INTERNATIONAL MONETARY FUND

Foreign Aid and Conflicts: The Effects of 9/11 on Donor Behavior

Rabah Arezki, Youssouf Camara, Patrick Imam, Kangni Kpodar

WP/25/16

2025
JAN

WORKING PAPER

 WP/25/16

IMF Working Paper
Strategy, Policy and Review Department and Institute for Capacity Development

Foreign Aid and Conflicts: The Effects of 9/11 on Donor Behavior

Prepared by Rabah Arezki, Youssouf Camara, Patrick Imam, Kangni Kpodar*

Authorized for distribution by Pritha Mitra
January 2025

ABSTRACT: We explore the changing relationship between armed conflicts and non-military foreign aid. We find that the sign of the relationship linking (bilateral) aid commitments to the onset of armed conflicts in aid recipient countries is statistically significant and goes from negative to positive after the year 2001. We also find that our results are driven by grants rather than loans and by aid for health and humanitarian purposes. The results are robust to a myriad of checks including substituting armed conflicts with terror attacks, accounting for debt relief initiatives and using different estimators. We interpret our results as stemming from a shift in donors' preferences induced by 9/11 attacks toward supporting conflict affected countries, confirming the primacy of donors' interests over recipient needs.

JEL Classification Numbers:	E00; F3; O1; O2
Keywords:	Foreign Aid; Conflicts; Terror Attacks; Absorptive Capacity
Author's E-Mail Address:	rarezki.econ@gmail.com ; camarakantona@gmail.com; pimam@imf.org ; kkpodar@imf.org

*Rabah Arezki is a Director of Research at CNRS, a Senior Fellow at FERDI and Harvard's Kennedy School of Government. Youssouf Camara is a postdoctoral fellow at McGill University. Patrick Imam and Kangni Kpodar are Economists at International Monetary Fund (IMF). We thank Omer Akbal, Andy Berg, Bill Easterly, Patrick Guillaumont, Carlos van Hombeeck, Chandana Kularatne, Philippe Le Houérou, Adnan Mazarei, Honore Ndoko, Ha Nguyen, and Baoping Shang, and Petia Topalova, for insightful comments. This research is part of a Macroeconomic Research in Low-Income Countries project [Project ID: 60925] supported by the UK's Foreign, Commonwealth and Development Office (FCDO). The findings, interpretations, and conclusions expressed in this paper do not necessarily reflect the views of IMF, the Executive Directors of the IMF or the governments they represent, and the FCDO.

WORKING PAPERS

Foreign Aid and Conflicts: The Effects of 9/11 on Donor Behavior

Prepared by Rabah Arezki, Youssouf Camara, Patrick Imam, Kangni Kpodar

Contents

1. Introduction

The global salience of conflict and terrorism rose sharply after the attacks of September 11, 2001, in the United States (Gaibulloev and Sandler, 2019). While the consequences of the security and military interventions following 9/11 also known as the "global war on terror" are well known, the response of nonmilitary aid following 9/11 have received much less attention.[1] The US and its Western allies being traditional aid donors, this unprecedented attack since WWII could have altered their preferences, with important consequences for aid recipient countries around the world. Accounts from leading aid specialists as well as evidence from data on the usage of such phrase as "fragile states" in books suggest that 9/11 was a turning point in donors willingness to support nations grappling with conflict and terror attacks.[2] [3]Before 2001, the focus of development aid was primarily on issues of governance and corruption in recipient countries, mirroring the objective of the maximization of aid effectiveness (see Panel B in Figure 1).[4] Interestingly, the strand of literature on aid effectiveness lost its prominence in the early 2000s just when the literature on conflicts and terrorism was gaining prominence. The "scissor effect" could coincide with a change in donor behavior in their allocation of non-military in response to conflicts and terror attacks. In the present paper, we test the potential changing relationship between foreign aid and conflicts.

Unlike the 2008 financial crisis, the economic effect on the United States of the terror attacks perpetrated by Al Qaeda on September 11, 2001 were short lived.[5] Yet, the attacks have durably shaped American public perception of terrorism.[6] In turn, 9/11 profoundly shifted the approach of the United States' government as well as other Western government partners on issues of security through the global war on terror.[7] In the immediate aftermath of the attacks, a coalition led by the US invaded Afghanistan and later Iraq.[8] Further massive surveillance programs were deployed, and international military cooperation were extended. In this paper, we contend that 9/11 fundamentally altered aid priorities of global players, namely the US as well as other Western allies—which together constitute an overwhelming share of global aid under the period of consideration. A

[1] An early contribution by Moss et al. (2005) exploring the effects of the global war on terror on US Agency International Development Agency (USAID) published a few years after 9/11 finds little diversion of development aid. We take a much longer view of the effect of 9/11 on donors' behavior going beyond the US.

[2] Philippe Le Houerou, the Chairman of the Board of the Agence Francaise de Developpement who played a major role in various replenishments of the World Bank's International Development Association—which provides zero to low-interest loans and grants to the world's poorest countries—stated that: "not surprisingly, since after 9/11 the donor community progressively focused its attention on "post-conflict", "failed states", and "fragility situations" concepts. Also, other topics such as gender and global public goods (climate change, pandemics) became increasingly center stage of aid discussions and allocations. Correspondingly, "the effectiveness" of aid which was becoming a central part of the discourse of development in the late 90s did not disappeared but started to fade into the background.

[3] See Panel A in Figure 1 illustrating the prominence of the phrase "fragile state" in books using data from Google Trends. Citations as listed by Google Scholar, March 28, 2024.

[4] See Panel B in Figure 1 illustrating the prominence of the phrase "development aid effectiveness" in books using data from Google Trends. Citations as listed by Google Scholar, March 28, 2024.

[5] See Evans and Krueger (2003) explore the economic consequences of terrorism in the US following 9/11 attacks and in other countries using a variety of indicators such stock market performance. The authors find that while the effects of terrorist attacks can be significant in some countries, the effects tend to be temporary and localized.

[6] See URL link to Pew Research Center's analysis of the enduring legacy of 9/11 in the United States: https: //www.pewresearch.org/politics/2021/09/02/two-decades-later-the-enduring-legacy-of-9-11/

[7] See URL to Encyclopedia Britannica's description of the scope of the global war on terror: https://www. britannica.com/topic/war-on-terrorism

[8] See URL link to the Council of Foreign Relations' timing of military interventions that followed 9/11: https: //www.cfr.org/timeline/us-war-afghanistan.

scant look at the data, both for global aid commitments and for select conflict affected countries, support our hypotheses that both the year 2001 was a turning point in aid commitment and that countries embroiled in conflict or impacted by terrorism after 2001 have received more (not less) foreign aid.[9] In this paper, we are not interested in the response of military aid. Rather, we specifically test whether the shift in preference of donors following 9/11 has changed the allocation of non-military aid in support of conflict or terror affected countries.[10]

Exploring the causal relationship between conflicts and terror attacks in recipient countries and foreign aid can be challenging. Conflicts are endogenous to domestic social and economic factors.[11] However, the timing of the onset of domestic conflicts, as well as domestic terror attacks, are arguably exogenous. Albeit the timing of conflicts and terror attacks are not often studied as such comport a strategic element of surprise (Morris, 2009). Exploiting that plausible exogenous source of variation in the timing of conflicts and terror attacks in recipient countries allows us to detect whether donors respond to the news by changing their aid commitments. To further allay concerns about the endogeneity of conflict to aid inflows, we use aid commitments as opposed to disbursements.[12] Nunn and Qian (2014) results exploiting shipments of food aid—corresponding to disbursement—point to the lack of evidence linking aid shipment and the onset of conflicts. This confirms the difficulty to predict the exact timing of the onset of conflicts using aid—even when using disbursement.

To estimate the response of bilateral aid commitments to conflicts, we use a gravity model of (bilateral) aid donor-recipient flows for the period going from 1980 to 2021 saturated with donor-recipient dummies which is akin to estimating a difference-in-difference model. To test the potentially changing relationship between conflicts and foreign aid following 9/11 attacks, we resort to a simple sample split in the year 2001. As argued earlier, 9/11 attacks are a shock to preference of donors which has the advantage of being salient given the change in public attitude toward conflict and terrorism. Yet 9/11 is not a material shock to economic activity in donor countries unlike the 2008 global financial crisis—the latter having a more mechanical effect on aid allocation through reduced economic growth.

We exploit the UCDP/PRIO Armed Conflict Dataset constructed by International Peace Research Institute, Oslo (PRIO) to capture the timing of and severity of armed conflicts. This dataset offers a comprehensive overview of all conflict types. We also utilize data on terror attacks from the Global terrorism database constructed by the University of Maryland, which contains detailed records of terrorist incidents, including the number of casualties, injuries, hostages and the estimates of damages to properties. We merge these datasets with official development assistance (ODA) data provided by the members of the Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD). We exclusively use bilateral aid—as opposed to multilateral aid—which accounts for about 75 percent of overall aid globally

[9] We formally test for the existence of structural break. Results from the tests discussed in the empirical strategy section confirm the existence of break around the year 2001.

[10] Figure 2 showing the evolution of global aid commitments in constant US dollars indicates a structural break around 2001. Figure 3 suggests that Afghanistan, Iraq, Libya and Nigeria have received more non-military aid following conflict and terrorist attacks only following 2001.

[11] Nunn and Qian (2014) explore the opposite direction of causality running from aid to conflict. The authors exploit time variation in food aid shipments due to changes in U.S. wheat production and cross-sectional variation in a country's tendency to receive any U.S. food aid. They find evidence for the incidence and duration of civil conflicts but has no robust effect on inter-state conflicts or the onset of civil conflicts.

[12] Aid is only disbursed several years after it is committed. The delay depends on both the nature of the aid (purpose vs. non purpose aid) as well as the level of state capacity in recipient countries.

according to the Dube and Naidu (2022). In this paper, we exclude multilateral aid which is pooled from multiple countries to maintain clarity in donor attribution—as it cannot be attributed to one single donor country.[13]

We find that the sign of the arguably causal relationship linking (bilateral) aid commitments to the onset of armed conflicts in recipient countries is statistically significant and goes from negative to positive after the year 2001. We also find that our results are driven by grants rather than loans and by aid for health and humanitarian purposes. The results are robust to a myriad of checks including substituting armed conflict with terror attacks, accounting for debt relief initiatives and different estimators. We interpret our results as stemming from a shift in donors' preferences toward sup-porting fragile states following 9/11 attacks confirming the primacy of donors' preferences over recipient needs.

Our paper is related to the abundant strand of the literature on aid allocation and effectiveness.[14] As mentioned earlier, the literature on aid effectiveness peaked in the early 2000s. A notable paper by Burnside and Dollar (2000) point to the importance of "good policies" defined as policies which are good for growth as a driver of aid effectiveness. The authors further argue that aid allocation is only weakly going to countries with good policies. In turn, the authors argue that this needs to change to increase the effectiveness of foreign aid.[15] Easterly (2007) provides evidence that the impact of aid on growth is inconclusive and depends on a variety of factors including policies. The literature on aid effectiveness had then gone on a slump for almost two decades while the literature on conflicts gained prominence. In this paper, we bring together two separate strands of literature aid allocation and conflicts to document the changing response of aid in the face of conflict in recipient countries.

Most recently, Easterly (2024) finds that US and other aid donors shifted toward badly governed countries, worsening the so-called "paradox of aid"—lowest income countries where aid is most needed are often the ones with the worst governance. Interestingly, Eisensee and Stromberg¨ (2007) documents that the public opinion in the United States is influenced by media coverage of global events and disasters and in turn affect U.S. aid decisions. The authors also find that global events outside natural disasters tend to crowd out US disaster relief. Our paper is related in that we perform a reduced form test of 9/11 as a salient shock to donors' preference in the allocation of aid in response to conflicts and terror attacks in recipient countries.

Our paper is related to papers exploiting natural experiment to dissect the effect of shocks on foreign aid allocation.[16] [17] Most notably, Faye and Niehaus (2012) document the existence of "aid cycle", whereby donors strategically use bilateral aid to sway the outcome of elections. In other words, the authors exploit the timing of

[13] Regression analysis of the ratio between multilateral and bilateral aid flows following conflicts point to no statistically significant effect. Results are not presented in the paper but are available upon request.

[14] Dollar and Alesina (2000), Alesina and Weder (2002) and Knack (2001) are among the early contribution to the strand of literature on aid allocation. The authors find that foreign aid tended to flow to more democratic and less corrupt countries—prior to the early 2000s.

[15] A recent paper by Andersen et al. (2022) shows evidence of outright aid capture in low-income countries. The authors find aid disbursements to highly aid-dependent countries coincide with sharp increases in bank deposits in offshore financial centers known for bank secrecy and private wealth management but not in other financial centers.

[16] Arezki, Camara, Imam and Kopdar (2024) exploit natural disasters in recipient countries to explore the response of aid flow. The authors find evidence that the response is statistically and economically significant.

[17] Interestingly, Werker et al. (2009) utilize oil price fluctuations as an exogenous source of variation to examine the macroeconomic implications of foreign aid from the Organization of Petroleum Exporting Countries (OPEC). The study reveals that aid substitutes for domestic savings, does not significantly impact the financial account, and leads to substantial unaccounted capital flight, challenging conventional assumptions about the economic benefits of foreign aid.

(predetermined) elections to explore whether donors behave strategically during elections. In this paper, we follow a similar empirical approach to identify the effect of conflicts and terrorist attacks in recipient countries on foreign aid.

Our paper is also related to the line of literature on conflicts, terrorism and military aid. The strand of literature on the determinants and consequences of conflicts is abundant. On the determinants of conflicts, Edward and Sergenti (2004) notably use rainfall as instrument for economic growth to ascertain the causal relationship between economic growth and conflicts. Another strand of the literature document the opposite direction of causality that is the economic consequences of conflicts and terrorism including related to 9/11 attacks (Abadie and Gardeazabal, 2003; Evans and Krueger, 2003).[18] [19] Burke et al. (2015) review the literature on climate and conflicts. The authors find that deviations from moderate temperatures and precipitation patterns systematically Increase conflict risk.[20] In this paper, we exploit the timing of the occurrence of conflicts domestically and internationally to detect change in behavior on the part of donors.

Interestingly, Dube and Naidu (2014) explore whether foreign military assistance strengthen or further weaken fragile states facing internal conflict focusing on Columbia. The authors' findings suggest that US military assistance strengthen armed nonstate actors, undermining domestic political institutions. Sullivan et al. (2011) explore whether US military aid leads to more compliance with donor objectives by recipient countries. Their results suggest that increasing military assistance decrease significantly cooperative foreign policy behavior of recipient countries with the US. In this paper we complement the existing body of work on military aid by focusing on non-military aid allocation to explore the effects of 9/11 attacks on donors' behavior vis-a`-vis conflict affected countries. Our paper documents the change in volume and composition of aid allocation following conflicts and terror attacks in recipient countries.[21]

The remainder of the paper is organized as follows. Section 2 describes data sources. Section 3 discusses the empirical strategy. Section 4 presents the results. Section 5 lays out extensions and robustness checks. Section 6 concludes.

2. Data

In this section, we present our data set which consists primarily of data on foreign aid as well as armed conflicts and terror attacks. We also present additional data for control variables as well as data on political alignment and US military aid. Table 1 presents a summary of descriptive statistics.

[18] See Gaibulloev and Sandler (2019) for an overview of the political science and economics on a variety of issues related to terrorism including how it has evolved since 9/11.

[19] Interestingly, Stiglitz and Bilmes (2008) estimate the true cost of the war of terror. The authors evaluate the war in Iraq to have cost 3 trillion on account of hidden costs from the war.

[20] More recently, several papers have documented the link between climate change and conflicts. Prominently, Dell et al. (2012) examine empirically the economic impacts of climate change on agricultural output. The authors provide empirical evidence on the relationship between weather fluctuations and economic outcomes. See Dell et al. (2014) for a survey of literature on economic impact of climate change. Burke and Emerick (2016) provide evidence of the effect of climate on agriculture output.

[21] In an extension of our main analysis, we explore whether US military aid spikes in conflict affected countries but find no such evidence. Unfortunately, the data available is not only just for the US but also not commitment but rather aid obligations which makes the comparison with our main results difficult.

Foreign aid is our main dependent variable. Foreign aid data known as ODA cover the period going from 1980 to 2021. ODA is retrieved from DAC database. We exclusively consider bilateral aid flows, excluding multilateral flows. We focus on the 20 largest donors during the study period which together accounted for 99 percent of aid commitments.[22] That results in a 47-year panel dataset, featuring 189 recipients in total, with an average of 165 recipients per donor-year. ODA, as defined by the OECD Glossary, encompasses grants or loans directed to countries and territories classified as ”developing” based on criteria such as being official sector undertakings with economic development and welfare enhancement as primary objectives and featuring concessional financial terms. The dataset also incorporates technical cooperation as part of aid, while excluding grants, loans, and credits for military purposes. The ODA data exclude military aid.[23] [24]

Armed conflict is our main explanatory variable. Data from the UCDP/PRIO Armed Conflict Dataset are constructed by the International Peace Research Institute Oslo (PRIO) to capture the timing of and severity of armed conflicts. The timing here refers to the onset of conflicts, defined as the year of the first battle-related death in the conflict. UCDP/PRIO contains data on the occurrence and severity of armed of all types.[25] UCDP defines armed conflict as: “a contested incompatibility that concerns government and/or territory where the use of armed force between two parties, of which at least one is the government of a state, results in at least 25 battle-related deaths.”

We also use terror attack as an alternative explanatory variable. The data are from the Global Terrorism Database (GTD) constructed by the University of Maryland. The GTD contains data for the number of killings, number of persons wounded and hostages as well as estimates of the value of damages to properties. The GTD defines a terrorist attack as the threatened or actual use of illegal force and violence by a nonstate actor to attain a political, economic, religious, or social goal through fear, coercion, or intimidation. The GTD is an open-source database including information on over 200,000 terrorist events. Statistical information contained in GTD is based on reports from a variety of open media sources. Yet, information is not added to the GTD unless and until the sources are deemed credible.[26]

To further explore the underlying mechanisms driving aid flows following conflicts we use a measure of political alignment between major donors and recipients. To build our political alignment measure, we use a comprehensive dataset encompassing votes on General Assembly resolutions at the United Nations (UN) from session 49 (1995/1996) to session 75 (2020/2021) compiled by Voelsen et al. (2021). Our alignment measure is based on the average fraction of UN General Assembly votes for which the recipient country and the Group of 7 (G7) donor countries cast concordant votes (either yes, no or abstention). This measure of alignment is

[22] Recognizing China’s emergence as a non-traditional creditor donor, a dimension not covered by the OECD’s DAC database, we incorporate data sourced from AidData’s Global Chinese Development Finance. Not surprisingly, removing China from the analysis does not alter the main results presented in our paper. Data available at the following URL link: https://www.aiddata.org/data/aiddatas-global-chinese-development-finance-dataset-version-2-0

[23] In an extension of this paper, we use US military aid obligation—commitments data are not available. The data on US military aid obligation are available from the United States Agency for International Development (USAID) website at: https://www.foreignassistance.gov/data#tab-data-download

[24] Transfer payments to private individuals, such as pensions, reparations, or insurance payouts, are generally not included in the ODA calculation.

[25] Uppsala University and Norwegian University of Science and Technology (NTNU). Website: https://www. prio.org/data/31

[26] The National Consortium for the Study of Terrorism and Responses to Terrorism (START) makes the GTD available via on online interface at the following URL link: https://www.start.umd.edu/gtd/

calculated for each year of observation between specific G7 donor and recipient, and then averaged across all G7 donors to determine the recipient's alignment. Votes from countries that are absent or not members of the UN are excluded, as are proposals with no voting mechanism.

Additionally, we use US military aid as an alternative dependent variable to compare the response of military as opposed to nonmilitary aid. We also use demographic and economic control variables obtained from the World Bank's World Development Indicators database (Worl Bank, 2023). These controls include variables such as population and Gross Domestic Product (GDP), allowing us to contextualize our examination within larger socio-economic trends. Population and income in both recipient and donor countries are indeed important determinants of aid commitments.

3. Empirical Strategy

In this section, we describe the empirical strategy to explore the effects of armed conflicts—as well as terror attacks—on foreign aid commitments. To do so, we exploit the specific timing of the onset of conflicts—and terror attacks—in aid recipient countries to test whether the response of donors has changed after 9/11 attacks. We follow the reduced-form specification used by Faye and Niehaus (2012). In all our specifications, we incorporate donor-recipient fixed effects, allowing us to estimate the effects of conflicts by relying solely on the time variation within donor-recipient pairs. This approach effectively eliminates any time-invariant characteristics associated with recipients and their specific bilateral relationships with donors. Our approach is akin to a difference-in-difference estimation using aid inflows (outcomes) for countries who were exposed to conflicts (treated) and countries which were not (not treated), both before and after conflicts.

In addition, we proceed to a simple sample split to document the changing pattern of the relationship between aid commitments and conflicts after 9/11 attacks. We formally test for the existence of a break using tests for multiple structural breaks in panel data, following Bai and Perron (1998), Ditzen et al. (2021) and Karavias et al. (2021). The test confirms the existence of a single breakpoint in bilateral aid flows. The estimated date for the break point is 2002, at a 99 percent confidence level (see Appendix Table A1).

To account for the potential influence of trends in aid flows coinciding with conflicts, we introduce time-varying controls such as population and GDP.[27] Further we also introduce step dummies and Multilateral Debt Relief Initiative (MDRI). The step dummies take the value of zero otherwise. which take the value of one for years when countries achieved specific decision (or completion) points related to debt relief initiatives namely Heavily Indebted Poor Countries Initiative (HIPIC) That approach helps mitigate the risk of confounding variables and ensures a robust examination of the effects of conflicts on bilateral aid.[28]

Formally, let d index donor countries, r index recipient countries, and t index years. We estimate the direct relationship between bilateral aid and conflicts within a country pair:

[27] Our main results are also robust to simultaneously or separately including year fixed effects and donor-year fixed effects.

[28] See an URL link to a presentation of the HIPIC and MDRI initiatives

$$ODA_{drt} = \theta CONFLICT_{rt} + X'_{drt}\beta + \gamma_{dr} + \epsilon_{drt} \qquad (1)$$

where ODA_{drt} is the logarithm of commitment ODA from donor d to recipient r at time t; and $CONFLICT_{rt}$ is the dummy that takes 1 if country r has any conflicts in year t or the logarithm of the total number of person killed, injured, taken hostage or estimate of the value of the property in US dollars at time t in the recipient country r; X'_{drt} is a vector of time-varying donor or recipient specific control variables such as GDP and population; and γ_{dr} represents a vector of donor-recipient country pair fixed effects.

Further, we explore the mechanisms driving aid allocation following conflicts, exploring the role of political alignment. Indeed, political alignment is expected to interact with conflicts to drive more aid commitments. To explore these mechanisms, we augment Equation (1) with an interaction between conflicts and political alignment between major donors and recipient (UN_{rt}) as shown in Equation (2).

$$ODA_{drt} = \theta_1 CONFLICT_{rt} + \theta_2 UN_{drt} + \theta_3 CONFLICT_{rt} * UN_{drt} + X'_{drt}\beta + \gamma_{dr} + \epsilon_{drt} \qquad (2)$$

Bilateral aid flows between a specific donor and recipient over time involves in numerous instances zero values. Most empirical studies typically adopt a straightforward approach of excluding pairs with zero aid from the dataset and using ordinary least square (OLS) to estimate the logarithmic linear form. In contrast, we do not drop the zeros in this paper. We assign the value of one when ODA is equal to zero and take the natural logarithm of ODA commitments. Given the prevalence of zeros and the potential heteroskedasticity of errors, OLS results may exhibit biases and inconsistency. To ensure consistent estimators and address zero-value observations effectively, alternative robust estimators can be used. These alternatives include the Poisson Pseudo-Maximum Likelihood (PPML) estimator, Zero-Inflated Poisson, Heckman selection model, and Probit model (Silva and Tenreyro, 2006; Herrera, 2010; Martin and Hall, 2017). We exploit these alternative estimators to assess the robustness of our estimates.

A statistical consideration arises regarding the potential correlation between conflicts and unobserved characteristics of recipients, such as the possibility that poor countries may exhibit both lower resilience to conflicts and a higher propensity to receive aid. To address this concern, we incorporate donor-recipient fixed effects (denoted as γ_{dr}) into Equation (1). This adjustment effectively removes time-invariant attributes of recipients and their specific bilateral relationships with donors, allowing us to focus on estimating the impact of conflicts by considering only the time variation within donor-recipient pairs. Another issue to contend with is the potential alignment between trends in aid and the frequency of conflicts. To mitigate this concern, we introduce controls in the form of time-varying variables such as population and GDP. This approach helps account for any concurrent trends in aid allocation and the occurrence of natural disasters, enabling a proper identification of the effects of conflicts on aid allocation. A concluding methodological consideration pertains to inference. Even upon the elimination of donor-recipient and time varying effects, achieving conditional uncorrelation of error terms within the panel dimensions in Equation (1), a requisite for the consistency of conventional OLS standard errors, remains unlikely. Given the various dimensions available for clustering, we adopt a robust approach by clustering on donor-recipient pairs, which is both the most general and restrictive method (Bertrand et al., 2004).

4. Results

4.1 Did the relationship between foreign aid and conflicts change after 9/11 attacks?

We first estimate the relationship between aid commitments and armed conflicts over the full sample period running from 1980 to 2021. Column I of Table 2 report estimates of Equation (1), in which the occurrence of conflict is captured by a dummy as a predictor of bilateral aid commitment. The results point to a negative and statistically significant relationship between aid commitment and the occurrence of armed conflict. We then test whether the relationship between aid commitments and the occurrence of conflicts in recipient countries has changed over time. Columns II-III of Table 2 report estimates of Equation (1) for two separate sub-sample periods running respectively from 1980 to 2000 and from 2000 to 2021. The results point to shift in sign of the relationship between aid commitment and natural disasters. The results are first statistically significant and negative for the first sub-sample running from 1980 to 2000. The results then become statistically significant and positive from 2001 to 2021.[29] [30] [31]

Using Columns II and III estimates as our benchmark regressions, we interpret results as evidence that the occurrence of an armed conflict respectively decrease (increase) bilateral aid commitment by about 54 (30) percent for respectively the sub-sample period before (after) the year 2001. In other words, the average absolute value difference in bilateral aid between countries experiencing an armed conflict and those which do not is respectively 54 (30) percent before (after) the year 2001.[32] The response of aid commitment is statistically significant the response and appears relatively large. That said the quantification based on the coefficient from the estimation of Equation (1) relates to the change in aid commitments resulting from conflicts on impact. The increase in commitment should thus not be interpreted as the overall increase in commitment over the duration time of conflicts. The dynamic effect of ongoing conflicts on aid commitment does however pose further challenge to identification rendering the quantification of the overall effect throughout conflicts difficult.

When substituting the dummy for armed conflicts with two dummies indicating the intensity cate-gory of conflict namely major and minor conflicts (Columns IV-VI in Table 2), the results remain statistically significant with a flip in sign when comparing the sub-sample period before and after 2001. However, the results are driven by major conflicts. The results are qualitatively similar for minor conflicts but show less significance. Quantitatively, the coefficients associated with major conflicts presented in columns V and VI suggest the effect of major conflicts are multiple the size in absolute value than that for overall armed conflicts. The effect of major conflicts on aid commitment could increase by over 1 percent after 2001. Notwithstanding the caveat that the quantification exercise is pertaining to the effect on impact, the response of aid to (major) conflicts appears relatively large.

[29] The main results holds if we also control simultaneously or separately for donor-year fixed effects or year fixed effects (see Appendix Table 15).

[30] Results are also robust to the exclusion of the US and/or China as donors and the exclusion of Afghanistan, Iraq and Libya as recipients (see Appendix Tables 16, 17, 19, and 20 respectively).

[31] Donor countries that were attacked on their soil after 2001 were more sensitive to the shift in sign (see Appendix Table 18).

[32] The interpretation of the relevant coefficient in presence of a dummy variable is equal to 100*(exp(coefficient)-1)

The results should be interpretated as an average—on impact—response of the main bilateral donors to armed conflicts—bilateral aid constitutes 75 percent of ODA. As mentioned earlier we left out the multilateral donor response hence our results should be interpreted as lower bound estimates of the average overall aid response considering the role that multilateral donor plays in fragile states. Our interpretation for the results pertaining to the sub-sample before 2001 is that bilateral donors displayed risk aversion related to venturing into conflict affected countries for obvious reasons pertaining to political and operational risks. However, one must wonder given the stated development goals of aid whether such level of risk aversion leading to an actual reduction in commitments goes beyond just political and operational risks. The fact that traditional donors have enjoyed peace and stability on their soil for over sixty years may indeed have also contributed to not making intervention in conflict affected countries a priority.

The anecdotal evidence presented in the introduction suggest that indeed countries experiencing conflict before 2001 have not receive much aid but that changed after 2001. This anecdotal evidence is consistent with our systematic analysis of the response of aid to conflicts. Our interpretation for the flip in sign after 2001 is that donors have shifted preferences regarding the importance supporting conflict affected countries on account of 9/11 attacks in the US, the biggest attack on US soil since WWII. The shift in preferences maybe on account of global salience of conflicts post 9/11 and the necessity to promulgate a development response to conflict and not just a military response.[33]

To ascertain that our main results are not driven by the ad hoc nature of the approach consisting in splitting the sample in the year 2001, we explore a more flexible approach to detecting the change in the sign of coefficient associated with conflicts in Equation (1).[34] We plot the evolution of the coefficients associated with conflicts based on regression results performed using 10-year rolling windows (Figure 4). The results confirm that the sign of the coefficients associated with conflicts are first negative before progressively turning positive as the rolling window move past 2001. The results associated with a flip in sign after the year 2001 are robust features of the relationship be-tween conflicts and aid commitments. The results presented in Figure 4 are consistent with donors having experienced a shift in preference related to the desirability of development intervention in conflict affected countries post 9/11. In this section we explored the response of aid commitment to armed conflicts but if 9/11 shock affected preferences of donors, donors should also respond to terror attacks in would be aid recipient countries. In the following sub-section, we explore whether terror attacks also drive aid commitment.

4.2 Did the relationship between foreign aid and terror attacks also change after 9/11?

Before substituting terror attacks to armed conflicts in our regression analysis, we also explore whether different types of armed conflicts—defined by PRIO as a contested incompatibility result-ing in at least 25 battle-related deaths—have a differentiated effect on aid commitments. The types of conflicts available from PRIO database are intra-state, inter-state, and externalized conflicts. The first two types are self-explanatory. The externalized conflicts are conflicts involving at least a third party.

[33] We further test whether US military assistance is systematically going to conflict affected countries and find no evidence of that.

[34] The results from the formal structural break tests of bilateral aid flows confirm the presence of a single structural break points around the year 2002.

Table 3 presents the results of the estimation of Equation (1) for the overall sample period as well as two sub-sample periods before and after 2001 (Columns I-III). Results for the coefficients associated with intra-state conflicts for the overall sample (Column I) and pre-2001 period (Column II) are both statistically significant and negative. The coefficient associated with intra-state conflicts for the post 2001 period is negative but not significant (Column III). Results for the coefficients associated with inter-state conflicts are not statistically significant across the board (Columns I-III). Results for the coefficients associated with internationalized conflicts are positive but not statistically significant for the overall sample period (Column I). Results associated with internalized conflicts are statistically significant and negative for pre-2001 sample period (Column II) and statistically significant and positive for the sample period post 2001 (Column III). Our main results are thus driven by intra-state and internationalized conflicts. In turn, this suggests that terrorist attacks and international involvement in conflicts could be important drivers of foreign aid allocation.

We now substitute the dummies for armed conflicts with measures of casualties or damages (evaluated in number of victims or US dollars) caused by terrorist attacks. Table 4 Columns I-VI present results for the number of persons wounded and killed. Table 5 Columns I-VI present results for persons kidnapped and the value of property damage. Across the board, the results remain statistically significant, and the sign of the coefficients associated with terrorist attacks flip after 2001. Quantitatively, the interpretation of the results for the post-2001 period using columns III and VI estimates implies that a 1 percent increase in damages caused by terrorist attacks increase bilateral aid by respectively about 0.04 and 0.03 percent everything else being equal. In comparison for the period pre-2001, a 1 percent increase in damages cause by terrorist attacks decrease bilateral aid by about 0.18 percent. Results presented in Table 5 are consistent with our main results. The result should be interpretated as an average response of the main bilateral donors to terrorist attacks on impact.

In turn, we explore a more flexible approach to detecting the change in the sign of coefficient associated with terrorist attacks in Equation (1). We plot the evolution of the coefficients associated with terrorist attacks based on regression results performed using 10-year rolling windows for all four measures (Figure 5). The results confirm that the sign of the coefficients associated with terrorist attacks are first negative before progressively turning positive as the rolling window move past 2001. The results associated with a flip in sign after the year 2001 are robust features of the relationship between terrorist attacks and aid commitments.

In the following sub-section, we explore further the compositional responses of aid inflows to natural disaster shocks.

4.3 How did the composition of aid evolve following conflicts?

In this subsection, we test whether the occurrence of a conflict affects the composition of foreign aid commitment in recipient countries. Unfortunately, the data on composition of aid commitment is only available starting in 2003. We thus present the regression results for the period post 2003. Columns I-IX of Table 6 report estimates of Equation (1) for non-purpose as well as purpose aid flows and the subcomponents of the latter. The results suggest a statistically significant and negative (positive) direct relationship between non-purpose (purpose) aid commitment and conflicts (Columns I-II). When exploring the effect of conflict on disaggregated component of purpose aid we find that humanitarian and social infrastructure components are

driving the positive and statistically significant results. We interpret these results as evidence that the occurrence of conflicts increases bilateral aid commitment through the category of purpose aid associated with humanitarian and social infrastructure. Quantitatively, the occurrence of conflict lead to respectively 28 and 63 percent of humanitarian and social infrastructure aid components. The increase in these two components following the occurrence of conflict is consistent with the shift in preference in donors post 9/11 aiming at supporting conflict afflicted countries. It should also be noted that the debt reduction component decreases suggest that debt initiatives are not driving the results.

Further, we test whether grants or loans are driving our main results that the relationship between aid commitment flipped sign after 2001. Table 7 presents results for grants (Columns I-III) and loans (IV-VI) over respectively the overall sample period, the sample period before 2001 and after 2001. Columns I-III shows that the coefficients associated with conflicts in the grant regressions are statistically significant across the board, and that the sign flips after 2001. Columns IV-VI shows that the coefficients associated with conflicts in the loan regressions are positive across the board but not statistically significant. We conclude that our main results are driven by grants and not loans. That is consistent with a change in preference on the part of donors following 9/11 willing to use more grants than loans in a conflict context. Indeed, conflicts afflicted countries are less able to acquire loans. Also, the results confirm that debt relief initiatives are not confounding factors driving the flip in sign after 2001. Indeed, if the debt relief initiatives were to drive our results, loans will respond much more in the post 2001 period. We more systematically account for such debt relief initiatives in robustness checks.

Overall, the results confirm that the occurrence of conflicts causes new bilateral commitment in humanitarian and social components on impact. Yet, the estimated average response of aid flows following conflicts could hide that other factors interact with conflicts to drive donors' response. In other words, there could be a differentiated effect including depending on donor-recipient characteristics, which we further explore below.

4.4 Is political alignment driving the relationship between aid and conflict?

In this subsection, we test whether donor-recipient political alignment proxied by closedness in UN voting patterns drive aid response following conflicts in recipient countries. Columns I-III in Table 8 report estimates for a regression of aid commitments on conflicts. The regression uses Equation (2) including an interaction between conflicts and political alignment with G7 countries. The results point to a flip in sign of the coefficient associated with conflicts, but results are only statistically significant for the period after 2001.

The results also point to statistically significant but negative interaction terms between conflicts and political alignment with G7 countries in the post 2001 period. These results suggest that our main results related to the flip in sign in post 2001 period is not driven by political alignment.[35] In other words, G7 countries do not increase aid in conflict afflicted countries that have closer political alignment with them. Our political alignment measure is however an imperfect measure of strategic alignment between donor and recipient especially in a context where political turnover is a byproduct of conflicts.

[35] The results are also qualitatively similar, not shown here but available upon request, when restricting the political alignment to US as opposed to all G7 countries.

5. Robustness Checks

In this section, we explore a variety of robustness checks and extensions. First, we test whether debt initiatives namely HIPC and MDRI. The analysis in the previous sections pointed to the com-positional change of aid commitment as not supportive evidence for the hypothesis that debt initiatives drive our main results. Indeed, the debt reduction component decreases following conflicts and the grant (loan) component increases (decreases). We more directly account for decision and separately completion points of the debt relief initiatives in the 2000 era. To do so, we introduce step dummies which are zeros except starting at the dates of decision or completion points. The step dummies are country specific. It should be noted that the various debt initiative only concerns 36 countries of which 33 are African countries.

Table 9 show results including step dummies for decision points (Columns I-III) and completion points (IV-VI). Our main results pointing to a flip in sign after 2001 are robust to controlling for debt initiatives. We further explore whether military and development aid move in sync. We are constrained by the availability of military aid data which is only readily available for the US. Hence, we restrict the analysis to the US. Table 10 shows results contrasting the responses of US development aid (Columns I-III) with US military aid (Columns IV-VI) following conflicts. For US development aid, results confirm the flip in sign albeit the coefficient associated with conflicts is not statistically significant for the period post 2001 (Column I-III). For US military aid, the results point to a negative relationship between aid commitments and conflicts albeit lacking statistical significance. Military aid does not appear to follow development aid pattern of increasing at the onset of conflicts after 2001. That said, the data on military aid are obligation which are not direct comparable to commitment. Further research on the topic could address issues of identification issues associated between military aid and conflicts as well as data comparability between development and military aid.

We test whether our main results are robust by using different estimators to account for the presence of too many zeros. Table 11 presents the results from the estimation of Equation (1) using OLS which is our benchmark as well as alternative estimators namely Poisson Pseudo-Maximum Likelihood, and Probit model. The coefficient associated with Columns (I-VI) suggests that the coefficients associated with conflict flip sign after 2001 for both Poisson and Probit estimators albeit the coefficient is not statistically significant for Probit estimator. Overall, our main results are robust to using different estimators accounting for the presence of too many zero observations.

Finally, we explore whether our main results are robust to the exclusion of group of regions namely regions as classified by the World Bank. Tables 12-14 present the results for the overall sample period (Table 12), the period before 2001 (Table 13) and the period after 2001 (Table 14). Table 12 confirms that over the full sample period aid commitment are negatively affected by the onset of conflicts across the different regressions excluding successively different regions except when excluding Europe and Central Asia. Table 13 shows that across the board the relationship between aid commitment and conflicts is negative for the period 2001. Table 14 shows that the flip in sign of the coefficient associated with conflict is not robust to excluding sub-Saharan Africa and the Middle East and North Africa region separately. These results suggest that sub-Saharan Africa and the Middle East and North Africa region do drive our results. That is not surprising as these two regions have had their fair share of conflicts.

6. Conclusion

In this paper, we explored the changing relationship between armed conflicts and non-military foreign aid. We found that the sign of relationship linking (bilateral) aid commitments to the onset of armed conflicts in aid recipient countries is statistically significant and goes from negative to positive after the year 2001. We also found that our results are driven by grants rather than loans and by aid for health and humanitarian purposes. The results are robust to a myriad of checks including substituting armed conflicts with terror attacks, accounting for debt relief initiatives and different estimators. We interpret our results as stemming from a shift in donors' preferences to-ward supporting fragile states following 9/11 attacks confirming the primacy of donors' preference over recipient needs.

Further research could explore the effectiveness of foreign aid in conflict afflicted countries. To do so, appropriate identification techniques should be used to address the acute endogeneity as-sociated with the economic consequences of conflicts and the need for more aid. Addressing the endogeneity challenge associated with aid effectiveness means building a counterfactual to answer the question as to whether the situation of the conflict affected country would have been worse without donors' interventions.

Our main results have important policy implications. The change in preference on the issue of conflict affected countries suggests that a fundamental rethink of the aid industry should be undertaken. Recipient needs should take precedence over donor preference. Finding mechanism to elicit these needs in recipient countries in ways that align with taxpayers in donors' countries should be a priority. Further, the debate on aid effectiveness should not take a backstage relative to emerging new priorities. To the contrary, allocative and technical efficiency of foreign aid should be seen as complementary. In a world increasing affected by conflicts including in relation to climate change, aid should both increase and be more effective to support countries in need as they face existential threats.

References

Alberto Abadie and Javier Gardeazabal. The economic costs of conflict: A case study of the Basque country. American Economic Review, 93(1):113–132, March 2003. doi: 10.1257/000282803321455188. URL https://www.aeaweb.org/articles?id=10.1257/000282803321455188.

Alberto Alesina and Beatrice Weder. Do corrupt governments receive less foreign aid? Ameri-can Economic Review, 92(4):1126–1137, September 2002. doi: 10.1257/00028280260344669. URL https://www.aeaweb.org/articles?id=10.1257/00028280260344669.

Jørgen Juel Andersen, Niels Johannesen, and Bob Rijkers. Elite Capture of Foreign Aid: Evidence from Offshore Bank Accounts. Journal of Political Economy, 130(2):388–425, 2022. doi: 10.1086/717455. URL https://ideas.repec.org/a/ucp/jpolec/doi10.1086-717455. html.

Marianne Bertrand, Esther Duflo, and Sendhil Mullainathan. How Much Should We Trust Differences-In-Differences Estimates?*. The Quarterly Journal of Economics, 119(1):249–275, 02 2004. ISSN 0033-5533. doi: 10.1162/003355304772839588. URL https://doi.org/10. 1162/003355304772839588.

Marshall Burke and Kyle Emerick. Adaptation to climate change: Evidence from us agriculture. American Economic Journal: Economic Policy, 8(3):106–40, August 2016. doi: 10.1257/pol.20130025. URL https://www.aeaweb.org/articles?id=10.1257/pol.20130025.

Marshall Burke, Solomon M. Hsiang, and Edward Miguel. Climate and Conflict. Annual Review of Economics, 7(1):577–617, August 2015. URL https://ideas.repec.org/a/anr/reveco/ v7y2015p577-617.html.

Craig Burnside and David Dollar. Aid, policies, and growth. American Economic Review, 90 (4):847–868, September 2000. doi: 10.1257/aer.90.4.847. URL https://www.aeaweb.org/ articles?id=10.1257/aer.90.4.847.

Melissa Dell, Benjamin F. Jones, and Benjamin A. Olken. Temperature shocks and economic growth: Evidence from the last half century. American Economic Journal: Macroeconomics, 4 (3):66–95, July 2012. doi: 10.1257/mac.4.3.66. URL https://www.aeaweb.org/articles? id=10.1257/mac.4.3.66.

Melissa Dell, Benjamin F. Jones, and Benjamin A. Olken. What do we learn from the weather? the new climate-economy literature. Journal of Economic Literature, 52(3):740–98, September 2014. doi: 10.1257/jel.52.3.740. URL https://www.aeaweb.org/articles?id=10.1257/ jel.52.3.740.

David Dollar and Alberto Alesina. Who gives foreign aid to whom and why? Journal of Economic Growth, 5:33–63, 02 2000. doi: 10.1023/A:1009874203400.

Oeindrila Dube and Suresh Naidu. Bases, bullets, and ballots: the effect of U.S. military aid on political conflict in Colombia. Working Paper 20213, National Bureau of Economic Research, June 2014. URL http://www.nber.org/papers/w20213.

Oeindrila Dube and Suresh Naidu. Multilateral development finance 2022. Technical report, OECD, November 26 2022. URL http://https://doi.org/10.1787/9fea4cf2-en.

William Easterly. The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill And So Little Good. Number 9780199226115 in OUP Catalogue. Oxford University Press, 2007. ISBN ARRAY(0x5dc26f20). URL https://ideas.repec.org/b/oxp/obooks/ 9780199226115.html.

William Easterly. The paradox of aid and donor self-interest. Working Paper 20213, Handbook of Aid and Development, Elgarh, June 2024. URL https://www.e-elgar.com/shop/gbp/ handbook-of-aid-and-development-9781800886803.html.

Satyanath Shanker Edward, Miguel and Ernest Sergenti. Economic shocks and civil conflict: An instrumental variables approach. Journal of Political Economy, 112:725–753, 02 2004. doi: 10.1086/421174.

Thomas Eisensee and David Stromberg¨. News Droughts, News Floods, and U. S. Disaster Relief*. The Quarterly Journal of Economics, 122(2):693–728, 05 2007. ISSN 0033-5533. doi: 10.1162/qjec.122.2.693. URL https://doi.org/10.1162/qjec.122.2.693.

William N. Evans and Alan B. Krueger. The economic consequences of terrorism. American Economic Review, 93(1):pp. 75–81, September 2003.

Michael Faye and Paul Niehaus. Political aid cycles. American Economic Review, 102(7):3516–30, December 2012. doi: 10.1257/aer.102.7.3516. URL https://www.aeaweb.org/articles?id=10.1257/aer.102.7.3516

Khusrav Gaibulloev and Todd Sandler. What we have learned about terrorism since 9/11. Journal of Economic Literature, 57(2):275–328, June 2019. doi: 10.1257/jel.20181444. URL https://www.aeaweb.org/articles?id=10.1257/jel.20181444.

Estrella Gomez´ Herrera. Comparing alternative methods to estimate gravity models of bilateral trade. ThE Papers 10/05, Department of Economic Theory and Economic History of the University of Granada., September 2010. URL https://ideas.repec.org/p/gra/wpaper/10-05. html.

Stephen Knack. Aid dependence and the quality of governance: Cross-country empirical tests. Southern Economic Journal, 68(2):310–329, 2001. doi: https://doi.org/10. 1002/j.2325-8012.2001.tb00421.x. URL https://onlinelibrary.wiley.com/doi/abs/ 10.1002/j.2325-8012.2001.tb00421.x.

Jacob Martin and Daniel B. Hall. Marginal zero-inflated regression models for count data. Journal of Applied Statistics, 44(10):1807–1826, 2017. doi: 10.1080/02664763.2016.1225018.

Daniel R. Morris. Surprise and terrorism: A conceptual framework. Journal of Strategic Studies, 32(1):1–27, 2009. doi: 10.1080/01402390802407392.

Todd Moss, David Roodman, and Scott Standley. The global war on terror and u.s. development assistance: USAID allocation by country, 1998-2005. Center for Global Development, Working Papers, 01 2005. doi: 10.2139/ssrn.984258.

Nathan Nunn and Nancy Qian. Us food aid and civil conflict. American Economic Review, 104(6):1630–66, June 2014. doi: 10.1257/aer.104.6.1630. URL https://www.aeaweb.org/ articles?id=10.1257/aer.104.6.1630.

J. M. C. Santos Silva and Silvana Tenreyro. The Log of Gravity. The Review of Economics and Statistics, 88(4):641–658, 11 2006. ISSN 0034-6535. doi: 10.1162/rest.88.4.641. URL https://doi.org/10.1162/rest.88.4.641.

Joseph Stiglitz and Linda Bilmes. The three trillion dollar war: The cost of the Iraq and Afghanistan conflicts have grown to staggering proportions. Technical report, Handbook of Aid and Development, Elgarh, 2008.

Patricia L. Sullivan, Brock F. Tessman, and Xiaojun Li. US Military Aid and Recipient State Cooperation. Foreign Policy Analysis, 7(3):275–294, 07 2011. ISSN 1743-8586. doi: 10.1111/j. 1743-8594.2011.00138.x. URL https://doi.org/10.1111/j.1743-8594.2011.00138.x.

Daniel Voelsen, Paul Bochtler, and Rebecca Majewski. United nations general assembly resolutions: Voting data and issue categories. SWP - German Institute for International and Security Affairs. Data File Version 1.0.0, https://doi.org/10.7802/2297, 2021.

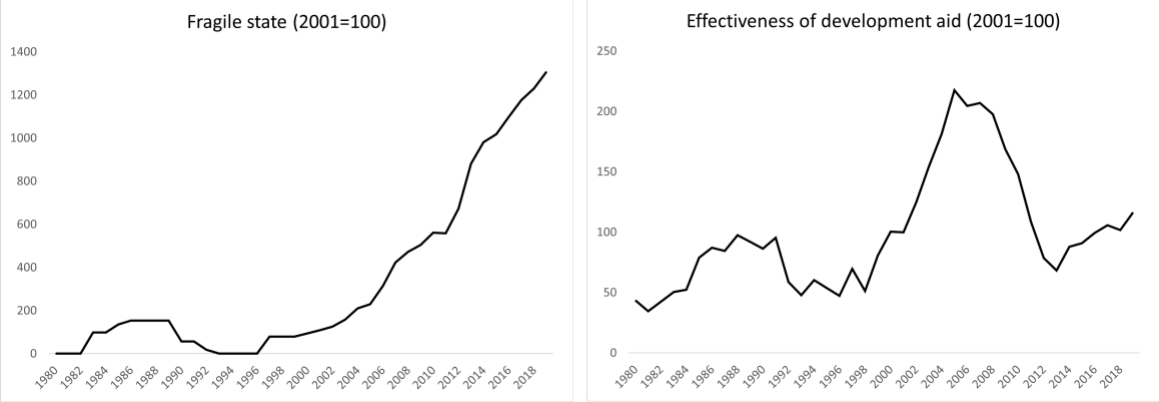
Eric Werker, Faisal Z. Ahmed, and Charles Cohen. How is foreign aid spent? evidence from a natural experiment. American Economic Journal: Macroeconomics, 1(2):225–44, July 2009. doi: 10.1257/mac.1.2.225. URL https://www.aeaweb.org/articles?id=10.1257/mac. 1.2.225.

World Bank. WDI. https://databank.worldbank.org/source/world-development-indicators, 2023.

Appendices

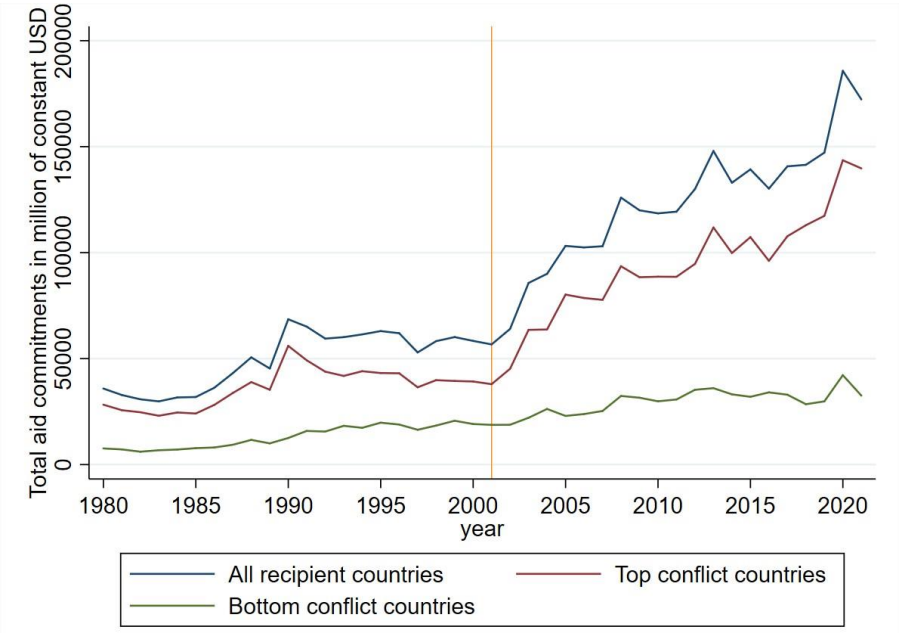
Figure 1: Rise of “fragile state” phrase and fall of “effectiveness of development aid” phrase

(a) Trend for the use of “fragile state” (b) Trend for the use of “aid effectiveness”



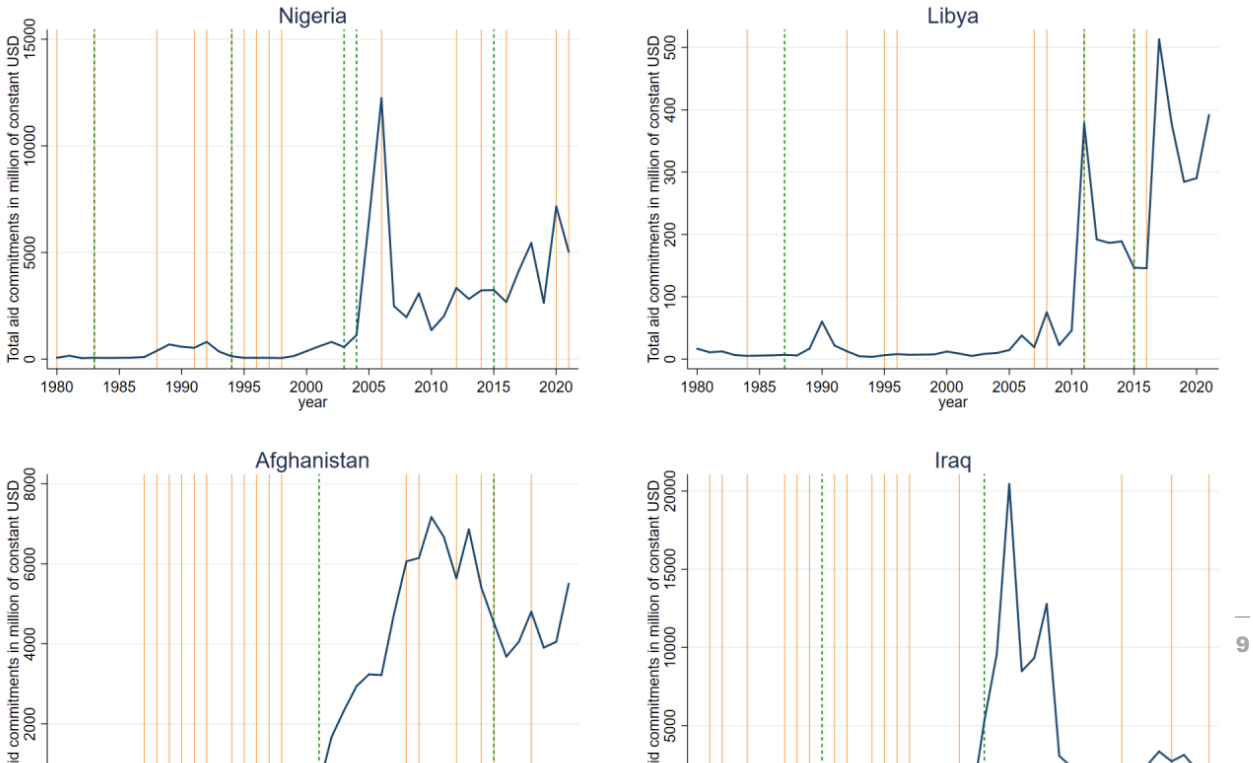
Notes: The figure shows the evolution of Google Books search results for ”fragile state” and “development aid effectiveness”, using American English, three-year smoothing and rebasing at 100 for the year 2001. The results are robust to using other languages such as English, French and Spanish.

Figure 2: Evolution of total bilateral aid commitments



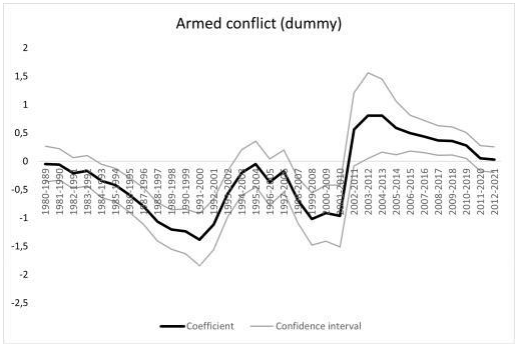
Notes: The figure shows the evolution of the sum of bilateral aid commitments for all recipient countries, as well as for groups of recipients with the highest (strictly above the third quintile) and lowest (strictly below the first quintile) conflict frequency over the period ranging from 1980 to 2021.

Figure 3: Evolution of bilateral aid commitments in Nigeria, Libya, Afghanistan, and Iraq



Notes: The figure shows the evolution of total bilateral aid commitments (blue) and terrorist attacks (orange) and armed conflicts (green) by country. Data on official development assistance (ODA) come from the OECD's Development Assistance Committee (DAC). Conflict data comes from the UCDP/PRIO Armed Conflict Dataset created by Uppsala University and the Norwegian University of Science and Technology. The Global Terrorism Dataset is from the University of Maryland.

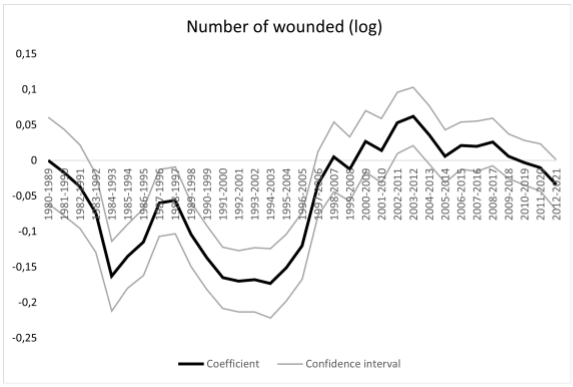
Figure 4: Changing relationship between foreign aid and armed conflict using 10-year rolling windows



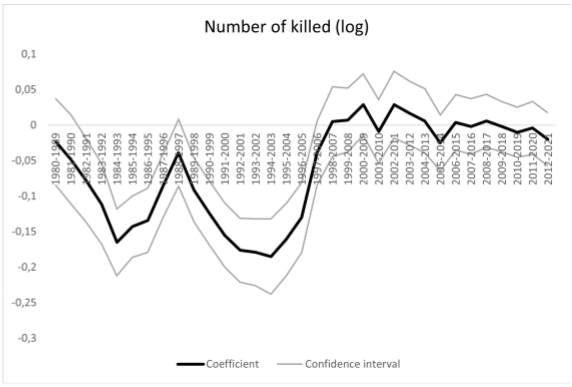
Notes: The figure shows the evolution of the coefficients of the terrorism variables using 10-year rolling windows. The black line indicates point estimates, and the gray lines the 95% confidence intervals.

Figure 5: Changing relationship between foreign aid and terrorist attacks using 10-year rolling windows

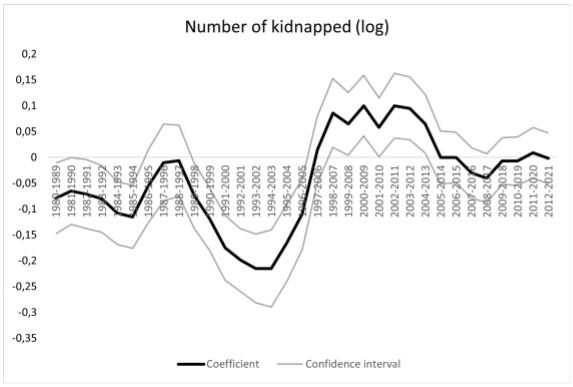
(a) Wounded



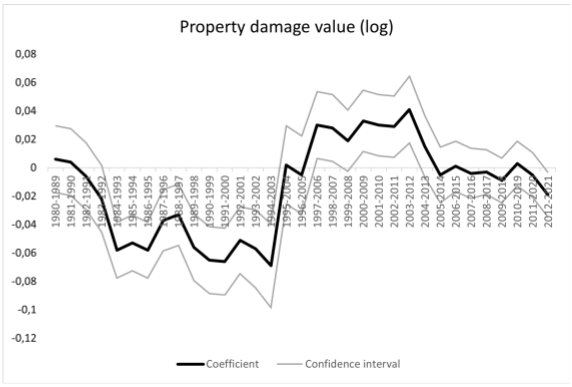
(b) Killed



(c) Kidnapped



(d) Damage



Notes: The figure shows the evolution of the coefficients of the terrorism variables using 10-year rawling windows. The black line indicates point estimates, and the gray lines the 95% confidence intervals.

Table 1: Descriptive Statistics

	1980-2021			1980-2000			2001-2021		
Variable	N	Mean	SD	N	Mean	SD	N	Mean	SD
Donor/Recipient/Year Level									
ODA	135,276	28.3	425.5	66,502	10.9	84.1	68,774	45.1	590.5
Grants	135,276	12.1	83.7	66,502	6.9	60.4	68,774	17.2	101.1
Loans	135,276	13.8	385.0	66,502	4.0	49.9	68,774	23.3	537.5
Recipient/Year Level									
Armed conflict	7,914	0.018	0.135	3,949	0.022	0.146	3,965	0.015	0.122
Terrorism	7,914	0.229	0.042	3,949	0.305	0.461	3,965	0.154	0.361
Number of wounded	7,914	23.5	267.4	3,949	20.0	93.7	3,965	27.0	366.1
Number of killed	7,914	25.8	273.1	3,949	27.8	163.6	3,965	23.8	349.6
Number of kidnapped	7,914	12.8	398.5	3,949	16.2	538.6	3,965	9.4	167.5
Property damage value	6,618	0.40	10.2	3,132	0.50	12.3	3,427	0.31	7.8
Political alignment	4,336	0.53	0.13	909	0.57	0.11	3,427	0.52	0.14
GDP	6,587	958,534	559,975	2,984	32,429	90,430	3,603	148,382	748,652
Population	7,466	29.8	125.9	3,728	25.1	109.1	3,738	34.4	140.5
Donor/Year Level									
GDP (Donor)	816	1,600,281	2,961,620	400	884,907	1,567,202	416	2,288,141	3,727,784
Population (Donor)	816	74.3	199.2	400	45.9	84.6	416	101.6	263.6

Notes: Official Development Assistance (ODA) is total aid commitments in millions of US dollars. Armed conflict is a dummy variable for recipient countries that have experienced armed conflicts between states and groups. Terrorism is a dummy variable for recipient countries that have experienced terrorist attacks. Number of wounded is confirmed non-fatal injuries to both perpetrators and victims in terrorist attacks. Number of killed is the total confirmed fatalities in terrorist attacks. Number of kidnapped is total confirmed hostages or kidnaping victims by terrorists. Property damage value is the exact U.S. dollar amount of total damages in terrorist attacks. Political alignment is the average probability of agreement between the G7 donor and recipient countries when voting at the United Nations. GDP is expressed in millions of US dollars. Population is expressed in millions of inhabitants.

Table A1: Sequential test for multiple breaks at unknown breakpoints for bilateral aid data

	Test Statistics	Critical value 1%	5%	10%
F(1|0)	57.05	12.29	8.58	7.04
F(2|1)	4.49	13.89	10.13	8.51
F(3|2)	1.61	14.80	11.14	9.41
F(4|3)	1.56	15.28	11.83	10.04
F(5|4)	0.96	15.76	12.25	10.58
Detected number of breaks:		1	1	1
Estimation of break points		2002	2002	2002

Notes: The table shows the results of tests for the number of structural breaks and estimation of the year associated with structural breaks using a panel bilateral aid

Table 2: Foreign aid and armed conflicts

	(I)	(II)	(III)	(IV)	(V)	(VI)
				Bilateral aid		
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed Conflict (dummy)	-0.235**	-0.723***	0.258**			
	(0.111)	(0.134)	(0.127)			
Major Armed Conflict (dummy)				-0.233	-0.490**	1.061***
				(0.229)	(0.246)	(0.281)
Minor Armed Conflict (dummy)				-0.106	-0.584***	0.131
				(0.112)	(0.147)	(0.128)
Recipient GDP (log)	-1.292***	-1.043***	-1.546***	-1.291***	-1.042***	-1.541***
	(0.087)	(0.112)	(0.112)	(0.087)	(0.112)	(0.112)
Donor GDP (log)	2.770***	3.549***	1.678***	2.771***	3.546***	1.671***
	(0.128)	(0.152)	(0.177)	(0.128)	(0.152)	(0.177)
Recipient population (log)	1.188***	-1.569***	1.879***	1.182***	-1.566***	1.880***
	(0.320)	(0.495)	(0.429)	(0.320)	(0.495)	(0.429)
Donor population (log)	-1.184***	-2.079***	2.347***	-1.185***	-2.082***	2.346***
	(0.198)	(0.397)	(0.332)	(0.198)	(0.397)	(0.332)
Observations	118,046	52,613	65,229	118,046	52,613	65,229
R-squared	0.616	0.682	0.736	0.616	0.682	0.736
Fixed effects	DR	DR	DR	DR	DR	DR

Note: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by country. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Minor Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced minor armed conflict (less than 999 battle-related deaths). Major Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced major armed conflict (more than 1000 battle-related deaths). The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 3: Foreign aid and different types of conflicts

	(I)	(II)	(III)
		Bilateral aid	
	1980-2021	1980-2000	2001-2021
Internal armed conflict (dummy)	-0.392***	-0.721***	-0.023
	(0.135)	(0.168)	(0.153)
Interstate armed conflict (dummy)	-0.175	-0.207	0.031
	(0.209)	(0.238)	(0.272)
Internationalized internal conflict (dummy)	0.171	-0.504*	0.862***
	(0.205)	(0.280)	(0.224)
Recipient GDP (log)	-1.292***	-1.041***	-1.544***
	(0.087)	(0.112)	(0.112)
Donor GDP (log)	2.770***	3.550***	1.677***
	(0.128)	(0.152)	(0.177)
Recipient population (log)	1.188***	-1.570***	1.871***
	(0.320)	(0.495)	(0.429)
Donor population (log)	-1.184***	-2.084***	2.346***
	(0.198)	(0.397)	(0.331)
Observations	118,046	52,613	65,229
R-squared	0.616	0.683	0.736
Fixed effects	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country. Each column shows a separate re-gression, with columns (I), (II) and (III) using samples from the 1980-2021, 1980-2000 and 2001-2021 periods respectively. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Interstate Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced external armed conflict. Internal Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced internal armed conflict. Internationalized Internal Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has expe-rienced internal armed conflict with intervention from other states. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 4: Foreign aid and terrorism related killings and injuries

	(I)	(II)	(III)	(IV)	(V)	(VI)
				Bilateral aid		
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Number of wounded (log)	-0.149***	-0.181***	0.041***			
	(0.022)	(0.022)	(0.015)			
Number of killed (log)				-0.175***	-0.179***	0.030*
				(0.022)	(0.021)	(0.015)
Recipient GDP (log)	-1.323***	-1.119***	-1.550***	-1.330***	-1.128***	-1.549***
	(0.087)	(0.112)	(0.112)	(0.087)	(0.112)	(0.112)
Donor GDP (log)	2.777***	3.650***	1.678***	2.777***	3.651***	1.680***
	(0.128)	(0.153)	(0.177)	(0.128)	(0.152)	(0.177)
Recipient population (log)	1.173***	-1.655***	1.885***	1.158***	-1.651***	1.891***
	(0.319)	(0.493)	(0.428)	(0.319)	(0.493)	(0.429)
Donor population (log)	-1.205***	-2.114***	2.350***	-1.209***	-2.117***	2.349***
	(0.198)	(0.395)	(0.331)	(0.198)	(0.394)	(0.331)
Observations	118,046	52,613	65,229	118,046	52,613	65,229
R-squared	0.617	0.683	0.736	0.617	0.683	0.736
Fixed effects	DR	DR	DR	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Number of wounded is confirmed non-fatal injuries to both perpetrators and victims in terrorist attacks in the recipient country. Number of killed is the total confirmed fatalities in terrorist attacks in the recipient country. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 5: Foreign aid and terrorism related kidnapping and property damages

	(I)	(II)	(III)	(IV)	(V)	(VI)
				Bilateral aid		
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Number of kidnapped (log)	-0.064**	-0.153***	0.097***			
	(0.025)	(0.026)	(0.020)			
Property damage value (log)				-0.057***	-0.069***	0.017**
				(0.010)	(0.010)	(0.008)
Recipient GDP (log)	-1.294***	-1.060***	-1.554***	-1.469***	-1.508***	-1.543***
	(0.087)	(0.112)	(0.112)	(0.092)	(0.125)	(0.117)
Donor GDP (log)	2.767***	3.562***	1.682***	2.921***	3.685***	1.619***
	(0.128)	(0.152)	(0.177)	(0.133)	(0.161)	(0.177)
Recipient population (log)	1.186***	-1.576***	1.870***	1.195***	-0.807	1.896***
	(0.320)	(0.494)	(0.428)	(0.324)	(0.505)	(0.438)
Donor population (log)	-1.185***	-2.091***	2.344***	-1.247***	-2.107***	2.299***
	(0.198)	(0.395)	(0.331)	(0.209)	(0.409)	(0.345)
Observations	118,046	52,613	65,229	95,402	38,853	56,384
R-squared	0.616	0.683	0.736	0.629	0.697	0.743
Fixed effects	DR	DR	DR	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Number of kidnapped is total confirmed hostages or kidnaping victims by terrorists in the recipient country. Property damage value is the exact U.S. dollar amount of total damages in terrorist attacks in the recipient country. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 6: The changing composition of foreign aid and conflicts

	(I) Non-purpose aid	(II) Purpose aid	(III) Action to debt	(IV) Eco. infra.	(V) Humanitarian	(VI) Multisector	(VII) Prod. sectors	(VIII) Progr. assist.	(XIX) Social infra.
Armed conflict	-0.152	0.402***	-0.100**	0.104	0.549***	-0.028	0.013	0.030	0.242**
	(0.107)	(0.091)	(0.050)	(0.131)	(0.148)	(0.120)	(0.125)	(0.121)	(0.102)
Recipient GDP (log)	-1.478***	-0.396***	-0.606***	0.092	-1.442***	0.318***	0.137	-0.514***	-0.177*
	(0.108)	(0.101)	(0.070)	(0.116)	(0.150)	(0.114)	(0.117)	(0.090)	(0.103)
Donor GDP (log)	1.175***	1.911***	0.511***	0.672***	1.605***	1.238***	1.061***	0.648***	1.472***
	(0.199)	(0.150)	(0.069)	(0.122)	(0.154)	(0.149)	(0.132)	(0.095)	(0.130)
Recipient population	-4.643***	-0.557	-3.605***	-0.909**	1.969***	-0.120	0.352	-1.185***	0.394
	(0.334)	(0.352)	(0.283)	(0.363)	(0.483)	(0.373)	(0.366)	(0.318)	(0.376)
Donor population (log)	4.387***	-0.026	1.503***	-0.764***	-0.329	-0.617***	-0.859***	0.339**	-0.344*
	(0.404)	(0.193)	(0.145)	(0.178)	(0.247)	(0.199)	(0.178)	(0.157)	(0.191)
Observations	52,791	52,791	52,791	52,791	52,791	52,791	52,791	52,791	52,791
R-squared	0.509	0.849	0.373	0.652	0.608	0.732	0.718	0.513	0.829
Fixed effects	DR	DR	DR	DR	DR	DR	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral (purpose and non-purpose) aid committed by the donor country to the recipient country. Each column shows a separate regression, with columns (I)-(II), (II)-(IV) and (V)-(VI) using samples from the 1980-2021, 1980-2000 and 2001-2021 periods respectively. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 7: Grants, loans, and armed conflicts

	(I)	(II)	(III)	(IV)	(V)	(VI)
		Bilateral grants			Bilateral loans	
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.239**	-0.722***	0.279**	0.105	0.070	0.017
	(0.105)	(0.129)	(0.121)	(0.098)	(0.118)	(0.131)
Recipient GDP (log)	-1.241***	-1.034***	-1.489***	-0.164***	-0.090	-0.375***
	(0.086)	(0.109)	(0.108)	(0.053)	(0.069)	(0.096)
Donor GDP (log)	2.647***	3.367***	1.308***	0.496***	0.517***	1.378***
	(0.125)	(0.150)	(0.155)	(0.081)	(0.096)	(0.182)
Recipient population (log)	1.393***	-1.155**	1.921***	-1.411***	-2.599***	-0.247
	(0.320)	(0.489)	(0.424)	(0.163)	(0.347)	(0.253)
Donor population (log)	-1.060***	-1.753***	2.821***	-0.330**	-0.812***	-1.626***
	(0.181)	(0.340)	(0.301)	(0.133)	(0.295)	(0.283)
Observations	118,046	52,613	65,229	118,046	52,613	65,229
R-squared	0.626	0.690	0.750	0.378	0.453	0.451
Fixed effects	DR	DR	DR	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral grants and loans committed by the donor country to the recipient country. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in columns (I) - (III) is logarithm of bilateral grants, and in columns (IV) - (VI) is logarithm of bilateral loans. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 8: Foreign aid and conflicts accounting for donor-recipient political alignment

	(I)	(II)	(III)
		Bilateral aid	
	1995-2021	1995-2000	2001-2021
Armed conflict (dummy)	0.518	-1.312	1.231**
	(0.547)	(0.976)	(0.577)
G7 political alignment	-1.085***	2.155***	-0.980***
	(0.237)	(0.677)	(0.231)
Armed conflict (dummy) x G7 political alignment	-0.808	2.765	-2.637**
	(1.156)	(1.838)	(1.298)
Recipient GDP (log)	-1.638***	0.203	-1.648***
	(0.121)	(0.267)	(0.114)
Donor GDP (log)	1.502***	0.866**	1.698***
	(0.173)	(0.423)	(0.181)
Recipient population (log)	3.611***	2.935**	1.994***
	(0.460)	(1.251)	(0.434)
Donor population (log)	1.314***	-1.364	2.316***
	(0.311)	(1.336)	(0.332)
Observations	78,757	15,993	62,583
R-squared	0.684	0.770	0.735
Fixed effects	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country. Each column shows a separate regression, with columns (I), (II) and (III) using samples from the 1980-2021, 1980-2000 and 2001-2021 periods respectively. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. G7 Political alignment is the average probability of agreement between the G7 donor and recipient countries when voting at the United Nations. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 9: Foreign aid and conflicts accounting for debt relief initiatives

	(I)	(II)	(III)	(IV)	(V)	(VI)
				Bilateral aid		
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.234**	-0.725***	0.259**	-0.239**	-0.723***	0.249**
	(0.109)	(0.134)	(0.127)	(0.110)	(0.134)	(0.127)
Recipient GDP (log)	-1.300***	-1.046***	-1.553***	-1.305***	-1.043***	-1.578***
	(0.088)	(0.112)	(0.113)	(0.088)	(0.112)	(0.114)
Donor GDP (log)	2.780***	3.560***	1.679***	2.788***	3.552***	1.679***
	(0.128)	(0.152)	(0.177)	(0.129)	(0.152)	(0.178)
Recipient population (log)	1.028***	-1.655***	1.881***	1.033***	-1.596***	1.853***
	(0.342)	(0.499)	(0.429)	(0.338)	(0.495)	(0.435)
Donor population (log)	-1.193***	-2.099***	2.353***	-1.192***	-2.080***	2.382***
	(0.197)	(0.397)	(0.331)	(0.197)	(0.397)	(0.331)
Observations	118,046	52,613	65,229	118,046	52,613	65,229
R-squared	0.617	0.683	0.736	0.617	0.683	0.736
Fixed effects	DR	DR	DR	DR	DR	DR
Debt relief decision points	Yes	Yes	Yes	No	No	No
Debt relief completion points	No	No	No	Yes	Yes	Yes

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, controlling for HIPC and MRDI. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 10: US military aid vs. US development aid and conflicts

	(I)	(II)	(III)	(IV)	(V)	(VI)
		US bilateral aid			US military aid	
	1980-2019	1980-2000	2001-2019	1980-2019	1980-2000	2001-2019
Armed conflict (dummy)	-0.507	-1.367**	0.445	-0.400	-0.101	-0.378
	(0.540)	(0.581)	(0.433)	(0.578)	(0.612)	(0.748)
Recipient GDP (log)	-1.755***	-2.806***	-0.361	0.347	-0.421	0.172
	(0.463)	(0.538)	(0.613)	(0.552)	(0.608)	(0.510)
Donor GDP (log)	-2.979*	-1.508	-3.828**	2.756	10.833***	-6.480**
	(1.648)	(2.102)	(1.927)	(2.384)	(2.981)	(2.797)
Recipient population (log)	1.532	-11.214***	6.356**	-2.062	-13.827***	1.850
	(1.555)	(2.968)	(2.505)	(1.388)	(3.364)	(1.583)
Donor population (log)	32.906***	53.677***	0.748	4.709	-13.890	41.727***
	(10.185)	(14.275)	(11.648)	(13.183)	(16.484)	(15.457)
Observations	6,079	2,896	3,179	6,079	2,896	3,179
R-squared	0.624	0.689	0.806	0.553	0.590	0.698
Fixed effects	DR	DR	DR	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on US bilateral aid committed and US bilateral military aid to the recipient country. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in columns (I) - (III) is logarithm of US bilateral aid, and in columns (IV) - (VI) is logarithm of bilateral military aid. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 11: Foreign aid and conflicts with different estimators accounting for “too many zeros”

	(I)	(II)	(III)	(IV)	(V)	(VI)
		Poisson			Probit	
		1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.022**	-0.077***	0.017*	-0.170***	-0.296***	0.093
	(0.010)	(0.015)	(0.010)	(0.042)	(0.059)	(0.072)
Recipient GDP (log)	-0.139***	-0.123***	-0.150***	-0.415***	-0.382***	-0.692***
	(0.010)	(0.015)	(0.011)	(0.030)	(0.048)	(0.063)
Donor GDP (log)	0.300***	0.498***	0.128***	0.770***	1.321***	0.337***
	(0.017)	(0.026)	(0.018)	(0.043)	(0.060)	(0.074)
Recipient population (log)	0.016	-0.411***	0.091*	0.350***	-0.253	0.360*
	(0.038)	(0.073)	(0.050)	(0.115)	(0.206)	(0.211)
Donor population (log)	0.297***	-0.383**	0.940***	-0.067	-1.157***	1.691***
	(0.078)	(0.184)	(0.099)	(0.077)	(0.247)	(0.137)
Observations	116,849	47,247	61,554	90,681	32,116	34,502
Fixed effects	DR	DR	DR	DR	DR	DR

Notes: The table presents the results of regressions of armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country using alternative specifications. Each column reports a separate regression for each sample and alternative specification including Poisson regression and Probit regression. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Fixed effects are denoted DR for donor-recipient pair. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 12: Foreign aid and conflicts removing select region for the period 1980-2021

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
				1980-2021 sample excluding			
	EAP	LAC	ECA	MENA	SSA	SA	NA
Armed conflict (dummy)	-0.182	-0.205*	0.225**	-0.497***	-0.606***	-0.291**	-0.234**
	(0.116)	(0.116)	(0.105)	(0.121)	(0.165)	(0.118)	(0.111)
Recipient GDP (log)	-1.328***	-1.236***	-1.145***	-1.336***	-1.380***	-1.312***	-1.289***
	(0.092)	(0.096)	(0.090)	(0.095)	(0.108)	(0.090)	(0.087)
Donor GDP (log)	2.868***	2.724***	2.801***	2.651***	2.857***	2.753***	2.785***
	(0.137)	(0.151)	(0.135)	(0.132)	(0.163)	(0.131)	(0.128)
Recipient population (log)	1.425***	1.046***	0.666*	1.787***	0.741	1.186***	1.157***
	(0.342)	(0.354)	(0.344)	(0.323)	(0.457)	(0.325)	(0.320)
Donor population (log)	-1.381***	-1.145***	-1.246***	-1.162***	-0.956***	-1.154***	-1.197***
	(0.220)	(0.242)	(0.205)	(0.192)	(0.257)	(0.199)	(0.198)
Observations	99,213	92,689	100,154	104,725	81,825	111,960	117,710
R-squared	0.602	0.608	0.643	0.621	0.609	0.610	0.615
Fixed effects	DR	DR	DR	DR	DR	DR	DR
Decision point date	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, using samples from the 1980-2021 periods. Each column reports a separate regression excluding the region specified (EAP: East Asia and Pacific, LAC: Latin America and Caribbean, ECA: Europe and Central Asia, SSA: Sub-Saharan African, MENA: Middle East and North Africa, SA: South Asia, NA: North America). The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 13: Foreign aid and conflicts removing select region for the period 1980-2000

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
				1980-2000 sample excluding			
	EAP	LAC	ECA	MENA	SSA	SA	NA
Armed conflict (dummy)	-0.701***	-0.749***	-0.270**	-0.805***	-1.069***	-0.830***	-0.723***
	(0.141)	(0.146)	(0.124)	(0.144)	(0.192)	(0.143)	(0.134)
Recipient GDP (log)	-0.763***	-1.161***	-0.891***	-1.308***	-1.164***	-1.032***	-1.042***
	(0.116)	(0.130)	(0.113)	(0.123)	(0.140)	(0.114)	(0.112)
Donor GDP (log)	3.585***	3.829***	2.895***	3.677***	3.889***	3.515***	3.568***
	(0.160)	(0.189)	(0.154)	(0.159)	(0.189)	(0.155)	(0.152)
Recipient population (log)	-1.865***	-2.628***	0.073	-1.124**	-2.590***	-1.467***	-1.615***
	(0.527)	(0.572)	(0.502)	(0.544)	(0.650)	(0.504)	(0.496)
Donor population (log)	-2.484***	-1.919***	-2.975***	-1.781***	-1.077**	-1.989***	-2.083***
	(0.449)	(0.519)	(0.404)	(0.386)	(0.483)	(0.401)	(0.397)
Observations	44,231	40,226	46,714	46,647	35,612	49,803	52,445
R-squared	0.674	0.672	0.712	0.681	0.677	0.677	0.682
Fixed effects	DR	DR	DR	DR	DR	DR	DR
Decision point date	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, using samples from the 1980-2000 periods. Each column reports a separate regression excluding the region specified (EAP: East Asia and Pacific, LAC: Latin America and Caribbean, ECA: Europe and Central Asia, SSA: Sub-Saharan African, MENA: Middle East and North Africa, SA: South Asia, NA: North America). The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 14: Foreign aid and conflicts removing select region for the period 2001-2021

	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)
				2001-2021 sample excluding			
	EAP	LAC	ECA	MENA	SSA	SA	NA
Armed conflict (dummy)	0.249*	0.242*	0.467***	0.152	0.201	0.262*	0.258**
	(0.133)	(0.127)	(0.134)	(0.145)	(0.174)	(0.134)	(0.127)
Recipient GDP (log)	-1.723***	-1.604***	-0.813***	-1.606***	-1.718***	-1.594***	-1.546***
	(0.126)	(0.123)	(0.106)	(0.126)	(0.136)	(0.117)	(0.112)
Donor GDP (log)	1.806***	1.443***	2.127***	1.627***	1.392***	1.671***	1.686***
	(0.200)	(0.192)	(0.177)	(0.193)	(0.226)	(0.182)	(0.177)
Recipient population (log)	2.252***	2.422***	-1.334***	2.934***	2.163***	1.952***	1.871***
	(0.461)	(0.455)	(0.393)	(0.461)	(0.635)	(0.438)	(0.429)
Donor population (log)	2.346***	2.729***	2.378***	1.848***	2.697***	2.268***	2.345***
	(0.378)	(0.384)	(0.350)	(0.323)	(0.422)	(0.338)	(0.332)
Observations	54,832	52,288	53,274	57,889	46,071	61,959	65,061
R-squared	0.718	0.737	0.752	0.739	0.738	0.732	0.735
Fixed effects	DR	DR	DR	DR	DR	DR	DR
Decision point date	Yes	Yes	Yes	Yes	Yes	Yes	Yes

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, using samples from the 2001-2021 periods. Each column reports a separate regression excluding the region specified (EAP: East Asia and Pacific, LAC: Latin America and Caribbean, ECA: Europe and Central Asia, SSA: Sub-Saharan African, MENA: Middle East and North Africa, SA: South Asia, NA: North America). The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 15: Foreign aid and armed conflicts, including time fixed effect

	(I)	(II)	(III)	(IV)	(V)	(VI)
				Bilateral aid		
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.159	-0.552***	0.211*			
	(0.108)	(0.128)	(0.127)			
Major armed conflict (dummy)				-0.136	-0.168	1.187***
				(0.225)	(0.239)	(0.278)
Minor armed conflict (dummy)				-0.059	-0.524***	0.052
				(0.110)	(0.144)	(0.127)
Recipient GDP (log)	-0.764***	-1.298***	-0.440***	-0.763***	-1.300***	-0.429***
	(0.102)	(0.120)	(0.139)	(0.102)	(0.120)	(0.139)
Donor GDP (log)	4.642***	4.239***	3.526***	4.642***	4.238***	3.526***
	(0.183)	(0.208)	(0.231)	(0.183)	(0.208)	(0.231)
Recipient population (log)	1.725***	-4.821***	3.665***	1.721***	-4.814***	3.673***
	(0.375)	(0.688)	(0.503)	(0.375)	(0.688)	(0.503)
Donor population (log)	-2.015***	-3.325***	2.371***	-2.015***	-3.325***	2.371***
	(0.203)	(0.411)	(0.337)	(0.203)	(0.411)	(0.337)
Observations	118,046	52,613	65,229	118,046	52,613	65,229
R-squared	0.624	0.691	0.742	0.624	0.691	0.742
Fixed effects	DR-Y	DR-Y	DR-Y	DR-Y	DR-Y	DR-Y

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, includng time fixed effect. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Minor Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced minor armed conflict (less than 999 battle-related deaths). Major Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced major armed conflict (more than 1000 battle-related deaths). The fixed effects of the donor-recipient pair (DR) and year (Y) are included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 16: Foreign aid and armed conflicts, excluding China

	(1)	(2)	(3)	(4)	(5)	(6)
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.252**	-0.723***	0.242*			
	(0.112)	(0.134)	(0.127)			
Major armed conflict (dummy)				-0.288	-0.490**	1.041***
				(0.230)	(0.246)	(0.282)
Minor armed conflict (dummy)				-0.104	-0.584***	0.132
				(0.112)	(0.147)	(0.126)
Recipient GDP (log)	-1.275***	-1.043***	-1.302***	-1.274***	-1.042***	-1.298***
	(0.087)	(0.112)	(0.114)	(0.087)	(0.112)	(0.114)
Donor GDP (log)	2.669***	3.549***	0.603***	2.670***	3.546***	0.596***
	(0.136)	(0.152)	(0.195)	(0.136)	(0.152)	(0.195)
Recipient population (log)	1.291***	-1.569***	1.899***	1.284***	-1.566***	1.899***
	(0.325)	(0.495)	(0.434)	(0.325)	(0.495)	(0.434)
Donor population (log)	-1.080***	-2.079***	3.511***	-1.081***	-2.082***	3.511***
	(0.202)	(0.397)	(0.334)	(0.202)	(0.397)	(0.334)
Observations	115,589	52,613	62,906	115,589	52,613	62,906
R-squared	0.617	0.682	0.745	0.617	0.682	0.745
Fixed effects	DR	DR	DR	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, excluding China. Each column shows a separate regression, with columns (I) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Minor Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced minor armed conflict (less than 999 battle-related deaths). Major Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced major armed conflict (more than 1000 battle-related deaths). The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 17: Foreign aid and armed conflicts, excluding Afghanistan, Iraq and Libya

	(1)	(2)	(3)	(4)	(5)	(6)
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.342***	-0.728***	0.140			
	(0.112)	(0.135)	(0.127)			
Major armed conflict (dummy)				-0.713***	-0.470*	0.708**
				(0.238)	(0.253)	(0.276)
Minor armed conflict (dummy)				-0.124	-0.591***	0.091
				(0.112)	(0.147)	(0.129)
Recipient GDP (log)	-1.341***	-1.180***	-1.570***	-1.340***	-1.177***	-1.569***
	(0.090)	(0.117)	(0.114)	(0.090)	(0.117)	(0.114)
Donor GDP (log)	2.814***	3.628***	1.642***	2.815***	3.624***	1.639***
	(0.129)	(0.152)	(0.180)	(0.129)	(0.152)	(0.180)
Recipient population (log)	1.024***	-1.571***	1.904***	1.012***	-1.570***	1.905***
	(0.323)	(0.497)	(0.437)	(0.323)	(0.498)	(0.437)
Donor population (log)	-1.181***	-2.046***	2.328***	-1.182***	-2.049***	2.328***
	(0.198)	(0.401)	(0.335)	(0.198)	(0.401)	(0.335)
Observations	116,202	51,978	64,022	116,202	51,978	64,022
R-squared	0.618	0.683	0.736	0.618	0.683	0.736
Fixed effects	DR	DR	DR	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, excluding Afghanistan, Iraq and Libya. Each column shows a separate regression, with columns (1) and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Minor Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced minor armed conflict (less than 999 battle-related deaths). Major Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced major armed conflict (more than 1000 battle-related deaths). The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 18: Foreign aid and armed conflicts with differentiated effect before and after the first terrorist attack in donor countries

	(1) 1980-2021	(2) 1980-2000	(3) 2001-2021
Armed Conflict x Years before the first terrorist attack (1980-2000)	-2.033**	-1.562**	
	(0.905)	(0.742)	
Armed Conflict x Years after the first terrorist attack (1980-2000)	-1.116***	-0.708***	
	(0.163)	(0.136)	
Armed Conflict x Years before the first terrorist attack (2001-2021)	0.399		-0.363
	(0.533)		(0.490)
Armed Conflict x Years after the first terrorist attack (2001-2021)	0.937***		0.329**
	(0.161)		(0.129)
Recipient GDP (log)	-1.296***	-1.043***	-1.546***
	(0.087)	(0.112)	(0.112)
Donor GDP (log)	2.766***	3.548***	1.678***
	(0.128)	(0.152)	(0.177)
Recipient population (log)	1.118***	-1.574***	1.871***
	(0.320)	(0.495)	(0.429)
Donor population (log)	-1.192***	-2.078***	2.347***
	(0.198)	(0.397)	(0.331)
Observations	118,046	52,613	65,229
R-squared	0.617	0.683	0.736
Fixed effects	DR	DR	DR

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, excluding Afghanistan, Iraq and Libya. Each column shows a separate regression, with column a based on samples from the 1980-2021 period, column (II) from the 1980-2000 period, and column (III) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Years after/before the first terrorist attack (1980-2000 or 2001-2021) is a dummy variable that takes the value 1 for years after/before the first terrorist attack in the donor country in 1980-2000 or 2001-2021. The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 19: Foreign aid and armed conflicts, excluding the United States

	(1)	(2)	(3)	(4)	(5)	(6)
	1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.220*	-0.674***	0.252*			
	(0.113)	(0.137)	(0.133)			
Major armed conflict (dummy)				-0.260	-0.539**	1.051***
				(0.234)	(0.249)	(0.294)
Minor armed conflict (dummy)				-0.090	-0.527***	0.128
				(0.114)	(0.150)	(0.134)
Recipient GDP (log)	-1.291***	-0.973***				-1.565***
	(0.088)	(0.113)	(0.116)	(0.088)	(0.113)	(0.116)
Donor GDP (log)	2.764***	3.444***	1.759***	2.765***	3.441***	1.752***
	(0.130)	(0.152)	(0.178)	(0.130)	(0.152)	(0.178)
Recipient population (log)	1.137***	-1.307***	1.796***	1.131***	-1.305***	1.797***
	(0.328)	(0.503)	(0.441)	(0.329)	(0.503)	(0.441)
Donor population (log)	-1.199***	-2.258***				2.374***
	(0.198)	(0.392)	(0.331)	(0.198)	(0.392)	(0.331)
Observations	111,639	49,717	61,722	111,639	49,717	61,722
R-squared	0.610	0.679	0.728	0.610	0.679	0.728

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, excluding the US Each column shows a separate regression, with columns and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Minor Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced minor armed conflict (less than 999 battle-related deaths). Major Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced major armed conflict (more than 1000 battle-related deaths). The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

Table 20: Foreign aid and armed conflicts, excluding the United States, China, Afghanistan, Iraq and Libya

	(1)	(2)	(3)	(4)	(5)	(6)
		1980-2021	1980-2000	2001-2021	1980-2021	1980-2000	2001-2021
Armed conflict (dummy)	-0.337***	-0.677***	0.124			
	(0.115)	(0.138)	(0.132)			
Major armed conflict (dummy)				-0.768***	-0.516**	0.723**
				(0.246)	(0.256)	(0.285)
Minor armed conflict (dummy)				-0.111	-0.535***	0.076
				(0.116)	(0.151)	(0.134)
Recipient GDP (log)	-1.324***	-1.113***				-1.335***
	(0.092)	(0.118)	(0.120)	(0.092)	(0.118)	(0.120)
Donor GDP (log)	2.702***	3.522***	0.626***	2.703***	3.519***	0.623***
	(0.140)	(0.153)	(0.198)	(0.140)	(0.153)	(0.198)
Recipient population (log)	1.095***	-1.302**	1.821***	1.083***	-1.302**	1.822***
	(0.337)	(0.505)	(0.454)	(0.337)	(0.505)	(0.454)
Donor population (log)	-1.085***	-2.227***				3.530***
	(0.202)	(0.396)	(0.336)	(0.202)	(0.396)	(0.336)
Observations	107,486	49,116	58,304	107,486	49,116	58,304
R-squared	0.611	0.679	0.737	0.611	0.679	0.737

Notes: The table shows the results of regressions of different armed conflicts in the recipient country on bilateral aid committed by the donor country to the recipient country, excluding the US, China, Afghanistan, Iraq and Libya. Each column shows a separate regression, with columns and (IV) based on samples from the 1980-2021 period, columns (II) and (V) from the 1980-2000 period, and columns (III) and (VI) from the 2001-2021 period. The dependent variable in all columns is logarithm of bilateral ODA. All control variables are in logarithm. Armed Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced armed conflict. Minor Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced minor armed conflict (less than 999 battle-related deaths). Major Conflict (dummy) is a dummy variable which takes the value 1 if the recipient country has experienced major armed conflict (more than 1000 battle-related deaths). The fixed effect of the donor-recipient pair (DR) is included in all regressions. Constant term is included in all regressions and not reported to save space. Standard errors in parentheses are clustered at donor-recipient pair level. ***, **, and * denote statistical significance at the 1%, 5%, and 10% levels, respectively.

PUBLICATIONS

Foreign Aid and Conflicts: The Effects of 9/11 on Donor Behavior

Working Paper No. WP/2024/016