

The Management of Aid and Conflict in Africa*

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Abstract

This study investigates the relationship between the management of development aid and violent conflict in Africa. I exploit variation in World Bank project management quality driven by the assignment of project leaders of varying capacity, combined with geo-coded data on lending and project performance scores. I find that better project management reduces violent conflict across sub-national aid receiving regions. Poorly-managed projects increase conflict while well-managed projects do the opposite. Project monitoring is particularly important and management matters most in regions with a recent history of warfare. The results suggest that the quality of aid implementation affects patterns of conflict.

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Humanitarian aid will continue to be utilized as an instrument of war and will continue to fuel conflict. It is incumbent upon those providing aid to minimize this phenomenon.

John Prendergast (1996, p. 145)

1 Introduction

The relationship between development aid and violent conflict is a source of contentious debate (Qian, 2015). Some recent studies suggest that aid can cause conflict (Croft et al., 2014; Nunn and Qian, 2014; Dube and Naidu, 2015; Darden, 2020), while a range of other work finds an insignificant or negative relationship between the two (Collier and Hoeffler, 2002; De Ree and Nillesen, 2009; Beath et al., 2017; Croft et al., 2016).¹ The reasons for these strikingly different results across contexts are poorly understood. Since humanitarian aid is one of the primary policy levers used to allay global poverty, understanding when and why it leads to violence, as well as what can be done to prevent it from doing so, is of central importance. Is there a way to minimize aid's harm in order to maximize its net benefit?

Qualitative accounts of aid delivery stress that the management practices of aid organizations shape the consequences of development assistance and, in particular, whether or not a given aid project spurs conflict (e.g. Prendergast, 1996; Anderson, 1999; Polman, 2010). Monitoring strategies, for example, have anecdotally been the difference between whether aid leads to violence or not; one development agency delivering food aid to Rwanda during the mid-1990s reduced aid diversion by armed groups by over 95% after redoubling its monitoring efforts (Prendergast, 1996, p. 84). Aid organizations themselves increasingly prioritize monitoring activities in order to reduce aid stealing, particularly in conflict zones.² A key empirical question, therefore, is whether the management of aid design and delivery—processes under the control of policy makers and bureaucrats—mediates the relationship between aid and conflict.

I investigate this question in the context of World Bank development aid in Africa; in 2018, the World Bank invested \$66.9 billion in development assistance globally, and \$28 billion in Africa alone.³ All completed World Bank projects from 1995-2014 are accompanied by detailed evaluation reports, including numerical performance scores, completed by the World Bank Independent Evaluation Group (IEG). These scores measure the quality of monitoring and evaluation, organization and preparation, and project execution, and provide a unique window into the details of aid project management.

To identify the causal effect of project management, I use the identity of individual project leaders as instruments for project management quality.⁴ Every World Bank project is assigned one task team leader (TTL or “project leader”) in charge of advising the borrowing government, making hiring

¹Also see Djankov et al. (2008) on the impact of aid on institutions.

²E.g. USAID: https://www.usaid.gov/sites/default/files/documents/1868/060909_policy_paper.pdf.

³See the 2018 Report: <https://www.worldbank.org/en/about/annual-report>

⁴This strategy is most similar to Marx (2017), who uses the portfolio size of project leaders as an instrument for project completion in an analysis of African elections. Also methodologically related are studies that use “examiner designs” (e.g. Kling, 2006; Doyle, 2007; Maestas et al., 2013; Doyle et al., 2015).

decisions, and monitoring project design, risk profile, implementation, and financial disbursements. Indeed, local project leaders are exactly the individuals that oversee aspects of aid delivery that, if poorly executed, could exacerbate conflict. According to Anderson (1999, p. 72), project field staff “make local, specific, daily, and ongoing decisions about how they do their work [that] can affect the impacts of aid on conflict,” often to a much greater extent than national or global leadership. Moreover, after broad lending sector specialty is taken into account, TTLs are assigned on the basis of their rolling availability and before project location has even been determined. Therefore, leader assignment provides identifying variation in project management quality; pre-trends and event study analysis, discussed in greater detail below, lend credibility to the identification strategy.

Combining leader assignment information and project quality scores with geo-coded conflict data, I find that, across sub-national aid-receiving regions, conflict is lower in regions with better project implementation. Having a project leader that is one standard deviation higher in the leader quality distribution reduces the probability of conflict by 15% (or 0.39 standard deviations). Changing overall project quality from the lowest to the highest implementation score reduces the probability of conflict by 12%. Individuals and organizations that administer aid play a major role in determining whether or not it causes conflict.

The baseline estimates document that a region experiences less conflict following the arrival of a well-managed project compared to a poorly-managed project; however, this does not necessarily imply that poorly managed projects cause conflict and well-managed projects do not. In order to identify the direct effect of World Bank aid, I also introduce an instrument for the direct effect of aid inspired by Nunn and Qian (2014) and Dube and Naidu (2015). The instrument for aid receipt is constructed as an interaction between (i) the share of years that the location received any aid during the sample period and (ii) the total number of World Bank aid projects during the year outside of Africa. Used in concert with the project leader assignment information, this second instrument makes it possible to compare regions with well or poorly managed aid projects to a control group that did not receive aid at all.

I find that regions with the lowest scoring projects experience more conflict than they would without any World Bank project, while regions with the highest scoring projects experience less. That is, variation in project management is enough to explain why, in some contexts, aid has had a positive effect on conflict while in other contexts it has a negative effect.

A series of empirical tests support the validity of the identification assumption: that project leader assignment is independent of potential sub-national conflict outcomes. First, to address the fact that project leaders are assigned in part based on their sector specialty, I include sub-sector fixed effects in the baseline specification to control flexibly for differences across lending sectors; the results do not change. The baseline specification also includes both location and country-by-year fixed effects; thus, project leader sorting based on *persistent* differences across locations (e.g. conflict intensity) or *country-level dynamics* do not violate the identification assumption. Finally, and consistent with the theoretical assignment process, there is no evidence of “pre-trends” or of any relationship between past conflict trends and leader sorting.

The evidence on mechanisms highlights several components of the relationship between aid man-

agement and conflict emphasized in qualitative accounts. First, by estimating the relationship between a series of disaggregated project ratings and conflict, I find that the quality of monitoring and evaluation are particularly important drivers of the baseline results. This dovetails well with case studies illustrating how monitoring can limit aid diversion and conflict.

Second, I find that the estimated effect of management is particularly strong in regions with a recent history of conflict and for projects that involve the direct transfer of “divertable” resources that could most easily be stolen (e.g. health products).⁵ This is consistent with aid organizations’ emphasis on the importance of project management in conflict zones, and in particular its role in limiting resource stealing; Oxfam, for example, highlights the importance of “management controls” in areas where “due to conflict...the likelihood of diversion is higher.”⁶

Finally, I do not find strong evidence of spatial spillover effects, nor do I find evidence that project management affects the duration of pre-existing conflict or the incidence of conflict after the project concludes. These findings are consistent with the importance of management in mitigating direct attacks on aid projects and other violence that takes place during aid delivery (Crost et al., 2014). This set of results moreover does not seem consistent with management affecting conflict via its impact on the perceived legitimacy or entrenchment of armed groups (e.g. Polman, 2010, pp. 133-147 on the Nigeria-Biafra civil conflict), which would likely have longer-lasting and more geographically dispersed effects that are similar across lending sectors.

This study argues that poorly-implemented aid causes conflict whereas well-implemented aid can reduce it. Focusing on the details of aid administration is a departure from most prior work on the consequences of development assistance, which has highlighted variation in recipient country characteristics (e.g. Pritchett and Kaufmann, 1998; Svensson, 1999; Burnside and Dollar, 2000; Werker et al., 2009). The fact that leader capacity shapes the impact of World Bank projects corroborates work on challenges associated with implementing large scale development programs, especially if one of the inputs (e.g. capable project leaders) is supplied inelastically (Davis et al., 2017; Banerjee et al., 2017). Finally, this study extends existing work on the role of bureaucrats in service provision (Best et al., 2017; Decarolis et al., 2018) and bureaucratic inefficiency (e.g. Bandiera et al., 2009; Chong et al., 2014), as well as analyses of management in economic development (Bloom and Van Reenen, 2010; Bloom et al., 2013). The role of management in conflict mitigation has not been the subject of prior work.

2 Background

2.1 Project Management and Conflict

A large body of qualitative evidence suggests that the management of development aid affects the outcome of aid delivery. Case studies emphasize the role of project monitoring, particularly in conflict zones; when projects are poorly monitored, resources may be more easily diverted or explicitly used for violence. Prendergast (1996, p. 84) recalls: “One agency delivering large amounts of food to

⁵I use information on project sector to identify projects that are more likely to be “divertable” (see Section 5.1).

⁶See here: https://www-cdn.oxfam.org/s3fs-public/file_attachments/story/anti-diversion-and-abuse-policy.pdf

Rwanda increased its monitoring rapidly just after the emergency erupted in 1994. ‘We went from 120 tons per month diversion to five tons,’ [...] recalls a representative of that international agency. ‘We did it through monitoring. It’s monotonous, boring, but critical in cutting down mis-management.’” Different project leaders may be more or less willing or able to organize and execute “monotonous” monitoring activities.

Widespread theft and diversion of development assistance has been well documented (Polman, 2010). Local bureaucrats play a particularly important role in limiting aid diversion and appropriation (Anderson, 1999, p. 72). While “headquarters’ policies” are often important, management decisions made by staff often have a more immediate and wide-ranging impact on conflict activity. Hiring decisions and the haste with which personnel decisions are made affect the perceived legitimacy of the project, the community’s ability to monitor aid disbursement, and the likelihood of appropriation (Anderson, 1999, p. 45); local wage rates and payment monitoring can be similarly impactful. Project managers improvise a range of strategies to reduce the likelihood that aid is appropriated by armed groups (Anderson, 1999, pp. 39-40).

The existence of variation in management quality across World Bank projects was recently documented by the Special Inspector General for Afghanistan Reconstruction audit report. The report provides a unique level of detail into the operation of aid projects. For example, in many cases it was never verified that local salary recipients even existed; the report cites evidence of faulty monitoring across the board that exacerbated corruption and conflict.⁷ The potential role of management in mitigating violent fallout from development assistance is apparent in a range of case studies.

2.2 World Bank Project Leaders

Each year, World Bank country offices select a set of country priorities and determine how to allocate funds across ten broad lending sectors. Once the sector-specific allocations are determined, country-specific sector managers are in charge of assigning the task team leader (TTL) for each project. The TTL is the “Bank’s principal point of contact for the borrower for [each] project” (World Bank, 2003, p. 12). They specialize in one or several of the ten principal lending sectors and advise the borrower in project development and design. This includes hiring consultants and personnel and monitoring project implementation, including financial disbursements. According to World Bank (2013) protocol, TTLs “regularly monitor the performance of their projects: contracts, disbursements, technical progress, and risk flags.” Thus, the TTL oversees exactly the practices that qualitative evidence suggests, if done wrong, could lead to conflict.

TTLs are assigned during the first stage of project development—the “Identification” stage—before any project specifics have been determined (World Bank, 2013, p. 12). Assignment to projects is based on their current workload and availability, as well as their broad sector speciality. When the TTL is assigned, only a general project description is known and specifics, including project location, design, and sub-sector, have not been determined (Vermehren, 2017). In theory, the borrowing government is largely responsible for determining the location of project sites; while the Bank and TTL might emphasize certain criteria that the project location must meet, location decisions are ulti-

⁷See full report here: <https://www.sigar.mil/pdf/audits/SIGAR-18-42-AR.pdf>.

mately the responsibility of the government. In practice, there are cases where TTLs and other Bank consultants take a more active role in project design, particularly in the lowest income contexts.

Thus, the official timing and process of project development and TTL assignment make it unlikely that high or low performing TTLs are systematically assigned to sub-national regions that are becoming more or less conflict prone. Nevertheless, project dynamics on-the-ground may differ from the ideal protocol of the World Bank; Sections 4.4 and 4.5 report a series of empirical tests of bias introduced by TTL sorting and find no evidence of problematic sorting dynamics.

3 Methodology

3.1 Data

World Bank Projects Geo-coded data from AidData provide information on the universe of World Bank lending projects in Africa from 1995-2014. In addition to the precise latitude and longitude of each World Bank project site, the data set includes the approval and end date for each project, the primary sector(s) that the project covered, and the name of the TTL who managed the project.

All completed World Bank projects are reviewed by the World Bank Independent Evaluation Group (IEG) and assigned a series of project scores. The IEG is an independent unit within the World Bank Group that reports directly to the Executive Board; its primary goal is to evaluate development assistance in order to identify shortcomings and improve future effectiveness. IEG scores, measuring various components of project performance, are computed on a scale from one to six.⁸ In the baseline results, I use the composite project rating and the first presented by the IEG as the project quality measure. The composite performance measure is “based on three separate criteria—the relevance of the project’s objectives and design, the...efficacy, and efficiency.” To investigate which components of management performance are most important, I also use more detailed performance scores that separately evaluate individual components of project execution.⁹

Figure 1(a) shows the geographical distribution of completed World Bank projects, color coded based on their IEG score. There is substantial variation in project performance within countries and even within sub-national aid receiving regions.

Conflict I use the Armed Conflict Location and Event Data Project (ACLED) to measure sub-national conflict over time. ACLED provides detailed information about all known politically violent events in Africa from January 1, 1997 to the present.¹⁰ ACLED only includes conflict events when at least the province in which the conflict event took place is known. All conflict incidents in ACLED are displayed in the map in Figure 1(b). The main dependent variable in the empirical analysis is the amount of conflict in a grid cell in each year, computed either as (log of) the number of conflict incidents in the grid-cell-year or as an indicator that equals one if there were any conflict incidents in the grid-cell-year.

⁸The score for project “Monitoring and Evaluation” is the only exception; it is scored on a scale from 1-4.

⁹Ratings criteria are described in more detail here:

<http://ieg.worldbankgroup.org/sites/default/files/Data/HarmonizeEvalCriteria.pdf>.

¹⁰This does not include crime, only actions by political agents, including governments, rebels, militias, etc.

3.2 Empirical Strategy

I exploit the assignment of World Bank project leaders in order to identify the impact of aid project management quality on conflict. While management quality itself might be endogenous to local conflict, leader assignment (i) has a strong effect on management quality, (ii) is plausibly independent of potential sub-national conflict outcomes, and (iii) only affects local conflict through World Bank project implementation. The empirical analysis is conducted on a balanced yearly panel (1997-2014) of one-by-one degree grid cells that cover all of Africa, displayed in Figure 1.¹¹ Grid cells are a convenient spatial unit that allow me to match World Bank projects to nearby conflict events in a consistent manner over time. In the first stage, I use project leader indicators as instruments for project quality. The estimating equation is:

$$P_{ict} = \alpha_i + \delta_{ct} + \sum_{\ell} \phi^{\ell} \cdot \text{Leader}_{ict}^{\ell} + \zeta \cdot A_{ict} + \mathbf{X}'_{ict} \Sigma + e_{ict} \quad (1)$$

Here and throughout the analysis, i indexes grid cells, c indexes countries, and t indexes years. The instruments ($\text{Leader}_{ict}^{\ell}$) are indicators that equal one if project leader ℓ is operating a project in grid cell i in year t . P_{ict} is the IEG performance score of the aid project. If there are multiple ongoing projects in grid cell i in year t , P_{ict} is computed as the average IEG score of all ongoing projects.¹² A_{ict} is an indicator variable that equals one if there is an aid project in the grid cell, and α_i and δ_{ct} are grid cell and country-by-year fixed effects respectively.

The corresponding second stage estimating equation is:

$$\text{Conflict}_{ict} = \alpha_i + \delta_{ct} + \gamma \cdot A_{ict} + \beta \cdot P_{ict} + \mathbf{X}'_{ict} \Omega + \epsilon_{ict} \quad (2)$$

The coefficient of interest is β . Conditional on a region receiving any aid, β captures the effect of aid project performance on violent conflict; if $\beta < 0$, it implies that better project management reduces conflict. Conflict_{ict} is a measure of conflict in grid cell i in year t and \mathbf{X}'_{ict} is a set of time-varying controls. Since project leaders are assigned in part on the basis of their sector specialty, \mathbf{X}'_{ict} includes a set of sub-sector indicators to absorb any relationship between project sector and conflict.

In order to compare regions with and without any aid, I introduce an instrument for the direct effect of aid computed as the interaction between: (i) the fraction of time periods not including t during which i receives any aid and (ii) the fraction of total aid project-years *outside of Africa* taking place during time t . Specifically, the instrument, Z_{ict} , is constructed as:

$$Z_{ict} = \left[\frac{\sum_{t' \neq t} A_{ict'}}{T-1} \right] \cdot \frac{\text{Projects Outside Africa}_t}{\sum_t \text{Projects Outside Africa}_t}$$

Since temporal variation in the instrument is driven by variation in World Bank aid outside of Africa, the positive correlation between the instrument and the actual presence of aid is driven by fluctu-

¹¹At the equator, a one-by-one degree grid cell is approximately 111 km².

¹²Table A12 shows that the main results are robust to a variety of parameterizations P_{ict} when there are multiple projects.

ations in World Bank capacity common to Africa and the rest of the world and not changes within Africa.¹³ Grid cell fixed effects absorb the direct effect of a region’s propensity to receive aid. To the extent that changes in aid flows outside of Africa are driven by the substitution of aid across countries, country-level changes are absorbed by the country-by-year fixed effects.

There are two corresponding first stage regressions when the presence of aid is also instrumented:

$$A_{ict} = \alpha_i + \delta_t + \omega^1 \cdot Z_{ict} + \sum_{\ell} \phi_{\ell}^1 \cdot \text{Leader}_{ict}^{\ell} + \mathbf{z}'_{ict} \Sigma^1 + e_{ict}^1 \quad (3)$$

$$P_{ict} = \alpha_i + \delta_t + \omega^2 \cdot Z_{ict} + \sum_{\ell} \phi_{\ell}^2 \cdot \text{Leader}_{ict}^{\ell} + \mathbf{z}'_{ict} \Sigma^2 + e_{ict}^2 \quad (4)$$

Equation (3) is the first stage regression for the direct effect of aid receipt. The second stage estimating equation is again (2), except now the coefficient on the direct effect of aid, γ , can be interpreted as a causal estimate.

4 Main Results

4.1 OLS Estimates

Panel A of Table 1 reports OLS estimates of (2). While I estimate a positive correlation between development aid and conflict, this correlation decreases as project performance increases ($\beta < 0$). Conditional on receiving any aid, project performance is negatively correlated with conflict. This relationship, however, does not necessarily reflect the causal effect of project performance.

4.2 First Stage and Reduced Form

I next turn to first stage estimates of (1), the relationship between World Bank project leader indicators and project performance.¹⁴ The overall variance of the leader indicator coefficients is 0.171; the estimates imply that having a project leader who is one standard deviation higher in the quality distribution increases project performance by 0.47 standard deviations (0.41 points on a scale of 1-6).¹⁵ The leader indicators are strong instruments—in all IV specifications reported, the concentration parameter (corrected for the number of instruments) is never below 37 and it only reaches 37 when a restricted instrument set is used (Table A11). Project leaders at both ends of the quality distributions are associated with large differences in overall project quality.

Next, I investigate reduced form estimates (1). A project leader who is one standard deviation higher in the quality distribution increases the probability of conflict by 0.15, or 0.39 standard deviations.¹⁶ This highlights the vast heterogeneity in project performance and conflict management

¹³All results are very similar using a version of the instrument constructed using aggregate aid flows *to* Africa instead of aggregate flows *outside* of Africa (Table A4).

¹⁴In order to limit estimation-error variance in the project leader effect estimates, to be conservative when presenting the first stage results, I report empirical Bayesian shrinkage estimators (see Koedel et al., 2015). See Appendix Section A1.

¹⁵Figure A2 presents a histogram of the full distribution of leader indicator coefficients.

¹⁶A histogram of all leader coefficient estimates from the reduced form regression is presented in Figure A3.

capability across project leaders, dovetailing well with recent work that finds bureaucratic performance explains substantial variation in policy outcomes (e.g. Best et al., 2017; Decarolis et al., 2018).

Finally, the first stage relationship for the direct effect of aid—Equations (3) and (4)—is reported in Figure A3 and Table A2. I find a strong positive correlation between the instrument (Z_{ict}) and aid receipt (columns 1-2) and no relationship between the instrument and project management (columns 3-4), suggesting that the instrument is strong and capturing the desired effect.

4.3 Second Stage

I now turn to the central result of the paper: estimates of the relationship between aid project quality and violent conflict. Panel B Table 1 reports IV estimates of (2); the first stage estimating equation is (1).¹⁷ In columns 1-3, the outcome variable is the (log of the) number of conflict incidents and in columns 4-6 it is a conflict indicator. Estimates of β are negative and highly significant: Conditional on having a World Bank project in a region, conflict in that region is significantly decreasing in the project performance score. Reassuringly, the point estimates are similar when sub-sector fixed effects are included (columns 2-3,5-6). The standard errors are similar clustering by grid cell (columns 1-2, 4-5) or by country (columns 3 and 6).

In Panel C, I also include the instrument for aid receipt in the instrument set, and include the direct effect of aid in the set of endogenous variables. Again, the coefficient on project quality is negative and statistically significant across specifications. Moreover, causal estimates of the direct effect of aid on conflict remain positive and similar in magnitude. In the most conservative specification (columns 5-6), a grid-cell with the lowest possible project score has 0.14 more conflict events than a grid-cell with no ongoing aid projects, and a grid-cell with the highest possible project score has 0.13 fewer conflict events than a grid-cell with no ongoing aid projects. A grid-cell-level project score between 1 and 3 increases conflict while a grid-cell-level project score score between 4 and 6 reduces conflict. World Bank aid delivery and administration practices play a major role in mediating the violent consequences of development aid.

Spatial Spillover Effects The baseline estimates could be over or under estimates of the equilibrium impact of project management if management also affects conflict in adjacent regions. For example, conflict actors might move toward poorly executed projects if resources are easier to steal, thereby reducing conflict in nearby regions. Large spillover effects would suggest that the units of analysis used in the main analysis might be too small. To investigate these possibilities, I estimate the relationship between conflict and aid project quality in adjacent grid cells by augmenting Equation (2) to include an indicator for an aid project in adjacent grid cells and the quality score of that project. I use indicators for leaders operating in adjacent grid cells as instruments for the project score in those grid cells. The details of spillover effects estimation are discussed in Appendix Section A3.1; estimates are presented in Table A3. I do not find strong evidence of spillovers. If anything, compared to regions

¹⁷Since the estimation strategy uses many instruments—in total, 545 project leader indicators—I report limited information maximum likelihood (LIML) estimates in the baseline specification to reduce finite sample bias (Flores-Lagunes, 2007; Anderson et al., 2010). However, LIML, Fuller, and standard 2SLS estimation all produce similar results (see Table A6)

adjacent to low-quality projects, regions adjacent to high-quality projects experience more conflict; however, spillover effect estimates are small in magnitude.

4.4 Falsification Tests

The central concern about the baseline results is that regions that received projects led by better or worse leaders would have been on different trends regardless of the arrival of poorly or well-managed aid. This section reports a series of results suggesting that project leader sorting is not related to local conflict dynamics. First, I estimate the relationship between conflict and both contemporaneous and leading values of project leader performance. If the identification strategy is valid, leading values of project performance should be uncorrelated with conflict. For ease of presentation, the independent variables of interest in this test are the contemporaneous and leading values of a one-dimensional *predicted* grid-cell level project score, estimated from Equation (1). The predicted score is thus the part of the grid-cell level score that can be explained by the leader indicators.

Reassuringly, leading values of the project performance score are statistically insignificant and close to zero across specifications; these estimates are reported in Panel D of Table 1. The coefficients on a series of leading values of the predicted project performance score estimated from separate regressions are reported in Figure 2, both with and without a broad set of time-varying controls.¹⁸ These event study graphs show no trend in the relationship between project leader performance and conflict until the year that the project leader arrives in the grid cell.

As an auxiliary test, I estimate the relationship between the predicted project score and lags of conflict. A significant relationship between lags of conflict and the predicted score would suggest that conflict dynamics affect project leader assignment. I find, however, that the lags are statistically insignificant, have fluctuating signs, and are small in magnitude (see Table A5). The baseline results are also robust to controlling flexibly for several lags of conflict (see Table A7). Dovetailing well with the World Bank's description of the project leader assignment process, the results from this section suggest it is unlikely project leader sorting is affected by conflict trends.

4.5 Robustness

I conduct extensive tests of the robustness of the baseline results, described in more detail in Appendix Section A2. Broadly, results are robust to the use of alternative IV estimators (Table A6); to the inclusion of a broad set of controls, including trends in local income and natural resource presence, or project size and total spending (Tables A7, A8, and A9); to sample period and instrument set restrictions (Tables A10 and A11); and to the use of a variety of alternative parameterizations of the project score measure (Table A12).

¹⁸The grid-cell level characteristics include diamond and petroleum prevalence, agricultural suitability, and an indicator that equals one if a grid-cell is intersected by a national border.

5 Mechanisms and Extensions

5.1 Which Management Qualities Matter?

Qualitative accounts highlight the role of monitoring; this section presents evidence consistent with their emphasis. In addition to the overall project performance measure used in the main results, the IEG reports a series of additional scores that capture components of Bank's project performance. The three additional measures capture the quality of: (i) monitoring and evaluation, (ii) preparation at the project's outset ("performance at entry"), and (iii) project supervision.¹⁹ While (i) and (iii) sound similar, they are distinct. The supervision score (iii) evaluates the Bank's role in identifying potential threats to the achievement of project's stated outcomes. The monitoring and evaluation score (i), however, directly evaluates the quality of monitoring at each stage of the project and regardless of whether the monitoring activity had any impact on the project's pre-determined development outcomes.

Columns 1-4 of Table 2 document that of the three sub-scores, only the monitoring and evaluation score is significantly correlated with conflict. My ability to compare the causal effects of each sub-score is limited by the fact that I only have one set of instruments—the project leader indicators. It is, however, possible to determine which component of project performance is driving the baseline results. In columns 5-8, I estimate the relationship between conflict and the value of each project score predicted from the project leader indicators. The coefficient on the monitoring and evaluation score is the largest (columns 5-7) and significantly different from the other two. When all three are included in the same regression, only the coefficient on the monitoring and evaluation score is statistically significant (column 8).

5.2 Conflict Zones and Aid Diversion

Existing accounts also highlight the important role of project management in conflict zones, where the risk of stealing and appropriation by armed groups is particularly high (see Section 2.1). To investigate this, I include an interaction terms between both the aid project indicator and predicted project score and an indicator that equals one if a grid cell experienced conflict in the past year. Columns 1-2 of Table 3 present the results from this analysis. The interaction between the predicted project score and past conflict is negative and significant, suggesting that project management has a particularly large mediating effect in regions with recent conflict.²⁰ The uninteracted project score remains negative and significant: project management still plays a role in regions without recent conflict.

The explanation for this pattern emphasized in case studies is that monitoring is particularly important when there is the possibility that armed groups steal or divert humanitarian resources (e.g. Prendergast, 1996). To investigate this channel, I test for heterogeneous effects of project management

¹⁹Detailed descriptions of the criteria determining each rating can be found here: <http://ieg.worldbankgroup.org/sites/default/files/Data/HarmonizeEvalCriteria.pdf>.

²⁰Since I do not have an instrument for recent conflict, this cannot be interpreted as the causal effect of recent conflict. It captures the heterogeneous average effect of regions with recent conflict.

based on characteristics of the lending sector. If limiting diversion were an important channel, the impact of management on conflict should be larger in sectors with more potential for diversion. I construct an indicator that equals one if an aid project belongs to a sector that involves the transfer of goods and resources to individuals and refer to these sectors as “diversion prone.” This includes the first, fifth, and tenth of the World Bank’s ten major lending sectors (projects related to agricultural development, health and social services, and water provision and sanitation). The sectors not classified as “diversion prone” are those related to energy, finance, industry and trade, education, information and communications, public administration, law, and justice, and transportation.²¹

Columns 3-4 of Table 3 present estimates of (2) that include an interaction term between an indicator that equals one if a project belongs to a “diversion prone” sector and both the aid project indicator and performance score. The estimated effect of management is more pronounced for lending sectors that are diversion prone. Moreover, this is particularly true in regions with recent conflict. Columns 7-8 report the triple interaction between the project score, the recent conflict indicator, and the diversion-prone lending sector indicator; the triple interaction is negative and significant. While admittedly suggestive, these results argue that project management matters most in conflict zones when appropriate resources are being transferred.

5.3 Conflict Onset vs. Duration

While the main results suggest that high-quality project performance reduces conflict incidence, this could either be because it affects conflict onset, or conflict duration, or both. To distinguish between the two, I estimate discrete-time hazard models of conflict onset and offset separately.²² The estimation strategy is discussed in detail in Section A3.2 and estimates are reported in Table A14. These results are imprecisely estimated, possibly because of the small sample size after dropping observations that are not “at risk” of either conflict onset or offset. Nevertheless, when conflict offset is the outcome the coefficient on project score is never significant, is close to zero, and switches sign across specifications. When conflict onset is the outcome, the coefficient of interest is consistently negative and statistically significant in columns 1-2. These results are consistent with good project management preventing the arrival of lootable from spurring conflict, and not with management affecting the entrenchment of existing conflict actors or power holders.

6 Conclusion

This study investigates whether the management development aid affects violent conflict. The empirical analysis focuses on World Bank aid in Africa, a region that experiences protracted violent conflict and where development assistance is frequently appropriated for violence. I find that poorly managed projects cause conflict while well executed projects have the opposite effect. To derive causal estimates, I exploit the assignment of project leaders with varying ability. Project leaders drive sub-

²¹Since the education and information and communication categories are more ambiguous to classify, I re-estimate all results including these sectors in the set of “diversion prone” sectors and the results are similar albeit somewhat smaller in magnitude.

²²See Jenkins (1995) for the finer details of estimation. This analysis is modeled from Nunn and Qian (2014).

stantial variation in aid project performance and conflict dynamics; management matters not only for the success of projects themselves but also for mitigating their potentially violent fallout.

These results affirm that the policy makers and bureaucrats that comprise development agencies play an important role in determining the consequences of development aid. The broader goal of this research is to move beyond statements that aid is “good” or “bad”—or that place full blame for its failings on recipient countries—and investigate strategies that might allow recipient countries to benefit from assistance without falling victim to its violent side effects.

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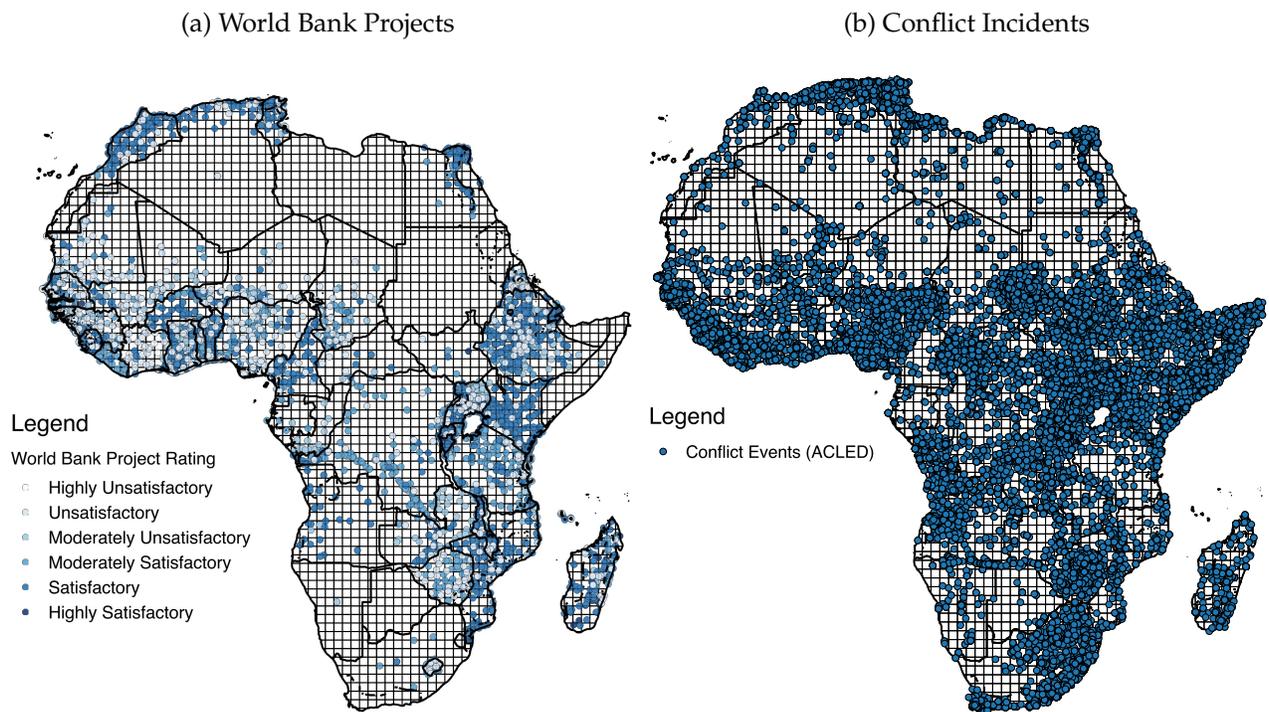
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7 Figures and Tables

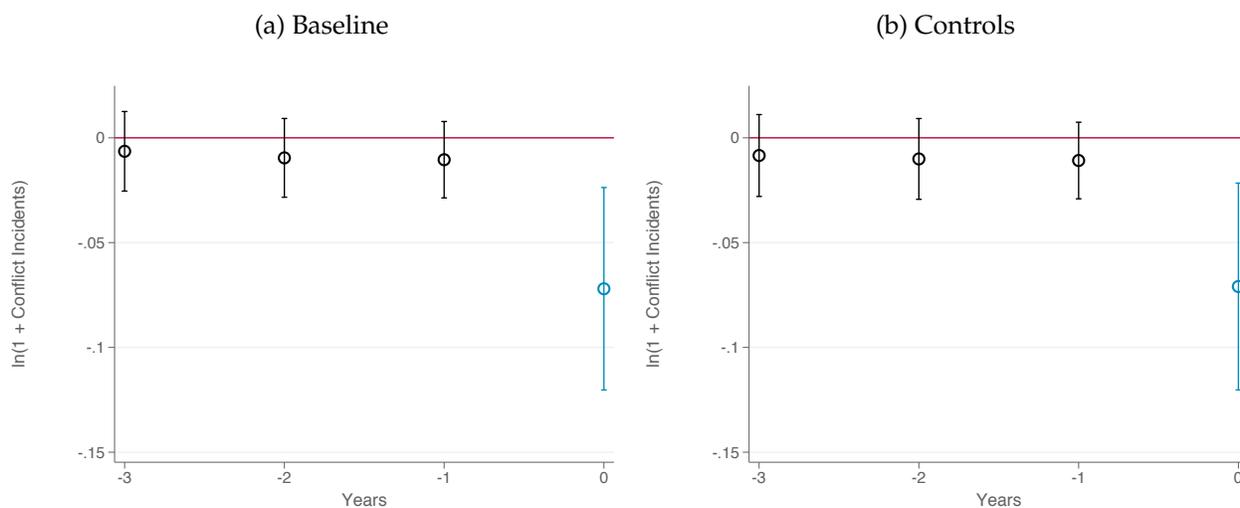
Figure 1: World Bank Projects and Conflict Incidents
Matched to One-By-One Degree Grid Cells



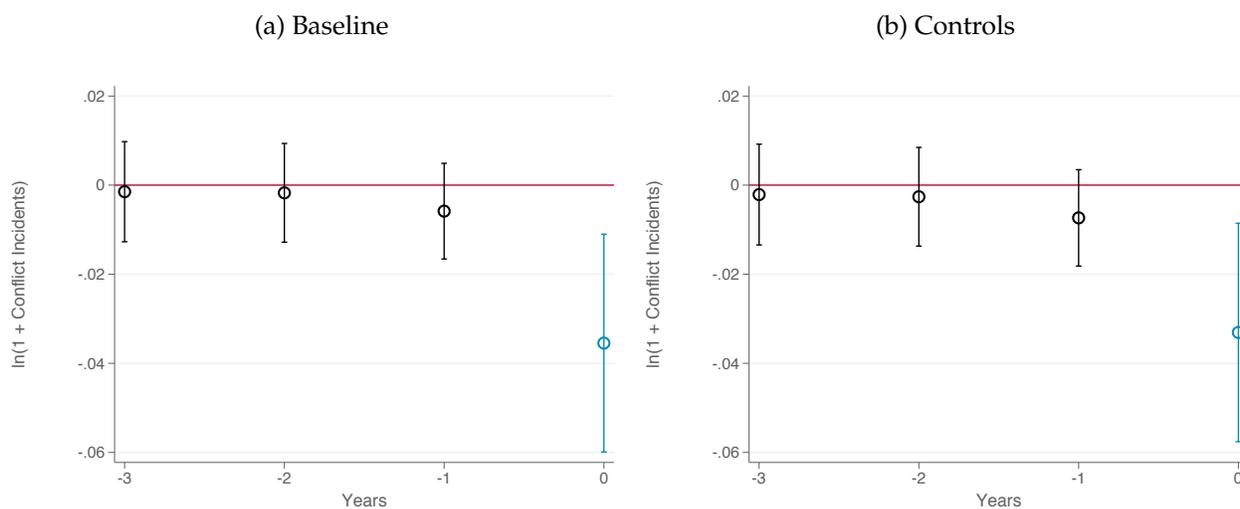
Notes: This figure displays all World Bank projects used in the analysis in the geo-coded AidData data set (a) and all conflict incidents in the ACLED conflict data (b). Country borders are also displayed, along with the one-by-one degree grid cells used in the empirical analysis.

Figure 2: Event Study Graphs, Management and Conflict

Panel I: Dependent Variable is $\ln(1 + \text{Conflict Incidents})$



Panel II: Dependent Variable is a Conflict Indicator



Notes: This figure displays coefficient estimates from a series of regressions in which either a leading value (colored black) or the contemporaneous value (colored blue) of the predicted project performance score is included on the right hand side. In Panel I, the dependent variable is the (log of the) number of conflict incidents in the grid-cel-year. In Panel II, the dependent variable is an indicator that equals one if there is a conflict incident in the grid-cell-year. (a) reports the baseline specification and (b) reports specifications in which grid-cell level controls interacted with year indicators are included on the right hand side (the controls are agricultural suitability, and indicators if a grid cell has petroleum deposits, diamond deposits, or is intersected by a national border). 95% confidence intervals are reported; standard errors were clustered by grid cell.

Table 1: Main Results: Aid Management and Conflict

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable is ln (1 + Conflict Incidents)			Dependent Variable is a Conflict Indicator		
Panel A: OLS Estimates						
Project Indicator	0.0946** (0.0467)	0.130*** (0.0483)	0.130* (0.0712)	0.0471** (0.0218)	0.0419* (0.0234)	0.0419 (0.0275)
Project Score	-0.0389*** (0.0116)	-0.0384*** (0.0117)	-0.0384** (0.0160)	-0.0180*** (0.00545)	-0.0164*** (0.00574)	-0.0164** (0.00636)
R-squared	0.260	0.269	0.269	0.158	0.160	0.160
Observations	49,644	49,644	49,644	49,644	49,644	49,644
Panel B: IV Estimates, Project Score Instrumented						
Project Indicator	0.152** (0.0673)	0.199*** (0.0669)	0.199** (0.0932)	0.0786** (0.0307)	0.0693** (0.0321)	0.0693** (0.0325)
Project Score	-0.0539*** (0.0172)	-0.0561*** (0.0168)	-0.0561** (0.0223)	-0.0262*** (0.00787)	-0.0235*** (0.00811)	-0.0235*** (0.00783)
R-squared	0.260	0.269	0.269	0.158	0.160	0.160
Observations	49,644	49,644	49,644	49,644	49,644	49,644
Panel C: IV Estimates, Project Indicator & Project Score Instrumented						
Project Indicator	0.104 (0.0702)	0.176** (0.0756)	0.176 (0.109)	0.0775** (0.0322)	0.0675* (0.0358)	0.0675* (0.0355)
Project Score	-0.0562*** (0.0173)	-0.0573*** (0.0169)	-0.0573** (0.0230)	-0.0268*** (0.00788)	-0.0240*** (0.00813)	-0.0240*** (0.00786)
R-squared	0.259	0.269	0.269	0.158	0.160	0.160
Observations	49,644	49,644	49,644	49,644	49,644	49,644
Panel D: Falsification Test						
Project Indicator, leading value	0.0882 (0.102)	0.0598 (0.103)	0.0598 (0.0993)	0.00142 (0.0584)	-0.00494 (0.0605)	-0.00494 (0.0698)
Project Indicator	0.177* (0.106)	0.170 (0.112)	0.170 (0.128)	0.149** (0.0621)	0.122* (0.0643)	0.122** (0.0547)
Predicted Project Score, leading value	-0.0214 (0.0249)	-0.0191 (0.0249)	-0.0191 (0.0264)	-0.00188 (0.0142)	-0.00235 (0.0144)	-0.00235 (0.0164)
Predicted Project Score	-0.0584** (0.0257)	-0.0582** (0.0273)	-0.0582* (0.0310)	-0.0373** (0.0152)	-0.0321** (0.0157)	-0.0321** (0.0140)
R-squared	0.742	0.749	0.749	0.603	0.610	0.610
Observations	7,117	7,117	7,117	7,117	7,117	7,117
Grid Cell FE	Yes	Yes	Yes	Yes	Yes	Yes
Year x Country FE	Yes	Yes	Yes	Yes	Yes	Yes
Sub-Sector Indicators	No	Yes	Yes	No	Yes	Yes
Standard Errors Clustered By:	Grid Cell	Grid Cell	Country	Grid Cell	Grid Cell	Country

Notes: The unit of observation is a grid-cell-year. Project Indicator is an indicator variable that equals 1 if there is a world bank aid project in a grid-cell-year. Project Score was determined by the IEG and is on a scale from 1-6 in order of increasing overall project performance. In columns 1-3 the outcome variable is ln(1 + Conflict Incidents) while in columns 4-6 an indicator that equals one if there is any conflict in the grid-cell-year. Panel A reports OLS estimates. Panel B reports IV-LIML estimates in which Project Score is instrumented using the full set of project leader indicators. Panel C reports IV-LIML estimates in which Project Indicator is also instrumented and an variable constructed from the interaction between a time specific variable (total number of World Bank aid projects outside of Africa) and a grid-cell specific variable (fraction of years with at least one aid project) is included in the instrument set. In Panel D, Predicted Project Score is the project score predicted from the leader indicators in the first stage equation; the leading value is also included and the sample is restricted to observations where a project leader either enters or exits a grid cell. Standard errors, reported in parentheses, are clustered by grid-cell in columns 1-2 and 4-5 and clustered by country in columns 3 and 6. *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.

Table 2: Disaggregated Performance Scores

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Dependent Variable is ln(1+Conflict Incidents)							
	Raw Project Score Measures (OLS)				Project Score Measures Predicted from Leader Indicators			
Project Indicator	0.219*** (0.0409)	0.0601 (0.0472)	0.0650 (0.0521)	0.252*** (0.0613)	0.249*** (0.0555)	0.127** (0.0593)	0.160** (0.0697)	0.371*** (0.0808)
Project Score - Monitoring & Evaluation	-0.0862*** (0.0149)			-0.0871*** (0.0156)	-0.0984*** (0.0214)			-0.0960*** (0.0231)
Project Score - Performance at Entry		-0.0139 (0.0116)		-0.0147 (0.0134)		-0.0317** (0.0149)		-0.0284 (0.0177)
Project Score - Supervision			-0.0138 (0.0122)	0.00598 (0.0144)			-0.0369** (0.0167)	-0.00525 (0.0210)
Year & Grid Cell FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Sub-Sector Indicators	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	49,644	49,644	49,644	49,644	49,644	49,644	49,644	49,644
R-squared	0.561	0.560	0.560	0.561	0.561	0.560	0.560	0.561

Notes: The unit of observation is a grid-cell-year. Project Indicator is an indicator variable that equals 1 if there is a world bank aid project in a grid-cell-year. The Monitoring and Evaluation project score is on a scale from 1-4; the remaining scores are on a scale from 1-6. In columns 5-8, the project score measures are values predicted by the full set of project leader indicators. All specifications include grid cell and year fixed effects, as well as the full set of sub-sector indicators. Standard errors, clustered by grid-cell, are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.

Table 3: Recent Conflict and Aid Diversion

	(1)	(2)	(3)	(4)	(5)	(6)
	Dependent Variable is ln(1+Conflict Incidents)					
Predicted Project Score	-0.0237** (0.0103)	-0.0405*** (0.0132)	-0.0105 (0.0258)	-0.0364 (0.0260)	-0.00649 (0.0162)	-0.0342* (0.0176)
Predicted Project Score x Conflict Past Year	-0.0752** (0.0368)	-0.0717** (0.0360)			0.00554 (0.0610)	0.0225 (0.0598)
Predicted Project Score x Diversion Prone			-0.0617** (0.0265)	-0.0462* (0.0262)	-0.0251 (0.0178)	-0.00639 (0.0186)
Predicted Project Score x Conflict Past Year x Diversion Prone					-0.119* (0.0680)	-0.141** (0.0662)
Year & Grid Cell FE	Yes	Yes	Yes	Yes	Yes	Yes
Sub-Sector Indicators	No	Yes	No	Yes	No	Yes
Observations	49,644	49,644	49,644	49,644	49,644	49,644
R-squared	0.574	0.580	0.554	0.561	0.575	0.580

Notes: The unit of observation is a grid-cell-year. Predicted Score is the grid-cell-year project score predicted from a regression including a full set of project leader indicators on the right hand side. Conflict Past Year is an indicator that equals one if there was a conflict event in the grid cell in the previous year. Diversion Prone projects are those in major lending sectors one, five, or ten. All regressions always include the all relevant double interactions and uninteracted variables, as well as the aid project indicator and its interactions; these coefficients are suppressed for concision Standard errors, clustered by grid-cell, are reported in parentheses. *, **, and *** denote significance at the 10%, 5%, and 1% levels respectively.