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## Exploring the Impact of Foreign Aid on Corruption: Has the 'Anti-Corruption' Aid been Effective?

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**QoG WORKING PAPER SERIES 2009:29**

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December 2009

ISSN 1653-8919

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**Abstract:**

Though many studies have referred to an 'anti-corruption movement' beginning in the 1990's by major international organizations, none has empirically tested its effectiveness on corruption. The data show that from 1997 on, the impact of multilateral aid is strongly and robustly associated with lower corruption levels, while bilateral aid is shown to be an insignificant determinant. An increase in any ODA pre-1997 is associated with higher levels of corruption or has no impact at all. Using panel data from 1986-2006, this study reveals a more nuanced relationship between ODA and corruption than in previous studies and demonstrates that when disaggregating the time periods, there are sensitive temporal effects of ODA's effect on corruption overlooked by earlier studies, and provides initial evidence of the effectiveness of the international organization (IO), anti-corruption movement in the developing world..

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*"Corruption is a serious threat to good governance and deters investment. Therefore, fighting corruption is essential to the development of our economies for the benefit of our people."*  
Asia-Pacific Economic Cooperation - Declaration of Santiago. November 2004

*'Corruption is "A cancer on the development process and a cancer that is unfortunately the cause of a good deal of the poverty that we have seen and particularly in Africa."* – James D. Wolfensohn, former president of the World Bank

In the wake of the 'Anti-corruption Movement' of the mid 1990's, has foreign aid assistance (official development assistance, ODA) had an impact on a recipient country's corruption level? Moreover, are there reasons to believe that different types of ODA<sup>1</sup>, whether multilateral or bilateral, impact the quality of governance in any systematic way? Though the good governance 'anti-corruption movement has been widely discussed, these questions have had surprisingly little empirical attention from literature pertaining to the impact on foreign aid on good governance and corruption. These are of course important a question for scholars and policy makers alike, as the volume of ODA redistributed from the developed to the developing world has increased substantially over the past decade. This complex relationship has drawn the attention of many scholars in recent years and the effects of ODA on 'good governance' indicators, whether democracy, bureaucratic quality or corruption, remains strongly debated in the literature. This study makes a first step in assessing the vastly complex effects of the 'anti-corruption movement' by theoretically distinguishing and empirically testing the impact of ODA on corruption by disentangling its effects over time and by donor type.

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<sup>1</sup> ODA is defined as "Flows of official financing administered with the promotion of the economic development and welfare of developing countries as the main objective, and which are concessional in character with a grant element of at least 25 percent (using a fixed 10 percent rate of discount). By convention, ODA flows comprise contributions of donor government agencies, at all levels, to developing countries ("bilateral ODA") and to multilateral institutions. ODA receipts comprise disbursements by bilateral donors and multilateral institutions". – *OECD glossary of statistics terms*

One of the first distinctions made by many studies when looking at the effect ODA has on democracy, economic growth, etc. is whether the aid is multilateral or bilateral. Bilateral ODA is argued by many to be tied with the political agenda of the donor country and less focused on ‘good governance’ reform in the recipient country for its own sake. Though of course not apolitical, multilateral ODA is seen as relatively more impartial, and the program to fight corruption and improve governance in the developing world has been at the forefront of the agenda of each major Breton Woods organization since the mid-1990’s, and thus might be associated with more effective results in curbing corruption.

The second distinction is the time period in which one examines the effect of ODA on corruption. What I argue is that previous studies have overlooked this salient distinction – that in the post ‘anticorruption movement’ (ACM) era of the major international organizations (IO’s) it is theoretically plausible that we should expect different results than in previous time periods (Armon 2007). It is thus the central contribution of this paper that a more nuanced relationship between ODA and corruption in developing world is uncovered. Though many scholars have previously found little to no impact on democratization or corruption with higher levels of ODA (Knack 2001 and 2004; Ear 2006) my argument follows from Dunning (2004) in that to better understand the more complex relationship<sup>2</sup>, disaggregating the sample diachronically is of vital importance, otherwise a significant relationship might be overlooked

I argue that two reasons best explain this relationship. The first comes from the rational side – it is in recipient states’ self-interest to consent to the new demands of their

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<sup>2</sup> Dunning (2004) demonstrates that there is a different effect of ODA on the level of African countries’ democratization scores when separating the Cold War era from the post-Cold War era. A conditional effect that was overlooked in the Goldstein (2001) study which demonstrated a less nuanced relationship.

multilateral donors for the sake of their international reputation and in order to maintain future ODA. On the donor side, in seeking to maintain their relevance as major international actors of development and governance, the major IO donors have a strong incentive to monitor recipient states to uphold ‘their end of the bargain’. The second explanation for this more nuanced relationship can be explained by the more normative, constructivist approach. An ‘anticorruption’ norm was instigated by leading IO’s in the mid 1990’s and after proliferating to all other major IO’s during this time period, was accepted by major actors in the international system. This in turn brought substantial attention on the fight to curb corruption and recipient states followed suit. I maintain that these two approaches help explain the primary hypothesis and empirical finding in this analysis in a complementary manner.

I test this relationship on 77 ODA recipient countries from 1986 to 2006. Using the two-stage method of Generalized Method of Moments (GMM) I model a number of potential problems of endogeneity between corruption and ODA using panel data. The empirical results show that the “anticorruption” movement adopted by all major IO’s proved to be an effective strategy in combating corruption in developing states, while the effects of multilateral ODA before this time period have mixed effects. Bilateral ODA is either a negative or insignificant determinant of corruption levels in recipient countries in both time periods. Upon multiple robust checks with alternative specifications and data on corruption, the results hold strongly.

### **THE IMPACT OF AID ON CORRUPTION**

Corruption, though difficult to characterize in the abstract (Tanzi 1998) and admittedly even more difficult to detect in the ‘real world’, is defined as “the abuse of

public office for private gain” and has an effect that is “corrosive to the development of a state” (Kaufmann 1997: 114). As Alesina and Dollar point out almost two-thirds of all foreign aid collected goes to government consumption (Alesina and Dollar, 2002). These funds are therefore allocated by international sources and end up in the hands of government bureaucrats to be distributed in some form to the general public. Thus, some argue that foreign aid allocations are funds that are “ripe territory for corruption” (Tavares 2003: 100). The question is consequently – what effect does foreign aid have on corruption and governance in recipient countries? Not surprisingly, numerous previous empirical studies have investigated the relationship between foreign aid, or official development assistance (ODA), and some type of democratic-performance outcome (Goldsmith 2001; Stone 2004; Olsen 1998; Dunning 2004; Ear 2006; Gokcekus and Knörich 2006; Knack 2001, 2005 & 2005; Knack and Rahman 2007). Some scholars have argued that there is a positive relationship between ODA dependence and corruption and have reported empirical evidence to support such a claim.

The ways in which ODA could potentially exacerbate corruption and harm recipient governance has been well documented by Knack (2001, 2004). The argument essentially goes as follows: when aid dependence increases (whether measured by ODA/GDP or ODA as a proportion of government consumption) recipient states are expected to become less accountable for their own actions, and increases incentives for domestic corruption by increasing conflict over aid funds and essentially compensates for economic policies and weak government institutions by offering a ‘crutch’ (Knack 2001, 2004 & 2005). Some scholars have found empirical support for the notion that, the more ODA a state receives relative to its GDP, the worse off their democratic and bureaucratic

performance and corruption levels become (Knack 2001, 2004; Knack and Rahman 2007). For example, Knack and Rahman (2007) estimate the effects of several determinants of bureaucratic quality using the ICRG data and find that quality of bureaucratic services are negatively impacted as the proportion of a state's ODA rises relative to GNP (Knack and Rahman 2007: 189, 192).

On the other side of the debate, there are numerous scholars who argue that in fact ODA does have a positive impact on governance and indeed contributes in reducing corruption (Goldsmith 2001; Tavares 2003; Dunning 2004; Ear 2006). The argument in favor of more foreign aid in assisting with democratic development and corruption reduction is that IO's and bilateral donors can bring in certain expertise to developing states that they would otherwise not have. Accountability could in fact be enhanced due to international oversight along with numerous conditionality measures which stipulate that states must reform their governing practices in order to make them more efficient and less corrupt. Developing states concerned about their reputation will seek to make enough reforms so as to receive future ODA. Furthermore, the expertise of some IO employees or foreign diplomats could provide the necessary 'know how' for developing states to make critical reforms in order to improve governance. Knack (2001) also provides the argument that perhaps increases in ODA can make-up for the shortfalls of resources in some countries that might be used for the salaries of bureaucrats and thus provide less of an incentive for them to practice 'petty corruption'.

Some evidence has been reported by scholars to support the notion that ODA improves governance. In studying African states for example, Goldsmith (2001) finds that increases of ODA as the proportion of GDP are associated with higher levels of

democratic performance and economic freedom. Dunning (2004) replicates these results, but when disaggregating the time period into the Cold War and post-Cold War periods, he finds that ODA only improves democratization in the later. Moreover, Taveres (2003) finds that even when controlling for such factors as economic development, oil resources and political rights, ODA has a strong and statistically significant relationship with curbing corruption. However, there appears to be no clear theoretical or empirical consensus on the effects of ODA on outcome variables such as quality of governance in general or corruption specifically. This analysis builds on these previous contributions while adding a more nuanced explanation of this complex relationship.

### **THE ‘ACM’ AND ITS IMPACT ON RECIPIENT STATES**

ODA has become an increasingly more relevant source of income in developing regions over time as shown in Figure 1. Of particular interest to this study is the subsequent impact of the consensus among major international organizations to shift significant attention to the agenda of “good governance” in the mid to late 1990’s<sup>3</sup>. Beginning with the OECD in 1994, discussions on bribery came to the forefront by 1996, when a binding convention on “Combating Bribery of Foreign Public Officials in International Business Transactions” was signed by all 36 OECD member states (Sandholz and Gray 2003). The World Bank (WB) followed suit with a clear message about fighting corruption and began working the non-governmental organization (NGO) *Transparency International* in 1997 on combating such practices, along with establishing its own anticorruption institution the *World Bank Institute* (WBI), which together take on a number of corruption related problems. Since this time, the WB has tied anti-

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<sup>3</sup> This chronology is well document in previous published analyses (Sandholz and Gray 2003; Bukovansky 2001; Goldstein 2001; Hjertholm and White 1998) so for the sake of parsimony, I do not go into great historical detail.

corruption practices to its list of conditionalities (Pieth 1997; Sandholz and Gray 2003). The IMF, though not a development institution, in addition to the other Bretton Woods financial institutions began its campaign against corruption in 1996. In 1997, the organization finalized the first round of discussions on policies against corruption and declared its new agenda to combat it (International Monetary Fund 1997). Moreover the United Nations created its own division called the *Management Development and Government Division* (MGDG) in 1995, which by 1997 was elected by the member states to pursue an agenda of government accountability and transparency. Lastly, the World Trade Organization (WTO) compelled each member state to join the *Working Group on Transparency in Government Procurement* in 1996, which dealt with accountability and corruption issues. In addition to the major global IO's, a number of regional IO's have followed suit in the anti-corruption theme as well, such as the European Union and the Organization of American States signing comprehensive anti-corruption initiatives.

**\*\*\*Figure 1 about here\*\*\***

This analysis explores whether the new anti-corruption measures have had any significant impact on corruption levels in recipient countries. The ACM could have had an impact for two reasons, stemming from either the rationalist/ utility-based or constructivist/ normative perspective. First, on the normative side, the 'anti corruption norm' ensured that multilateral donors were serious about ODA being used for measures that fought corruption and improved governance in recipient states. As Bennet and Finnemore explain (1999), "having established rules and norms, IO's are eager to spread the benefits of their expertise and often act as conveyor belts for the transmission of norms and models of 'good' behavior"...and that "developing states continue to be a

popular target for norm diffusion by IO's" (Barnett and Finnemore 1999: 416-17). The inspiration for the 'anti-corruption' norm is ideational or normative in the sense that IO's sought to combat a coercive element found in many developing states in order to improve governance and economic performance world-wide. Much like norms related to women's suffrage, non-proliferation and human rights, they are driven by a select group of 'idealist' states, then accepted by international actors (in this case IO's) and then 'cascaded' throughout the system (Dubois 1994; Katzenstein 1996a; Finnemore and Sikk. Whether the norms of 'good governance' in this case are accepted domestically, of course is a matter of self interest on the part of the developing country itself.

Second, as Finnemore and Sikkith note, "In addition, international norms must always work their influence through the filter of domestic structures and domestic norms, which can produce important variations in compliance and interpretation of these norms" (Finnemore and Sikkith 1998: 893) This "two-level game" (Putnam 1988) between international ideas and domestic change leads into the rational side, where both the donors and recipients have incentives to push for good governance reforms when channels of multilateral ODA are established. In the case of recipient states acting rationally in their own interest, I posit that states are concerned with two simultaneous issues – *reputation* and *future aid*. States receiving multilateral ODA that are strongly tied to anti-corruption and good governance stipulations must in return make at least minimal reforms or else face the consequences of obtaining a poor reputation and face foreign aid cuts from skeptical donors in the future. It is therefore in their interest to comply so as to obtain such aid in the future. The reputation concerns also impact the multilateral donors – that the conditional policies that they tie with ODA actually have an

impact after the aid is received by the recipient country. The less reforms are observed from recipient countries, the less relevant such donor IO's become and future stipulations of reform are likely to be taken less seriously by developing states. Consequently, the donors have incentives to monitor recipients so as to ensure some necessary changes are made with respect to improving governance.

### **THE POST-ACM, MULTILATERAL AID HYPOTHESIS**

The central contribution of this study is the expectation that both time and source of ODA matter in the relationship between foreign aid and corruption. Briefly, the drawbacks to bilateral aid are clear - the donor country can set whatever agenda it wishes with the ODA, and oftentimes, such aid is "tied aid", which many scholars have shown can exacerbate wasteful government consumption (CIDA 2001) and distort trade (Pratt 1994). Recipient states are perceived to be much more willing to accept council from IO's than from other governments directly, which underscores multilateral aid's relative effectiveness to bilateral OD (Ehrenfeld 2005). However, because of previous mixed empirical results on the relationship between ODA and corruption, I argue that it is that neither multilateral nor bilateral aid will play any significant role in levels of corruption for recipient states before the major shift in focus to the 'Anti Corruption Movement' (Bukovsky 2002) in the mid 1990's as outlined in a previous section. Due to bilateral ODA being largely strategic and that a lack of serious attention before the mid-1990's to combating corruption by multilateral actors, there is no reason to believe that either type of ODA would be an effective determinant in reducing corruption in developing states. Subsequently, the shift by major multilateral donors to 'good governance' and fighting corruption created movement for a new international norm to improve governance

conditions in recipient countries<sup>4</sup>. What I seek to test empirically in this study is whether or not this shift in focus has had any substantive effect – whether the source (i.e. the major multilateral IO’s) that has advanced the ‘anticorruption norm’ have impacted corruption levels in any significant way, which will be operationalized by the multilateral aid.

Based on the literature on bilateral aid and the findings of Alesina and Weder (2002) I leave open the possibility that bilateral sources may or may not be associated with higher levels of corruption perceptions in developing states. However, the contrast between the two sources is intended only to show possible differences in the effects of multilateral and bilateral ODA after the ACM begins (if any exist), not to have any specific theories about bilateral aid in and of itself. Finally, the effect of multilateral foreign aid prior to 1997 is not expected to play any significant role in determining variation in corruption levels because the ‘good governance’ norms had yet to be universally accepted by all major donors before this time.

### **DATA, SPECIFICATION AND MEASUREMENT**

The dependent variable in this study is corruption as operationalized by a leading indicator of this concept, which is taken from the Political Risk Services Group’s (PRS) *International Country Risk Guide* (ICRG). The PRS Group, a think tank specialized in economic and political risk assessment internationally, has published monthly data for business and investors on over 140 countries since 1980. The PRS measure is primarily concerned with accounting for “excessive patronage, nepotism, job reservations, favor-

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<sup>4</sup> While this dichotomy might seem somewhat crude, it allows me to maximize the number of developing states in the sample, as opposed to using measures such as DFID aid for example. The trade-off with using multilateral aid in the aggregate is of course that the level of abstraction becomes higher, yet using more specific data on aid specifically targeting corruption is too limited and significantly reduces the number of cases.

for-favors', secret party funding, and suspiciously close ties between politics and business.”<sup>5</sup> A primary advantage for this study is the time period of this indicator ranges from 1984-2006 and has up to 139 countries, while other indicators such as the *World Bank* or *Transparency International* either have far too little or no data before 1997 needed to test the hypothesis in this study. The data in the analysis has a finite range from ‘0’-‘10’, with higher scores indicating lower levels of perceived corruption. The PRS data has been used in numerous recent publications on determinants of corruption (Ades and Di Tella 1999; Dollar et al 2001; Persson, Tabellini and Trebbi 2003; Knack and Rahman 2007; Charron and Lapuente 2009). Figure 2 breaks the data down by region across the time period in the study<sup>6</sup>. Clearly there is a substantial amount of variance and movement among the regions, with some showing stability at the aggregate during the time period and others, such as the post-Soviet, Eastern European bloc, demonstrating substantial declines. Of the 138 countries in the ICRG data for 2005 for example, Finland ranks best with a score of 10, followed by Sweden, New Zealand and Denmark with 9.16. Developing countries have a significant range of variance; with countries like Nigeria (1.67), Pakistan (2.5), and Gabon (1.60) rank on the low end while Chile (6.67), Botswana (5.0), Jordan (5.0) and Singapore (7.5), rank among the least corrupt outside of the OECD.

**\*\*\*Figure 2 about here\*\*\***

The empirical tests are to be conducted as parsimoniously as possible. The primary independent variables, *bilateral ODA* and *multilateral ODA*, are annual data taken from the World Bank. Clearly there are finer distinctions one can make with ODA, yet this

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<sup>5</sup> See [http://www.prsgroup.com/ICRG\\_Methodology.aspx](http://www.prsgroup.com/ICRG_Methodology.aspx)

<sup>6</sup> Countries are assigned to a region according to Hadenius and Teorell (2005). For a clear description of the data, see the Quality of Government data codebook at: <http://www.qog.pol.gu.se/>

simple disaggregation is made to maximize observations and maintain a level of parsimony to the analysis. Following the format of Goldsmith (2001), I take each figure as an annual proportion to a state's GNP, which is thus essentially measuring the level of dependence on ODA for each recipient country. Other significant determinants of corruption are also controlled for in the full model. Level of institutionalized democracy (*democracy*) is a measure from Freedom House and measures the level of political rights on a scale of 1-7. I invert the scale to indicate that higher numbers equal higher levels of democracy. Higher levels of *democracy* are anticipated to be associated with lower levels of corruption, as found by previous empirical studies (Sandholtz and Gray 2003; Treisman 2000). Secondly, I control for economic development with the log of GDP per capita annually from the World Bank (*logGDP*). Higher levels of economic development are consistently shown in the literature as having a negative impact on corruption levels (La Porta et al 1999; Treisman 2000). Additionally, I control for a state's level of ethno-linguistic heterogeneity by including Alesina et al's (2003) level of ethno linguistic fractionalization (*Ethnic Frac.*) Several studies have demonstrated a positive relationship between ethnic and linguistic diversity in a country and corruption levels (See Charron 2009). Finally, I control for a country's legal system, in particular common law (*UK Common*) has been shown compared to others to be a significant factor in a developing country's transitional phase to well functioning government institutions (La Porta et al 1999).

## **RESEARCH DESIGN**

Due to data restraints in the dependent variable, I run models based on a limited time frame, between 1986 and 2006. Based on the potential problems of endogeneity and

the mixed empirical evidence suggesting that corruption could in fact impact the levels of ODA a country receives - with some claiming that it has a negative relationship with aid (McGillivray et al. 2002) and others finding null or mixed results (Alesina and Weder 2002; Alesina and Dollar 2000) - OLS may no longer be the best linear unbiased estimator (BLUE). In the presence of endogeneity from reverse-causality one of the key OLS assumptions is therefore violated<sup>7</sup>. I elect to model this problem explicitly. First, I run a series of regressions using GMM estimation on panel data, introduced by Hansen (1982), which employs a two-stage process taking into account problems associated with endogeneity and produces more efficient and reliable estimates than 2SLS in the presence of heteroskedasticity (Baum, Shaffer and Stillman 2003). The two-staged analysis assumes that (1) the model is specified correctly and that valid instruments are employed, (2) the error terms of the variables are normally distributed, (3) outliers should be controlled for or removed and (4) observations in the data are independent of one another. With regard to the first assumption, based on the recent corruption literature and endogeneity found in the data between ODA and corruption, the GMM analysis with the parsimonious amount of control variables seems appropriate. Assessing the validity of the instruments is done by first testing the instrument relevance with a first stage F-test (see Wright 2003: 322) and second by using a post-estimation Sargan-Hansen test. With respect to the additional assumptions, based on scatter plots of the error terms along with variance of the variables in the model there is nothing exceptional about the way these are distributed to cause alarm when outliers are removed from the sample. Moreover, none of the independent variables correlate higher than 0.32 (*democracy* and *logGDP* per

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<sup>7</sup> The post-estimation Wu-Hausman test in the 2SLS and GMM statistic in the 2-stage models I run indicate that there is indeed consistent endogeneity in the models, and thus the specification appears to be correct.

capita), while the rest are less than 0.15. On the issue of outliers, I make two adjustments to the sample. First, there are three extreme outliers with respect to ODA that if included, violate one of the assumptions of model and significantly alter the results – Sudan, Niger and Ghana – which receive levels of multilateral aid in multiple years from 1995-2006 that are well above three standard deviations over the mean sample level<sup>8</sup>. Numerous scholars in the literature on GMM models and 2SLS models have pointed to the potentially hazardous and misleading effects of extreme outlying cases when estimating models with panel data (see Huber 1981; Lucas, van Dijk and Kloek 2007; Baum et al. 2003). In particular, in datasets where a few cases demonstrate significantly divergent behavior from the majority of cases in the sample and the number of cross-sectional units is substantially greater than the number of time periods, as in the case of this study, the outliers can substantially impact the estimates in misleading ways (Lucas, van Dijk and Kloek 2007). If the cases are few, then dropping them or controlling for them in the model is an appropriate solution, both are done in empirical section. Secondly, based on Figure 2, the East Asian countries show a trend that is divergent from the rest of the sample in that there is a sizable and rapid drop-off in corruption scores from 1999 on, while at the same time this group received less ODA due to rapid economic growth. I control for this by reporting models with and without this region.

The ODA is the instrumented variable in the first stage of the equation (and lagged by one year), which includes all independent variables (time variant controls are lagged

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<sup>8</sup> For example, in 2003, 6.75 percent of Ghana's GDP was in multilateral development aid (sample mean for that year was 0.20), in 2004, Sudan (along with experiencing extreme civil conflict) received 7.25 of GDP in multilateral aid. Similarly, Niger reached levels of 3.5 of multilateral aid as a percentage GDP during the years from 1996-1998, and remained ad over 1.5 percent since. I check the results with their inclusion as well, using dummy variables, and though the estimates are in the same direction, the significance of the coefficients is weakened in certain models. Please write the author for the estimates with the inclusion of the outliers.

by two years) as well as colonial history, regional dummies and corruption lagged by the average past corruption score from the previous 2-5 years<sup>9</sup>, so as to include as many observations as possible and avoid misleading anomalies. The second stage includes a lagged value of the dependent variable, the instrumented ODA, along with the four control variables (time variant controls are lagged by one year). Both the effect of ODA on corruption and corruption on ODA are therefore explicitly modeled. The dependent variable and ODA in each stage is thus a function of its own past values as well as the past values of ODA. This can help demonstrate causality in the sense of Granger (1969) – if ‘X’ at time ‘t’ significantly impacts ‘Y’ at ‘t’+1 (with ‘Y’ at time ‘t’ also known), which is of vital importance for understanding the impact of the ACM on later corruption levels in recipient states.

Two separate time period are analyzed, before and after 1997<sup>10</sup>. The models are regressed on all available data before and after 1997 to test the impact of ODA (both multilateral and bilateral) on corruption<sup>11</sup>. I check the robustness of the results by employing a standard two-stage least squares estimation (2SLS) with both ICRG data and alternative sources of corruption data from the World Bank (Kaufmann et al 2008) and Transparency International’s *Corruption Perceptions Index* (CPI). Further, I check the sensitivity of the time frame by setting the start year of the ACM at 1998 and 2000 to see

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<sup>9</sup> The lagged corruption score is thus:  $((\text{corruption}(t-2) + (t-3) + (t-4) + (t-5)/ 4))$ . Because of the 4-year average, in cases of missing data, the state-year is simply omitted from the calculation and the denominator of the equation is adjusted accordingly.

<sup>10</sup> In additional robust checks, I change the ACM year to 1998 and 2000, and remove some of the instruments, such as the colonial heritage, with no significant changes in the results.

<sup>11</sup> I elect to regress bilateral and multilateral ODA on corruption in separate models due to relatively high levels of multicollinearity, which results in more efficient coefficient estimates.

if the results are time sensitive. Finally, the sample of states in the empirical analyses is all developing (recipient) states for which corruption data is available<sup>12</sup>.

## RESULTS

The models in both Table 1 and Table 2 report the two-stage estimates to capture the effect of the relationship between ODA and corruption levels. Both the GMM and 2SLS methods of estimation are extensions of linear regression and interpretation is similar to that of OLS<sup>13</sup>.

### \*\*\*Table 1 about Here\*

The estimates in Table 1 are intended to elucidate the effects of the two types of ODA before and after the ACM<sup>14</sup>. Additionally, all models account for past values of the dependent variable to control for autocorrelation and to avoid any potential problems with the instrumented corruption<sub>t-2</sub> being correlated with the error term. Model 1 examines the overall effect of total ODA over the entire time period, demonstrating essentially ‘what we *would* miss’ if the data was not disaggregated by time and aid source. As several studies have reported, total levels of ODA is actually associated with greater levels of corruption (see Knack and Rahman 2007) yet the coefficient fails to reach an appropriate level of significance in model 1. Models 2 and 4 show the impact of multilateral and bilateral aid on corruption for all available cases before 1997. While standard control variables in the model, such as level of political rights (democracy) and ethno-linguistic fractionalization are significant determinants of corruption levels, neither

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<sup>12</sup> Iraq is omitted as an outlier case due to the huge influx of ODA starting in 2003. Additionally, Afghanistan has no data on corruption.

<sup>13</sup> For an in depth analysis of GMM and other 2-stage models, see Baum, Shaffer and Stillman (2003)

<sup>14</sup> Running the multilateral and bilateral ODA data in the same model introduces a high level of multicollinearity as indicated by post estimation t-tests. For the sake of efficiency and clarity, I elect to run them separately in this analysis.

bilateral nor multilateral aid impacts corruption in recipient states significantly during this time period, yet both exhibit negative coefficients. However, when moving to models 3 and 5, which elucidate the post-ACM effects of ODA, the estimates show a different impact on the dependent variable for multilateral aid entirely. A one unit increase in multilateral aid is quite substantial, estimated with a reduction of corruption by almost an entire standard deviation of the ICRG variable (1.66), and unlike bilateral aid, statistically significant at the 95% level of confidence. However, a one unit increase (one additional percent of GDP coming from ODA) would be a sizable increase and is not all that likely according to the data. A more realistic interpretation would be to use one tenth of a one unit increase, which would result in an approximately 0.17 increase in the ICRG corruption score. Again, three diagnostic tests are included for each model. First, as recommended by Wright (2003) the first stage F-test provides a “*sufficient* (but not necessary) test for underidentification” (Wright 2003: 329). All models have a significant F-statistic, meaning that we would not suspect a ‘weak instrument’ problem in the models. Second, Baum, Shaffer and Stillman (2003) recommend a test for endogeneity of the regressor (a ‘C-statistic test’, where the null hypothesis is that the two stages are exogenous), which demonstrates the presence of endogeneity in all models except for model 1. Finally, I check the validity of the instruments in stage one with a Sargan-Hansen J-test. In all models except for 7 and 9 in Table 1 (bilateral aid with the World Bank and CPI data), the p-values are insignificant, meaning the null hypothesis that the instruments are valid cannot be rejected in most cases.

Models 6-9 test the hypothesis with alternative indicators of corruption. Both are composite indices made up of multiple surveys conducted by numerous sources and are

available annually for a substantial number of countries from 1996 on<sup>15</sup>. Since the time range for these variables is limited, only the effects of the post-ACM time period are analyzed. Here we see robust support for the results in models 3 and 5 and the results for multilateral aid. An increase in multilateral aid during this time period is strongly associated with lower levels of corruption in both the World Bank data and Transparency International's CPI, demonstrating wider support for the hypothesis. Notably, the estimates for bilateral aid with alternative indicators of corruption have a slightly significant and negative impact on corruption levels.

**\*\*\*Table 2 about Here\*\*\***

Moving to Table 2, I test the robustness of the results from Table 1. The estimates in Table 2 largely corroborate the findings in Table 1. The first four columns in Table 2 replicate models 2-5 in Table 1 using a simple two-stage least squares (2SLS) estimator with the same instrumented variable for each ODA indicator as in Table 1. Again, the effects of both types of foreign aid have an impact on corruption that is indistinguishable from zero before 1997. However, the signs for the multilateral ODA coefficient are positive after 1997 and significant at the 95% level of confidence, indicating the sensitive temporal effects of aid, possibly driven by the ACM. Similar to Table 1, bilateral aid has no discernible impact on corruption levels when using the ICRG data.

Models 5-10 test the sensitivity of the sample of recipient countries and the time period of the ACM. In models 5 and 6, I exclude East Asian states from the analysis.

Based on the aggregate figures from Figure 2, we observe that this group declines

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<sup>15</sup> The World Bank data was available bi-annually from 1996-2002, and has been available annually from 2002 to the current year. More detail on the World Bank and Transparency International data can be found in the Quality of Government's data codebook: <http://www.qog.pol.gu.se/>

significantly in corruption scores after around 1999. This trend occurred while states in East Asia were receiving significantly less ODA during this time period due to their economic development<sup>16</sup>. These two simultaneous trends pose a potentially problem in that they could be driving the results in the post-ACM period analysis. Models 5 and 6 address this issue. The results show in models 5 and 6 that although removing the East Asian states from the sample reduces the size of the coefficients of a number of estimates – namely both forms of aid, democracy and GDP – the effect of multilateral ODA in the post-ACM era remains strongly significant and in the expected direction.

The results thus far have corroborated the hypothesis that multilateral aid in the post-ACM time period is associated with less corruption. In models 7-10, I use alternative start-years of the ACM, testing for the possibility that the results may be sensitive to the start-year of the ACM used in Table 1 (1997). Since all of the models have either shown a non-significant or slightly negative relationship between bilateral aid and the dependent variable, I analyze only multilateral aid in models 7-10 in the post-ACM time period with ICRG and World Bank data<sup>17</sup>. In models 7 and 8 I test the sensitivity of the start year in the previous models and employ 1998 as the start-year of the ACM. Moreover, I exclude the East Asian states from the models to create a more stringent test for the hypothesis<sup>18</sup>. Although weakened slightly, the coefficients remain largely the same, in particular for the multilateral ODA, which is in the expected direction and statistically significant. In models 9 and 10, the ACM is set as the year 2000. For both the World Bank and ICRG indicators of corruption the effects of

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<sup>16</sup> I would like to thank an anonymous reviewer for this suggestion.

<sup>17</sup> The World Bank data is chosen over the CPI because it contains more observations.

<sup>18</sup> However, I run models 7-10 with the inclusion of the East Asian countries as well, with the results robust to those reported in Table 2. For the sake of space, I do not report them. Please contact the author for the full tables.

multilateral aid remain positive and 99% and 95% significant respectively. In sum, irrespective of the corruption data employed, the start date of the ACM used, or sample, the effects of the ACM (as measured by multilateral aid) are consistently associated with lower levels of corruption. The data however is slightly sensitive to changes in the start year of the ACM regime. Thus while the results mainly reveal strong support of the hypothesis, one must interpret them with caution; in particular due to the imperfect operationalization of the ACM regime.

Briefly, the control variables throughout the model showed to be more or less consistent irrespective of specification and time period. In particular the Freedom House, political rights variable and the ethno-linguistic fractionalization variables were mainly robust to alternative specification. For example, a one unit increase on the political rights scale is expected to result in anywhere from a 0.05 to a 0.23 increase in corruption score for the ICRG data, depending on specification. Somewhat surprisingly, the GDP per capita, which was consistently positive throughout the models, was only statistically significant when employing the World Bank and Transparency International data as the dependent variable or when the ACM start year was set later (2000) with the ICRG data.

## **CONCLUSION**

This study provides a more nuanced explanation and empirical examination between the complicated effects of foreign aid on domestic corruption levels. While the data on corruption and using multilateral ODA as a proxy for the anti-corruption movement are not perfect indicators of the respective concepts they are used to represent, it would seem that given this caveat, there is relatively strong empirical support for the ‘anti-corruption’ hypothesis - that based on the strong correlation between multilateral

ODA and the dependent variable, the anticorruption movement has in fact been relatively effective in curbing the level of corruption in recipient countries during the regime. This can be distinguished from bilateral aid, which was shown to be largely an insignificant (or slightly negative) determinant of corruption levels in recipient states. The results demonstrated that multilateral aid in the pre-ACM time period proved ineffective in combating corruption, yet it revealed to be quite successful in the sample which examines only the time period after 1997 (the year by which all major IO's had signed agreements on fighting corruption). The effects of multilateral ODA dependence are strong and generally robust across all three indicators of corruption, using multiple specifications, different start-years, including and excluding East Asian states and when controlling for economic development, level of democracy, colonial heritage and ethnic fractionalization. However, since it was not possible to measure the ACM directly, there is always the possibility that the results are somewhat spurious, and thus should be interpreted with a degree of caution. Further, while the alternative indicators, namely the World Bank 'control of corruption' and the CPI, corroborated the findings from the ICRG data, they are not available for the pre-ACM time period. Thus I could not conduct a 'pre-test' so to speak, and we are therefore not privy to whether or not the ACM altered any relation between the two types of ODA and corruption as measured by the World Bank and Transparency International.

In addition, there are methodological difficulties in studies such as these, namely the issue of endogeneity. Scholars have reported that the relationship works both ways (i.e. that ODA impacts corruption and corruption impacts ODA) and thus the researcher must pay a good deal of attention to the modeling of this issue so as to not to produce biased

estimates. While there is no perfect solution to this problem, this study used multiple two-stage regression with lagged independent variables, modeling corruption as a function of past values of itself and ODA (as well the control variables) while simultaneously modeling ODA as a function of past values of corruption (and two-year lagged GDP and democracy values along with regional and colonial heritage controls).

Some practical implications follow from these results. One, the relatively newfound, worldwide attention to overall “good governance” and more specifically to fighting corruption has been rather effective from a multilateral standpoint. The data show that after the ‘anti corruption’ norm was accepted in the mid 1990’s, multilateral agencies, which can be considered to have less of their own political agenda with respect to the aid that they allocate compared with direct bilateral aid, were considerably more effective in producing better governance relative to bilateral ODA investments. Bilateral ODA donors remain to be perceived as tying their own self-interest to the aid that they allocate to recipient countries. The results between the two time frames are thus interesting in the sense that neither ODA strategy, multilateral or bilateral, was associated with significantly lower levels of corruption in the early to mid 1990’s. Yet when attention was focused on the anticorruption movement, the agencies were apparently able to, with processes of loan allocation that are mostly more transparent than those of bilateral transactions, have achieved a significant task – bringing down levels of corruption levels in the developing world. However, this study demonstrates only a strong correlation into this relationship. In further scholarship, more theoretical development as to more thoroughly elucidate the underlying causal mechanism is needed.

Secondly, and further, it is clear that if states are serious about fighting corruption – and there are both economic and moral reasons for the international community to be such (Bukovansky 2002) – a policy should be shifted in order to allocate more resources to IO’s for ODA redistribution. Accomplishing this is of course easier said than done – states collect revenues from their citizens who expect their leaders to spend their money in their interest. However, though more investigation and study into the nuanced relationship between these two variables shown in this analysis, the data and results in this study demonstrate that one channel of foreign aid is more effective than another in accomplishing positive results for improving governance and combating corruption.

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**Table 1: Disaggregating the Effects of ODA on Corruption**

Variable	<u>All ODA</u>	<u>Bilateral ODA</u>		<u>Multilateral ODA</u>		<u>World Bank</u>		<u>CPI</u>	
	Full Model	Pre ACM	Post ACM	Pre ACM	Post ACM	Bilat	Multi	Bilat	Multi
	1	2	3	4	5	6	7	8	9
Lagged corruption	0.498*** (0.028)	0.643*** (0.042)	0.405*** (0.037)	0.635*** (0.042)	0.388*** (0.036)	0.088*** (0.011)	0.069*** (0.012)	0.245*** (0.027)	0.237*** (0.031)
ODA	0.054 (0.150)								
Bilateral		-0.067 (0.234)	0.016 (0.221)			-0.118* (0.062)		-0.311* (0.174)	
Multilateral				-0.122 (0.191)	1.65** (0.633)		0.62** (0.214)		0.893*** (0.293)
Democracy	0.107*** (0.027)	0.057** (0.028)	0.162*** (0.031)	0.064** (0.032)	0.203*** (0.032)	0.039*** (0.013)	0.073*** (0.012)	0.209*** (0.038)	0.098*** (0.028)
LogGDP	0.088* (0.051)	0.082 (0.077)	0.056 (0.053)	0.081 (0.079)	0.067 (0.057)	0.366*** (0.029)	0.35*** (0.029)	0.891*** (0.088)	0.757*** (0.077)
Ethnic Frac.	-0.346** (0.169)	-0.094 (0.272)	-0.514** (0.196)	-0.134 (0.262)	-0.503** (0.205)	-0.035 (0.072)	-0.051 (0.071)	-0.105 (0.172)	-0.147 (0.165)
UK Common	0.009 (0.018)	0.272** (0.106)	0.062 (0.105)	0.243** (0.095)	0.054 (0.107)	0.127*** (0.043)	0.039 (0.044)	0.492*** (0.106)	0.309** (0.105)
Const.	2.19*** (0.51)	1.45** (0.615)	3.65*** (0.57)	1.41** (0.62)	3.39*** (0.59)	-3.62*** (0.27)	-3.34*** (0.26)	-5.13*** (0.33)	-3.91*** (0.71)
1 <sup>st</sup> Stage F-Test	8.53	3.97	7.03	3.81	10.65	5.75	11.62	7.93	11.81

Obs.	962	351	573	351	573	359	359	359	359
Number of countries	78	75	75	75	75	75	75	68	68
GMM C stat	3.28	1.25	2.55	2.38	3.89	7.62	23.76	7.23	21.24
Sargan-Hansen	0.41	0.20	0.25	0.31	0.44	0.09	0.34	0.04	0.23

*Note:* This table uses Generalized Method of Moments (GMM) two-staged estimation. The first-stage  $F$ -test in the linear IV model tests for instrument relevance. The null hypothesis that all of the instruments are uncorrelated with all of the endogenous regressors. The GMM C statistic provides at test Durbin-Wu-Hausmen test of whether the regressors treated as endogenous during estimation could in fact be treated as exogenous. The Sargan-Hansen J-test performs an overidentification test the validity of the independent variables, significant p-values reject the null hypothesis (no overidentification). The instruments used in the first stage for each type of ODA are all lagged independent variables, colonial origin, regional dummies and a two to five-year (averaged) lagged dependent variable. The year of ACM in the models is 1997. Alternative variables from World Bank and Transparency International (CPI) are used only for the time-period after 1997 as they have almost no coverage before hand. They range from -2.5 to 2.5 and 0 to 10 respectively, with higher numbers indicating lower corruption. Thus, the 5-year lagged dependent variable (ICRG) used in the first as a regressor of the ODA instrumented variable in the first four models is kept so as to address (albeit imperfectly) the endogeneity problem in models 5-8. Robust standard errors correcting for heteroskedasticity in parentheses.

$p^* < .10$ ,  $p^{**} < .05$ ,  $p^{***} < .01$

**Table 2: Robustness Checks**

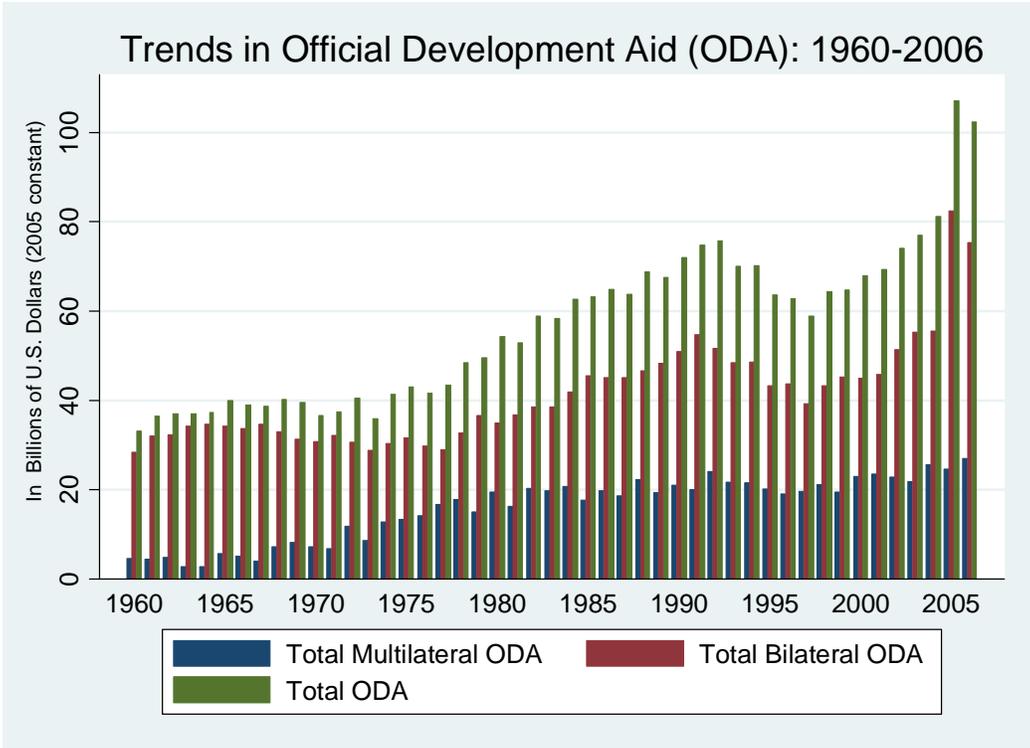
Variable	2SLS		GMM (no E. Asia)		Multilateral ODA only (no E. Asia)					
	Pre ACM	Post ACM	Pre ACM	Post ACM	PostACM	PostACM	amc1998WB	amc1998	amc2000WB	amc2000
	1	2	3	4	5	6	7		10	10
Lagged corruption	0.637*** (0.045)	0.411*** (0.038)	0.611*** (0.046)	0.401*** (0.039)	0.429*** (0.036)	0.430*** (0.040)	0.073*** (0.013)	0.441*** (0.037)	0.075*** (0.015)	0.446*** (0.039)
Bilateral	0.138 (0.307)	-0.049 (0.290)			-0.010 (0.223)					
Multilateral			-0.100 (0.303)	1.62** (0.712)		1.51** (0.64)	0.818** (0.253)	1.31** (0.618)	0.865*** (0.274)	1.23** (0.62)
Democracy	0.081** (0.036)	0.141*** (0.032)	0.091** (0.037)	0.195*** (0.035)	0.127*** (0.031)	0.161*** (0.030)	0.069*** (0.013)	0.186*** (0.033)	0.076*** (0.015)	0.237*** (0.036)
LogGDP	0.154 (0.095)	0.021 (0.068)	0.122 (0.095)	0.041 (0.067)	0.021 (0.062)	0.010 (0.063)	0.351*** (0.031)	0.045 (0.063)	0.35*** (0.035)	0.135** (0.067)
Ethnic Frac.	-0.045 (0.302)	-0.569** (0.205)	-0.120 (0.293)	-0.51** (0.212)	-0.560** (0.193)	-0.596** (0.211)	-0.087 (0.073)	-0.569** (0.205)	-0.053 (0.081)	-0.701*** (0.207)
UK Common	0.152 (0.142)	0.056 (0.107)	0.132 (0.177)	0.048 (0.115)	0.114 (0.101)	0.079 (0.107)	0.041 (0.045)	0.136 (0.111)	0.02 (0.051)	0.128 (0.123)
Const.	1.01 (0.77)	3.36*** (0.61)	1.35 (0.75)	1.05 (0.77)	3.50*** (0.59)	3.31*** (0.57)	-3.40*** (0.27)	3.62*** (0.58)	-3.41*** (0.32)	4.37*** (0.67)

1 <sup>st</sup> Stage F-Test	3.72	5.53	3.26	9.30	5.59	11.29	6.62	10.81	6.65	11.27
Obs.	351	573	351	573	562	562	353	494	282	352
No. of countries	75	75	75	75	71	71	71	71	71	71
GMM C stat					3.89	4.98	8.13	4.03	9.72	3.24
Sargan-Hansen	0.16	0.18	0.24	0.43	0.23	0.22	0.22	0.51	0.16	0.17

*Note:* This table uses 2SLS and Generalized Method of Moments (GMM) two-staged estimation. The first-stage *F*-test in the linear IV model tests for instrument relevance. The null hypothesis that all of the instruments are uncorrelated with all of the endogenous regressors. The GMM C statistic provides a test Durbin-Wu-Hausman test of whether the regressors treated as endogenous during estimation could in fact be treated as exogenous. The Sargan-Hansen J-test performs an overidentification test the validity of the independent variables, significant p-values reject the null hypothesis (no overidentification). The instruments used in the first stage for each type of ODA are all lagged independent variables, colonial origin, regional dummies and a two to five-year (averaged) lagged dependent variable. The year of ACM in the models is 1997. Alternative variables from World Bank and Transparency International (CPI) are used only for the time-period after 1997 as they have almost no coverage before hand. They range from -2.5 to 2.5 and 0 to 10 respectively, with higher numbers indicating lower corruption. Thus, the 5-year lagged dependent variable (ICRG) used in the first as a regressor of the ODA instrumented variable in the first four models is kept so as to address (albeit imperfectly) the endogeneity problem in models 5-8. Robust standard errors correcting for heteroskedasticity in parentheses.

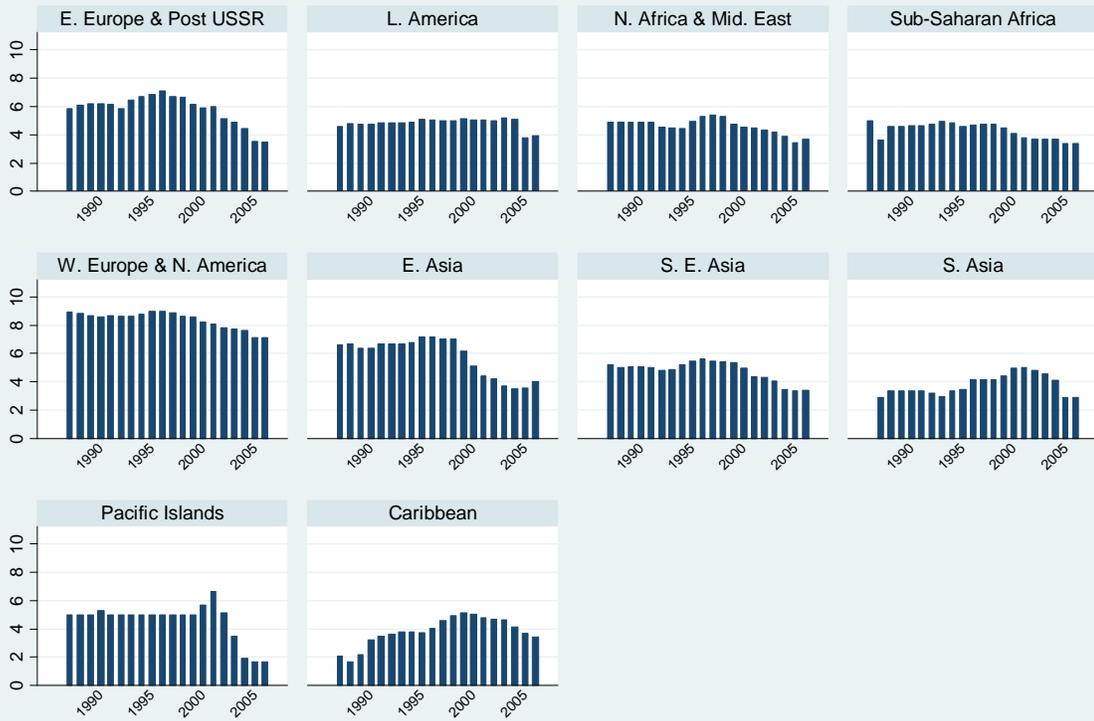
*p*\*<.10, *p*\*\*<.05, *p*\*\*\*<.01

## Figure 1



**Figure 2**

## Annual ICRG Corruption Scores by Region: 1986-2006



Notes: annual ICRG scores are regional averages, ranging from 0-10 with higher scores indicating less corruption. Regions taken from Hadenius and Teorell (2005)

## Appendix

### A. List of States

Algeria	Guyana	Nigeria
Angola	Haiti	Pakistan
Azerbaijan	Honduras	Panama
Argentina	India	Papua New Guinea
Bahrain	Indonesia	Paraguay
Bangladesh	Iran	Peru
Armenia	Cote d'Ivoire	Philippines
Bolivia	Jamaica	Guinea-Bissau
Botswana	Kazakhstan	Saudi Arabia
Brazil	Jordan	Senegal
Cameroon	Kenya	Sierra Leone
Sri Lanka	Korea, South	Vietnam
Chile	Lebanon	Slovenia
China	Madagascar	South Africa
Colombia	Malawi	Suriname
Congo	Malaysia	Syria
Congo, Democratic Republic	Mali	Thailand
Costa Rica	Malta	Togo
Croatia	Mexico	Trinidad and Tobago
Dominican Republic	Mongolia	Tunisia
Ecuador	Moldova	Turkey
El Salvador	Morocco	Uganda
Egypt	Mozambique	Burkina Faso
Ethiopia	Oman	Uruguay
Gambia	Namibia	Venezuela
Ghana <sup>a</sup>	Nicaragua	Yemen
Guatemala	Niger <sup>a</sup>	Zambia
Guinea		

<sup>a</sup>removed from the final sample due to extreme outlier figures

## B. Summary Statistics

	Obs	Mean	St. dev	Min	Max
<b>Corruption Variables</b>					
ICRG	2081	4.64	1.82	0	10
World Bank	1089	-0.35	0.71	-2.12	2.43
CPI	912	3.52	1.48	0.4	9.4
<b>Development aid</b>					
Total ODA	2360	0.46	1.68	-17.26	26.47
Multilateral	2358	0.29	1.13	-17.44	18.83
Bilateral	2355	0.16	0.68	-0.06	9.99
<b>Control Variables</b>					
logGDP (per capita)	2745	8.07	0.98	5.85	10.34
Democracy (inverted)	2985	2.94	2.12	1	7
Ethnic Fractionalization	3100	0.414	0.283	0.002	0.92
UK Common	3696	0.31	0.46	0	1
<b>Instrumented Variables</b>					
E. Europe	3696	0.17	0.38	0	1
Latin Am.	3696	0.11	0.31	0	1
E. Asia	3696	0.03	0.16	0	1
SE. Asia	3696	0.07	0.26	0	1
S. Asia	3696	0.05	0.22	0	1
Pac. Islands	3696	0.07	0.25	0	1
Caribbean	3696	0.08	0.27	0	1
Mid. East/ N. Africa	3696	0.12	0.32		
Ex. French Colony	3696	0.16	0.36	0	1
Ex. Spanish Colony	3696	0.11	0.31	0	1
Ex. Portuguese Colony	3696	0.03	0.18	0	1

*note:* sample consists of ODA recipient countries only from 1986-2006