti-corruption.

Further research is needed to find out whether grand corruption is less detrimental to welfare. Such investigations must embrace more than just investor's calculus. Productivity and growth of GDP might be affected by the type of corruption. Tax revenues might deteriorate and government programs might promote useless white-

[9] Another potential instrument for component 2 is the absence of Legal Political Donations and Public Trust in Politicians. They might also be measured with imprecision, but once this measurement error is uncorrelated with that of component 2 their usage as instruments provides a further check to the robustness of the findings. The findings also survive the use of this instrument. The results become more significant when using weighted TSLS. Similar results are obtained when instrumenting separately for the two components.

elephant projects when affected by grand corruption. These are repercussions that are beyond the scope of this paper.

8. References

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9. Appendix

The 95 countries included in regressions 1 and 2 (without Luxembourg) are:

		Average Annual Gross FDI inflows relative to GDP, 1994-2003	WEF 2003,* Component 2: Grand Type of Corruption,	WEF 2003,* Component 1: Absence of Corruption,
1	Angola	7.79	0.62	21.50
2	Argentina	1.69	1.24	22.99
3	Australia	1.79	0.34	42.79
4	Austria	2.02	0.21	40.59
5	Bangladesh	0.06	-0.46	15.78
6	Belgium	8.43	0.45	36.98
7	Bolivia	3.25	1.50	22.52
8	Botswana	0.68	0.16	35.74
9	Brazil	1.59	0.62	28.99
10	Bulgaria	1.53	0.53	33.77
11	Cameroon	0.03	-0.16	20.46
12	Canada	2.66	0.40	37.36
13	Chile	3.25	0.97	37.19
14	China,P.R.: Mainland	0.86	0.15	31.01
15	China,P.R.:Hong Kong	14.20	0.19	40.98
16	Colombia	0.99	0.99	30.72
17	Costa Rica	1.67	0.57	30.03
18	Croatia	2.95	0.56	28.24
19	Czech Republic	2.89	0.81	29.94
20	Denmark	6.58	0.16	44.79
21	Dominican Republic	1.44	0.95	25.46
22	Ecuador	2.42	1.18	24.26
23	Egypt	0.33	-0.30	28.91
24	El Salvador	0.96	1.23	34.25
25	Estonia	3.08	0.65	36.13
26	Finland	3.93	0.16	43.93
27	France	2.62	0.54	37.93
28	Gambia, The	0.51	-0.16	29.76
29	Germany	2.20	0.24	41.63
30	Ghana	0.35	-0.17	25.96
31	Greece	0.50	0.69	30.21
32	Guatemala	0.51	1.50	22.82
33	Haiti	0.06	0.50	17.70
34	Honduras	1.07	0.63	19.70
35	Hungary	2.15	0.66	34.61
36	Iceland	1.63	0.14	44.70
37	India	0.12	0.25	25.18
38	Indonesia	0.07	0.00	24.15
39	Ireland	14.27	0.72	36.89
40	Israel	2.12	0.28	40.50
41	Italy	0.67	0.70	30.70

* Data source: The Global Competitiveness Report 2003-2004, New York: Oxford University Press for the World Economic Forum. The values are based on a principal component analysis carried out by the author.

42	Jamaica	4.58	0.41	26.70
43	Japan	0.16	0.65	36.70
44	Jordan	1.26	0.32	36.80
45	Kenya	0.12	0.43	20.83
46	Korea	0.48	0.42	33.65
47	Latvia	2.03	0.55	30.61
48	Lithuania	1.58	0.90	33.28
49	Luxembourg	544.81	0.29	40.50
50	Macedonia, FYR	1.22	0.38	22.81
51	Madagascar	0.26	0.55	20.74
52	Malawi	0.33	0.23	32.43
53	Malaysia	1.80	0.31	33.36
54	Mali	1.10	0.16	18.75
55	Malta	3.86	0.50	38.12
56	Mauritius	0.47	0.42	29.83
57	Mexico	1.62	0.73	31.10
58	Morocco	0.08	-0.02	24.23
59	Mozambique	1.47	0.62	22.81
60	Namibia	0.72	0.26	29.46
61	Netherlands	7.49	0.30	40.88
62	New Zealand	3.06	0.14	44.03
63	Nicaragua	1.81	1.02	24.93
64	Nigeria	1.23	0.01	19.38
65	Norway	2.69	0.18	39.74
66	Pakistan	0.24	0.22	26.16
67	Panama	4.00	0.88	25.48
68	Paraguay	0.57	0.78	22.17
69	Peru	1.60	1.57	29.78
70	Philippines	0.44	1.15	20.98
71	Poland	1.50	0.58	28.81
72	Portugal	1.62	0.39	37.16
73	Romania	0.79	0.62	20.54
74	Russia	0.30	0.47	24.82
75	Senegal	0.62	0.36	24.14
76	Singapore	10.64	0.16	43.65
77	Slovak Republic	1.02	1.48	28.99
78	Slovenia	1.19	0.48	36.03
79	South Africa	0.50	0.17	31.65
80	Spain	2.54	0.67	37.66
81	Sri Lanka	0.29	0.20	24.33
82	Sweden	8.33	0.21	42.79
83	Switzerland	4.36	0.33	42.22
84	Tanzania	1.49	0.11	26.44
85	Thailand	0.92	0.58	32.30
86	Trinidad and Tobago	6.06	0.32	28.40
87	Tunisia	0.84	-0.07	33.94
88	Turkey	0.27	0.44	25.47
89	Uganda	0.60	0.09	20.91
90	Ukraine	0.37	0.42	23.09
91	United Kingdom	3.78	0.20	41.36
92	United States	1.51	0.45	38.42
93	Uruguay	0.69	0.47	36.60
94	Venezuela, Rep. Bol.	2.31	1.18	23.73
95	Vietnam	1.06	0.04	27.46
96	Zambia	2.15	-0.02	25.39