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Does foreign aid fuel trust?

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Abstract

What are the socioeconomic effects of foreign aid in developing countries? How effective is aid in promoting social capital? The paper focuses on these questions from an empirical perspective and assesses the casual effect of foreign aid on trust in Uganda. Individuals living in counties that received more aid exhibit up to 13.3% higher probability to trust others with respect to those living in counties with no aid. The same finding holds when taking into account the intensive margin, i.e. an increase of 1% in foreign aid induces an increase of 1.1% in the probability of trusting other people. We use also an instrumental strategy based on the enforcement of Non Governmental Organizations (Amendment) Act and we show that the link from aid to trust is robust to different estimation strategies. Finally, we find that a channel is operating through lowering inequality. We demonstrate that foreign aid has a stronger effect in counties where there is a lower level of perceived inequality.

JEL Classification: D63; O12; O22; O55; C31

Keywords: foreign aid; social capital; trust; Africa; geo-referenced data; inequality.

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1 Introduction

The effectiveness of foreign aid is an old debated issue among economists and development experts. In this paper, we depart from the traditional focus on the pure economic outcome of aid and look at the potential effect on trust. A recent strand of the growth literature has stressed the importance of the role of cultural values in economic development. In particular, trust, broadly defined as cooperative attitude outside the family circle and usually taken as a proxy for social capital, is considered a key element of many economic and social outcomes by social scientists and increasingly also by economists.¹

Combining individual-level survey data on trust with georeferenced county-level data on aid, we ask whether aid flows affected how generalized trust changed over time. We hypothesize that large disbursements of aid funds in a county contribute to increase the generalized trust (i.e. trust on other people) of individuals living in that county or, equivalently, to reduce the trust deficit over time. Since a trust deficit may hinder the effectiveness of aid in furthering development outcomes, a direct effect of aid in recovering trust represents an important feature to consider while planning how to foster long lasting development.

We contribute to the empirical literature on foreign aid by adding novel evidence about the socioeconomic effects of aid from a microeconomic perspective. Given the important policy implications, it is therefore surprising that there is little direct evidence on the relationship between foreign aid and population attitudes - in particular, trust - in the extant literature. By contrast, there is a large debated literature on how effective is foreign aid in reducing poverty, enhancing governance or other economic outcomes.

The paper focuses on Uganda due to its status of developing country and because it has an experience of disruption of capital due to violent conflicts occurred during the last decade. Although Uganda has been studied for social capital, allowing useful comparisons in the field, the importance of the building-effect of external funding is still unexplored. For example, Rohner et al. [29] study the influence of civil conflict on social capital, focusing on Uganda's experience during the last decade and highlight how such a large disruptive contemporaneous shock changes beliefs and social capital by reducing generalized trust. Conversely, in this study we hypothesize that the disbursement of funds through the financing of foreign aid initiatives by donors, represents a positive contemporaneous shock that changes beliefs and social

¹See Algan and Cahuc [5] for an extensive review of the recent research on trust, institutions and growth.

capital, and increases trust.

To test our hypothesis, we use data from the 2012 Afrobarometer survey and from AidData and examine whether individuals living in counties that received more aid in the last decade are more trusting of others today. We find that individuals living in counties that received more aid exhibit higher levels of generalized trust today. This finding holds both for the extensive margin (whether the county received or not aid) and the intensive margin (how many funds the county received). Particularly, the more funds the county received, the higher is the level of trust of individuals living in that county.

An alternative explanation for our finding is that more aid has been directed to counties that initially were more trusting, and that these higher levels of trust simply remain unchanged today. Alternatively, there might be other factors, such as individual and county specific characteristics, that are correlated with the amount of aid flows and subsequent levels of trust. In our methodological approach, we consider a number of ways to determine whether the correlations we uncover are indeed causal.

Our first strategy is to study the shift in individual trust with respect to the previous survey, by controlling for the county-average level of trust in the previous period. Moreover, we use predetermined independent variables, i.e. we do not use contemporaneous values of aid and trust. A second check is to control for a number of county and district level characteristics - such as, among others, urbanization, number of micro-enterprises, unemployment rate. The intuition is that by controlling for this extensive set of covariates, we capture any potential effects other than aid on trust.

Our alternative approach is the use of instrumental variables. This requires an instrument that is correlated with the presence of aid in the county but uncorrelated with any characteristics that may affect the level of trust of the individuals in that county. We use the distance of each county from the committee belonging to the same district of the county itself. The introduction of the particularly restrictive legislation that disciplines the ordinary activity of NGOs in Uganda (the NGO Registration Act) provides a basis for the instrument's exogeneity. The IV regressions produce estimates that are qualitatively consistent with the OLS estimates.

In section 2, we begin our study by first describing the historical and conceptual background. We discuss the traditional literature on foreign aid and its effectiveness, we summarize the recent economic performance of Uganda and we give a broader macroeconomic perspective on the relationship between aid and trust. In section 3, we turn to a presentation of the data sources, before describing the methodology

and the empirics in section 4. In section 5 we study the relationship between aid, inequality and trust. section 6 describes robustness checks while section 7 concludes.

2 Literature and background

The Development Assistance Committee (DAC) of the Organization for Economic Cooperation and Development (OECD) defines foreign aid as financial flows, technical assistance, and commodities that are designed to promote economic development and welfare as their main objective, i.e. aid for military or other non-development purposes is excluded, and are provided as either grants or subsidized loans.² Based on this definition, aid represents one of the largest components of foreign capital flows to low-income countries, while for most middle-income countries private capital flows are more important. On average, between 2000 and 2012, Uganda, classified by the World Bank as a low income country, received foreign aid worth 13 percent of its GNI, that sum up to almost 75% of central government expense.³

One of the most debated issues in development economics is whether foreign aid promotes economic growth in aid recipient countries. The topic is relevant to both donors, given the difficulty of keeping up with the same level of aid as in the past in the current global economic crisis, and recipients countries, given their difficulty, among others, to meet the goal set by the United Nations of reducing poverty to half the 1990 level by 2015.⁴

The academic research on aid has traditionally focused on the effects of aid inflows on growth rates, as well as on determining which socio-political, institutional and economic factors undermine or enhance the effectiveness of aid. Mosley [24] suggested that while aid seems to be effective at the microeconomic level, any positive aggregate impact of aid is much harder to identify, and pointed out the presence of a "micro-macro paradox".

Bourguignon and Sundberg [8] refer to a 'black box' to describe the relationship between aid and development, given that the empirical literature on aid effectiveness has yielded unclear and ambiguous results, due to the heterogeneity of aid motives, the limitations of the tools of analysis, and the complex

²See for example Radelet [27].

³Data are taken from World Development Indicators. According to the World Bank classification, economies are divided according to 2012 GNI per capita, calculated using the World Bank Atlas method. The groups are: low income, \$1,035 or less; lower middle income, \$1,036 - \$4,085; upper middle income, \$4,086 - \$12,615; and high income, \$12,616 or more. In Uganda GNI per capita in 2012 is \$480.

⁴This is one of the eight Millennium Development Goals.

causality chain linking external aid to final outcomes. Rajan and Subramanian [28] conclude how difficult it is to find any systematic effect of aid on growth, at a macroeconomic level.

The impact of aid on growth is an empirical question and has been extensively studied in the macro literature in the last four decades.⁵ The quantitative cross-country analyses of the macroeconomic impact of foreign aid on growth has seen three different stages. The first wave of the literature on aid and growth can be traced back to the so called "gap-models" where the emphasis was on the effects of financing constraints on growth in low income countries and how aid could alleviate them (Chenery and Strout [12]; Domar [15]; Bacha [6]). A second wave of the literature focused on a direct investigation of the aid-growth relationship, instead of addressing the topic only indirectly through the aid-savings link and produced contradictory results (Levy [22]). A third generation of panel based econometric studies started in the '90s with the aim of assessing whether the impact of aid on growth was unconditionally positive and what are the necessary conditions to make aid effective in recipient countries (Burnside and Dollar [9]; Alesina and Dollar [3]; Collier and Dollar [13]; Dalgaard et al. [14]). More recently, Chatterjee et al. [11] study the effectiveness of aid on the growth performance of recipient countries by looking at indirect mechanisms through which aid affects growth. In particular, by looking at linkages between the composition of foreign aid and the composition of government-spending, they find that the fungibility of aid matters and that the composition of aid is important in determining and affecting the economic outcomes.

From a microeconomic perspective, besides the impact evaluation of specific projects, there is lack of any systematic academic evidence on the impact of aid on growth.⁶ The main difficulty in producing microeconomic evidence on the topic is data availability. If AidData provides localized data about the aid projects at the county level, at the same time there are no localized data to measure local development, i.e. there are not reliable statistics about each county's GDP. If, on one hand, it is not possible to measure economic development at the county level, on the other hand, there are survey data on trust at the individual level that can be used as county-level proxy of development. Data on trust in the economic literature are usually used as proxy for social capital.⁷ Social capital refers to the institutions, relationships,

⁵See Hansen and Tarp [20] for a comprehensive review of the aid literature.

⁶The Independent Evaluation Group (IEG) evaluates the activities of the International Bank for Reconstruction and Development (IBRD) and International Development Association (inside the World Bank), the work of International Finance Corporation (IFC) in private sector development, and Multilateral Investment Guarantee Agency's (MIGA) guarantee projects and services. They generally report positive assessment when looking at individual specific initiatives.

⁷See, among others, Butler et al. [10], Giuliano and Spilimbergo [19].

and norms that shape the quality and quantity of a society's social interactions. Academics interested on African development issues used survey data on trust in many instances. Relying on Afrobarometer and historical data, Nunn and Wantchekon [26] find that individuals in sub-Saharan African countries whose ancestors' ethnicities were subject to a high intensity of enslavement report lower trust levels today.

Milner et al. [23] document additional evidence on aid and beliefs in Uganda and highlight how aid effectiveness should be not studied per se but compared to other domestic programs and by looking at recipients' beliefs about foreign aid. In particular, they provide evidence that in Uganda citizens view aid as less prone to political manipulation and does more efficient than government activities.

The Global Humanitarian Assistance (2014) ranks the country as the 16th largest ODA recipient country in the world in 2011. Total aid received were 1.5 billions of dollars, including 80 millions of humanitarian assistance. The high need for external funding in Uganda is also emphasized by the fact that the country is classified as 'fragile state', and it shows the highest level of vulnerability index score. According to Global Humanitarian Assistance (2014), such rankings largely depend on the fact that the country experienced a number of conflicts during the last decade. Regarding the contribution of aid in improving the country's situation, the US Department of State (2013) documents how: "the assistance enhances social and economic well-being throughout the country, and U.S. support improves the lives of hundreds of thousands of Ugandans."

In general, countries assistance programs aim at promoting good governance and human rights, the strengthening of democracy, the conduct of free and fair elections. They also aim at addressing health threats, as well as improving maternal and child health and coping with Ugandan fast population growth through family planning, agricultural productivity, food security, and nutrition, besides several other environmental issues, such as global warming and climate change. The way the programs are implemented and their final goals may have different impacts on population, both from a physical and from a social perspective. For example, in 2012 US Centers for Disease Control and Prevention (CDC) provided antiretroviral therapy (ART) to more than 228,000 people and care for 400,000 HIV-infected patients, we can trivially hypothesize that these individuals not only experienced a direct benefit from the occurrence of the event - receiving foreign aid - in terms of increased life expectancy, but they also changed their beliefs on external agents, increased their generalized trust on other people, and these all together led to better average living conditions in the country. Thus, following our premises, the

underlying mechanism that we have in mind should work through the direct interaction of inhabitants with other people. Hence, in our study we select funds delivered from 25 agencies that addresses ten primary sectors (listed in Appendix 2), for a total of 1315 projects ⁸.

3 Data Sources and Description

Data for this study come from two different databases: AidData 3.0 and Afrobarometer.⁹

AidData is managed by the AidData Center for Development Policy. It is a huge geospatial dataset that contains data on more than \$5.5 trillion dollars in development finance from 90 bilateral and multilateral agencies at the project level. By specifying the precise detail of the geographic locations of development projects, the dataset allows to analyze where aid funds are going at the sub-national level. Therefore, it represents the most accessible and complete database to study and evaluate foreign aid. ¹⁰

Afrobarometer is a research project that measures the social, political, and economic environment in Africa through a series of national public attitude surveys on democracy and governance. Afrobarometer surveys are conducted in 35 African countries and are repeated on a regular cycle. Each survey contains a standard set of questions, thus making possible comparisons across countries and over time.

In our analysis we employ the most recently issued Afrobarometer survey for Uganda, i.e. Round 5 that covers year 2012 (AfrobarometerData [2]). Among other questions, respondent answer the following question:

- Generally speaking, would you say that most people can be trusted or that you must be very careful in dealing with people?
 - a] Most people can be trusted
 - b] Must be very careful

The answer given to this question represents our main dependent variable, that takes value 1 if the individual answer "Most people can be trusted", 0 otherwise. Thus, we build a cross-sectional dataset at the individual level, where for each individual we have a set of information on individual characteristics, including the county of residence.

⁸We do not report the list of projects due to limited space, but it is available upon request.

⁹See Tierney et al. [30] and AfrobarometerData [1]

¹⁰ Findley et al. [16] and Fleck and Kilby [17], among others, have used AidData to study implications of aid and conflicts.

Our main explanatory variable is a dummy on the presence of funds in a specific county. We employ data from the Uganda Aid Management Platform, a new dataset release that includes all foreign aid disbursed in Uganda since 1996. For each project, the dataset includes information about donors, quantity disbursed, project category, project objective, signature and starting date, completion date, and the chronology of the disbursement. We consider 1315 projects, sponsored by 25 different agencies and involving more than 10 different sectors of activity (for an extensive list of sectors financed by each agency please refer to Appendix 2). We build a dummy variable taking value 1, if at least one project delivered aid in that county for the period 2008-2010, 0 otherwise. We limit the time sample to 2008-2010 because Afrobarometer survey has been delivered in 2012 but it refers to a fieldwork that started in 2011 so we cannot consider funds that arrived in 2011.

The timing of the analysis is displayed in Figure 1, where we plot the time series of foreign aid in Uganda and the waves of Afrobarometer that we employ in the analysis. Foreign aid have a huge increase during 2006-2011, mainly associated with the end of the conflicts in the north of the country and the presence of Uganda in the security council of UN during 2009-2010¹¹. Wave 4 of Afrobarometer was delivered in 2008, and we use it here mainly to correct our estimates by taking into account the previous level of county’s average trust. Afrobarometer’s wave 5 is our dataset of interest for the individual analysis.

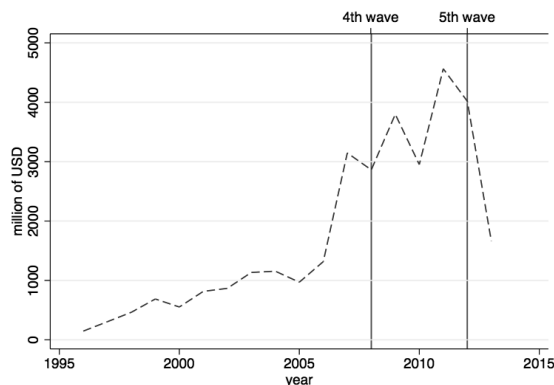


Fig. 1. Level of foreign aid (USD) and waves from Afrobarometer

Figure 2 shows the localization of aid in Uganda according to AidData. While the distribution of funds seems homogeneous all over the country, there is evidence of high concentration of projects at the boarder with Kenya and Rwanda (east and south-west). Furthermore, some counties in the middle of the

¹¹For an in depth discussion of the correlation of foreign aid with presence in UN’s security council, see Kuziemko and Werker [21]

differences in counties' characteristics, the regression sign should be the opposite of what we find.

A commonly used proxy for per capita income, satellite nightlights are lower in the control group, however this is extremely correlated to the lower degree of urbanization in the same group and somehow compensated by the higher level of urban population. Finally, as ethnic-level variable we consider the traditional ethnic-group specific dependence on some activity (such as hunting, fishing, agriculture or animal husbandry) that we take from the Ethnographic Atlas of Murdoch [25].

[Insert Table 1 and Table 2 here]

4 Empirics

We begin by estimating the relationship between the presence of a fund in a county over the period 2008-2010 and the level of trust in that county as surveyed in 2012. Following Rohner et al. [29], our baseline estimating equation is a standard probit-model as follows:

$$Pr(trust_{i,c}^{2012} = 1) = \Phi[\beta_0 + \beta_1 dummy_funds_c + \beta_2 trust_c^{2008} + \alpha \mathbf{X}_i + \lambda_r + agency_j + project_k + ethnic_m + \mu_{i,c}] \quad (1)$$

where $trust_{i,c}^{2012}$ is a dummy which varies across individuals and takes value 1 if in county c the person i answers in the survey that most people can be trusted, 0 otherwise; $trust_c^{2008}$ denotes the county-average level of trust from the previous wave of the survey; $dummy_funds_c$ is a binary variable assuming value 1 if funding occurred in 2008-2010 in that county. λ_r are region fixed-effects, which are included to capture region-specific factors that may affect trust; $agency$ and $projects$ are donors and project destinations fixed-effects; $ethnic$ are fixed effect on ethnicity and $\mu_{i,c}$ are county-clustered individual errors. The use of region and ethnic fixed effects, as well as county-clustered errors is a standard methodology to allow for common effects and spatial correlation among individuals belonging to the same county, while the use of agency and project fixed effects is peculiar and crucial to the purpose of the analysis. Given the heterogeneity that characterizes projects and agencies implementing them, such fixed effects capture the *singularity* of each agency and of each type of project, helping us in identifying the *net effect* of funding,

independently of who is actually implementing it and how it is developed.

\mathbf{X}_i denotes a matrix of individual-level covariates, which include the respondent’s demographic characteristics, such as age, age squared, employment status, and educational level.¹² Other individual level covariates considered are possession of radio, television, and vehicles, an indicator variable that equals one if the respondent lives in an urban location instead of a rural one. The matrix also includes a set of variables designed to capture the composition and characteristics of the county in which the respondent lives, which include population size, diffusion of mobile phone services, availability of schools, access to electricity, piped water and sewage system, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate, unemployment rate, ethnic fractionalization and nightlight.

When considering our cross-sectional dataset, we need to deal with the issue of potential reverse causality. Foreign aid could be allocated according to several dimensions, such as a higher or lower level of trust or corruption, or according to allocation parameters and decisions possibly correlated with them. Therefore, in order to partially avoid reverse causality, we focus the analysis on the shift with respect to the previous level of trust, as in Rohner et al. [29]. In this way, we can partially overcome the problem of reverse causality, and for this purpose we consider three different variables of trust - in other people, in neighbors and in family - and compute the county-average level of generalized trust in the previous period ($trust_c^{2008}$).

4.1 Extensive margin

Table 2 reports Probit estimates of Equation 1. The estimates show that the presence of aid is positive correlated with the subsequent level of trust. The coefficient of the dummy for the presence of foreign aid (Dummy Fund) is positive and significant throughout all the specification considered. All the specifications fitted include dummies for each agency, in order to capture the net effect of aid on trust, independently from differences among agencies, as, for instance, efficiency in implementation.¹³

Table 2 reports the results from the baseline model as marginal effects at mean value of other control variables. We interpret results in column 1 as showing that respondents living in a county that received

¹²Occupation and education may be important determinant of trust themselves, as underlined in Nunn and Wantchekon [26] and Francois et al. [18], who, in particular, provide evidence of higher levels of trust for individuals working in more competitive sectors within the United States.

¹³In our dataset we have 25 different agencies.

aid, have 11.4 percent higher probability of trusting other people - i.e. trust taking value 1 - than people living in a county that did not receive aid, given that all the control variables take their mean value. Such estimate is significant at one percent level, and robust to a set of individual, county and district level controls, regional and agency fixed effects.

In column 2 and 3 we increase model's complexity, controlling for sectoral and ethnic fixed effects. The inclusion of sectoral fixed effects determines an higher probability of trusting other people of 13.3 percent, meaning that people living in a county that received foreign aid show a positive effect on trust. The result holds also in case of ethnic fixed effects, where the coefficient associated to presence of fund is equal to 13.2 percent and still significant at one percent level.

Finally, in column 4 we control for religion fixed effects and the coefficient remains significant and equal to 11.3 percent.

[Insert Table 2 here]

In Table 3 we report the marginal effect of the increase in one unity of other control variables in order to compare our result on trust. In each column are reported the results obtained with the same specification of the corresponding column in Table 2. The first variable reported is the natural log of population, which seems to be negative correlated with trust in other people, but the coefficient associated is significant only in column 3-4. Urban-rural dummy does not appear to be correlated with trust in other people while the unemployment level is positively correlated with trust. This result could be driven by the fact that in counties with higher level of unemployment individuals should rely more on the social environment in order to find alternative resources to labor income. In addition, the result is coherent with the dummy on the employment at individual level, that has a negative and significant coefficient equal to -0.04. Finally, satellite nightlight is positively associated with trust, indicating that an increase of one unit in satellite nightlight increase the probability of trusting other people of 17.5% in column 1, and up to +26.9% in column 4. Thus, the presence of foreign aid in a county has a coefficient associated that on average is equal to half of the one of satellite nightlight, but higher both of the unemployment and more significant, in general, of the one linked to the natural log of population. This give us a first indication of the magnitude that the presence of foreign aid could have on individuals believes, sometimes stronger than the common demographic controls employed.

[Insert Table 3 here]

4.2 Intensive margin

We now turn to a different dimension of aid. Table 4 reports Probit estimates for the intensive margin of aid. The main difference with respect to Equation 1 and Table 2 is the independent variable Ln fund used instead of Dummy Fund. Ln fund is the level of aid received in each county. Table 4 shows the effects on trust of an increase of one percent in the amount of aid. Similarly to Equation 1 we regress individual trust on the logarithm of foreign aid disbursed, and we control for the same set of characteristics considered in Table 2. Results in Table 4 show that individual trust is highly correlated with foreign aid. An increase of one percent in the quantity of aid is associated with an increase of 0.8 percent of the probability of trusting other people, and the estimated coefficient is significant at one percent level (column 1).

In column 2 and 3 we add sectoral fixed effect and ethnic fixed effects. The coefficient estimates are thus robust, do not change much, and stay significant, to different specifications. Indeed, both in column 2 and 3, an increase of one percent of foreign aid determines an increase of 1.1 percent of trust, given that all the other explanatory variables take their mean value.

In column 4, where we fit a model with a set of 22 religion fixed effects, we find that the coefficient on Ln fund is equal to 0.7 percent and significant at one percent level. Hence, our estimates are also robust to the introduction of a bigger set of controls.

[Insert Table 4 here]

Both in Table 4 and in Table 2, when we control for the type of project and the type of agency, the estimated coefficient increases significantly. We believe that this happens because of the heterogeneity of projects and because of the number of agencies that implemented them. As showed by Alesina and Dollar [3] from a macro perspective, donors give foreign aid is disbursed for different reasons, that may be even completely unrelated to developing issues. There are countries that have more propensity to finance countries that share similar international political preferences. For example, Alesina and Dollar [3] show that there is evidence that the United States have given more aid to countries active in fighting terrorism, and that France has financed mainly former French colonies. Such allocation patterns somehow show that

the goal of supporting development and social capital is not considered as the primary determinant of foreign aid. Following a similar reasoning, some type of projects or some agencies could end up delivering aid *less efficiently* than we would expect. Hence, our estimates for the coefficient on aid might actually be lower than we would hypothesize if aid were delivered only according to development considerations, although still positive. Controlling for project and agency type allow us to get rid of the influence of the specific characteristics of single donors or sectors, and to detect the actual correlation between aid and trust.

4.3 Instrumental strategy: the NGO Registration Act

The findings reported in section 4 of a positive correlation between the presence and level of aid in a county and the subsequent level of trust are consistent with our hypothesis about the positive impact of aid on trust. However, an alternative explanation for our findings is that more aid has been directed to counties that initially were more trusting, and that these higher levels of trust simply remain unchanged, or there might be other factors, such as individual and county specific characteristics, that are correlated with the amount of aid flows and subsequent levels of trust. In this section, we address the endogeneity concerns through the use of instrumental variables. This strategy requires an instrument that is correlated with the presence of aid in the county but uncorrelated with any characteristics that may affect the level of trust of the individuals in that county.

In Uganda, a non governmental organization can operate and deliver aid funds to a county after obtaining a specific authorization from the competent district committee. If the NGO is not authorized by the district committee, it cannot carry out any activity and so no aid fund would arrive in Uganda. Since 2006, NGOs started to operate in counties where there were district committees. The more an agency is located far away from the district committee, the more difficult it is to get the authorization, the lower is the incentive for NGOs to engage in aid activities in that county, the less aid the county receives.

The legal source of the provisions on the activity of NGOs comes from a particularly restrictive legislation that regulates the course of their ordinary activities (the NGO Registration Act). The introduction of this law provides a basis for the instrument's exogeneity.

The Non Governmental Organizations (Amendment) Act, passed in 2006, has undermined the productivity of NGOs, by erecting barriers to entry, activity, funding and assembly within the sector.

Among other factors, the precondition that all foreign funds have to be passed through the Bank of Uganda is severely limiting the output of the NGO sector. Among others, the ICNL (International Center for Not-for-Profit Law) has recognized how the fact that all foreign funding must be received in the Bank of Uganda, a government bank, represents a huge barrier to resources' disbursement.¹⁴ The law establishes mandatory registration procedures, including recommendations from governmental representatives, and penalties for conducting activities through unregistered organizations. I.e., NGOs must cooperate with local councils and relevant district committees to be able to carry on their ordinary duties. Regulation 13 of the NGO Registration Regulations 2009 states that an organization in carrying out its operations shall comply with the requirement of not having any direct contact with the people in the area of operation unless it has given seven days' notice in writing of its intention to the local councils and Resident District Commissioners of the area.

We instrument the presence of aid in a specific county with the distance of the county from the district committee.

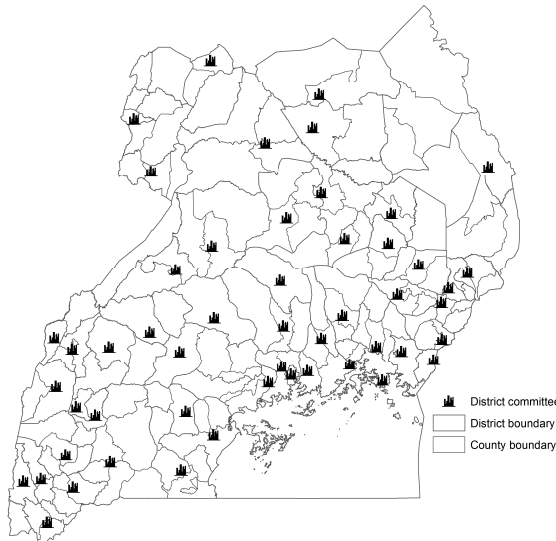


Fig. 3. Geolocalized District committee in Uganda.

Notes: In the map we draw only the district committees of the counties included in our dataset.

In particular, we employ as instrument the logarithm of the distance of each county from the committee belonging to the same district of the county itself. We impose that if the county contains the district committee the instrument takes value 0, otherwise it equals the logarithm of the distance

¹⁴See <http://www.icnl.org/research/monitor/uganda.html>.

plus one. To be consistent, we need to exclude from the dataset all individuals that live in counties that received funds committed before 2006. We thus select only foreign aid projects committed after the 2006 amendment to the legislation and compare trust of respondents in this specific sub-sample with trust of those who did not receive funds. The selection reduces the sample to 985 observations.

Table 5 shows the results of the first and second stage of the instrumental variables estimation. Throughout all the specifications, the distance from the district committee is significant in predicting the effect of foreign aid on trust on other people. In line with our conjecture, the sign of the coefficient on the distance from the district committee is negative, i.e. the more a county is distant from the committee the lower is the probability that the NGO belonging to that county obtains funds for their activities. Column 1 shows the result of the baseline regression, where we fit a two stage least square model with individual controls, county and district level controls and fixed effects for ethnicity. The marginal coefficient on distance is equal to -3.23 and significant at five percent level. The second stage results, reported in the bottom panel of Table 5, are also in line with our conjecture: the sign on the variable dummy fund is positive, as expected. Furthermore, the component of the dummy fund variable predicted by the distance is equal to 0.379 and significant at one percent level. In column 2 and 3, we increase the complexity of the model, adding region fixed effects (column 2) and religion fixed effects (column 3). In both cases, an increase in the logarithm of the distance from the district committee is associated with a negative probability of receiving foreign aid, corresponding to a marginal coefficient of -3.74, significant at the one percent level. The second stage results show again a positive causal effect of the component of the dummy fund variable predicted by the distance on trust in other people. The coefficients estimates are quite stable (0.340 in column 2 and 0.374 in column 3) and significant at the one percent level. Estimates in the last two columns of Table 5 pass the F-test for exogeneity. Overall, the instrumental variables analysis confirms that foreign aid represents a positive shock on individual trust on other people.

5 Foreign aid, inequality and trust

A number of papers studied the correlation between social capital, as measured by trust, and various measures of inequality, finding a significant linkage between them. According to Alesina and Ferrara [4], living in a community with a high degree of income disparity, i.e. high level of Gini coefficient, is strongly associated with low trust. They find evidence of this effect in a sample of individuals from American

localities. Uslaner and Brown [31] explain the linkage between trust and inequality. According to the authors, where inequality is high, people are less likely to believe that the future looks bright, and this is reflected also in trust in other people. Thus, a possible explanation to our finding is that receiving foreign aid induces a decrease in the level of inequality inside the county and this in turn affects trust in other people. This could happen given that one of the objectives of foreign aid is to provide or improve public goods, such as roads, or public services. Living in an improved environment could then have an effect on perceived inequality and on trust.

In this section we follow this strand of the literature and study whether inequality could be a channel through which aid affects trust. We exploit a question from Afrobarometer, where individuals are asked to compare their living condition with respect to other Ugandans. Using individuals' answer to this question, we create a dummy measure of perceived equality. The variable in the survey can assume 5 values, depending on whether the individual feels that his living condition are "much worse", "worse", "same", "better", "much better" than that of other Ugandans. We code the variable as 1 if the individual feels his living condition equal to other Ugandans, and zero in all the other cases. We control for the same variable estimated in 2008 averaged at county level to measure the shift from the average perceived inequality during previous wave. Results in Table 6 show that when a county received foreign aid, the likelihood that residents in that county feel more equal increase of 11% (column 1). This result is significant at 1% level and robust to several demographic and fixed-effect controls on region and agency. It is interesting to notice that the magnitude of the coefficient is similar to the one associated to trust in column 1 of Table 2. Columns 2-4 fit different fixed effects on sectors, ethnic origin and religion, and the result is always positive and significant at least at 5% level.

Figure 4 reports the results from the rolling-window regressions using the main specification and where we control for past level of trust, individual and geographic controls, and sectorial fixed effects. The x-axis shows the difference between individual perceived equality and the county's average of perceived equality from Afrobarometer 4. The dependent variable is a dummy taking value 1 if the individual shows generalized trust, and 0 otherwise. The blue line shows the coefficient estimates for the natural log of foreign aid received ($\ln \text{fund}$) by the county while the red lines are the 5-percent confidence intervals. As it is possible to notice, when the equality perceived with respect to previous wave is low, the coefficients estimated are not significative. Increasing the equality perceived with respect to previous wave, the

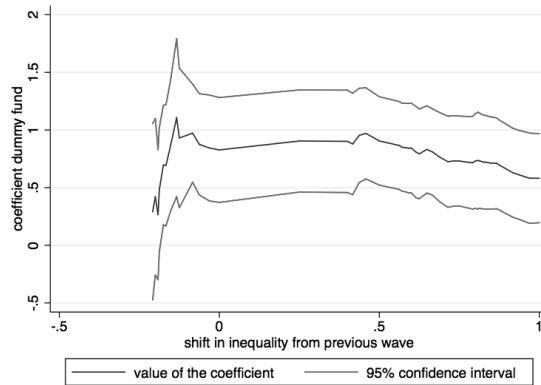


Fig. 4. Evolution of the coefficients on the presence of aid (dummy fund) in rolling regressions (probit model) ordered by increasing equality perceived with respect to previous wave

Note: The figure reports the result from the rolling-windows regressions, where the window includes 900 observations. The x-axis shows the difference between individual perceived equality and the county’s average of perceived equality from Afrobarometer 4. The dependent variable is a dummy taking value 1 if the individual shows generalized trust, and 0 otherwise. The blue line shows the coefficient estimates for the presence of fund (dummy fund) in the county while the red lines are the 5-percent confidence intervals.

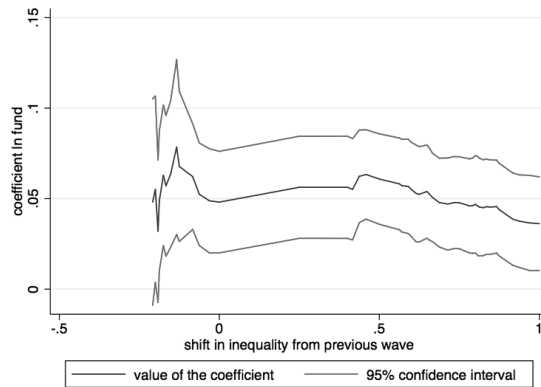


Fig. 5. Evolution of the coefficients on the quantity of aid (ln fund) in rolling regressions (probit model) ordered by increasing equality perceived with respect to previous wave

Note: The figure reports the result from the rolling-windows regressions, where the window includes 850 observations. The x-axis shows the difference between individual perceived equality and the county’s average of perceived equality from Afrobarometer 4. The dependent variable is a dummy taking value 1 if the individual shows generalized trust, and 0 otherwise. The blue line shows the coefficient estimates for the natural log of foreign aid received (ln fund) by the county while the red lines are the 5-percent confidence intervals.

coefficient associated to the presence of fund becomes positive and significant.¹⁵ This gives support to the hypothesis that trust and inequality are strictly linked, and the last one could be a channel for the effect of foreign aid on trust. Figure 5 shows the result of the same type of analysis when the rolling estimation is conducted using the natural log of foreign aid received in the county. Also in this case, for lower level of equality perceived with respect to previous wave the coefficients estimated are not significant. Then, for higher level of equality perceived, an increase in 1% in foreign aid seems to contribute linearly to the trust in other people. The findings of this section confirm the close link among aid, inequality, and trust.

6 Robustness check

Up to this point, we have studied whether large disbursement of aid contributed to reduce the trust deficit over time using different specification and addressing exogeneity issues through an appropriate instrument. In this section, we run some empirical tests to check the robustness of our hypothesis. In Table 9, we conduct the same instrumental strategy investigation as in Table 5 using the sample of aid committed before 2006. We test whether distance predicts foreign aid committed prior to the enforcement of the NGO's registration act, to check for spurious correlation between foreign aid and distance in general. Based on the results in Table 9, we can easily dismiss the possibility of having detected a spurious correlation: distance has a positive effect on foreign aid committed before 2006, unlike what we have detected in Table 5. We might infer that 2006 represented a breaking point in our analysis, mainly due to the enforcement of the NGO's registration act. Looking at the F test, we can exclude that distance is a good instrument for predicting foreign aid committed before 2006 and this supports once more our conjecture.

In Table 10, we run different instrumental probit models and the results are robust and in line with those in Table 5. As Table 10 shows, higher distance from the district committee is always associated with higher probability of getting aid, and the probability of obtaining aid is positively associated with higher trust in other people. In column 1 to 3 of Table 10, we include the same controls employed in Table 5: results are consistent and independent from the model's specification.

In Table 11, we collapse the data at county level and run a probit model employing only county and district levels' regressors. Although the number of observations in this case is extremely low and thus

¹⁵we identify a cut-off point when the value of the shift in equality is equal to -0.17.

any inference must be drawn with caution, the presence of aid in a county (dummy fund) remains again statistically significant. The positive and significant marginal coefficient reported in column 1 of Table 11 comes from a model in which we control for the average level of trust in 2008. In column 2, we control for other demographic and economic characteristics of the county, such as nightlight, unemployment and all the other county level controls included in Table 2. The effect of the main explanatory variable becomes stronger when we include additional controls: the coefficient now takes a value of 0.711 and is significant at five percent level. Finally, in column 3 we control for ethnic fragmentation and for slave trade, employing the variables developed by Nunn and Wantchekon [26]. Again, the coefficient on aid is positive and significant, with a marginal value equal to 0.865.

In Table 12, we study the effect of foreign aid on other dimensions of trust, in particular trust on relatives, on neighbors, and on other known people. The presence of foreign aid has almost no effect on other dimensions of trust, with the exception of a slightly positive effect in the two stage least squares regression with trust on neighbors. In general, we conclude that foreign aid has an extremely significant effect only on generalized trust, without affecting the other dimensions of trust.

Considering the recent history of Uganda, there is an additional possible explanation to our results on aid and trust, that is related to the occurrence of civil conflicts. Both aid and trust might be correlated with the past experience of fighting in a specific county. In their recent work Rohner et al. [29] highlight the importance of civil conflict in determining the level of social capital and trust in Uganda from a long term perspective. They show how people living in counties that experienced conflicts report lower levels of trust, compared to people that never experienced conflicts. Following this reasoning, it might be interesting to study whether and how foreign aid mitigate the legacy of past conflicts on today levels of trust. Indeed, if the availability of aid resources on a number of projects has also the potential to reduce the disrupting effects on trust of past conflicts thus accelerating the process of rebuilding trust, we could conclude that foreign aid has a wider role in similar situations than just enhancing economic growth. As an extension of the core analysis of the paper, in Table 7 we fit the same specification of Table 2 adding as regressor the variable *All fighting*, taken from Rohner et al. [29]. This variable counts all the conflicts that occurred in a county from 2000 to 2008, a period characterized by a high incidence of conflict in Uganda, especially in the north of the country, where a rebel movement called Lord's Resistance Army was operating.¹⁶

¹⁶See Rohner et al. [29] for an extensive overview of the situation of conflict in Uganda.

In column 1 of Table 7, we fit the baseline model using *All fighting* as explanatory variable and excluding the dummy on the presence of foreign aid. The number of fighting that occurred until 2008 has a negative effect on long-term trust, but this effect is statistically significant at ten percent level only in column 2 where we control for ethnic fixed effects. When we include in the model the dummy for aid, we find that *All fighting* continues to be barely significant and the sign becomes quite unstable (see column 3-6). Conversely, the dummy on the presence of fund is significant at one percent level and the estimates are similar to those in Table 2 in terms of magnitude.

The results in Table 7 could be driven by a high correlation between the localization of foreign aid and that of conflict. Indeed, it might happen that NGOs develop projects in counties with records of violent conflicts and such eventuality would drive our result, delivering non significant coefficients for the proxy of conflicts. In order to test this hypothesis, in Table 8 we collapse the data at county level and fit a probit model in which we regress the dummy for the presence of foreign aid on the number of conflicts that occurred between 2000 and 2008 (column 1). In column 2, we add several county and district level controls, and in column 3 we include controls on ethnic fractionalizations and the logarithm of the quantity of slaves exported historically. Throughout all the specifications, we find no relevant effect of fighting on the presence of foreign aid (dummy fund).

7 Conclusion

Is there a linkage between foreign aid and trust? In this study we hypothesize that the disbursement of funds through the financing of foreign aid initiatives by donors, represents a positive contemporaneous shock that changes beliefs and social capital, and increases trust on other people. To test our hypothesis, we use data from two waves of Afrobarometer survey and from AidData to examine whether individuals living in counties that received more aid in the last decade are more trusting of others today.

In the first part of the analysis we implement a probit model and we find that an individual who lives in a county recipient of foreign aid, has an higher probability of trusting other people compared to one living in a county that did not receive foreign aid. The coefficient associated with the presence of a project tells us that the marginal probability at mean value of the other variables is equal to 13 percent and significant at one percent level. Our finding holds also at the extensive margin, where a rise of one percent in foreign aid is associated with an increase of one percent in the probability of trusting other

people. The findings are robust to controlling for the previous level of trust in the county, individual, local, ethnic, and religion characteristics. However, an agency could decide to allocate foreign aid in a county where there is more probability of success for the project, and in this case our result could be driven by reverse causality. In order to overcome the reverse causality issue, we implement an instrumental variable strategy exploiting the NGO Registration Act of 2006, a restrictive legislation that disciplines the ordinary activity of NGOs in Uganda and that entered into force in 2006. Excluding the aid committed before 2006 and employing as instrument the logarithm of the distance between a county and its district committee, we assess the causal effect of foreign aid on trust. The magnitude of the result is higher than in the previous case, an individual living in a county recipient of foreign aid has a 37.9% higher probability of trusting other people than someone living in a county not recipient of foreign aid. However, the shift in magnitude could be caused by the implementation of a linear probability 2SLS model.

Finally, we conjecture that a possible channel, through which aid affects trust, operates through decreasing inequality. Usually, where inequality is high, people are less likely to believe that the future looks bright, and this is reflected also in trust in other people. Receiving foreign aid might induce a decrease in the level of inequality inside the county and this in turn affects trust in other people. This could happen given that one of the goals of foreign aid is to provide or improve public goods, such as roads, or public services. Living in an improved environment has an effect on perceived inequality and on trust. We exploit a question from Afrobarometer, where individuals are asked to compare their living condition with respect to other Ugandans to build a proxy for inequality and find supporting evidence for our conjecture.

Following Bourdieu [7], social capital is an attribute of an individual in a social context; one can acquire social capital through purposeful action and can transform social capital into conventional economic gains.' Our study supports the hypothesis that, independently from the long-debated issue between foreign aid and growth, foreign aid has an impact on trust, that is commonly considered as a proxy of social capital. Previous literature on aid was not able to capture the short-term growth effect, and in some cases, as Burnside and Dollar [9], found a positive relationship between foreign aid and growth conditional on good policies. Conversely, our analysis is the first that suggests how foreign aid has a significant effect on social dimensions that, following Bourdieu [7] definition, could be converted into conventional economic gains in the future.

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Appendix 1

Table 1. Summary Statistics

	Foreign aid=0			Foreign aid=1		
	N	mean	sd	N	mean	sd
Individual-level						
Urban/Rural dummy	413	0.920	0.268	1699	0.822	0.383
Access to electricity	413	0.445	0.498	1699	0.427	0.495
Access to piped water system	413	0.290	0.455	1699	0.313	0.464
Access to sewage system	413	0.058	0.234	1699	0.174	0.380
Cell phone service	413	0.961	0.193	1699	0.896	0.305
Access to school	413	0.903	0.296	1699	0.883	0.322
Radio	413	0.789	0.408	1698	0.813	0.390
Television	412	0.085	0.279	1696	0.163	0.369
Vehicle	413	0.082	0.275	1699	0.101	0.302
Age	408	36.74	13.60	1693	34.88	12.76
Age ²	408	1534.6	1222.4	1693	1379.4	1080.8
No and not looking for employment	413	0.301	0.463	1699	0.257	0.437
Unemployed	413	0.225	0.418	1699	0.247	0.431
Part-time employed	413	0.230	0.421	1699	0.232	0.422
Full-time employed	413	0.235	0.424	1699	0.263	0.440
High education	413	0.092	0.289	1699	0.131	0.338
Medium education	413	0.494	0.500	1699	0.505	0.500
Low education	413	0.414	0.493	1699	0.363	0.481
Sex	413	0.499	0.500	1699	0.501	0.500
County and district-level						
Trust relatives 2008	413	0.843	0.110	1699	0.844	0.119
Trust in known people 2008	413	0.575	0.216	1699	0.529	0.190
Trust in others 2008	413	0.356	0.252	1699	0.312	0.219
Population size (2002)	413	506735	223645	1699	558819	298867
Urbanization	413	7.301	4.902	1699	15.01	26.23
Net Migration (in 1000)	413	-2.197	5.07	1699	0.155	5.61
Age dependency ratio	413	116.48	10.40	1699	109.69	16.17
Adjusted Fertility Rate	413	7.312	0.628	1699	6.923	1.02
Manufacturing Share	413	2.034	1.742	1699	2.38	2.01
Subsistence farming	413	24.84	10.47	1699	31.143	23.15
Unemployment share	413	4.085	1.639	1699	4.628	3.379
Number of Micro Enterprise	413	22590	11680	1699	30382	25134
Ethnic fragmentation	413	0.202	0.237	1699	0.116	0.173
Satellite nightlight per capita	413	0.131	0.183	1699	0.812	1.880
Ethnic-level						
Slave export area (ln)	413	0.0319	0.042	1699	0.031	0.052
Hunting	377	.692	0.615	1595	0.869	0.470
Fishing	377	0.745	0.818	1595	0.727	0.835
Animal Husbandry	377	2.541	1.093	1595	2.515	1.168
Agriculture	377	5.94	0.682	1595	5.774	0.823

Table 2. Foreign aid and trust - extensive margin

	(1)	(2)	(3)	(4)
Dummy Fund	0.114*** (0.029)	0.133*** (0.037)	0.132*** (0.045)	0.113** (0.045)
Agency FE	Y	Y	Y	Y
Sector FE	N	Y	Y	Y
Ethnic FE	N	N	Y	Y
Religion FE	N	N	N	Y
Region FE	Y	Y	Y	Y
Pseudo- R^2	0.1335	0.1432	0.1461	0.1589
Observations	1,845	1,845	1,721	1,697

County-religion clustered standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Note: The table reports marginal effects obtained through a Probit model. The dependent variable is a dummy taking value 1 if the individual shows generalized trust, and 0 otherwise. All the specifications (columns 1 to 4) include the following set of controls: a vector of demographic characteristics (age and its square, employment status, and educational level), a vector of social characteristics (population size, possession of radio, television, and vehicles, whether the county is rural or urban, access to electricity, piped water, sewage system, cell phone services and availability of schools), the average level generalized trust in 2008 by county, the previous level of trust in own group, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate, unemployment rate, and county characteristics (ethnic fractionalization, nightlight), fixed-effects on agencies and regions.

Table 3. Other control variables and trust - marginal coefficients.

	(1)	(2)	(3)	(4)
ln of Population	-0.054 (0.039)	-0.025 (0.042)	-0.232*** (0.066)	-236*** (0.066)
Urban dummy	-0.033 (0.042)	-0.031 (0.044)	-0.07 (0.048)	-0.07 (0.048)
Unemployment level 2008	0.018*** (0.005)	0.019*** (0.005)	0.023*** (0.007)	0.023*** (0.007)
Dummy employment	-0.040** (0.017)	-0.041** (0.017)	-0.042** (0.017)	-0.039** (0.018)
Satellite nightlight percapita 2008	0.175*** (0.040)	0.219*** (0.046)	0.263*** (0.054)	0.269*** (0.053)

County-religion clustered standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Notes: The table reports the marginal effects of other control variables from the specification reported in Table 2. Specifications in column 1-4 correspond to those fitted in column 1-4 of Table 2. The dependent variable is a dummy taking value 1 if the individual shows generalized trust, and 0 otherwise. All the specifications (columns 1 to 4) include the following set of controls: a vector of demographic characteristics (age and its square, employment status, and educational level), a vector of social characteristics (population size, possession of radio, television, and vehicles, whether the county is rural or urban, access to electricity, piped water, sewage system, cell phone services and availability of schools), the average level generalized trust in 2008, the previous level of trust in own group, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate, unemployment rate, and county characteristics (ethnic fractionalization, nightlight), fixed-effects on agencies and regions.

Table 4. Foreign aid and trust - intensive margin

	(1)	(2)	(3)	(4)
Ln fund	0.008*** (0.002)	0.011*** (0.002)	0.011*** (0.002)	0.0076*** (0.002)
Agency FE	Y	Y	Y	Y
Sector FE	N	Y	Y	Y
Ethnic FE	N	N	Y	Y
Religion FE	N	N	N	Y
Region FE	Y	Y	Y	Y
Pseudo- R^2	0.1340	0.1446	0.1470	0.1485
Observations	1,845	1,845	1,721	1,697

County-religion clustered standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Notes: The table reports marginal effects obtained through a Probit model. The dependent variable is a dummy taking value 1 if the individual shows generalized trust, and 0 otherwise. For the set of controls see note below Table 2.

Table 5. Two stage least square estimation using ln of the distance from district committee as instrument for the presence of fund

First stage regression			
ln(distance+1) from district committee	-3.23** (1.21)	-3.74*** (1.13)	-3.74*** (1.11)
Individual controls	Y	Y	Y
County/Districts-level controls	Y	Y	Y
Fixed Effects	Ethnic	Ethnic, Regions	Ethnic, Regions, Religion
Kleibergen-Paap F statistic	7.09	10.93	11.29
R^2	0.49	0.54	0.54
Second stage regression			
Dummy fund	0.379*** (0.134)	0.340*** (0.091)	0.374*** (0.098)
Individual controls	Y	Y	Y
County/Districts-level controls	Y	Y	Y
Fixed Effects	Ethnic	Ethnic, Regions	Ethnic, Regions, Religion
Errors clustered	County & Religion	County & Religion	County & Religion
R^2	0.07	0.09	0.09
Observations	985	985	985

*** p<0.01, ** p<0.05, * p<0.10

Notes: model applied is a a 2 stage least square with trust (dummy 0-1) as dependent variable at individual level and the ratio between average county's distance from all the offices of Bank of Uganda on the county's area. All the specifications include demographic controls (age and age-squared, employment status, and educational level) social controls (population size radio/television/vehicle possession, urban/rural dummy, access to electricity, piped water, sewage system, cell phone services and school); generalized trust in 2008 by county, past trust in own group, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate,unemployment rate), and county characteristics, fixed-effects on agency.

Table 6. Foreign aid and perceived equality - extensive margin

	(1)	(2)	(3)	(4)
Dummy Fund	0.111*** (0.042)	0.099*** (0.035)	0.064** (0.026)	0.058** (0.026)
Agency FE	Y	N	N	N
Sector FE	N	Y	N	N
Ethnic FE	N	N	Y	N
Religion FE	N	N	N	Y
Region FE	Y	Y	Y	Y
Pseudo- R^2	0.063	0.053	0.048	0.058
Observations	1,647	1,657	1,657	1,638

County-religion clustered standard errors in parentheses

*** $p < 0.01$, ** $p < 0.05$, * $p < 0.10$

Notes: The table reports the marginal effects obtained through a Probit model. The dependent variable is a dummy taking value 1 if the individual feels equal with others in term of living condition, and 0 otherwise. All the specifications (columns 1 to 4) include the following set of controls: a vector of demographic characteristics (age and its square, employment status, and educational level), a vector of social characteristics (population size, possession of radio, television, and vehicles, whether the county is rural or urban, access to electricity, piped water, sewage system, cell phone services and availability of schools), the average level of perceived equality in 2008 averaged by county, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate, unemployment rate, and county characteristics (ethnic fractionalization, nightlight), fixed-effects on agencies and regions.

Table 7. Foreign aid, trust and conflict- Extensive Margin robustness check

	(1)	(2)	(1)	(2)	(3)	(4)
All fighting	-1.903 (1.885)	-3.667* (2.231)	-0.212 (1.548)	1.371 (1.538)	2.047 (1.067)	- 0.460 (0.762)
Dummy Fund			0.572*** (0.089)	0.728*** (0.146)	0.685*** (0.232)	0.536*** (0.150)
Agency FE	N	N	Y	Y	Y	Y
Sector FE	N	N	N	Y	Y	Y
Ethnic FE	N Y	N	N	Y	Y	
Religion FE	N	N	N	N	N	Y
Region FE	Y	N	Y	Y	Y	Y
Observations	1,979	1,853	1,877	1,877	1,721	1,825

Region-clustered standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Note: The table reports Probit estimates. The dependent variable is a dummy taking value 1 if the individual shows generalized trust, and 0 otherwise. All the specifications (columns 1 to 4) include the following set of controls: a vector of demographic characteristics (age and its square, employment status, and educational level), a vector of social characteristics (population size, possession of radio, television, and vehicles, whether the county is rural or urban, access to electricity, piped water, sewage system, cell phone services and availability of schools), the average level generalized trust in 2008 by county, the previous level of trust in own group, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate, unemployment rate, and county characteristics (ethnic fractionalization, nightlight), fixed-effects on agencies and regions.

Table 8. Foreign aid and conflict - investigation on the determinants of foreign aid

	(1)	(2)	(3)
All fighting	2.162 (4.620)	0.942 (6.056)	-.037 (6.639)
County/Districts-level controls	N	Y	Y
Historical ethnic controls (Nunn)	N	N	Y
Errors clustered	District	District	District
Observations	98	98	98

*** p<0.01, ** p<0.05, * p<0.10

Note: model applied is a a probit with the presence of foreign aid (dummy fund) in the county as dependent variable. The second specification adds county demographic and economics controls. The third specification includes also control on ln of slave exported historically and ethnic fractionalization. Errors are robust and clustered at county level.

Table 9. Robustness check on foreign aid committed before 2006

First stage regression			
ln(distance+1) from district committee	1.23** (0.52)	1.21** (0.51)	1.23** (0.52)
Individual controls	Y	Y	Y
County/Districts-level controls	Y	Y	Y
Fixed Effects	Ethnic	Ethnic, Regions	Ethnic, Regions, Religion
Kleibergen-Paap F statistic	5.64	5.65	5.62
Second stage regression			
Dummy fund	0.146 (0.259)	0.139 (0.314)	0.059 (0.276)
Individual controls	Y	Y	Y
County/Districts-level controls	Y	Y	Y
Fixed Effects	Ethnic	Ethnic, Regions	Ethnic, Regions, Religion
Errors clustered	County & Religion	County & Religion	County & Religion
Observations	1046	1046	1046

*** p<0.01, ** p<0.05, * p<0.10

Note: model applied is a a 2 stage least square with trust (dummy 0-1) as dependent variable at individual level and the ratio between average county's distance from all the offices of Bank of Uganda on the county's area. All the specifications include demographic controls (age and age-squared, employment status, and educational level) social controls (population size radio/television/vehicle possession, urban/rural dummy, access to electricity, piped water, sewage system, cell phone services and school); generalized trust in 2008 by county, past trust in own group, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate,unemployment rate), and county characteristics, fixed-effects on agency.

Table 10. Instrumental Probit estimation using ln of the distance from district committee as instrument for the presence of fund

First stage regression			
ln(distance+1) from district committee	-3.66** (1.65)	-1.14** (0.55)	-4.03*** (1.50)
Individual controls	Y	Y	Y
County/Districts-level controls	Y	Y	Y
Fixed Effects	Ethnic	Ethnic, Regions	Ethnic, Regions, Religion
Prob > chi2	0.048	0.019	0.014
Second stage regression			
Dummy fund	1.60*** (0.536)	1.52*** (0.452)	1.71*** (0.459)
Individual controls	Y	Y	Y
County/Districts-level controls	Y	Y	Y
Fixed Effects	Ethnic	Ethnic, Regions	Ethnic, Regions, Religion
Errors clustered	County	County	County
Observations	875	875	847

*** p<0.01, ** p<0.05, * p<0.10

Note: model applied is a an istrumental probit with trust (dummy 0-1) as dependent variable at individual level and the ratio between average county's distance from all the offices of Bank of Uganda on the county's area. All the specifications include demographic controls (age and age-squared, employment status, and educational level) social controls (population size radio/television/vehicle possession, urban/rural dummy, access to electricity, piped water, sewage system, cell phone services and school); generalized trust in 2008 by county, past trust in own group, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate,unemployment rate), and county characteristics, fixed-effects on agency.

Table 11. Probit estimation of the effect of fund on trust using the collapsed cross-county dataset

Dummy fund	0.593* (0.306)	0.711** (0.334)	0.865** (0.349)
Trust level during 2008	Y	Y	Y
County/Districts-level controls	N	Y	Y
Historical ethnic controls (Nunn)	N	N	Y
Errors clustered	District	District	District
Observations	98	98	98

*** p<0.01, ** p<0.05, * p<0.10

Note: model applied is a a probit with average trust in the county as dependent variable. All the specifications include controls on generalized trust in 2008 by county as well as on trust on relatives and on known people during 2008. The second specification adds county demographic and economics controls. The third specification includes also control on ln of slave exported historically and ethnic fractionalization. Errors are robust and clustered at county level.

Table 12. Probit and two stage least squares estimation of presence of fund on other dimension of trust (relative, neighbor, otherpeople)

Trust dimension	relative	relative	neighbor	neighbor	otherpeopleknown	otherpeopleknown
	Probit	2SLS	Probit	2SLS	Probit	2SLS
dummy fund	0.145 (0.204)	-0.021 (0.193)	-0.140 (0.236)	0.608* (0.192)	-0.076 (0.160)	-0.165 (0.132)
Agency FE	Y	N	Y	N	Y	N
R ²	0.14	0.18	0.13	0.10	0.13	0.18

County-clustered standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.10

Note: Dependent variables are trust on relative, on neighbor, trust on other people. Model applied are a probit and 2sls with trust (dummy 0-1) as dependent variable at individual level. All the specifications include demographic controls (age and age-squared, employment status, and educational level) social controls (population size radio/television/vehicle possession, urban/rural dummy, access to electricity, piped water, sewage system, cell phone services and school); generalized trust in 2008 by county, past trust in own group, urbanization, age-dependency ratio, share of manufacture, share of subsistence farming, net migration, number of micro-enterprises, adjusted total fertility rate, unemployment rate), and county characteristics (ethnic fractionalization, nightlight), fixed-effects on agency.

Appendix 2

Table 13. List of agencies and sectors in the analysis - first part

Agency Name	Primary sector
African Development Fund	EDUCATION
African Development Fund	WORKS AND TRANSPORT
African Development Fund China Sweden	AGRICULTURE
ABEDA Belgium Germany IDB KFD OPEC SFD South Korea	EDUCATION
ABEDA OPEC	WORKS AND TRANSPORT
Austria	HEALTH
Austria	JLOS
Austria	SOCIAL DEVELOPMENT
Austria	TOURISM, TRADE AND INDUSTRY
China	AGRICULTURE
China	EDUCATION
China	ENERGY AND MINERAL DEVELOPMENT
China	HEALTH
China	SECURITY
China	TOURISM, TRADE AND INDUSTRY
China	WORKS AND TRANSPORT
Denmark/DANIDA	AGRICULTURE
Denmark/DANIDA	SOCIAL DEVELOPMENT
Denmark/DANIDA	WORKS AND TRANSPORT
European Union	AGRICULTURE
European Union	EDUCATION
European Union	HEALTH
European Union	JLOS
European Union	WORKS AND TRANSPORT
Germany	ENERGY AND MINERAL DEVELOPMENT
Iceland	EDUCATION
International Bank for Reconstruction and Development	ENERGY AND MINERAL DEVELOPMENT
IDA	ENERGY AND MINERAL DEVELOPMENT
IDA	HEALTH
IDA	TOURISM, TRADE AND INDUSTRY
IDA	WORKS AND TRANSPORT
IDA ADF	ENERGY AND MINERAL DEVELOPMENT
IDA Japan	WORKS AND TRANSPORT
IDA Norway	ENERGY AND MINERAL DEVELOPMENT
Ireland	EDUCATION
Ireland	ENERGY AND MINERAL DEVELOPMENT
Ireland	HEALTH
Ireland	SOCIAL DEVELOPMENT
Ireland Japan	EDUCATION

Table 14. List of agencies and sectors in the analysis - second part

Agency Name	Primary sector
Japan	AGRICULTURE
Japan	EDUCATION
Japan	ENERGY AND MINERAL DEVELOPMENT
Japan	HEALTH
Japan SOCIAL	DEVELOPMENT
Japan WORKS	AND TRANSPORT
Norway	AGRICULTURE EDUCATION
Norway	EDUCATION
Norway	ENERGY AND MINERAL DEVELOPMENT
Norway	HEALTH
Norway	SOCIAL DEVELOPMENT
Spain	HEALTH
Sweden	HEALTH
Sweden	SOCIAL DEVELOPMENT
Sweden	TOURISM, TRADE AND INDUSTRY
Swedish International Development Authority	HEALTH
United Kingdom	HEALTH
United Kingdom	SOCIAL DEVELOPMENT
UNDP	SOCIAL DEVELOPMENT
United States of America	AGRICULTURE
United States of America	HEALTH
United States of America	SOCIAL DEVELOPMENT