Aid and governance: Negative returns?

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Abstract

Recent literature has come to little agreement on the impact of aid flows on governance in recipient countries. This paper adds to the debate by developing a theoretical and empirical argument to help resolve the contradictory claims. The paper suggests that the aid-governance relationship need not be linear, but rather, that aid may simultaneously improve and hinder governance. This relationship might be akin to an aid-governance 'aid dependence' Laffer curve wherein 'too much' aid can lead to counter-productive results. Inserting non-linear aid terms in established techniques for examining aid and governance reveals significant support for the potential of negative returns in aid and governance.

Keywords: Aid, Governance, Growth, Corruption, Development

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INTRODUCTION

It is widely understood that little consensus exists amongst scholars and practitioners of development on the impacts of foreign aid. For every Burnside and Dollar (2000) aid-effectiveness optimist there is an Easterly (2007) sceptic or a Djankov et al. (2009) denouncer. In few places has the aid effectiveness debate been less conclusive than in the efforts to understand the impact of aid on governance. Uncovering the relationship is fraught with difficulty. There are strong theoretical arguments for suspecting both positive and negative effects of aid on the quality of governance. Beyond this, the relationship could be characterised by a significant endogeneity – does aid cause poor governance or does poor governance is an important piece of the linkage between aid with growth as the 'regnant consensus' is that good government and growth go hand-in-hand (Kurtz and Schrank, 2007: 538).ⁱ

This paper offers a fresh look at the aid and governance debating by suggesting that the relationship between aid and governance could be both positive and negative. In evaluating aid effects, most studies employ techniques that look for linear relationships. However, it is entirely plausible to think that aid relationships may be non-linear. In fact, the concept of a Laffer curve in aid is not new. As discussed in Lensink and White (2001) it seems entirely possible that in addition to decreasing marginal returns in some aid relationships, the marginal utility of aid could become negative, such that additional units of aid lead to *fewer* units of 'positive' outcome. Non-linearities based on the amount or duration of foreign aid may accommodate divergent theoretical expectations and may account for seemingly contradictory empirical findings. In order to explore this relationship this paper first offers a thorough overview of the theoretical and empirical aid and governance literatures. The paper then argues that opposing findings may be reconciled by understanding the aid-governance relationship as a Laffer curve where differences in governance quality are a function of the amount of aid received by a country. This hypothesis is tested using both cross-sectional and panel techniques and the paper finds strong evidence of a Laffer curve in aid-governance relationships. The paper concludes with thoughts on the implications of this finding for donor aims to improve governance.

WHAT DO WE KNOW ABOUT AID AND GOVERNANCE?

The relationship between official development assistance (ODA) and governance has been subject to extensive study in the social sciences. Starting in the early 1990s, scholars such as Lancaster (1993a, 1993b) and Brautigam (1992) began to speculate on the potential of using foreign aid to foster better governance which in turn would facilitate economic development. The logic behind using aid to directly enhance governance quality is straight-forward. As discussed by Degnbol-Martinussen (2002: 273) aid can be used to facilitate governance in three ways: 'enhancing state capacity' which could mean improving the quality of public administration and enhancing the use of public resources, 'strengthening state-society linkage institutions and procedures' which includes support for judicial reform and the rule of law and, 'empowerment of civil society organizations' so that they can engage with their governance.

Beyond direct interventions in improving governance quality, a related and voluminous literature examines the use of aid as an enticement or reward for improving governance

quality. Kaufmann and Kraay (2002: 2) discuss how multilateral agencies such as the World Bank, and individual donors such as the United States, have targeted their development assistance to countries with 'sound and/or improving policies and institutions' based on a 'consensus' that ODA is most effective when directed to these countries. This *ex-post* conditionality is discussed by Booth (2011: s17) who notes that the 'common sense appeal' of using aid to reward good governance has proved a powerful draw to policy makers who must justify aid outlays to wary political constituents, although Epstein and Gang's (2009) formal treatment suggests that recipient interests may thwart these donor intentions. While *ex-post* conditionality provides a further theoretical rationale for expecting a positive link between aid and governance, it also introduces the potential for a significant endogeneity where increasing/decreasing aid could be both cause and effect of improving/deteriorating governance.

While there are valid theoretical reasons for suspecting that aid can be used to improve governance, there is also a chorus of voices that suggest that aid can undermine governance quality. Busse and Groning (2009: 76) note that the 'moral hazard' and rent seeking associated with high levels of aid could lead to a negative impact of aid on governance, sentiments echoed by Moss et al. (2006). When government revenue comes from sources other than the domestic citizenry, governments will not necessarily have an incentive to spend public money wisely or efficiently as budgetary surpluses would presumably be returned to the donor and not to citizens. Instead, governments who receive significant amounts of external finance may often be motivated by a 'use it or lose it' mentality which could lead to expenditure being directed on government largess which does not foster development or governance. As noted by Castel-Branco (2008), in a case study on aiddependency in Mozambique, aid-recipient governments, like many governments, are motivated by an interest in their own survival and will use aid first in this pursuit and second in the pursuit of responsible public expenditure. That aid can be used to finance patronage has been shown yet again in Ahmed (2012) and using aid in this way may foster petty corruption, nepotism and favouritism that can undermine governance quality.

Empirical examinations of the aid/governance relationship also reveal mixed signals. There is little systematic evidence of aid directly improving governance, through 'successful' capacity building programs or interventions. Grindle (2007) and Brinkerhoff and Brinkerhoff (2002) both imply that there is some sort of epistemic consensus that capacity building does improve governance (granted perhaps with some caveats) but neither points to a definitive empirical literature in support of that inference.ⁱⁱ A recent working paper by Aronow et al. (2012) uses instrumental variable techniques to evidence a short-lived, positive, improvement of EU aid on governance in recipient countries, but it is hardly a systematic result. In contrast, a number of direct empirical tests have suggested that aid decreases the quality of governance. Knack (2001) tested the impact of aid on various components of the International Country Risk Guide (ICRG), finding strong evidence that aid undermines governance. Contemporary and subsequent works including Moore (2001), Brautigam and Knack (2004), Busse and Groning (2009), and Cooksey (2012) largely confirm those findings. Rajan and Subramanian (2007) examine the question in a slightly different way by suggesting that aid has a negative impact on manufacturing, which they style as a 'governance-dependent' sector of the economy. Thus, in terms of direct evidence, the bulk of the credible empirical support suggests that aid has a negative impact on governance, despite the scholars and practitioners who continue to advocate for governance-oriented capacity building interventions.

The empirical evidence regarding *ex post* aid conditionality is less clear, as discussed by Clist (2011). Drawing from the now-cannon Burnside and Dollar (2000), studies including Berthelemy and Tichit (2004) and Dollar and Levin (2006) find evidence that aid does indeed go to well-governed recipients. If this is the case, then presumably aid as an incentive or reward for governance is serving its purpose, spurring positive governance change in aid-recipient countries. However, other scholars such as Hout (2002), Zanger (2000), and Nunnenkamp and Thiele (2006) all cast doubt that ODA is allocated based on governance quality. Clist (2011) proposes an interesting solution to these discrepancies – donor heterogeneity. While some donors (the US, the World Bank) have explicitly conditioned aid on improving governance conditionality. Author (2012) goes further by suggesting donor heterogeneity in *effectiveness* in addition to allocation. Not all aid programs are created equally and presumably differences in the impact of governance aid programs may be driven by donor variation in design and implementation.

Thus, on balance, there appears to be no clear consensus regarding the impact of aid on governance quality. Yet, despite this evidence, donors continue to invest significant resources into 'good governance' programs, with governance ODA exploding from 7.4 billion USD in 2000 to 19.2 billion USD in 2011, as seen in figure one below. This sustained and increasing trend in governance investment suggests that, at a minimum, there continues to be consensus amongst policy-makers and practitioners regarding the potential for aid to improve the quality of governance. However, the bulk of the empirical evidence would suggest that in terms of direct effects, aid negatively impacts governance quality while there is only mixed-support that aid is an effective reward for improving governance. This discrepancy between evidence and practice has significant implications for the allocation of scarce development resources.

AID AND GOVERNANCE: A LAFFER CURVE?

The literature reviewed above provides theoretical and empirical support that aid could have either positive or negative effects on governance. What the literature has not proposed, however, is that aid could simultaneously have *both* positive and negative effects. By looking for a linear relationship researchers may be overlooking a more nuanced interaction between aid and governance. To some extent, the theoretical and empirical ambiguity may be driven by the fact that 'governance' itself is a slippery term. The first challenge is distinguishing 'governance' from 'government'. While governance may simply be the actions of government, it may also encompass a wider range of actors and activities that influence societal outcomes (Peters and Pierre, 1998). Operationalising governance has proved a contentious task. As discussed by Hout (2002), the World Bank attempted to tackle the problem by developing the World Governance Indicators (WGIs) to capture six distinct features of governance: political stability, rule of law, control of corruption, voice and accountability, government effectiveness, and regulatory quality. These measures capture outcomes that both reflect on government performance (government effectiveness, regulatory quality), but also incorporate features of the political environment in which governments operate (political stability, voice and accountability) and the ability of governments to govern themselves (rule of law, control of corruption). While these indicators have not pleased allⁱⁱⁱ, they have been widely employed in studies on the relationship between governance and development and I adopt this conceptualisation in this paper.^{1V}

A non-linear aid relationship was formally discussed by Lensink and White (2001: 49-50) who used the Laffer curve to examine the relationship between aid and growth. Their

illustrative formal model is driven by an assumption that some technological shift parameter in the production function in an endogenous growth model (a measure of total factor productivity) is negatively related to aid inflows. This assumption results in an ambiguous relationship between aid and growth, where high levels of aid, combined with inefficient technology, can lead to a negative relationship of aid on growth. While I do not replicate their formal treatment, the logic would hold in an economy that 'produces' governance and has the same assumption that the production technology decreases in (is negatively related to) aid.

As noted by Lensink and White (2001), the theoretical argument for a Laffer curve relationship between aid and growth is substantiated by arguments that aid can reduce productivity and/or that aid diminishes in effectiveness due to problems of absorptive capacity. Absorptive capacity is explored extensively by Feeny and de Silva (2012: 725) who consider a five-dimension typology that includes human, physical, economic, and donor and recipient policy factors to develop a composite index of absorptive capacity constraints. They find that countries with lower levels of absorptive capacity are more likely to see diminishing and/or negative returns to aid on growth.

I develop the logic for a Laffer curve in aid and governance based on the recognition that aid can result (simultaneously) in both 'public good' and 'selective benefit' outcomes. For instance, the same aid that funds capacity building programs or is used as an incentive (or condition) to institute democratic processes, the rule of law, or control corruption, may also provide perverse incentives that subvert those aims. For instance, 'good governance' programs that may be effective in providing the 'public good' of quality governance, for example externally-funded government or quasi-government positions in judicial or lawenforcement units, capacity building seminars or international conferences, also have 'selective benefits' (government jobs, spots at trainings or conferences) that could be allocated in a way that would undermine the aim of the project. It is not hard to imagine a scenario where spots at a training seminar on judicial independence (with international travel and lucrative per diem) may be allocated by an executive agency to judges that are most sympathetic to the executive – creating an 'indebtedness' of the judiciary that effectively decreases judicial independence. Similarly, consider a foreign aid donor which steps forward to fund an anti-corruption office, but the positions are staffed on a patronage basis that rewards supporters of the regime. Certainly donors may impose conditionality or reporting requirements that would seek to mitigate these perverse incentives, but monitoring costs are high and external donors may often be unaware of subtle patronage networks or the cultural milieu of exchange.

That 'high levels' of aid are associated with decreasing levels of governance is anticipated in the literature – most directly by Brautigam (2000) and Knack (2001) who both examine the impact of 'aid dependence' on governance. If aid programs are small so too are the patronage effects that might undermine efforts to improve governance quality. If the judicial training programme suggested above is only implemented for a handful of judges, is unlikely to have a systematic effect on the overall independence of that branch of government. However, if the program is sufficiently large such that the executive is able to bring a substantial number of judges into its patronage network then there is an increased likelihood of a meaningful and noticeable shift in the relationship between the two branches.

Functionally speaking, the Laffer curve is operationalised as a (negative) quadratic relationship between aid and governance (Lensink and White, 2001: 53). At low levels of aid the positive impacts of aid on governance either outweigh the negative impacts, or the levels

of aid are too low for meaningful negative impacts to become manifest. The benefit from introducing good governance concepts and practices, especially where they may not have existed before, outweighs any negative impacts from creating a marginal level of perverse incentives through aid patronage. However, as aid levels increase, absorptive capacity is 'used up' and the marginal benefit of good governance programs decreases while the increased pool of selective benefits raises the level of governance-undermining practice in the country. Accordingly, I propose the following hypothesis:

Hypothesis 1: The relationship between increased official development assistance and governance quality will display diminishing, and eventually negative, marginal returns.

If we have theoretical grounds for assuming a negative quadratic relationship between aid and governance then we are interested with both the marginal and total effects of aid on governance. If the operationalised functional relationship between governance quality and levels of aid is:

$$Governance(aid) = C + \beta_0 \mathbf{X} + \beta_1 aid - \beta_2 aid^2 + \varepsilon (1)$$

Where *C* is some intercept, *X* is a vector of other explanatory variables, and ε is a random error, then the (local) maximum gives the point at which the marginal effects of aid on governance shift from positive to negative:

$$Governance(aid)' = 0$$
 (2)

Likewise, solving the function at 0 gives the threshold of aid where the total net effect of aid on governance is 0, (i.e. gains have been completely offset by losses):

$$Governance(aid) = 0, aid > 0$$
 (3)

These points give us the thresholds at which an additional unit in aid will contribute to decreasing levels of governance quality and where the total impact of aid on governance becomes negative, respectively. This functional structure not only has the potential to harmonise competing claims about the impact of aid on governance, but can also serve as a useful policy instrument in order to assess when the additional costs of expanding aid programs may outweigh the benefits.

Looking for Negative Returns in Aid

As I have a theoretical expectation of a negative quadratic relationship between aid and governance I employ quadratic regression techniques to test my hypothesis. Lensink and White (2001) employ a quadratic term of the aid/income ratio in the examination of Laffer curve effects between aid and growth. A number of other studies have also used quadratic techniques in examining the relationship between aid and growth (Hadjimichael et al., 1995; Durbarry et al.,1998; Hansen and Tarp, 2000; Feeny and McGillivray, 2011). These studies each find turning points of aid, the threshold of negative marginal returns, at ODA/GDP ratios ranging from 25 to 50 per cent. In investigating the determinants of aid allocation Collier and Dollar (2003) also use a quadratic aid term in considering pro-poor allocations of aid, which Lensink and White (2001: 61) suggest implies an aid turning point of 18.5 per cent. In the context of governance, Kitschelt and Kselman (2012) use quadratic techniques to investigate the relationship between democracy and development on clientelism and find a

negative quadratic relationship between the democracy 'stock' and clientelism. These papers provide an empirical basis for suspecting a (negative) quadratic relationship between aid and governance.

In order to identify both the marginal and total thresholds of aid on governance I use quadratic least squares regression to estimate the coefficients on the linear and quadratic ODA/GDP terms based on equation one above. I then plot the effects of aid on governance and use equations two and three to find the marginal and total effects of aid on governance, respectively. Plotting fitted values from regressions to examine non-linearities has been employed in a number of recent socio-economic studies such as Agarwal et. al (2008) and Urqiuola and Verhoogen (2009). As noted above, threshold 'aid-dependence' is usually quantified by the ratio of either ODA to GDP or ODA to government expenditure. As Knack (2001) discusses, these measures are highly correlated and his models, which employ both, have highly consistent results. I employ a measure of ODA/GDP since this data series is more complete, especially for countries with high levels of aid-receipt.^v

As mentioned above, there is a significant potential for endogeneity in the relationship between aid and governance as the allocation of aid can effect changes in governance quality. but aid may also be allocated based on governance quality. In an attempt to address this concern I employ two approaches. In my preferred approach, I follow Knack (2001) by using a cross-section analysis to assess the impact of levels of aid on changes in government quality over time. By examining this shift in governance against the average level of ODA/GDP of each recipient I avoid the allocation endongeneity of testing the impact of aid changes on governance changes or aid levels on governance levels. While I largely replicate Knack's methods, I use additional data in order to check if Knack's results are robust across datasets (and covering different time periods). In addition to using the International Country Risk Guide (ICRG) as a basis for my dependent variable, governance quality, I also use the World Bank's World Governance Indicators (WGI), which were not available for the entirety of the time period in Knack's study. My naive expectation is the Laffer curve effects should impact each component of the WGI measure discussed above. However, authors such as Langbein and Knack (2010) argue that all six indicators essentially capture the same broad concept. Accordingly, I also construct a 'total' WGI indicator which is my preferred model in the tables below. It is important to note that the WGI's have faced criticism when used in timeseries cross-section (TSCS) analysis, from voices within the World Bank itself (Igbal and Shah, 2008; Langbein and Knack 2010). These criticisms have been directly responded to by Kaufmann et al (2010: 1), the researchers behind the indicators, who note that despite problems associated with this (and all) aggregate data, the indicators 'permit meaningful cross-country and over-time comparisons'. The indicators have been used in this manner in several working papers and recently-published pieces, including Wernick et al.(2009), Winters (2010) and Caceres and Kochanova (2012). However, the critiques prompt me to prefer the cross-section 'shift' specification when compared to the TSCS 'level' approach detailed below. Second, whereas Knack's data covered the period from 1975 to 1995, my data covers the period from 1995 to 2008. This change in time focus has two important implications. First, like Knack, I employ OECD CRS aid disbursement data as the measure of aid.^{vi} However, it is widely acknowledged that ODA data prior to 1995 is largely incomplete. Missing or incorrect ODA data could have introduced a reporting bias into Knack's results, a danger that is mitigated by examining the post 1995 relationship. Secondly, partly as a result of Knack's and others' work on donor selectivity, donors made explicit efforts (or at least made explicit statements) both to provide ODA in order to improve governance and to provide ODA as a reward for good governance. The substantial uptick in conditional

'governance' aid post-1995, as shown in figure one, corroborates the assertion that the importance of governance on the aid agenda has increased steadily over time. This substantive shift in donor allocation behaviour provides part of the basis for a hypothesis of a non-linear relationship between aid and governance. The absence of this mechanism prior to the mid/late 1990s would shift the expectation for negative effects of aid to be far stronger than the positive effects.

Knack (2001) controls for the initial level of governance as well as changes in income and population. I do the same but combine changes in income and population by including a measure of change in per capita income. I also include a measure of average per capita income drawing on the literature that recognises a link between governance and income levels (Kurtz, 2007). I include controls for the average level of oil rents, as there is significant evidence that the 'resource curse' negatively impacts governance (Ross, 1999) and for the occurrence of battle deaths, understanding that conflict may undermine governance, and in particular government stability (DeMesquita et al., 1992). My sample includes 122 developing countries whose average GDP per capita levels were less than 7500 USD from 1995 to 2009. In order to replicate Knack, I first run a model with only a linear ODA/GDP term. I run the models using eight dependent variables: the ICRG 'quality of governance' measure, the 'total' WGI measure, and each component part of the WGI. The results from this OLS estimation with robust standard errors are presented in table one.

Table one shows results using a linear term of ODA/GDP. In these models the controls are largely significant and correctly signed however there is no clear impact of the ODA/GDP term.^{vii} For the ICRG measure, the 'total' WGI measure, and the 'control of corruption' and 'regulatory quality' measures there is no significant relationship between ODA/GDP and the governance score. The 'voice and accountability', 'political stability' and 'rule of law' models all display a positive relationship with ODA/GDP while the 'government effectiveness' measure evidences a negative relationship. These conflicting results are hardly surprising given the expectation of simultaneous positive and negative impacts of aid on governance. To test this non-linear hypothesis, I insert a quadratic term of ODA/GDP into my models. The results are presented in table two:

Table two shows broad support for the hypothesis that aid has a negative quadratic effect on governance. Addition of the quadratic term evidences a statistically significant quadratic relationship between aid and governance for the ICRG model, the 'total' WGI model (my preferred specification), as well as the 'voice and accountability', 'control of corruption', 'political stability', and 'rule of law' component models. Once again, in each of these models the coefficients on the bulk of the controls are significant and 'correctly' signed. Interestingly, neither the 'government effectiveness' nor 'regulatory quality' models evidence a significant non-linear relationship. Despite the scepticism of the different WGI indicators capturing different conceptual measures, exploration of the heterogeneity of the impact of aid on different kinds of governance indicators might provide a fruitful avenue for future research beyond the scope of the current project.

As a robustness-check I use a General Methods of Moments (GMM) difference estimator to analyse *panels* of aid recipient countries. Rather than examining the impact of aid on long term shifts in governance, panel analysis permits consideration of the impact of aid on governance *levels*. GMM estimators have been widely employed to overcome endogeneity concerns in aid effectiveness studies (Hansen and Tarp, 2001; Dalgaard et al., 2004; Bearce and Tirone, 2010). Recent theoretical and computational advances have improved the

feasibility of using GMM in analysing panel data (Blundell and Bond, 2000; Roodman, 2013). While GMM permits the use of annual data, review of the CRS data reveals instances of significant annual swings in ODA due to measurement error.^{viii} As such, I employ a three-year moving average of ODA/GDP to smooth any annual fluctuations that may be the result of statistical inaccuracies. Using an Arellano-Bond first difference GMM estimator I instrument the endogenous variables, aid and governance, with second period or deeper lags of the untransformed variables and examine the aid relationship with each of the eight governance measures.^{ix} These results are presented in table three.

Like with the 'shift' models there is significant support for the non-linear hypothesis in a number of the panel models, including the preferred 'total' WGI model. Once again, the coefficients on most controls are 'correctly' signed and many are significant across the models. Like the WGI aggregate indicator, the 'political stability', and 'rule of law' component models both suggest a statically significant negative quadratic relationship between the lagged moving average of aid and governance levels. However, also like the 'shift' models, this relationship is not evidenced across all components. ICRG, 'voice and accountability' and 'control of corruption' which did show the relationship in the shift models are no longer significant, although the latter has the correctly signed coefficients. Conversely, the 'government effectiveness' and 'regulatory quality' models, which were not significant in table two, now both evidence a negative quadratic relationship between aid and governance. While the results do not identically match the shift models they do, on balance, suggest substantial evidence of diminishing returns of aid on governance, with the caveat that the impact may vary depending on the governance indicator.

MAPPING THE MARGINAL EFFECTS OF AID ON GOVERNANCE

The regression results above suggest ten situations where aid has a negative quadratic effect on governance quality, five in the 'shift' models and five in the 'levels' models. In order to discern when the negative impacts of aid on governance outweigh the positive effects I solve for equations two and three for each of the models that had statistically significant negative quadratic relationships. The solutions to these equations give the level of ODA/GDP where the marginal quadratic (negative) effects of aid on governance become larger than the linear (positive) effects, the 'turning point', and the level of ODA/GDP where the total impact of aid on governance is negative. As mentioned above, previous studies have found the 'turning point' of aid to be between 25 and 51 per cent. The thresholds for the turning point and total impacts are presented in table four below, alongside the turning point findings from earlier studies. The 'total' WGI results (models 2.II and 3.II) are presented in bold.

Table four indicates that the results from this study are largely in line with previous investigations into the diminishing impacts of aid on growth. The five previous studies find an average 'turning point' for aid at thresholds of roughly 34 per cent of ODA to GDP. Similarly, the cross-section 'shift' models in this paper find a turning point at 27 per cent of ODA to GDP, while the panel 'level' models find the turning point at roughly 32 per cent of ODA to GDP. As Lensink and White (2001: 61) note, these turning points are 'high', at ratios of ODA/GDP only seen in a handful of countries. To this end, table four indicates that while hitting the 'turning point' is a rare event, it is not unheard of. Of the 1928 country-year instances of aid-receipt during the time period of the study, depending on the indicator, between 45 and 86 were beyond the turning point, such that marginal return of aid on governance is negative. Additionally, there are four to 21 instances where the *total* return on aid was negative, meaning that the recipient country would have been better off in terms of

governance quality had they received no aid at all. However, since the logic of diminishing returns rests on a dynamic story of aid dependence with aid undermining governance over time, it is perhaps more appropriate to consider countries that had consistently high levels of aid. When viewed in this light, only three to seven countries, a handful of the 122 in the sample, had aid levels above the threshold for at least five of the 15 years of the study.

The turning points in table four give the impact of aid on governance at the *mean* coefficient estimates. Taking into account the uncertainty in the estimates is necessary in order to understand at what thresholds we can say *with confidence* that the marginal and total returns of aid on governance are positive. To assess this uncertainty I plot the mean effect of the ODA/GDP ratio on governance shifts and levels, respectively, with 95 per cent confidence intervals in figure two.

Figure two shows that certainty over positive aid/governance outcomes is limited to a far lower ODA/GDP threshold when compared to the mean levels for turning points and total effects. Table four shows the lower bound of the 95 per cent confidence for the turning point at 6.5 per cent for the 'shift' models and 6.3 per cent for the 'level' models. Likewise, the lower bound of the 95 per cent confidence interval suggests a threshold for positive *total* impact of aid at 12.9 per cent in the 'level' and 12.6 per cent in the 'shift' models. These results imply that as many as 502 country-year observations were above the 95 per cent confidence threshold for an impact of aid of governance and up to 202 were above the confidence threshold for an impact of aid of governance that was positive in total. In the context of states, this suggests that up to 42 states were beyond the threshold for certainty of no diminishing returns for at least five years during the study. This is more than a handful and, while the likelihood is that the majority of these states do *not* encounter diminishing returns from aid on governance, it highlights the needs for careful, country-specific analysis when considering the potential impact of aid programmes.

THE ROLE OF ABSORBATIVE CAPACITY

As discussed above, part of the logic for diminishing returns in aid is that increased aid inflows overwhelm the absorptive capacity of recipient countries, rendering additional aid less and less effective. Usefully, Feeny and de Silva (2012: 725) construct a 'composite index of absorptive capacity (CIAC)' which provides a workable proxy of the measure they conceptually develop as 'absorptive capacity'.^x I incorporate this measure into the models above as an intervening variable, interacting it with the linear and quadratic aid terms. The expectation is that higher levels of absorptive capacity will increase the positive, linear, impact of aid on governance, while lessening the impact of the negative, quadratic, aid coefficient. Plotting these interactive effects in figures three and four, below, shows the impact of aid on governance when conditioned by absorptive capacity.

While not universal across the governance indicators, there is evidence that absorptive capacity can enhance the positive, and mitigate the negative, impacts of aid on governance. In the 'shift' models, the linear coefficient of aid moves from 'insignificant' to 'positive' for the ICRG (figure 3.1), 'voice and accountability' (figure 3.5), and 'rule of law' (figure 3.11) measures as absorptive capacity increases. For these same measures (figures 3.2, 3.6, and 3.12), the quadratic coefficient on aid moves from 'negative' to 'insignificant' or 'positive' at higher levels of the CIAC variable. Similarly, in the GMM 'level' models, the linear aid coefficient moves from 'insignificant' to 'positive' for the 'voice and accountability' (figure 4.5) measure, while the quadratic coefficient moves from 'negative' to 'insignificant' for the

'total' (figure 4.4), 'voice and accountability' (figure 4.6) and 'rule of law' (figure 4.12) governance indicators. The remainder of the interactions show little variation in the significance/insignificance of the aid coefficients.^{xi} That the expected interactive findings are present for some, but not all, of the governance indicators suggests that low levels of absorptive capacity may be a sufficient, but not necessary, component of diminishing returns in the aid-governance relationship. This implies that while increasing absorptive capacity could be beneficial in improving the efficacy of aid for good governance, it is not a 'silver bullet' for overcoming the challenge of diminishing returns to aid.

CONCLUSIONS

This paper began by noting the theoretical and empirical disconnects in the aid and governance literature. While a number of scholars have put forth arguments and evidence that aid has a positive impact on governance, there is an equally vocal contingent that contends the relationship is the inverse. This paper has attempted to reconcile these competing claims by suggesting that both positive and negative impacts of aid on governance occur simultaneously, resulting in a Laffer curve relationship. Drawing on the notion of 'aid dependence', the paper suggests that the positive effects of aid are eventually supplanted by negative effects at sufficiently high levels of development assistance.

Using quadratic regression techniques, the paper finds evidence of a Laffer curve relationship between aid and governance both when examining the impact of average levels of aid on changes in governance over time and the impact of recent levels of aid on current levels of governance. The results suggest that at some sufficiently high threshold ODA can have negative marginal and total effects on governance. These results are in line with previous studies that have found a negative quadratic relationship between aid and growth. While varying levels of absorptive capacity help in explaining this relationship for some governance indicators, for other indicators absorptive capacity appears to have little impact on the negative quadratic relationship. This suggests the negative quadratic aid governance relationship is multi-causal and unlikely to be overcome with a panacea.

The results from this paper suggest a need for policy makers and practitioners to be careful when considering aid allocations. In an age of increasing fiscal constraints, donors are becoming more cognizant of the need evidence a positive return on aid to political constituencies at home. The findings in this paper suggest that not only does aid show diminishing returns in improving governance, it can also be counterproductive and, in the extreme, lead to more harm than good. While the 'turning points' of aid are relatively highly, the threshold for confidence in a positive marginal return to aid is well within the range of 'typical' aid-recipient states. When ODA/GDP ratios creep north of five per cent, donors should increase their vigilance that the negative consequences aid programmes have not begun to outweigh the positive. The uncertainty over the threshold at which positive marginal returns to aid disappears is unsurprising given the vast heterogeneity in aid recipients. Beyond absorptive capacity, variation in history, culture, institutional structure, and/or external shocks may all mitigate or exacerbate the positive and negative impacts of aid on governance. Some countries may be able to 'handle' very high aid ratios while other may see negative marginal effects of aid at significantly lower levels. I posit that these results echo Lensink and White's (2001) warning that aid cannot be scaled up indefinitely or indiscriminately. Donors must consider country context when assessing if increasing aid packages will lead to perverse outcomes.

I have theorised that it is the selective benefits of aid that can ultimately engender negative consequences of aid for governance. Unfortunately, it is nearly impossible to provide a direct empirical test of this causal mechanism as, to my knowledge, no donor or recipient government maintains data on final aid *expenditures* by object class.^{xii} The absence of this data can almost certainly be attributed to a lack of capacity by donors to monitor, and a lack of incentive for recipients to report, these expenditures – especially if they are being used to finance selective benefits. Without this data it is impossible to quantify to what extent aid is used to provide selective benefits. Moreover, it is difficult to investigate what type of recipient country characteristics promote perverse uses of aid. In the absence of this information, it may serve donors well to take a cautious approach and reconsider some of the principles of the Paris Declaration and Accra Accord. Using country systems for the provision of aid, especially when that aid is direct budget support, is almost assuredly the easiest way by which aid can be used by recipient governments to provide selective benefits. There are no easy answers to mitigating the negative effects of aid on governance. Reverting to a donor-controlled, project-based, approach to aid in order to avoid the dolling out of selective benefits by recipient governments fails to recognise the valid principle of recipient country ownership – not only do recipient countries have better knowledge of capacity gaps but ownership also gives development efforts a longevity which cannot be matched by timevolatile donor interventions.

At a minimum this paper has developed a more nuanced understanding of the relationship between aid and governance in order to take a step towards reconciling conflicting empirical and theoretical claims. The significant evidence of a negative quadratic relationship in the aid-governance relationship also suggests that it may be useful to more actively apply Lensink and White's (2001) Laffer curve approach, or other non-linear techniques, to other aid-outcome relationships, including projects involving education, health or environment outcomes.

APPENDIX I - DATA

The data on aid used in all regression models and in figures one and two was obtained from the OECD Creditor Reporting Database (CRS) from 1995 to 2008 available at http://stats.oecd.org/Index.aspx?DatasetCode=CRSNEW. Data on Gross Domestic Product (GDP), Battle Deaths, Population and Oil Rents are from the World Bank's World Development Indicator (WDI) database, available at http://data.worldbank.org/data-catalog/. Data on the World Governance Indicators is from the World Bank's Worldwide Governance Indicators project available at http://info.worldbank.org/governance/wgi/index.asp. The ICRG data is the 'governance quality' indicator and is available at http://www.prsgroup.com/icrg.aspx. The CIAC data was provided most graciously by Professor Simon Feeny. Summary statistics are presented in Table 1.1 below.

All regressions were run in STATA 12 using reg, and xtbond2 and STATA was used to create the interactive figures three and four. The marginal effects plots were created using Microsoft Excel. Missing data were dropped from the regression. For a full list of missing data points, or for a full replication dataset, please contact the Author.

^{vivi} While a number of scholars have discussed the advantages of using aid disbursement data over aid commitment data when examining aid impact(for an example of such a discussion see Michaelowa (2004), the main drawback is that aid disbursement data is not broken down by sector. While at first glance it might appear attractive to restrict the analysis to the relationship between *governance* aid and governance, *any* aid could be used as a 'reward' for good governance might spur a positive relationship between aid and governance. Conversely, any type of made may have potential to be used as a 'selective benefit', undermining good governance. Accordingly, I use total aid disbursements as my aid measure. ^{vii} The one exception in the controls is the measure of Battle Deaths, which while negative and significant for

^{vii} The one exception in the controls is the measure of Battle Deaths, which while negative and significant for 'political stability' is *positive* and significant for voice and accountability' and 'government effectiveness'. ^{viii} For example, OECD CRS data shows almost double the standard deviation (18.5 per cent vs. 9.6 per cent) in per cent changes in ODA from 2005-2012 in the Federated States of Micronesia when compared to official government statistics (http://www.pitiviti.org/initiatives/economics/fsm.php). In 2008 CRS data shows a 22 per cent drop in ODA compared to a 3 increase in official government statistics.

^{ix} The Sargan χ^2 values in table three suggest valid instruments in each of models 3.I-3.VIII. For model 3.I (ICRG) the 5th lag was needed to find valid instruments, while for model 3.III the 7th lag was needed to not reject the Sargan null hypothesis. For all other models either the 2nd or 3rd lag was used.

^x While this measures includes, as component parts, measures from the World Governance Indicators, the variables in the following models are sufficiently transformed (both through differencing of the outcome

ⁱ Although Lurtz and Shrank (2007) go on to point out that the relationship between governance and growth may show a similar endogeneity as governance and aid – growth may cause good governance rather than the reverse.

ⁱⁱ Both articles suggest ways for refining governance interventions that would appear to presuppose that governance interventions can be effective. Grindle (2007) in particular exerts significant effort in supporting the claim that governance leads to development, but extends virtually no effort to substantiate that aid can improve governance.

ⁱⁿConsidering the WGIs and other measures including the Varieties of Democracy Project, the International Country Risk Guide (ICRG), and the Quality of Governance Institution, Fukuyama (2013) laments the conceptual ambiguity of 'governance'. He suggests refinement along the lines of returning to a more explicit focus on state capacity, defining governance as 'a government's ability to make and enforce rules, and deliver services' (Fukuyama, 2013: 350). Yet as refreshing as Fukuyama's call for conceptual clarity may be, his focus on a bureaucratic-oriented conceptualization of governance is not the conceptualization that has been widely employed in considering the relationship between governance and development.

^{iv} Some examples of papers using the WGI conceptualization of governance include Shepherd (2010), Winters (2010) or Demetriades and Fielding (2012).

^v While there is reliable GDP data for almost all aid-recipient countries, reliable government expenditure data for countries with high levels of aid receipt is difficult to obtain. As I expect the non-linear relationship between aid and governance to become manifest at 'high' levels of aid I chose ODA/GDP as the measure to keep as many countries in my sample as possible.

variable and through the interaction between aid and the CIAC measure) to mitigate concerns of endogeneity and/or multicollinearity.

^{xii} Instead, aid data is collected by aggregate commitment or disbursement. Aid expenditure data is not accessible for a number of reasons, including the fact that aid is often mixed with local revenues such that local budget reports cannot disentangle local-revenue expenditures from aid-financed expenditure.

^{xi} In two instances (figures 3.3 and 3.7) the 'linear' aid coefficient moves from 'positive' to 'insignificant' at higher levels of the CIAC. This finding is not entirely inconsistent with the discussion above given the relatively small density at the higher levels of the CIAC distribution.

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s sama a	ICRG (I)	WGI_tot (II)	WGI_va (III)	WGI_cc (IV)	WGI_ps (V)	WGI_rl (VI)	WGI_ge (VII)	WGI_rq (VIII)
Initial DV	-0.632**	-0.369**	-0.183**	-0.431**	-0.629**	-0.265**	-0.347**	-0.274**
	(10.24)	(-5.04)	(2.55)	(5.89)	(5.89)	(3.87)	(4.41)	(3.47)
Avg. ODA/GDP	0.013	0.323	1.062**	0.301	2.031*	1.037*	-0.581†	-0.095
	(0.04)	(0.84)	(2.57)	(0.78)	(2.27)	(2.31)	(1.66)	(0.27)
PctChg GDP pc	0.115**	0.140*	0.002	0.098	0.302**	0.151*	0.159*	0.193*
	(3.99)	(2.43)	(0.03)	(1.41)	(3.37)	(2.37)	(2.32)	(2.32)
Avg. GDP pc	0.014*	0.071**	0.055*	0.083**	0.100**	0.063**	0.070**	0.038
	(2.01)	(3.10)	(2.05)	(3.46)	(3.43)	(2.89)	(3.28)	(1.47)
AvgOilRents/GDP	-0.155**	-0.616*	-0.617	-0.942**	-0.284	-0.552**	-0.676†	-0.185
	(-2.58)	(2.44)	(1.39)	(3.77)	(0.52)	(2.56)	(1.92)	(0.47)
In(Tot Battle Death)	0.001	0.000	0.025†	0.008	-0.084**	0.005	0.018†	0.012
	(0.50)	(0.04)	(1.89)	(0.86)	(3.97)	(0.50)	(1.92)	(1.07)
Sum Aid Dep	-0.007*	0.010	-0.006	-0.007	0.023	0.015	0.007	0.017
	(-1.96)	(0.90)	(0.43)	(0.86)	(1.03)	(1.08)	(0.63)	(1.43)
N	77	122	122	122	122	122	122	122
Adj. R ²	0.6224	0.3204	0.1333	0.2681	0.4188	0.2544	0.2793	0.2446
Prob> F	0.0000	0.0000	0.0753	0.0000	0.0000	0.0000	0.0000	0.0000

Table 1: Linear Relationship Between Aid and Governance 'shift'(Robust Standard Errors)

t score in parentheses. † = significant at 10% level, * = significant at 5% level, ** = significant at 1% level.

Т	able 2: Non-	Linear Relatio	nship Between	Aid and Gover	mance 'shift' (.	Robust Standa	rd Errors)	53	77	122
	ICRG (I)	WGI_tot (II)	WGI_va (III)	WGI_cc (IV)	WGI ps (V)	WGI_rl (VI)	WGI_ge (VII)	WGI_rq (VIII)		
Initial DV	-0.640**	-0.383**	-0.192**	-0.435**	-0.666**	-0.273**	-0.341**	-0.275**		
	(10.56)	(5.49)	(2.65)	(5.94)	(7.40)	(4.35)	(4.33)	(3.46)		
Avg. ODA/GDP	1.173*	2.950**	3.550**	2.700*	8.339**	2.946*	0.349	-0.325		
	(2.37)	(3.53)	(2.75)	(2.30)	(5.13)	(2.27)	(0.35)	(0.23)		
(Avg. ODA/GDP) ²	-5.879**	-6.160**	-5.809*	-5.647**	-14.713**	-4.494	-2.169	0.536		
	(2.99)	(4.01)	(2.42)	(2.58)	(4.70)	(1.62)	(0.95)	(0.20)		
PctChg GDP pc	0.142**	0.150**	0.010	0.108	0.328**	0.159**	0.162*	0.193*		
	(4.65)	(2.80)	(0.15)	(1.62)	(3.60)	(2.57)	(2.43)	(2.33)		
Avg. GDP pc	0.022**	0.099**	0.081**	0.107**	0.163**	0.083**	0.078**	0.036		
	(2.88)	(3.99)	(2.59)	(3.85)	(5.04)	(3.45)	(3.52)	(1.30)		
AvgOilRents/GDP	-0.178**	-0.620**	-0.617	-0.934**	-0.282	-0.551*	-0.661*	-0.188		
	(3.22)	(-2.66)	(1.52)	(4.28)	(0.46)	(2.38)	(1.97)	(0.46)		
In(Tot Battle Death)	0.002	0.001	0.025*	0.009	-0.086**	0.006	0.018*	0.012		
	(1.00)	(0.09)	(1.92)	(0.96)	(4.60)	(0.56)	(1.95)	(1.05)		
Sum Aid Dep	-0.007*	0.004	-0.012	-0.012	0.008	0.011	0.006	0.018		
	(-2.14)	(0.37)	(0.82)	(-0.96)	(0.46)	(0.80)	(0.49)	(1.52)		
N	77	122	122	122	122	122	122	122		
Adj. R ²	0.6475	0.3766	0.1648	0.3033	0.5043	0.2778	0.2852	0.2448		
Prob>F	0.0000	0.0000	0.0704	0.0000	0.0000	0.0000	0.0000	0.0000		

Absolute value of *t*score in parentheses. † = significant at 10% level, * = significant at 5% level, ** = significant at 1% level.

	ICRG (I)	WGI_tot (II)	WGI_va (III)	WGI_cc (IV)	WGI_ps (V)	WGI_rl (VI)	WGI_ge (VII)	WGI_rq (VIII)
ODA/GDP_3yrMA	-1.141	3.044**	-0.571	0.946	5.634*	4.534*	3.368**	3.689**
	(1.42)	(2.88)	(0.15)	(0.75)	(2.37)	(2.34)	(2.85)	(2.84)
ODA/GDP_3yrMA ²	1.989	-5.049**	1.773	-1.967	-7.600**	-8.207**	-5.330**	-5.656**
	(0.86)	(3.70)	(0.30)	(1.31)	(2.51)	(3.33)	(3.02)	(3.22)
GDP	0.114	1.802**	2.702**	1.149**	1.769*	2.410**	0.906	1.833**
	(1.39)	(5.30)	(2.57)	(2.43)	(2.26)	(3.97)	(1.57)	(3.66)
Population	-0.556*	-3.783**	-5.691**	-2.460†	-2.741	-4.879**	-1.190	-3.537**
	(2.40)	(4.54)	(2.47)	(1.69)	(1.28)	(3.45)	(0.82)	(2.89)
Battle Deaths	0.007**	0.017	0.022	0.010	-0.008	0.040	0.032*	0.019
	(2.56)	(1.37)	(0.67)	(0.80)	(0.59)	(1.48)	(2.31)	(1.03)
Aid Dependence	-0.013†	-0.024	-0.015	-0.019	-0.060	-0.008	0.028	0.007
	(1.65)	(1.23)	(0.16)	(0.61)	(1.14)	(0.26)	(0.97)	(0.26)
Oil Rents/GDP	-0.112	-0.421	0.132	-0.000	-2.497*	-0.500	-0.195	-0.417
	(0.35)	(1.12)	(0.18)	(0.00)	(2.23)	(0.92)	(0.39)	(0.81)
Ν	878	831	831	825	826	830	825	825
N Groups	84	122	122	122	122	122	122	122
N Instruments	23	20	16	20	20	20	20	20
Sargan χ^2	15.67	14.60	10.92	15.09	11.28	14.23	11.07	12.71
$Prob > \chi^2$	0.476	0.333	0.281	0.302	0.587	0.358	0.605	0.471
Wald $\chi^2(7)$	76.66	51.28	23.13	23.38	58.30	26.88	19.23	27.23
$Prob > \chi^2$	0.000	0.000	0.002	0.001	0.000	0.000	0.008	0.000

Table 3 Non-Linear Relationship Between Aid and Governance 'changes'. Arellano-Bond Panel GMM (Difference)

Absolute value of Zscore in parentheses. \dagger = significant at 10% level, * = significant at 5% level, ** = significant at 1% level.

Model	f'(ODA/GDP) = 0	n > threshold	n > threshold (5 yrs)	f(ODA/GDP) = 0	n > threshold
2.I	0.100	292	27	0.200	108
2.II	0.239	86	7	0.479	21
2.III	0.306	66	6	0.611	10
2.IV	0.239	86	7	0.478	21
2.V	0.283	70	7	0.567	15
Average 2.II-2.V	0.267	75	40	0.534	16
Std. Dev. 2.II-2.V	0.033			0.067	
95% Confidence	0.065	486	40	0.129	192
3.II	0.301	69	7	0.603	11
3.V	0.371	45	3	0.741	4
3.VI	0.276	72	7	0.552	16
3.VII	0.316	58	4	0.631	9
3.VIII	0.326	55	3	0.652	9
Average	0.318	58	4	0.636	9
Std. Dev.	0.035			0.070	
95% Confidence	0.063	502	42	0.126	202
Hajimichael et al.	0.25	81	7		
Durbarry et al.	0.51	18	1		
Hansen and Tarp	0.25	81	7		
Lensink & White	0.50	18	1		
Collier & Dollar	0.185	118	11		
Average	0.339	50	4		
Std. Dev.	0.153				

Table 4: ODA/GDP Solutions for Marginal and Total effects.

	N	Mean	Std. Dev.	Min	Max	Туре
ICRG_shift	103	-0.082	0.114	-0.402	0.167	Continuous
WGI_cc_shift	151	-0.040	0.415	-1.059	1.236	Continuous
WGI_rl_shift	151	-0.047	0.382	-1.205	1.061	Continuous
WGI_rq_shift	151	-0.058	0.451	-1.398	0.944	Continuous
WGI_ge_shift	151	-0.046	0.372	-1.131	0.890	Continuous
WGI_ps_shift	151	-0.005	0.630	-1.592	1.946	Continuous
WGI_va_shift	151	-0.015	0.423	-0.923	1.559	Continuous
WGI_tot_shift	150	-0.046	0.343	-1.160	0.969	Continuous
Avg. ODA/GDP	150	0.051	0.084	-0.002	0.544	Continuous
Avg. Oil Rents/GDP	155	0.061	0.141	0	0.867	Continuous
PctChg GDP pc	150	0.506	1.010	-0.419	12.449	Continuous
In(Tot Battle Death)	159	2.584	3.670	0	10.956	Continuous
Sum Aid Dep	159	4.528	2.785	0	11	Integer
ODA/GDP_3yrMA	1753	0.011	0.043	-0.006	0.800	Continuous
ln(GDP)	2190	22.536	2.075	16.236	27.509	Continuous
In(Population)	2384	15.078	2.264	9.130	20.867	Continuous
Battle Deaths	2399	181.296	1202.504	0	32203	Continuous
Aid Dependence	2064	1.150	2.337	0	18	Integer
Oil Rents/GDP	2271	0.061	0.146	0	1.059	Integer
ICRG	1401	0.478	0.154	0.083	0.917	Continuous
WGI_tot	1679	-0.310	0.755	-2.480	1.531	Continuous
WGI_va	1676	-0.320	0.888	-2.297	1.575	Continuous
WGI_cc	1654	-0.323	0.782	-2.062	2.391	Continuous
WGI_ps	1651	-0.262	0.977	-3.304	1.540	Continuous
WGI_r1	1660	-0.344	0.823	-2.677	1.763	Continuous
WGI_ge	1654	-0.338	0.797	-2.451	2.374	Continuous
WGI_rq	1655	-0.340	0.845	-2.676	2.226	Continuous
CIAC	2400	0.402	0.130	0.1	0.72	Continuous

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8 누운 of CIAC Q and 20 E 0 8 .7 2 .3 5 .6 Å CIAC Figure 3.6: Coefficient on ODA (quadratic) for 'WGI Voice and Accountability' and 95% Cls Histogram of CIAC ---cients -10 Coeff -15 -50 .2 .3 .5 .4 .6 .7 .8 CIAC Figure 3.10: Coefficient on ODA (quadratic) for 'WGI Political Stability' 0

Figure 3.2: Coefficient on ODA (quadratic) for 'ICRG'

95% CIs

nts

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Figure 3.4: Coefficient on ODA (guadratic) for 'WGI Total'







Figure 4: Absorptive Capacity and Aid Interactions ('Level' (GMM) Models)