

Belmonte, Alessandro; Bove, Vincenzo; Di Salvatore, Jessica

**Working Paper**

## Donors for tax morale: Evidence from 34 African countries

WIDER Working Paper, No. 2021/185

**Provided in Cooperation with:**

United Nations University (UNU), World Institute for Development Economics Research (WIDER)

*Suggested Citation:* Belmonte, Alessandro; Bove, Vincenzo; Di Salvatore, Jessica (2021) : Donors for tax morale: Evidence from 34 African countries, WIDER Working Paper, No. 2021/185, ISBN 978-92-9267-125-9, The United Nations University World Institute for Development Economics Research (UNU-WIDER), Helsinki, <https://doi.org/10.35188/UNU-WIDER/2021/125-9>

This Version is available at:

<https://hdl.handle.net/10419/249491>

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WIDER Working Paper 2021/185

## **Donors for tax morale**

Evidence from 34 African countries

Alessandro Belmonte,<sup>1</sup> Vincenzo Bove,<sup>2</sup> and Jessica Di Salvatore<sup>3</sup>

December 2021

**Abstract:** Do aid projects affect citizens' motivation to pay taxes? We address this question by combining fine-grained data on aid projects from AidData and survey data from the Afrobarometer for 34 African countries. We first employ a subnational analysis, where the treatment varies by administrative unit, and then move to an individual-level analysis, which exploits the occurrence of a project during the Afrobarometer fieldwork. Two main results emerge: first, we find a negative impact of foreign aid on tax morale when projects provide public goods that people would have expected from the state; second, we estimate a positive effect when projects are aimed at building state capacity (e.g. tax cooperation). We additionally show that changes in tax morale are shaped by the donor's type and its adherence to transparency standards. Our research provides important insights for designing interventions that support tax capacity by identifying risk factors in current donors' practices.

**Key words:** foreign aid, tax morale, state capacity, public goods, Africa

**JEL classification:** F35, H2, H11, O12

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<sup>1</sup> University of Urbino, Urbino, Italy, and CAGE, University of Warwick, Coventry, UK; <sup>2</sup> Department of Politics and International Studies, University of Warwick, Coventry, UK and CAGE, University of Warwick, Coventry, UK; <sup>3</sup> University of Warwick, Coventry, UK; corresponding author: [abelmonte.phd@gmail.com](mailto:abelmonte.phd@gmail.com)

This study has been prepared within the UNU-WIDER project [Detecting and countering illicit financial flows](#) that is implemented in collaboration with the University of Copenhagen. The project is part of the [Domestic Revenue Mobilization](#) programme, which is financed through specific contributions by the Norwegian Agency for Development Cooperation (Norad).

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ISSN 1798-7237 ISBN 978-92-9267-125-9

<https://doi.org/10.35188/UNU-WIDER/2021/125-9>

Typescript prepared by Gary Smith.

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Katajanokanlaituri 6 B, 00160 Helsinki, Finland

The views expressed in this paper are those of the author(s), and do not necessarily reflect the views of the Institute or the United Nations University, nor the programme/project donors.

## 1 Introduction

Improving states' capability to raise and collect taxes is crucial to fostering state-building. For developing countries it is also crucial to reducing reliance and dependence on foreign aid. Fiscal capacity allows states to strengthen their tax authorities and, by this mean, to reduce illicit financial flows related to tax abuse (Cobham and Janský 2020) and to boost citizens' motivations to pay taxes (Besley 2020; Weigel 2020). International donors are aware of this and have provided technical assistance to support the development of tax authorities. This assistance has entailed not only technical capacity, but also promotion of principles of transparency and accountability (Prichard 2010), in an attempt to boost tax compliance among citizens. Although donors have become increasingly concerned with tax as a 'development assistance priority' (OECD 2013), few studies have explored the effects of foreign aid projects on citizens' tax morale—that is, the belief that taxes should be paid (Luttmer and Singhal 2014). The intrinsic motivation for individuals to pay taxes is an important determinant of taxpayer compliance and is thus one of the primary concerns for revenue authorities (Alm and Torgler 2006). There is limited evidence, however, on the extent to which international assistance has a clear positive impact on tax morale, and how project-specific features may alter the expected outcome. This paper aims to fill this gap by exploring how foreign aid projects affect tax morale in a sample of African countries, where the Sustainable Development Goal of domestic source mobilization (SDG 17.1) is a pressing priority.

The challenge that developing countries face in their state-building efforts entails a vicious cycle where weak institutions result in inefficient performances, which in turn worsen citizens' relations with the state. The African continent provides a suitable context to study these dynamics in relation to fiscal capacity. For one, lack of state capacity and state inefficiencies affecting numerous countries in the region make people poorly motivated to pay taxes. And without citizens' willingness to contribute to collective goods, countries with a low fiscal capability find it particularly challenging to collect taxes required to provide these public goods and services. In equilibrium, these two intermingled dynamics create a vicious cycle in which the state is incapable of providing essential goods and services because of its inability to raise taxes, and citizens are not motivated to pay taxes because they receive little in exchange (Besley 2020).

Can international actors break this vicious cycle through foreign aid projects? On the one hand, extant research suggests a positive answer, as aid may indeed boost tax compliance (Milner et al. 2016). On the other hand, however, aid may worsen state legitimacy (Sacks 2012), and is more generally nefarious for governance indicators such as law and order, bureaucratic quality, and corruption (Busse and Gróning 2009). If the latter effect prevails, then we should expect aid to exacerbate existing low levels of tax morale. Since aid projects tend to have two effects that go in opposite directions, the net effect on tax morale is not obvious. This is something that has to be determined from the data. In addition to estimating the average effect of aid projects as such, we seek to unpack the aid–tax morale nexus by focusing on the signal that projects send in relation to state-building processes. First, we argue that aid projects focusing on tax and fiscal capacity signal future capacity. This may boost tax morale because of material incentive—via, for example, an increase in the expected cost of detection—and non-material incentives, such as the feeling that paying taxes is right. Second, externally provided public goods, such as aid projects that deliver public goods, signal state weakness as it needs to rely on third parties to provide basic goods to citizens. This should significantly lower citizens' tax morale. Third, aid projects funded via unreported flows that lack transparency cast a shadow on governments' legitimacy, and hence signal state inefficiency and enhanced corruption. Again, this mechanism should reduce tax morale. States' perceived legitimacy is expected to worsen as a consequence of such practices that heighten citizen's expectations of corruption.<sup>1</sup>

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<sup>1</sup> Recent research by Andersen et al. (2020) finds evidence of significant aid capture by elites in aid-dependent countries, as documented by increased bank deposit in offshore financial centres in the same quarter as the disbursement.

In sum, we unpack the effect of foreign aid on tax morale by considering theoretically relevant heterogeneity in project *sectors* and *donors'* practices. Our main expectations can be summarized as follows:

1. Foreign aid projects aiming at the tax sector improve citizens' motivations to pay taxes.
2. Foreign aid projects aiming at public good provision reduce citizens' motivations to pay taxes and other related attitudes.
3. Foreign aid projects increase citizens' motivations to pay taxes if funded by multilateral donors.
4. Foreign aid projects reduce citizens' motivations to pay taxes if funded through unreported financial flows.

Our research answers these broad questions by combining fine-grained geocoded survey data and foreign aid projects, and by applying two interrelated empirical strategies. First, we explore the impact of aid projects and their heterogeneous impact within first-order administrative units across the surveyed African countries. More specifically, we compare individuals across different regions to assess whether their exposure to aid projects—up to 12 months before the survey—increases tax morale at the time of the survey. We differentiate between completed and ongoing projects, tax-related and public-goods related, and projects funded by China. Notably, in comparing completed and ongoing projects, we aim to assess whether aid exerts any effect via a pure signalling mechanism or a signalling-*plus*-capacity-building mechanism.

In the second stage of the analysis we explore variation within administrative units by comparing individuals in villages interviewed just before and just after the take-off of an aid project. We are able to match six World Bank aid projects to the two Afrobarometer waves, four focused on public goods provisions and two on different sectors. The two stages of the analysis are to be considered as complementary as they seek at the same time to safeguard internal validity, threatened by unobserved heterogeneity in aid delivery, and external validity, threatened by the choice of specific projects.<sup>2</sup>

Our analysis documents a positive impact of completed aid projects, and a zero average impact of ongoing foreign aid projects on beneficiary areas' tax morale. At the same time, and more importantly, we also uncover heterogeneous effects, depending on the specific sector of the projects. On the one hand, projects aimed at building state capacity on taxation specifically (for example, tax cooperation or support in building a tax authority) have a strong and positive effects on people's motivations to pay taxes. On the other hand, the effect turns negative when the international actors replace the state in providing the very public goods that people expect from the state itself, such as health.

We interpret these effects as follows. Foreign aid projects that focus on public goods provision signal state weakness to citizens. Citizens update their beliefs about the future performances of the government and reduce their levels of tax morale. Conversely, when projects aim at building the country's state capacity, particularly in relation to taxation, citizens receive a signal of state-building and the expected cost of non-compliance (assuming the state will get better at monitoring and enforcing tax compliance); this results in an increase in their motivations to pay taxes. Finally, we explore whether aid flows that are more at risk of capture can negatively affect tax morale. Focusing on Chinese aid projects, we do not find any effect of these projects on tax morale specifically; however, we find that projects funded by China, which does not participate in existing aid reporting systems, exacerbate perceptions of corruption, while World Bank projects seem to possibly moderate them.

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<sup>2</sup> Whereas the second stage zooms in on specific projects that do not allow re-testing all the heterogeneity of the first stage (and have more limited external validity), it significantly assuages concerns over the causal identification of an effect by exploiting changes in aid provision that are expected to be unrelated to the timing of the surveys.

Our research contributes to two strands of the literature. First, we contribute to extant research on the effects of foreign aid on tax compliance. Some of this research has shown a beneficial effect of external projects on tax compliance (Milner et al. 2016), while other research, however, has found limited evidence for domestic resource mobilization (e.g. Casey et al. 2011). Our theoretical framework also builds on studies showing how foreign aid projects may unintentionally corrode state legitimacy by providing public goods that citizens expect the state to provide (Sacks 2012). Our findings support the expectation that some aid projects signal state-building (i.e. projects building capacity) while others signal state weakness (i.e. projects where state functions are taken over by external actors), and hence they prompt countervailing effects on citizens' willingness to contribute to public goods.

Second, we contribute to research showing that citizens may prefer aid from multilateral donors for their transparency and trustworthiness (Findley et al. 2017). Indeed, donors differ in the modality of aid provision, and this may in turn affect citizens' perceptions of their governments. For example, China has openly rejected the need for transparency in its aid provision by stating that the 'principle of transparency should apply to north-south cooperation, but that it should not be seen as a standard for south-south cooperation' (Tran 2011). Relatedly, Dreher et al. (2019) show that Chinese aid is more vulnerable to elite capture, with aid allocation being more likely in political leaders' birth regions; no similar effect is produced by the World Bank's projects, which comply with the existing reporting systems such as the OECD's Creditor Reporting System or the International Aid Transparency Initiative. As an illustration of how citizens' perceptions of their own governments are affected by their relationships with certain donor typologies, Isaksson and Kotsadam (2018) find that perceptions of corruption are higher in proximity to Chinese aid projects. However, it does not seem to be the case that Chinese aid projects worsen governments' legitimacy in the eyes of citizens (Blair and Roessler 2021), nor are they associated with less support for liberal democratic values (Blair et al. 2021). We do not contend that Chinese projects may have an adverse effect on tax morale because of the donor's characteristics; rather, we focus our argument on the unreported nature of financial flows that some donors, including China, have privileged. In so doing, we argue that multilateral aid projects are more likely to exert an effect on tax morale than unreported aid flows; the latter, we argue, are likely to have a negative impact on perceptions of governments' accountability in the first place and are expected to significantly worsen tax compliance as citizens associate their governments with non-transparent financial transactions.

The remainder of this paper is organized as follows. Section 2 describes the data. Section 3 outlines our two complementary empirical strategies. Section 4 presents estimation results from the subnational analysis at the regional level. Section 5 describes and presents the results of the individual-level analysis that exploits the start of the projects during the Afrobarometer fieldwork to assign respondents into treatment and control groups as good as randomly. Section 6 concludes.

## 2 Data

The paper relies on three main data sources to identify the impact of foreign aid on tax compliance. First, we use information on geocoded aid projects funded by the World Bank and made available by AidData (Tierney et al. 2011). For each project, AidData provides information on the location of the project and the sectors (or themes) of the intervention. This allows us to know exactly where and when specific interventions have taken place. More specifically, we identify projects focusing on public goods provisions (e.g., water supply and sanitation, health, education) and projects focusing on state/fiscal capacity (e.g., improving financial management systems, tax assessment procedures, accountability/anti-corruption). The second key data source is also part of the AidData collection and codes aid projects funded by China. This data source is important as it allows us to assess the potential impact of aid projects from donors that do not participate in global reporting systems. AidData uses a methodology

for tracking under-reported financial flows (Strange et al. 2017) that provides the most comprehensive coverage of Chinese aid projects from 2000 to 2014.

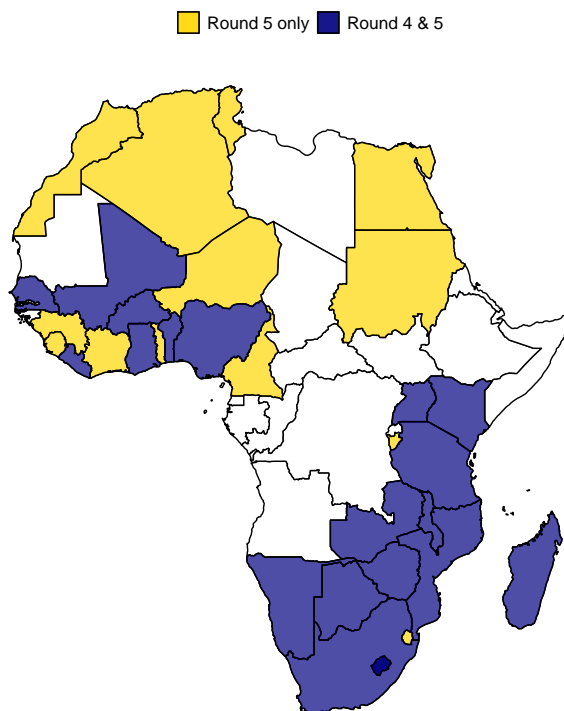
As mentioned, both World Bank and Chinese aid projects are geocoded, hence they can be combined with geocoded survey data from the Afrobarometer, our third data source. The Afrobarometer has been collecting data on public opinion and attitudes in African countries since 2001. We use rounds 4 and 5 of the Afrobarometer, carried out in 2008 and 2011–13, respectively, covering a total of 34 African countries. The surveys are based on face-to-face interviews, are nationally representative, and the same questionnaires are used for countries within the same wave. Most of the items from the survey in the fourth wave are also present in the fifth wave. Importantly, these surveys report key information on the provision of critical public goods as well as the date of the interview. The main variable of interest is the self-reported attitude on tax compliance, which we use as a measure of motivations to pay taxes. We also use responses on reported tax compliance and perceptions of domestic institutions to further explore possible mechanisms at play.

In the next two subsections we provide more details on the information we retrieve from the three data sources, and then describe the regional-level and individual-level analyses. We combine the two levels of analysis as complementary strategies that, as mentioned in the previous section, prioritize external or internal validity to different extents.

## 2.1 Afrobarometer survey data

The African countries sampled by the Afrobarometer are depicted in Figure 1. Round 4 was carried out between March 2008 and June 2009 across 20 African countries, with a total of 27,684 respondents; round 5 was carried out in 34 African countries between October 2011 and June 2013, with 50,772 individuals being interviewed. The survey includes probability weights designed to allow comparisons within and across sampled countries.

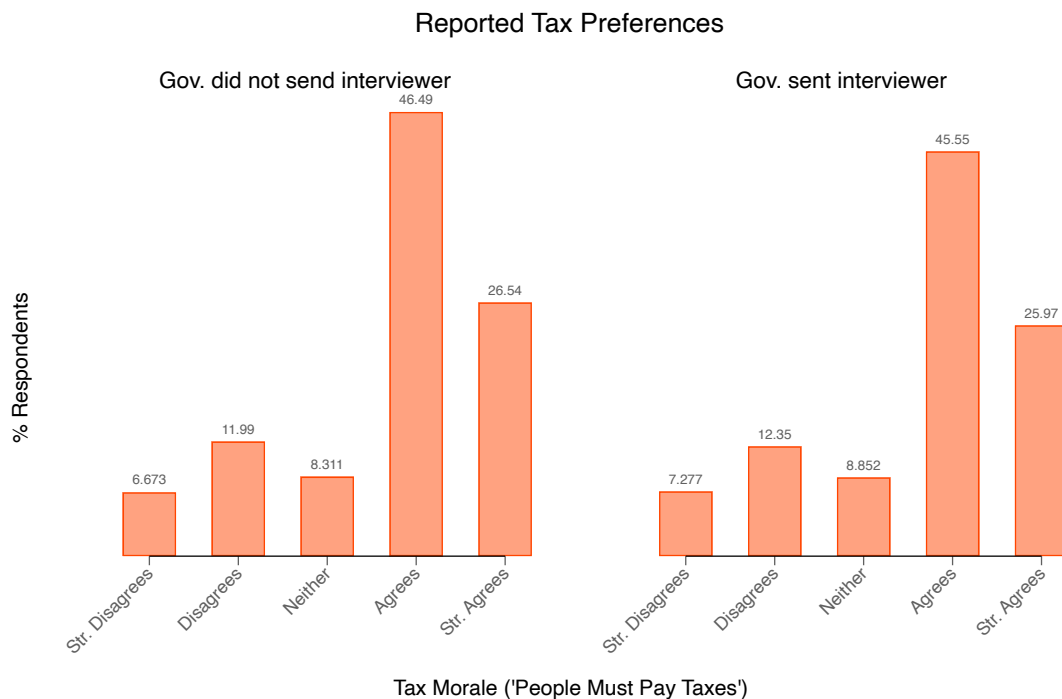
Figure 1: Afrobarometer sample (rounds 4 and 5)



Source: authors' construction based on the Afrobarometer.

We use the Afrobarometer surveys to measure our main dependent variable, namely tax morale. The survey asks respondents whether they agree or disagree with the statement: ‘The tax department always has the right to make people pay taxes.’<sup>3</sup> The answer is measured on a scale from 1 to 5 (strongly disagree, disagree, neither agree or disagree, agree, and strongly agree). We keep the variable in its original ordinal scale. While one could expect desirability bias to affect individuals’ reported preferences on taxation, Figure 2 does not show striking differences in the distribution of responses depending on whether respondents believed the government had commissioned the survey. Overall, most respondents tend to agree that people must pay taxes to their governments and the mean level of tax morale in the two merged surveys is 3.732 (see Table 1, where summary statistics are reported for the main outcome variables). We additionally investigate whether foreign aid affects levels of generalized or institutional trust and perception of corruption. These items are measured on a scale from 0 to 3 (not at all, just a little, somewhat, a lot). Regarding trust, the Afrobarometer asks respondents ‘How much do you trust each of the following?’, and lists different institutions, from the government (president or prime minister) to courts and police.<sup>4</sup> Corruption is measured as a response option for the following question: ‘How many of the following people do you think are involved in corruption?’, and again a list of institutions.<sup>5</sup> The variable ranges from 0 (none) to 3 (all of them).

Figure 2: Tax morale and respondents’ belief that the government commissioned the survey



Source: authors’ construction based on the Afrobarometer.

We observe a low level of generalized trust (with a mean of 0.591), while trust in institutions is somewhat higher (the average respondent reports level of trust towards the president/prime minister, parliament, and local government in the region of 1.8, 1.6, and 1.4, respectively). Perception of corruption is between ‘just a little’ and ‘somewhat’ (the average perceived corruption of presidents/prime ministers is 1.2, while it increases to 1.4 for civil servants and 1.4 for tax officers). There is, however, considerable variation around the mean level (see Table 1), which is leveraged and investigated in our study.

<sup>3</sup> This is question Q44C in round 4 and Q48C in round 5.

<sup>4</sup> These are questions Q49 in round 4 and Q59 in round 5.

<sup>5</sup> These are questions Q50 in round 4 and Q60 in round 5.



Table 1: Summary statistics for outcome variables

	Mean	SD	Min.	Max.	Obs.
Tax morale	3.723	1.177	1	5	74,341
Trust others	0.592	0.873	0	3	77,039
Trust president	1.844	1.105	0	3	74,003
Trust parliament	1.645	1.066	0	3	74,677
Trust local government	1.524	1.067	0	3	71,518
Corrupted president	1.443	0.863	0	3	64,848
Corrupted tax officers	1.202	0.866	0	3	63,310
Corrupted civil servants	1.417	0.803	0	3	67,884

Source: authors' compilation based on data from the Afrobarometer.

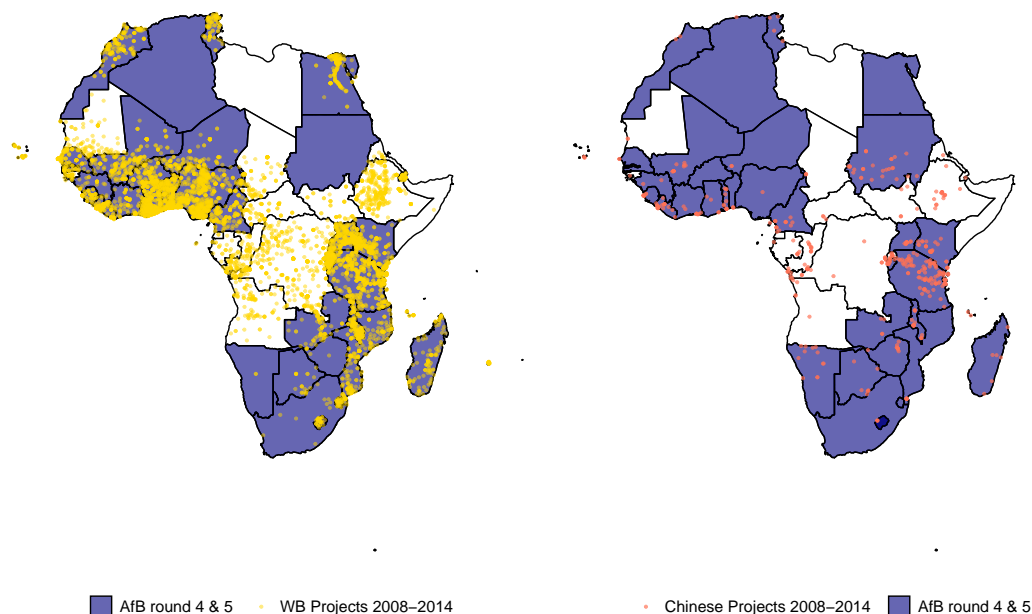
## 2.2 Foreign aid projects

Using the geographic information provided by AidData on foreign aid projects, we link aid projects to first-order administrative units surveyed by the Afrobarometer.<sup>6</sup> The overlap between the Afrobarometer sample and the World Bank's aid projects across the two rounds of the survey is shown in the left panel of Figure 3, which also shows the geographic distribution of China's projects in the right panel. We provide details on how we defined the treatment for the two levels of analysis below, but in both cases we use information provided for projects that are coded at the first- or second-order administrative level. We choose not to use aid projects that are implemented in specific villages or buildings as we do not have information on respondents' location at that level of disaggregation. The Afrobarometer does provide information on the administrative units within which respondents are located, but this is not sufficient to decide whether this implies exposure to very local aid projects. If a project is implemented in a school in a village in unit A, we may have respondents from that village or respondents living in another village in unit A. Without knowing the exact location of respondents, we are unable to ascertain which one of the two cases above was treated by the intervention. For this reason, we focus on projects that are carried out in larger administrative units. If anything, we would expect respondents to be more aware of larger projects being implemented in their regions than smaller-scale projects in nearby villages.

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<sup>6</sup> Both Afrobarometer respondents and the aid projects are geocoded at the level of the administrative unit. For aid projects, the projects' implementation is designed at the level of the administrative unit. This implies that individuals in the unit are (unambiguously) expected to be exposed to it. The use of the administrative unit indicated in both datasets allows us to match individuals and projects very accurately in the same treated areas. Note that, as individuals and projects are both assigned to administrative units in the original data, we cannot use grid cells as neither respondents or projects can be unambiguously matched to a cell in the grid.

Figure 3: Afrobarometer sample and aid projects (2008–14)



Source: authors' construction based on the Afrobarometer and AidData.

### 3 The two empirical strategies

The paper identifies the impact of foreign aid on tax compliance using two interrelated empirical strategies. First, we start with a subnational-level analysis where we assess the impact of foreign aid projects implemented in a region (i.e. first-order administrative unit) on individuals interviewed by the Afrobarometer. This will allow us to estimate the effect of aid exposure on changes in collective attitudes, while controlling for time-varying location characteristics and time and location fixed effects. By comparing different individuals in the same region across the two waves, we will exploit variation over time within each region, net of potential region time-invariant and common time-specific confounders. While this strategy allows us to assess the overall impact of aid projects on all respondents in each region, a potential threat to this identification is that the distribution of aid is non-randomly distributed and thus average attitudes can be endogenous to the selection of aid locations. For example, areas receiving foreign aid are typically on a worse trajectory than those that are not recipients, and are more in need of public goods and services. There could also be pre-treatment differences in tax morale that we are at present (with two waves) unable to control for. This shortcoming can be important as more economically depressed areas are more likely to display a lower level of tax morale. Our second analysis aims precisely at addressing the above concerns.

For the individual-level analysis, we select foreign aid projects whose implementation starts while the Afrobarometer fieldwork is ongoing, thus allowing the comparison of individuals within the same region just before and after a project has started. This methodology, which exploits the occurrence of unexpected events during a survey design (Muñoz et al. 2020), has been widely used in recent years using Afrobarometer data (Depetris-Chauvin et al. 2020; Sangnier and Zylberberg 2017) and will allow us to compare individuals with similar characteristics (e.g., same ethnicity, age, education) interviewed in the same region, in the same period, but respectively immediately before and immediately after the

start of a foreign aid project. This analysis hinges on the identifying assumption that the timing of the implementation of a foreign aid project is exogenous and randomly assigned relative to the timing of the interviews. As we will show below, the two groups of respondents are similar along a number of dimensions, but the latter are those that have information about the foreign aid and are therefore able to update their expectations about state-building. In doing so, we can thus rule out potential confounding factors threatening internal validity and substantiate the findings from the regional-level analysis.

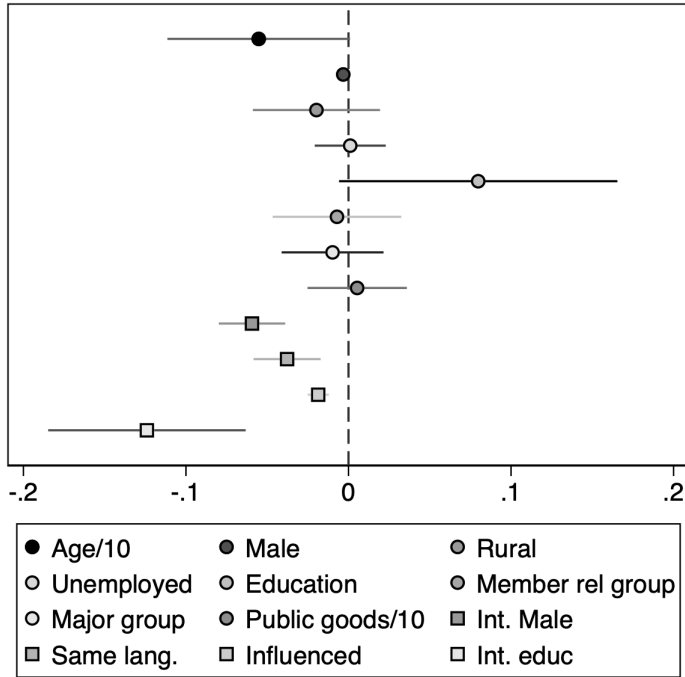
To summarize, the two empirical strategies, while closely related to each other, address different methodological challenges and complement each other. Using them in combination allows us to offer results with a more compelling internal validity while also offering a more realistic analysis of the impact of foreign aid on people's attitudes, which can be generalized across African countries. The individual-level analysis leans towards a more rigorous identification strategy, but we should bear in mind that the estimated effect only concerns informational mechanisms that induce people to update their expectations about a specific country's state-building.<sup>7</sup> The total impact of foreign aid may, however, be richer and additional insights appear when we distinguish among started and completed projects, hence the inclusion of a regional-level analysis.

As one would expect, the two analyses use a sample of survey respondents with very different sizes: whereas the regional-level analysis relies on a sample of 56,535 individuals, the individual-level analysis includes only 8,389 individuals. Differences in the estimated effect may thus be due to heterogeneous characteristics between the two samples. Yet Figure 4, which plots differences across all covariates between the two samples/analyses, suggests that this is not a major concern. As one can see, there are no significant differences (at 95 per cent confidence level) in age, gender, rurality, unemployment status, education, religiosity, belonging to the major ethnic group, and provision of public goods at the village level. However, the balance test highlights how important differences may have appeared in the way interviews were conducted. These differences need to be considered when interpreting results.

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<sup>7</sup> Furthermore, the individual-level analysis includes only those projects that had their start during the roll-out of the survey interviews. For this reason, the number of projects we could match is limited—only six—and thus a very limited subset of the ones used in the regional-level analysis. For example, we are unable to match any Chinese foreign aid project. For this reason, the results are more project-dependent.

Figure 4: Balance test between the two samples employed



Note: each dot is the estimated difference between the sample employed in the regional-level analysis and the one used in the individual-level analysis. Regressions include a full set of region fixed effects and a dummy for the Afrobarometer round 5. Standard errors are clustered at the village level.

Source: authors' compilation based on data from the Afrobarometer.

## 4 Regional-level analysis

### 4.1 Empirical strategy

We begin with a subnational analysis at the regional level. By regions we refer to first-order administrative units within countries surveyed by the Afrobarometer. It should be noted that while we keep our measurement of tax morale at the individual level, we consider the overall regional exposure to recent aid projects. In other words, respondents are part of regions that have been differently exposed to aid projects up to the 12 months before the Afrobarometer interviews started. Hence, the construction of our dependent variable measuring tax morale is as described above. However, we define our treatment in different ways. First, we assess the impact of all the World Bank's projects that started or ended 3, 6, 9, or 12 months before the beginning of each round. We create different versions of the treatment based on multiple time windows. This allows us to assess whether any impact of tax morale is more likely based on a signalling mechanism (and changes in taxpayers' expectations) or on possible capacity improvements resulting from the projects themselves.

More formally, our model specification takes the following form:

$$y_{irt} = \alpha + \beta \text{Projects}_{rt} + X_i' \gamma + \varphi_r + \Lambda_t + \theta_{ct} + \varepsilon_{irt} \quad (1)$$

where  $i$  indicates individuals,  $r$  the region, and  $t$  the round of the Afrobarometer survey. It follows that  $y_{irt}$  is individual-level tax morale, and  $\text{Projects}$  is a dummy equal to 1 if one or more projects were initiated (or completed) in region  $r$  before the beginning of wave  $t$ .  $X_i$  is a vector of individual controls (i.e. age, age squared, gender, education, whether the respondent lives in a rural area, unemployment status, whether the respondent is a member of a religious group or a member of the major ethnic group, and the number of public goods provided in the village), and the interviewer's characteristics (their

gender and education level, whether they speak the same language, and whether they felt the respondent was influenced by others during the interview).  $\varphi_r$  is a region fixed effect and  $\Lambda_t$  is the wave fixed effect.  $\theta_{ct}$  is the interaction between country fixed effects and wave fixed effects, which allows us to control for country-specific policies and the common factor in aid delivered to regions within a given country at a given point in time. Finally,  $\varepsilon_{irt}$  is the error term that we cluster at the region level.

## 4.2 Results

We first present baseline results where we estimate the impact of all the World Bank’s projects, completed or started, on tax morale in Table 2. In the first four columns of Table 2 we focus on completed projects as our treatment, and report results with fixed effects at the level of the region, wave, and then country-round. The coefficients are all positive and statistically significant up to the nine-month window, suggesting improvements in tax morale linked to completed World Bank projects. Conversely, that last four columns in Table 2 show less consistent coefficients in terms of direction of the association, but none reaches statistical significance. This discrepancy between completed and ongoing projects points towards the possibility that, *on average*, aid projects may boost tax morale only once they are terminated and their effects become more tangible. This would be consistent with a signalling-plus-capacity mechanism we have referred to. In the individual-level analysis we provide a stricter test of the signalling mechanisms by exploiting the start of projects during the Afrobarometer’s interviews. Overall, the results presented here hold when we include a control for completed projects in the models where the treatment are the ongoing projects, and vice versa (see Table A1 in Appendix A).

Table 2: All World Bank completed and started projects

	Dependent variable is tax morale							
	Completed 3 m	Completed 6 m	Completed 9 m	Completed 12 m	Started 3 m	Started 6 m	Started 9 m	Started 1 2m
WB projects	0.177** (0.080)	0.127* (0.069)	0.124** (0.061)	0.073 (0.063)	0.000 (0.135)	-0.081 (0.098)	0.010 (0.070)	-0.074 (0.052)
Admin. unit FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	56,535	56,535	56,535	56,535	56,535	56,535	56,535	56,535

Note:  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors, clustered by admin. unit, are in parentheses.

Source: authors' calculations.

To further dig into this first round of results, we distinguish tax-related projects and general public goods-related projects funded by the World Bank. We do so by leveraging AidData information on the projects' themes. More specifically, we identify tax-related projects if they fall under the themes of 'debt management and fiscal sustainability', 'tax policy and administration' or 'public expenditure, financial management, and procurement'. Unfortunately, we only have ongoing tax-related projects recorded up to nine months before the survey, hence we cannot unpack the effect of completed tax-related projects. Table 3 shows results that are consistent with our expectations: tax-related foreign projects are associated with higher tax morale. Recall that we could not identify a significant effect of ongoing World Bank projects pooled together, hence this analysis contributes to uncovering possible sector-specific heterogeneity. It suggests that some ongoing projects may either have no effect at all or, possibly, may have a negative impact on tax morale.

Table 3: All started tax-related World Bank projects

	Dependent variable is tax morale		
	Started 3 m	Started 6 m	Started 9 m
World Bank tax projects	0.546** (0.217)	0.434** (0.211)	0.434** (0.211)
Admin. unit FE	Yes	Yes	Yes
Round FE	Yes	Yes	Yes
Country $\times$ round FE	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes
<i>N</i>	56,535	56,535	56,535

Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors, clustered by admin. unit, are in parentheses.

Source: authors' calculations.

Indeed, we define our treatment based on the presence of projects related to public goods provision (e.g., education, health, transportation),<sup>8</sup> with Table 4 showing models for completed and started projects. Interestingly again, we find that the heterogeneity of sectors funded by foreign aid mostly matter for ongoing or recently started projects. We do not find robust support for the hypotheses that completed externally funded public good provision may be detrimental to tax morale, but the initiation of such projects seems to negatively affect tax morale among citizens. The lack of significant results for completed public goods-related projects is puzzling, but arguably in line with the expectations that initiated projects on public goods funded by non-governmental actors may reduce citizens' willingness to contribute to such goods by paying taxes to the government. Yet, this may not necessarily exclude the possibility that externally funded projects, once completed, may improve public goods provisions and attenuate citizens' concerns over who is providing the goods (or assisting the government in doing so). Finally, we attempt to assess the impact of projects funded by donors that do not adhere to international standards of flows reporting, such as China.<sup>9</sup> While we expected these flows to dampen tax morale as they may heighten perceptions of rent-capture by elites, we are unable to detect a significant effect of completed and started Chinese projects on tax morale, as shown in Table 5. Even when we focus on so-called 'ODA-like' only projects funded by China, the results in Table 6 report weakly significant, positive effects for projects completed or started in the six months prior to the Afrobarometer surveys.

<sup>8</sup> More specifically, we categorize the following themes from AidData as being related to public goods: 'water resource management', 'rural services and infrastructure', 'child health', 'climate change', 'education for all', 'education for the knowledge economy', 'environmental policies and institutions', 'health system performance', 'nutrition and food security', 'urban services and housing for the poor', 'child health', 'HIV/AIDS', 'malaria', 'other communicable diseases' and 'tuberculosis'.

<sup>9</sup> While there are other countries that do not adhere to such standards, data from AidData for these countries (e.g. Saudi Arabia and Qatar) is not geocoded, so we cannot add them to our analysis.

Table 4: All public goods-related World Bank projects

	Dependent variable is tax morale							
	Completed 3 m	Completed 6 m	Completed 9 m	Completed 12 m	Started 3 m	Started 6 m	Started 9 m	Started 12 m
WB public goods projects	0.195 (0.147)	0.156 (0.103)	0.138 (0.086)	0.112 (0.083)	-0.146 (0.128)	-0.194* (0.111)	-0.182** (0.080)	-0.152** (0.069)
Admin. unit FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	56,535	56,535	56,535	56,535	56,535	56,535	56,535	56,535

Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors, clustered by admin. unit, are in parentheses.

Source: authors' calculations.

Table 5: All Chinese projects

	Dependent variable is tax morale							
	Completed 3 m	Completed 6 m	Completed 9 m	Completed 12 m	Started 3 m	Started 6 m	Started 9 m	Started 12 m
China projects	-0.042 (0.276)	0.202* (0.121)	0.168 (0.111)	0.028 (0.099)	0.004 (0.185)	0.054 (0.119)	0.043 (0.131)	0.155 (0.099)
Admin. unit FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	56,535	56,535	56,535	56,535	56,535	56,535	56,535	56,535

Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors, clustered by admin. unit, are in parentheses.

Source: authors' calculations.



Table 6: All ODA-like Chinese projects

	Dependent variable is tax morale							
	Completed 3 m	Completed 6 m	Completed 9 m	Completed 12 m	Started 3 m	Started 6 m	Started 9 m	Started 12 m
China ODA projects	-0.042 (0.276)	0.202* (0.121)	0.168 (0.111)	0.100 (0.096)	0.000 (0.00)	0.129* (0.074)	0.112 (0.079)	0.027 (0.092)
Admin. unit FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	56,535	56,535	56,535	56,535	56,535	56,535	56,535	56,535

Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors, clustered by admin. unit, are in parentheses.

Source: authors' calculations.

While the overall effect of World Bank and tax-related vs public goods-related projects are consistent with our expectations, we explore plausible mechanisms linking foreign aid to perceived resource capture by government actors. More specifically, we focus on perceived corruption of the government, tax officers, and civil servants. It should be recalled that the corruption variable is an ordinal and ranges from 0 ('none is corrupt') to 3 ('all of them are corrupt'). To show results more concisely, we only report results for projects that started a maximum of 12 months before the beginning of each wave. We focus on ongoing projects as these are the ones that are more likely linked to expectations of capture, hence they should lower tax morale. Also, started projects seem to have more heterogeneous effects than completed projects according to the results we have presented so far. Table 7 reports the results of models with perceived corruption for the government, tax officers, and civil servants as the dependent variable. We find some weak evidence that World Bank projects may mitigate perceptions of civil servants' corruption, while most corruption perceptions are exacerbated by Chinese projects, though the effect reaches standard statistical significance for civil servants only.

Table 7: Projects in the last 12 months; dependent variable: corruption president, tax officers, and civil servants

	Corruption president	Corruption tax officers	Corruption civil servants
WB projects $t - 12$	0.000 (0.039)	-0.070 (0.046)	-0.066* (0.038)
WB tax $t - 12$	0.181 (0.180)	0.098 (0.234)	0.150 (0.186)
WB public goods $t - 12$	0.032 (0.045)	0.056 (0.052)	0.013 (0.041)
China projects $t - 12$	0.157* (0.081)	0.148* (0.089)	0.189** (0.078)
$N$	61,472	62,986	65,936

Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors, clustered by admin. unit, are in parentheses.

Source: authors' calculations.

In sum, the regional-level analysis points towards a positive effect of World Bank aid projects on tax morale, though the effect of ongoing tax-related projects and public goods goes in opposite directions, as expected. Projects funded by donors that do not adhere to transparency standards for tracking financial flows do not report consistently significant effects on tax morale. In light of the negative effect that Chinese projects seem to have on perceptions of corruptions among government officials, it is in fact surprising that they do not depress tax morale as well. In the individual-level analysis below, we focus on specific projects whose implementation started *during* the Afrobarometer rounds. By doing so, we will be able to better pin down the signalling effect in the immediate aftermath of projects' initiation. The results in the next section thus provide more insights into one specific type of heterogeneity we have explored in the aggregate in this section, namely at the sector level.

## 5 Individual-level analysis

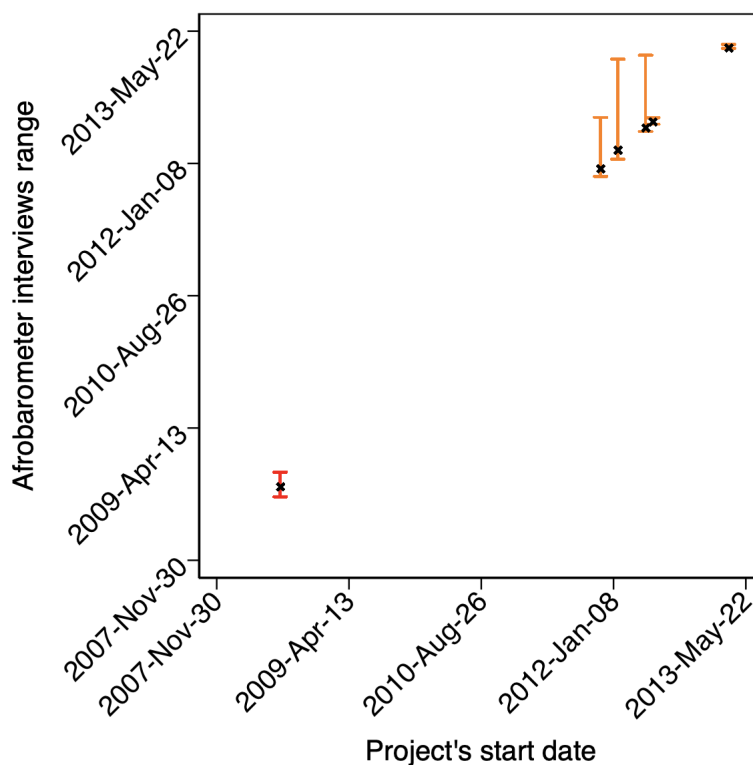
In this section we present an individual-level analysis that attempts to address endogeneity concerns in the aggregate analysis. As explained in Section 3, the two strategies are complementary. To reiterate, while the regional-level analysis presented earlier focuses on how projects affect individuals in targeted regions vs untargeted regions, the individual-level analysis estimates the effect of aid projects among treated and untreated individuals within the same region, based on interview dates.

## 5.1 Empirical strategy

To identify the effect of the start of a foreign aid project on motivations to participate in state-building processes, we additionally match the schedule of the Afrobarometer interviews with the plan of the World Bank projects that have been implemented in surveyed areas. We are unable to match Chinese project starting during the Afrobarometer fieldwork, unfortunately. Hence, the individual-level analysis unpacks and refines the aggregate findings on World Bank ongoing projects, whose effect on tax morale was found to be positive for tax-related projects but overall negative for public goods-related projects.

We focus on the start of the projects as the start is likely to affect people’s expectations without changing other ‘real’ aspects that are in turn expected to affect the people’s views about the country’s state capacity. In Figures A1 and A2 in Appendix A we illustrate graphically the matching with Afrobarometer rounds 4 and 5, respectively. Vertical bands indicate the period of roll-out of the interviews in surveyed areas while red crosses indicate the days of the start of a World Bank project. In Figure 5 we report the projects that we matched with surveyed areas—that is, projects whose start day (the cross) lies within the scheduling of the Afrobarometer interviews. Overall we can match six projects, one during round 4 and five during round 5, which are described in Table 8. We show the results of models pooling these projects together, then we estimate the individual effect of each project to explore differences due to project-specific characteristics.

Figure 5: Projects’ initiation during rounds 4 (red) and 5 (orange) of the Afrobarometer



Source: authors’ construction based on data from the Afrobarometer.

Table 8: Description of the sampled foreign aid projects

Project's ID	Countries	Project's title	Theme	Start date
1	Tanzania	Basic Health Services Project	Health, general/health/government and civil society, general	20 December 2011
2	Malawi	Shire River Basin Management Program (Phase-I) Project	Water supply and sanitation/agriculture, forestry, fishing/agriculture/government and civil society, general	14 June 2012
3	Zambia	Livestock Development and Animal Health Project	Industry/agriculture/government and civil society, general	28 February 2012
4	Cameroon	Cameroon Social Safety Nets	Other social infrastructure and services/agriculture, forestry, fishing	21 March 2013
5	Ghana, Mali, Senegal	West Africa Agricultural Productivity Program 2A	Industry/agriculture	22 May 2012
6	Uganda	Environmental Management and Capacity Building/Additional Finance	Water supply and sanitation/forestry/energy generation and supply	4 September 2008

Source: authors' compilation.

We use regression analysis to test whether interviewees have updated their beliefs about state capacity in the aftermath of projects' initiation—that is, we test whether citizens interviewed just after the start of a project display lower levels of tax morale than those interviewed just before. Formally, our baseline regression is written as follows:

$$y_{ijt} = \alpha + \beta \text{Start of the project}_{ij} + X_i' \gamma_1 + R_i' \gamma_2 + \mu_j + \Lambda_t + \varepsilon_{ijt} \quad (2)$$

where  $i$  indicates individuals,  $j$  the projects, and  $t$  the dates of the interview.  $y_{ijt}$  is one of the above-described outcome variables and Start of the project is a dummy equal to 1 if individual  $i$  is interviewed after the start of project  $j$ . The  $\beta$  coefficient captures the difference in tax morale (or other outcomes) held by individuals interviewed immediately before the start of the project and those interviewed immediately after its start. This difference is identified by including  $X_i$ , a vector of baseline individual controls (i.e. age, age squared, gender, education, whether the respondent lives in a rural area, unemployment status, whether the respondent is a member of a religious group, whether the respondent is a member of a major ethnic group, and the number of public goods provided in the village), and  $R_i$ , a vector of the interview's characteristics (i.e., the interviewer's gender and education level, whether the interviewer speaks the same language as the interviewee, and whether the interviewer felt the respondent was influenced by others during the interview). Importantly, the equation also includes  $\mu_j$ , a set of project fixed effects, and  $\Lambda_t$ , a vector of dummies for day of the week, working day, hour of the interview, and anti-meridian hours.  $\varepsilon_{ijt}$  is the error term that we cluster at the village level.

The inclusion of the project fixed effect means that we identify the effect of the start of the project on motivations to participate (or not) in state-building processes by comparing only individuals living in proximate areas, interviewed during the same period, and exposed to the same informational shock. Our identifying assumption is that the start of the project is as good as a random event—that is, it did not affect any other aspects but individuals' attitudes towards the state. Hence, we are also assuming that projects did not interfere with the organization of the Afrobarometer interviews, which are typically planned well ahead.

We corroborate our identifying assumption by showing that the covariates included in the vectors  $X_i$  and  $R_i$  balance between the two samples of respondents. We illustrate this in Table 9. Column 1 reports the differences between the mean values of the two samples. Each regression (i.e. a row) includes a set of project fixed effects and clusters standard errors (in brackets) at the village level. Some differences appear between the two samples. However, in column 2 we show that they stem from a small set of observations (we count 125 villages on average per project). When we move to a scale-free measure, as proposed by Imbens and Wooldridge (2009), these differences disappear. The differences reported in column 2 are in fact unaffected by the sample size and are computed by dividing the difference between the two means (i.e.  $m_{pre}$  and  $m_{post}$ ) by the square root of the sum of the variances:

$$\frac{m_{post} - m_{pre}}{\sqrt{v_{post} + v_{pre}}}$$

The only difference that appears larger than 0.25—the threshold suggested by Imbens and Rubin (2015)—is related to the language spoken by the interviewer. This coefficient indicates that individuals interviewed after the start of the project were relatively more likely to be interviewed by an individual who did not belong to the same ethnic group. We note that all regressions control for the dummy indicating the language spoken by the interviewer as well as the other covariates listed in Table 9.

Table 9: Balance test

	Diff. and SE (1)	Norm. diff. (2)
Age	-0.137 (0.560)	0.127
Male	0.006 (0.005)	-0.002
Rural	-0.102** (0.041)	-0.240
Unemployed	0.067** (0.033)	0.113
Education	-0.146 (0.097)	-0.063
Member rel. group	-0.212*** (0.052)	-0.111
Member major group	0.088** (0.038)	0.104
Public goods provided	0.725** (0.295)	0.182
Interviewer is male	-0.089*** (0.026)	-0.126
Same language	-0.010 (0.011)	<b>-0.539</b>
Influenced	0.003 (0.007)	0.004
Interviewer's education	0.147 (0.103)	0.052

Note: standard errors in parentheses clustered at the village level. Regressions include a set of project fixed effects. Column 2 reports normalized differences as suggested by Imbens and Wooldridge (2009). Differences larger than 0.25 are highlighted in bold. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' calculations.

## 5.2 Results

### *Baseline results*

In Table 10 we report the estimations of the effect of the start of all projects on the individual level of tax morale. Column 1 reports the estimated difference in tax morale between the sample of interviewees before the start of the project and those interviewed immediately after the same project. Column 2 includes interviewees' characteristics, and column 3 further includes aspects related to the interview. Finally, column 4 includes seasonal dummies—that is, a set of dummies for the day of the week, the working day, the hour of interview, and whether the interview occurred before midday. The estimated effect is negative and stable across the four specifications. It indicates that after observing the start of a foreign aid project people negatively update their beliefs about the capacity of the state to provide public goods and services. Considering the specification in column 3 as the baseline, we find that this effect explains around one-fifth of the standard deviation in tax morale levels (see from Table A2 that the standard deviation is 1.255). Considering that none of the six projects is related to taxation or fiscal capacity, this is in line with the aggregate results linking public goods projects to lower tax morale. It is also not in contradiction with the positive effect that *completed* World Bank projects were found to have on tax morale, which cannot be evaluated with this approach.

Table 10: Project's start and tax morale

	Dependent variable is tax morale			
	(1)	(2)	(3)	(4)
Start of the project	-0.140*	-0.154**	-0.145*	-0.142*
	(0.076)	(0.078)	(0.076)	(0.076)
Project FE	Yes	Yes	Yes	Yes
Individual controls	No	Yes	Yes	Yes
Interviewers controls	No	No	Yes	Yes
Seasonal FE	No	No	No	Yes
$N$	8,646	8,398	8,389	8,383
Adj. $R^2$	0.017	0.023	0.024	0.023

Note: standard errors in parentheses clustered at the village level. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' calculations.

### Event study design

One important assumption of our analysis is that the implementation of the project is capable of prompting a genuine, immediate shift in tax morale. If we rather find that beliefs unfold slowly, this could be the sign of the effect of confounding factors we are not controlling for. To check this aspect, we zoom around the days proximate to the start of a project and conduct an event study by estimating the following regression, which allows for  $\beta$  to vary across the days:

$$y_{ijt} = \alpha + \sum_t \beta_t \text{Start of the project}_{ij} + X_i' \gamma_1 + R_i' \gamma_2 + \mu_j + \Lambda_t + \varepsilon_{ijt} \quad (3)$$

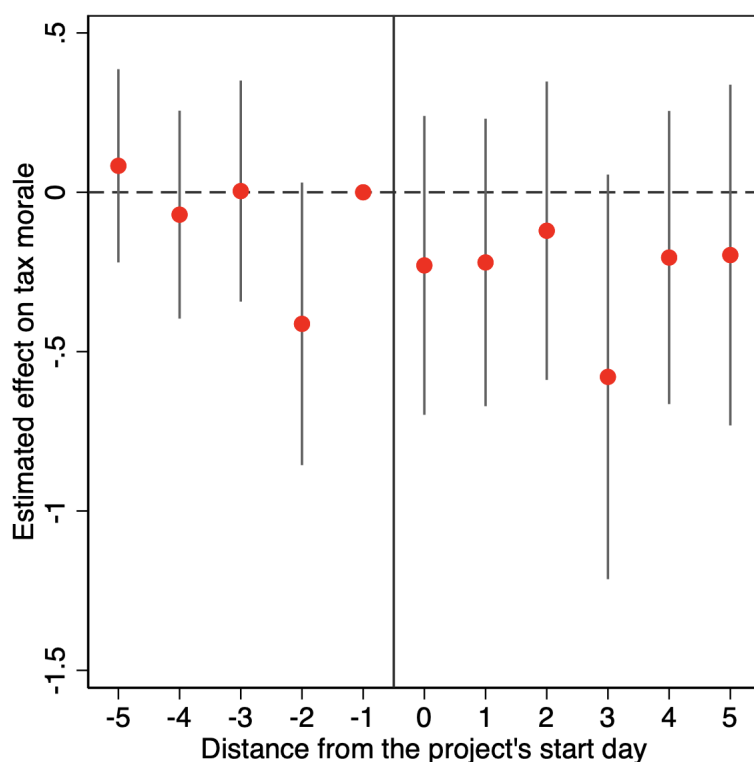
We omit the day before the start of the project ( $t = -1$ ), so that any  $\beta_t$  has to be evaluated relative to this baseline category.

We plot our estimated coefficients  $\beta_t$  in Figure 6. As one can see, the exposure to the start of a project prompts an immediate downward shift in tax morale, relative to  $t = -1$ , though such effects are not precisely estimated. Also, with the exception of  $t = -2$ , we estimate a pretty stable tax morale level around the same level observed in  $t = -1$ . This hints at a lack of a specific pre-trend pattern in our sample's tax morale.

### 5.3 Other outcomes

We use other related outcomes to explore potential mechanisms. Estimation results are presented in Table 11, while summary statistics are presented in Table A2. Column 1 of Table 11 employs variation in trust towards other people as the outcome. As one can see, we find that the start of a foreign aid project did not affect the level of trust of the people. Similarly, we do not find evidence that the project influenced the level of trust towards the president (column 2) and the parliament (column 3). While trust in the country's institutions is unaffected, we find moderate evidence that the start of a foreign aid project increased trust in the local government. One potential explanation is that citizens identify high-level institutions as responsible for a lack of state capacity and to a lesser extent the local government. Finally, we find no effect on perceived corruption, either for tax officers (column 5) or for public servants in general (column 6). In light of the results of the aggregate analysis, this is possibly due to the fact that in this set-up we only consider World Bank projects, which adhere to standards of transparency and hence are not expected to exacerbate perceptions of corruption.

Figure 6: Event study design



Source: authors' calculations.

Table 11: Project's start and other outcomes

	Dependent variable is:					
	Trust others (1)	Trust president (2)	Trust parliament (3)	Trust local government (4)	Corrupted Tax officers (5)	Corrupted officers (6)
Start of the project	0.041 (0.025)	0.009 (0.087)	0.037 (0.057)	0.118* (0.072)	0.018 (0.043)	0.023 (0.036)
Project FE	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	8,622	8,337	8,382	6,536	7,634	7,905
Adj. <i>R</i> <sup>2</sup>	0.577	0.041	0.067	0.063	0.077	0.065

Note: standard errors in parentheses clustered at the village level. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' calculations.

#### 5.4 Interpretation: what a project's theme can tell about the estimated effect

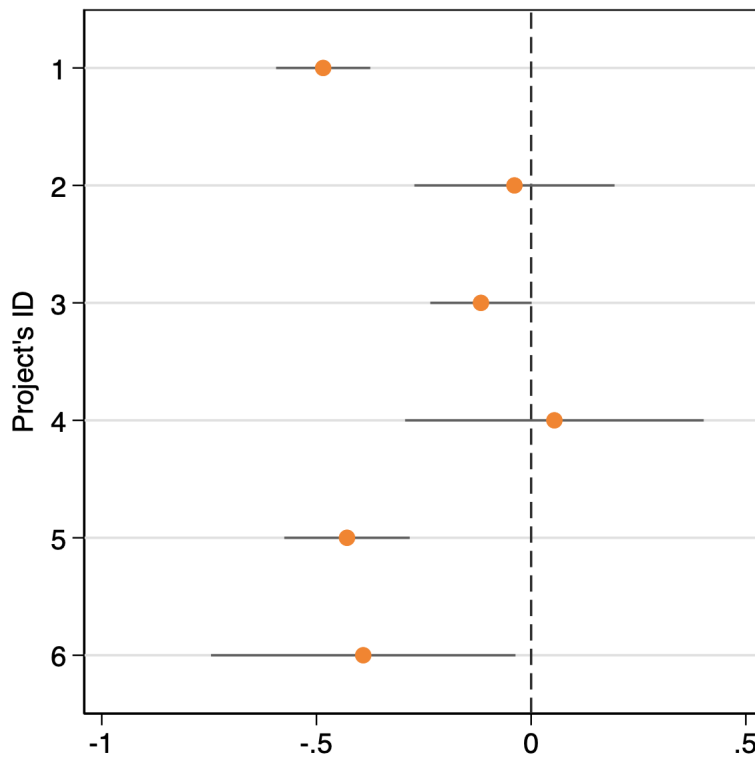
In Section 4 we found that people living in an area where a foreign aid project is completed exhibit a higher motivation to pay taxes, though the start of public goods-related projects had the opposite, negative effect. Here, we have documented that the very start of a project may indeed undermine motivations to pay taxes by establishing a more credible causal link. In the next analysis, we ask to what extent this discrepancy depends on the theme of the few randomly sampled projects by assessing the impact that each of them has on tax morale separately.

As mentioned earlier, we have focused on the six projects whose start day randomly crosses the schedule of the Afrobarometer interviews, which are described in Table 8. The individual effect of each project is illustrated in Figure 7, and it emerges that there is some degree of heterogeneity across projects. While



the overall effect is negative, half of the projects indeed have a strongly significant negative coefficient (projects 1, 5, and 6), and another one (project 3) reports a weaker negative effect. The remaining two (projects 2 and 4) do not report a statistically significant effect on tax morale. While such heterogeneity is not concerning (i.e. there is not one single project driving our main results), we try to provide a post-hoc explanation that focuses on a more detailed assessment of what these projects' objectives were.

Figure 7: Project-by-project effect on tax morale



Source: authors' calculations.

We had already mentioned that none of the six projects is tax-related, hence we are not surprised to see that none of them has a beneficial impact on tax morale (consistent with the aggregate analysis). Our theoretical framework would explain the negative coefficient as a consequence of a state failure-signal stemming from externally led public goods provision. To begin with, project 1 focuses on the health sector, hence being an obvious example of a public good-focused initiative. The second project in Malawi is concerned with the management of natural resources, with particular attention to planning, developing, and managing the waters of the Shire River basin. The private sector also features prominently as a key theme of the project.<sup>10</sup> Similarly, project 3 in Zambia is mostly targeted at infrastructural development for the private sector. Neither of these two projects has a clear goal of (supporting the government in) providing public goods. Project 4 focuses on welfare and the establishment of a social safety net and a cash transfer to poorer households.<sup>11</sup> While this could be categorized as a type of public good, targeting the most vulnerable households may not be wide enough scope to signal that a pure public good is being provided. Project 5 involves infrastructural developments for service delivery and the dissemination and adoption of technologies for the agricultural sector; project 6 involves environmental health, water, and

<sup>10</sup> See details of the project here: <https://documents1.worldbank.org/curated/en/584761569595531675/pdf/Malawi-Shire-River-Basin-Management-Program-Project.pdf>.

<sup>11</sup> See details of the project here: <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/115961533017248646/zambia-livestock-development-and-animal-health-project-audited-financial-statement-year-ending-december-31-2017>.

energy supply. Hence, these two projects also exhibit (together with project 1) more obvious features of a public good-focused programme, and their negative effect is consistent with our expectations.

## 5.5 Individual heterogeneity

The wealth of data we use allows us to explore further individual heterogeneity based on differences in sociodemographic characteristics. We present this analysis in Table 12. Here, we test whether the impact of aid projects on tax morale is larger among older respondents (column 1), among males (column 2), in rural areas (column 3), among respondents who lost their job (column 4), among the more educated (column 5), among members of a religious group (column 6), among members of the major ethnic group (column 7), and in areas where a higher number of public goods are already provided (column 8). We only find evidence that the effect of the start of a foreign aid project is larger among more educated people—in line with previous findings outlined by Torgler (2005) and Lago-Peñas and Lago-Peñas (2010)—and slightly lower among more religious individuals. A speculative interpretation for the latter result is that religious individuals see the state as a substitute of their religious authority (see, e.g. Hungerman 2005; Scheve and Stasavage 2006) and for this reason may be much less responsive to signals that inform about state-building processes.

Table 12: Project's start and tax morale: individual heterogeneity

	Dependent variable is tax morale							
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
Start of the project	-0.025 (0.098)	-0.158* (0.083)	-0.110 (0.074)	-0.108 (0.079)	-0.278*** (0.104)	-0.079 (0.073)	-0.186** (0.084)	-0.174 (0.123)
Age	0.006 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)	0.005 (0.005)
Start of the project × age	-0.003 (0.002)							
Male	-0.007 (0.028)	-0.021 (0.041)	-0.006 (0.028)	-0.006 (0.028)	-0.007 (0.028)	-0.007 (0.028)	-0.006 (0.028)	-0.006 (0.028)
Start of the project × male		0.025 (0.054)						
Rural	-0.031 (0.045)	-0.030 (0.045)	0.005 (0.064)	-0.030 (0.045)	-0.028 (0.045)	-0.030 (0.045)	-0.032 (0.045)	-0.031 (0.045)
Start of the project × rural			-0.050 (0.081)					
Unemployed	0.021 (0.035)	0.021 (0.035)	0.020 (0.036)	0.057 (0.042)	0.017 (0.035)	0.021 (0.035)	0.020 (0.035)	0.021 (0.035)
Start of the project × unemployed				-0.063 (0.066)				
Education	0.043*** (0.009)	0.043*** (0.009)	0.043*** (0.009)	0.043*** (0.009)	0.019 (0.013)	0.042*** (0.009)	0.043*** (0.009)	0.043*** (0.009)
Start of the project × education					0.044** (0.017)			
Member of a rel. group	-0.022 (0.014)	-0.022 (0.014)	-0.022 (0.014)	-0.022 (0.014)	-0.020 (0.014)	0.014 (0.022)	-0.023 (0.014)	-0.022 (0.014)
Start of the project × member of a rel. group						-0.059* (0.030)		
Major group	-0.048 (0.035)	-0.049 (0.035)	-0.049 (0.035)	-0.046 (0.035)	-0.048 (0.035)	-0.047 (0.035)	-0.084 (0.060)	-0.049 (0.035)
Start of the project × major group							0.060 (0.076)	
Public goods	0.005 (0.006)	0.005 (0.006)	0.006 (0.007)	0.005 (0.006)	0.005 (0.006)	0.005 (0.006)	0.005 (0.006)	0.002 (0.011)
Start of the project × public goods								0.005 (0.014)
Project FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	8,389	8,389	8,389	8,389	8,389	8,389	8,389	8,389
Adj. <i>R</i> <sup>2</sup>	0.024	0.024	0.024	0.024	0.025	0.024	0.024	0.024

Note: standard errors in parentheses. \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .

Source: authors' calculations.

## 6 Conclusions

Foreign assistance has become an important tool used to support states in building capacity and institutions (e.g. Juselius et al. 2014). In this sense, foreign aid projects can be considered as a form of externally led state-building, and their impact on citizens' perceptions of their own domestic institutions may be affected in unintended ways. Focusing on tax morale as the motivational component of tax compliance, we argue that citizens' beliefs on taxation are affected by foreign aid projects in different ways depending on (1) projects' sectors and (2) donors' practices. These two features of foreign aid projects convey different state-building (or state failure) signals to citizens. More specifically, we posit that projects that focus on taxation and fiscal capacity may boost tax morale by signalling state-building and increased costs of future non-compliance. On the other hand, projects that focus on public goods may highlight states' inability to deliver services and basic needs, thus heightening perceptions of state failure. Furthermore, projects funded by donors that do not adhere to international standards of financial transparency in aid provision may also worsen citizens' perceptions of elites' resource capture and corruption, thus worsening tax morale.

We put these expectations to a test combining two survey rounds from the Afrobarometer, covering more than 30 African countries between 2008 and 2014. We combine the surveys geocoded at the level of first-order administrative units with geocoded information on aid projects from AidData. Our regional-level analysis shows that individuals in regions that hosted at least one World Bank project have higher tax morale compared to individuals in non-treated regions, though this effect is mostly driven by the positive impact of tax-related projects; public goods projects, on the other hand, have a negative impact on tax morale. Overall, the general increase in tax morale associated with World Bank projects is important particularly in light of research showing how foreign aid is captured by elites in developing countries (Andersen et al. 2020). We are unable to identify the effect of Chinese projects on tax morale, but we find them to worsen perceptions of corruption for the president, tax officers, and particularly civil servants. We complement the regional-level analysis with an individual-level analysis that focuses on projects implemented during the Afrobarometer surveys. Hence, we compare individuals *within the same region* that vary in their exposure to the treatment because of the timing of their interviews. This not only improves the credibility of a causal interpretation of the results, but also provides a more fine-grained analysis of the signalling effect of specific aid projects. The six projects we identify happen to focus on slightly different sectors, with at least half of them on public goods provision but none of them on tax and fiscal capacity. Consistent with our expectations, the overall impact of these projects is negative, and so is the individual effect of each of the public goods-related projects; others, when analysed individually, do not seem to have any effect on tax morale.

In conclusion, this paper suggests that foreign aid projects may support tax morale and domestic resource mobilization, but donors need to consider the possible countervailing effect of different projects' sectors. While supporting taxation and the fiscal sector is helpful for national governments, heavily assisting in public goods provision may have unintentional effects and curtail the positive impact of the former. Key to further grasping the risk of certain projects is a long-term analysis of these effects on tax morale and, ultimately, their impact on actual tax compliance.

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## Appendix A: additional figures and tables

Table A1: All World Bank completed and started projects, including other projects as control

	Completed 3 m	Completed 6 m	Completed 9 m	Completed 12 m	Started 3 m	Started 6 m	Started 9 m	Started 12 m
WB projects	0.179** (0.080)	0.121* (0.067)	0.127** (0.060)	0.063 (0.063)	-0.031 (0.122)	-0.058 (0.092)	0.028 (0.066)	-0.066 (0.051)
Admin. unit FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country × round FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
<i>N</i>	56,535	56,535	56,535	56,535	56,535	56,535	56,535	56,535

Note: \*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ . Standard errors, clustered by admin. unit, are in parentheses.

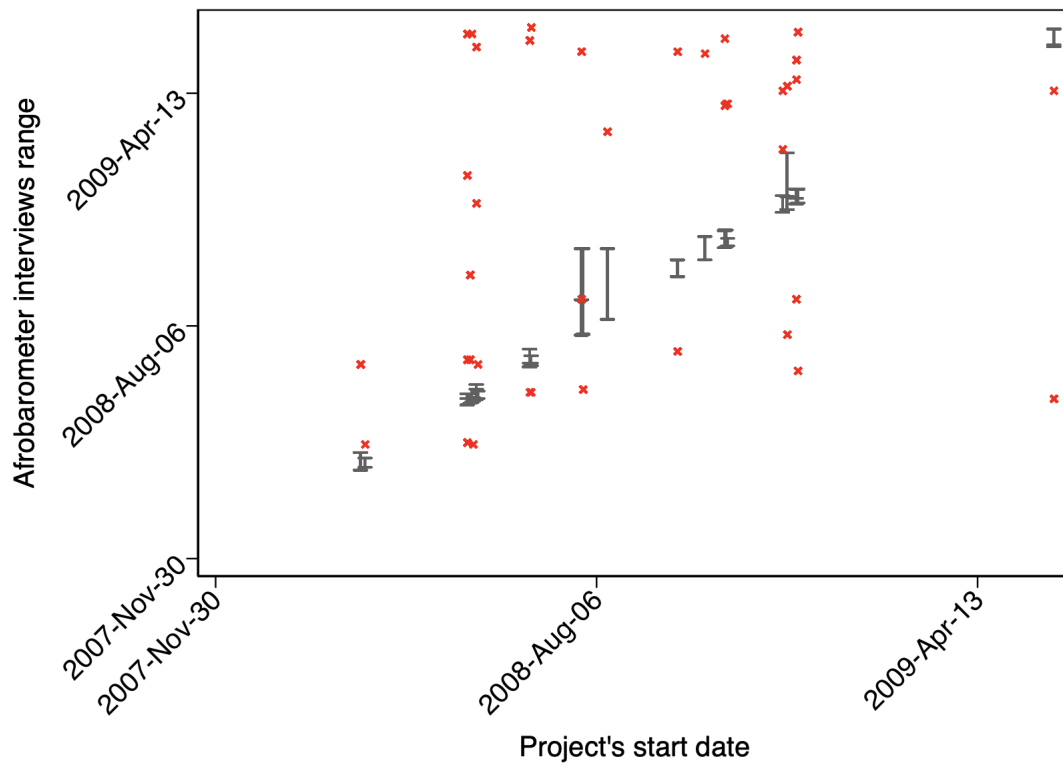
Source: authors' calculations.

Table A2: Summary statistics for outcome variables in the individual-level analysis

	Mean	SD	Min.	Max.	Obs.
Tax morale	3.723	1.177	1	5	74,341
Trust others	0.592	0.873	0	3	77,039
Trust president	1.844	1.105	0	3	74,003
Trust parliament	1.645	1.066	0	3	74,677
Trust local government	1.524	1.067	0	3	71,518
Corrupted president	1.443	0.863	0	3	64,848
Corrupted tax officers	1.202	0.866	0	3	63,310
Corrupted civil servants	1.417	0.803	0	3	67,884

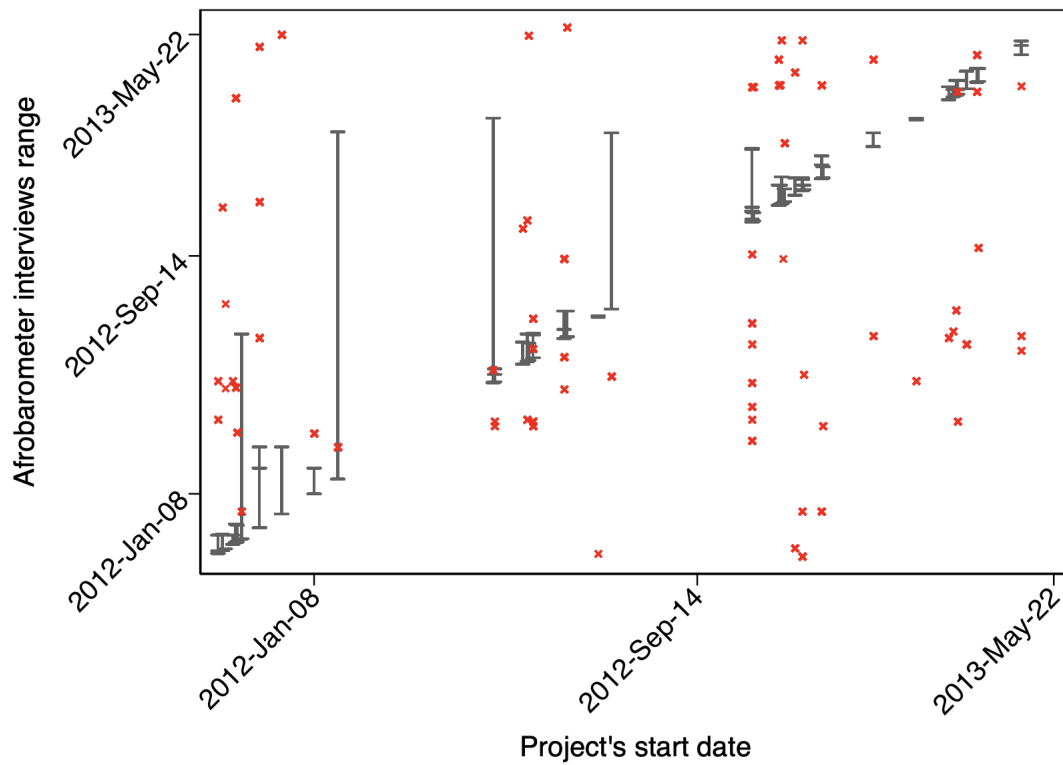
Source: authors' compilation based on data from the Afrobarometer.

Figure A1: Project initiation and interviews scheduled during the Afrobarometer round 4



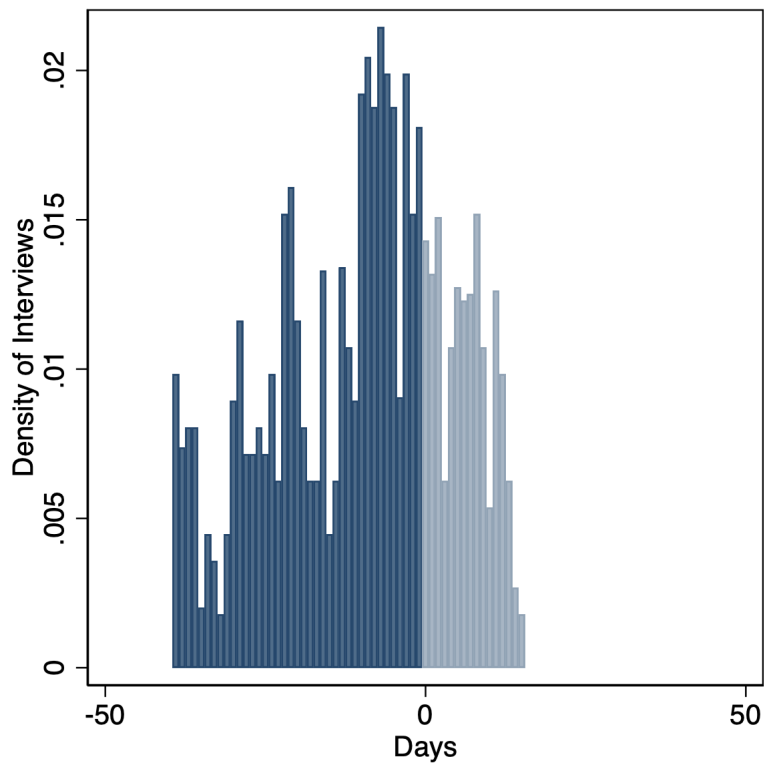
Source: authors' construction based on data from the Afrobarometer and AidData.

Figure A2: Project initiation and interviews scheduled during the Afrobarometer round 5



Source: authors' construction based on data from the Afrobarometer and AidData.

Figure A3: Density of interviews across days in the proximity of a project's initiation



Source: authors' construction based on data from the Afrobarometer.