UNIVERSITÀ POLITECNICA DELLE MARCHE
Dipartimento di Scienze Economiche e Sociali

Expected Foreign Military Intervention and Demand for State-Building: Evidence from Mali

Alessandro Belmonte, Désirée Teobaldelli and Davide Ticchi

QUADERNI DI RICERCA n. 493
ISSN: 2279-9575

December 2024

Abstract

We study the informational effects of foreign military intervention on citizens' motivations to participate in state-building processes. We analyze the 2012 United Nations Security Council resolution that authorized intervention in Mali to reunify the country and restore democracy during a profound institutional crisis. By exploiting the randomness of the foreign intervention announcement, relative to the timeline of the Afrobarometer interviews, we document that individuals interviewed the days after the announcement have a higher intrinsic motivation to comply with taxes, are less inclined to refuse to filing taxes, and are more reluctant to evade even if had chances, relative to individuals, interviewed immediately before, with the same characteristics, region, and ethnic group. We demonstrate that these effects are specific to regions characterized by low state capacity and limited ethnic diversity, as well as to individuals who perceive that their ethnic group has not been systematically discriminated against by the state. Consistently with our story, we document that motivations to comply only increase in respondents with access to the news at home (who own either a TV or a radio). Our results survive a wide range of falsification tests and indicate that foreign military interventions signal state-building, raising the expected benefits to participate.

JEL Class.: H11, H26, H56, D74.

Keywords: Foreign Military Intervention, State Capacity, Tax Morale, Weak States, Mali.

Indirizzo: Alessandro Belmonte. *E-mail address:* a.belmonte@univpm.it. Department of Economics and Social Sciences, Marche Polytechnic University, Italy; CAGE, University of Warwick, United Kingdom.
Désirée Teobaldelli. *E-mail address:* desiree.teobaldelli@uniurb.it. Department of Law. University of Urbino Carlo Bo, Italy.
Davide Ticchi. Corresponding author. *E-mail address:* d.ticchi@univpm.it. Department of Economics and Social Sciences, Marche Polytechnic University, Italy.

Expected Foreign Military Intervention and Demand for State-Building: Evidence from Mali *

Alessandro Belmonte, Désirée Teobaldelli and Davide Ticchi

1 Introduction

There is an established consensus that political institutions are an essential determinant of economic growth (Acemoglu, Johnson and Robinson, 2001; Acemoglu and Robinson, 2012). Specifically, it is the power of the state to raise taxes and provide public goods (in short, state capacity) that plays a key role in the process of development and in sustaining high income levels (Besley and Persson, 2011). A number of works have studied and provided evidence about the determinants of weak state capacity that can often be traced to the absence of common interests or the existence

* *The paper benefited from discussions with and comments from Antonio Ciccone, Sascha Becker, James Fenske, Kai Gehring, and participants to seminars at Brunel University, IMT Lucca, Parthenope University, University of Bremen, University of Warwick, University of Verona, Newcastle University, to the workshop "Facets of Political Violence and Peacebuilding" (Warwick), to the NGO Conference 2019 (Santa Severa), to the European Public Choice Society Conference 2022 (Braga), and to the Italian Public Economics Society 2023 (Verona). This research has been funded by the European Union – NextGenerationEU within the framework of PNRR Mission 4 – Component 2 – Investment 1.1 under the Italian Ministry of University and Research (MUR) programme "PRIN 2022", Ref. Project Code: 20227NN492 – The Economics of Beliefs, Culture and Institutions – CUP: I53D23002580006.*

of strong political conflicts (Besley and Persson, 2009, 2014a; Acemoglu, Ticchi and Vindigni, 2011). It is also understood that high levels of fiscal capacity come not only from an efficient enforcement system based on monitoring and punishment, but are also the result of a high intrinsic motivation of citizens to comply with taxes (Besley and Persson, 2014b; Besley, 2020) and, more generally, of the citizens' attitude toward the state (Callen, Weigel and Yuchtman, 2024). What instead is less clear are the determinants of the citizens' intrinsic motivation to pay taxes, often called tax morale (Luttmer and Singhal, 2014),[1] and how such incentives interact with the material ones (Besley, Jensen and Persson, 2023); this is also because poor countries are generally characterized by both inefficient bureaucracies and low motivation to comply with taxes, while the opposite holds in rich economies. Therefore, weak states that want to invest in institution-building face an important compliance problem (Besley and Dray, 2024): on the one hand, citizens have low motivation to cooperate and to participate to the provision of public goods and services by paying more taxes while, on the other hand, with little voluntary compliance by citizens, the state's possibilities of collecting taxes will have to rely predominantly on coercion, a circumstance which is hardly feasible, especially for states with weak capabilities.[2]

This paper provides a contribution to these issues by focusing on the understanding of the factors affecting the intrinsic motivation to pay taxes and emphasizing the potential role played by shocks to citizens' attitude toward the state in the process of state-building. Specifically, our research shows that the expectation of a foreign military intervention aiming at helping the government to take back control of territories and rebuild a well-functioning state apparatus can be an important state-building signal for citizens who, in turn, react with an increase in their motivations to comply

[1] Luttmer and Singhal (2014) provide a survey for relevant studies on tax morale that they define as an umbrella term capturing non-pecuniary motivations to comply with taxes. Luttmer and Singhal also note and illustrate many examples that tax authorities in developing countries are indeed much concerned about increasing voluntary compliance with tax laws.

[2] It is worth emphasizing that despite the critical role institutions accomplish in promoting economic development, citizens' demand for state-building is stagnant (Robinson, 2023). According to the available survey data, a close to majority of Sub-Saharan Africans prefer to pay low taxes, have low public services, and to pursue economic growth without investments in the tax system. According to the data provided by Afrobarometer (2015), around one-third of respondents in that area of the continent would prefer to attain economic growth not through an increase in fiscal capacity but through other (not specified) means. This share is larger than 40% in Botswana, Burundi, Guinea, Lesotho, Malawi, Namibia, Tanzania, Uganda, and Zimbabwe.

with tax duties. This result is important for two reasons. First, it shows a new perspective for which citizens' attitude to comply with taxes is affected by their beliefs about the well-functioning of the state. As it will be clear later, the effect that we document here goes beyond the standard channel for which citizens are more willing to pay taxes when they expect the provision of public goods and services in exchange as, in our analysis, the effect on today's intrinsic motivations of citizens comes from the expectation about *future* state capacity. Second, given the positive relationship between the citizens' intrinsic motivations to comply with taxes and the existence of an efficient enforcement system, we posit that a foreign military intervention that can credibly signal the start of a state-building process may (unintendedly) trigger a *critical juncture*, that is a path-dependent institutional trajectory that can move an economy toward a new, more efficient, institutional equilibrium (Callen, Weigel and Yuchtman, 2024).

To identify the effects of expectations about a foreign military intervention on citizens' intrinsic motivations to pay taxes, we use Mali at the juncture of 2012 as a natural experiment. Beginning with January 2012, the capability of the state of Mali to provide essential functions to its citizens weakened considerably. While the North was trapped in a bloody civil conflict, the heart of the state was shaken by a severe institutional crisis that reached its peak in the wake of a military coup in April 2012. The combination of these events left the country split and without a legitimate government. The reaction of the international community was slow but, eventually, decisive through a resolution undertaken by the United Nations Security Council (UNSC), on December 20^{th}. The resolution explicitly authorized the deployment of force in the North of Mali and, importantly, previewed a road map of actions to take, from the defeat of the rebels to the country's reunification to the restoration of democratic elections of a new legitimate government. Hence, this announcement was likely to signal state-building by picturing a potentially different governance of Mali once the intervention was accomplished. We take advantage of this historical context to examine whether this signal of state-building raised Malians' motivation to comply with taxes.

We assemble individual information on self-reported attitudes and individual characteristics as well as detailed information on the presence of basic public goods and services at the primary sample unit (PSU) level,[3] collected by Afrobarometer

[3]A PSU is the smallest, well-defined geographic unit for which reliable population data are

(AfB). Our analysis exploits the difference in the exposure to the UNSC resolution announcement. We compare attitudes between individuals interviewed in the days immediately before the UNSC resolution and individuals interviewed in the days immediately after. Our identification strategy relies on plausibly exogenous differences in the timing of the interviews relative to the timing of the UNSC resolution. Our regressions control for region-by-ethnic group fixed effects as well as for a large set of individual characteristics. Hence, we identify the effect on motivation to comply by comparing individuals with similar characteristics, with the same ethnic background, interviewed in the same region, in the same period, but respectively before and after the 20^{th} of December 2012.

We first document that individuals that were interviewed the days after the UNSC resolution have characteristics that do not differ statistically from those interviewed the days before. We examine a large set of characteristics that potentially explain variation in tax compliance. We look at the gender and the age of the respondent as well as his or her employment status and educational level. We then show that the two groups of respondents are not statistically different relative to the place where they live (urban vs. rural and the number of public amenities provided), religious commitment, and belonging to the predominant ethnic group (e.g., Bambara). We also verify that interviewers were not different before and after the 20^{th} of December 2012. This is important as interviewers are likely to affect answers in several, possible ways well documented by the theory on the social desirability bias.

Comparing these two groups, we obtain that respondents interviewed the days after the UNSC resolution are more inclined to believe that people *must* pay taxes. The effect is statistically as well as economically significant, as it explains about 0.26 standard deviations in our outcome variable. This result is corroborated by a set of regressions that use related outcomes. First, we estimate an increase of 12 percentage points in the share of citizens that would never refuse to pay taxes or fees to the government. Second, we document that the share of citizens that declare to be willing to evade if had chance—a dimension of tax compliance that captures intention to future behavior—drops by 9.5 p.p. Third, citizens interviewed the days immediately after the UNSC resolution adoption not only are more willing to pay taxes but also declare that other citizens who evade should be prosecuted: we esti-

available (Afrobarometer, 2011).

mate an increase of 5 p.p. which is however statistically imprecise. Taken together, these findings suggest that the expectation of a foreign military intervention can increase the salience of state capacity and the demand for state-building, potentially opening important windows of political opportunity for enlarging the fiscal capacity of a state.

We then explore which segment of the Malian population is particularly sensitive to the state-building signal. We find evidence that the signal intensity is only relevant in areas with a low state presence, where the expected benefits from a higher-performing state should arguably be larger (e.g., Weigel, 2020). Likewise, we obtain that the expected foreign intervention is only salient for individuals who value the state. For example, we find that those who feel discriminated by the state (and are likely to hold a negative view of it) do not experience a higher intrinsic motivation to pay taxes, and this can be interpreted as a lack of demand for state-building. Consistently with Alesina, Baqir, and Easterly (1999), we find that ethnic fragmentation negatively affects the support for state-building processes as only citizens in low ethnic diverse areas experience an increase in their intrinsic motivation to comply with taxes. Finally, we document that only citizens with access to news, that is with either a radio or a TV at home, react to the UNSC resolution announcement—a result which is particularly important for the credibility of our story as it provides support to one of the mechanisms behind our results that rely on the acquisition of information about the UNSC resolution by citizens.

The increase in demand for state-building goes hand-in-hand with other changes in citizens' views. We provide evidence that the shift in citizens' voluntary compliance is associated with an increase in the sense of cohesion between the citizens and the state as we find that citizens become more patriotic and develop a better judgment of the state agencies' officers, especially of tax officials. We therefore conclude that a likely mechanism driving the effect of the state-building signal on the citizens' motivations to comply with taxes is provided by their view about the state institutions, as recently stressed by Besley and Dray (2024). Further tests corroborate this conclusion. We show that respondents interviewed the days immediately after the UNSC resolution are more likely to believe that evading taxes is relatively more difficult; furthermore, they are more willing to resort to a state actor (e.g., police) for protection and assistance in case of need. We rather find limited evidence about other mechanisms such as the role of an expected accountability by international

organizations or a rise in national identification.

Our results are robust to a wide range of falsification tests. We check whether the occurrence of the Christmas feast or other time-variant aspects, such as the weather, can explain the estimated effect. We also check whether the increase in the motivation to comply is explained by the expectation of being directly involved in the conflict (e.g., males in the enlistment age). Then, we use a difference-in-difference estimation method and test whether the effect is common to other nearby sub-Saharan African countries. Next, we look at the attrition rate as well as the role of the perceived sponsorship. Reassuringly, our results are robust to all these tests. Finally, we re-estimate our baseline regression in an instrumental variable analysis that uses distance to the capital Bamako to explain plausible exogenous variation in the exposure to the state-building signal during the survey rollout. We provide several tests and anecdotes that prove that the instrument exogeneity comes from AfB organization motives. Our 2SLS estimate of the focal effect is statistically significant and similar in magnitude to our OLS estimate.

Our paper relates to several strands of literature. We connect with recent economic research that emphasizes the need for supportive action by citizens in increasing compliance and building state capacity.[4] Besley (2020) shows that the level of a country's state capacity and the citizens' motivation to comply with taxes are jointly determined and that it is unlikely to build a country's institutions with low-motivated citizens. When citizens have a low level of tax morale a state that intends to invest in state-building faces a compliance problem (Besley and Dray, 2024), which can be overcome by raising citizens' confidence in the state institutions (Acemoglu et al., 2020) and/or by raising their expected benefit to participate in a state-building process (Weigel, 2020; Weigel and Ngindu, 2023). We contribute to these works by providing evidence that salient events, such as the expectation

[4]There is also a sizable literature that studies state-building processes (with a historical perspective or in today's fragile states) by focusing on the elites' incentives in expanding state capacity (but without looking at whether citizens comply with the elite's decisions). A bulk of this work examines the factors that hamper the expansion of state capacity in poor countries (e.g., Herbst, 2000; Acemoglu, 2005; Acemoglu, Ticchi and Vindigni, 2010, 2011; Besley, Ilzetzki and Persson, 2013). Other papers highlight the role played by external military rivalry in both rising the salience of revenue collection and investment in state-building (e.g., Besley and Persson, 2009, 2010; Gennaioli and Voth, 2015; Becker et al., 2020; Cantoni, Mohr, and Weigand, 2024). Further works show that the natural resources appropriability problem triggers the elites' decision to invest in state capacity (e.g., Sanchez De La Sierra, 2020).

of foreign military intervention that is designed to (re-)build a state, can make citizens more likely to believe that people must pay taxes, less inclined to refuse to filing taxes, and more reluctant to evade even if had chances. The fact that citizens become more patriotic and develop a better view of the country's state institutions further indicates that these salient events, that are able to signal the possibility of a state-building process, can effectively open critical windows of political opportunity to expand the capacity of a state, i.e. a critical juncture (Callen, Weigel and Yuchtman, 2024).

Our paper also speaks to the literature on tax compliance and, in particular, on papers that study non-pecuniary motivations to comply with taxes (e.g., Andreoni, Erard and Feinstein, 1998; Luttmer and Singhal, 2014). According to these works, citizens pay taxes, not just because they expect a sanction for non complying, but because they may be intrinsically motivated to do so. Our work shows that the citizens' tax morale level increases because of the signal of state-building that is likely to raise their expected benefit to comply. However, the decision to comply with taxes (that we do not observe in our data) would be purely intrinsically motivated since the citizen could rationally free-ride on the other citizens' decision to comply and participate in the state-building process.

Finally, our paper also contributes to prior empirical works that investigate the effects of foreign military interventions on the targeted populations' attitudes (e.g., Berman, Shapiro and Felter, 2011; Dell and Querubin, 2017). This literature proves that when these interventions are accompanied by benign measures, such as public service provision, they are able to win "hearts and minds" thus improving the view people hold about the foreign power.[5] We contribute to this literature in two ways. First, we show that such interventions can change people's attitude and beliefs about their own state—thus unintentionally opening windows of opportunity to reform the state. Second, we bring evidence that the expectation itself can change such a view by sending a state-building signal.

The paper is organized as follows. The next section describes the institutional context of Mali in 2012 and Section 3 describes the data used. Section 4 discusses the

[5] Berman, Shapiro and Felter (2011), for example, show that the U.S. military intervention in Iraq increased the Iraqis' view of the donor when the U.S. military provided public goods that relieved the targeted populations' economic conditions. Similarly, Dell and Querubin (2017) find that Vietnamese living in areas that were targeted by public goods provision programs, during the U.S. military intervention, exhibited a better view of the United States.

empirical strategy. Section 5 presents the main results of our analysis and Section 6 focuses on additional dimensions of tax morale. Section 7 explores the mechanisms at work behind our main results. Section 8 presents the results of several robustness checks. Section 9 concludes. Additional results are reported in the Online Appendix.

2 Background

2.1 Institutional context

Mali is the eighth largest African country—a landlocked country positioned in the Western part of the continent. Its territory, defined during the African scramble, includes previous regions of the larger Ghana Empire, the Mali Empire, and the Songhai Empire (e.g., Roberts, 1987). Most of the state territory, the Northern part, lies in the southern Sahara Desert, while the South is located in the tropical Savanna where most of the Malian population live (about 83% of the total in the last 2009 Census). This difference mirrors on the ethnic composition that populates the two parts of the country. The North is predominantly inhabited by Berber descendant nomadic Tuareg groups; in contrast, the South hosts more than forty ethnic groups, that typically cross national borders in the Sub-Saharan region (e.g., Hall, 2011).[6] A wide-ranging political decentralized system was set up, starting from the 1992 democratic transition, in an attempt to govern the high level of ethnic fragmentation: throughout the 1990s over 700 municipalities were created, each governed by elected local councilors. Unfortunately, this system did not improve the democratic process, but it is experts' opinion that it increased the opportunities for corruption at the local levels (e.g., Wing, 2013, p. 480). Many groups flourished in the North and thanks to the steady erosion of democracy, rise of criminality, and impunity of state officials they gained territory as well as popular legitimacy (e.g., Wing, 2013, p. 481).

This situation was inflamed in January 2012 when Tuareg separatist groups began an armed insurgency. Taking advantage of a concurrent severe institutional crisis that culminated in a military coup, on 22 March 2012, overthrowing President Amadou Toumani Touré, the rebels took control of the Northern regions of Kidal,

[6]The largest ethnic group in South Mali, the Bambara, for example, is also massively present in Burkina Faso, Ivory Coast, Senegal, Guinea, Liberia, and the Gambia.

Gao, Timbuktu, and part of Mopti (see Online Appendix Figure A1 that maps administrative divisions in Mali). This territory was unilaterally proclaimed as the *Azawad* state.

For months, Mali was *de facto* divided in two with the Malian army completely unprepared to face the threat and in need of reorganization. Citizens were reported losing confidence in the country's fragile state institutions. A Gallup study conducted in October/November 2012, for example, documents that Malians' confidence in the government fell by 22 percentage points (from 71% in 2011). Confidence in the military and the judiciary dropped as well by 25 and 17 points, respectively, while the perceived level of corruption rose by 10 percentage points.[7]

2.2 The intervention of the international community

The fragile Malian transition government then turned to the international community for help. However, as late as October 2012 the United Nations Security Council (UNSC) only agreed on transferring economic resources to the Malian government, while not authorizing the deployment of force.[8] The escalation of the terror in the North, caused by the increasing leadership of Al-Qaeda warriors over the Tuaregs, induced the UNSC to urgently adopt S/RES 2085 on 20 December 2012 eventually authorizing a military intervention.[9]

The resolution was not simply an act through which the international community authorized an African Union-led mission to recover the North of Mali. In fact, military and security aspects were not mentioned before Art. 6. Essentially, it was a document through which the international community detailed a political process necessary to rebuild the Malian state: "*[The Security Council] urges the transitional authorities of Mali [...] to finalize a transitional roadmap through broad-based and inclusive political dialogue, to fully restore constitutional order and national unity, including through the holding of peaceful, credible and inclusive presidential and legislative elections*" (Art. 1). The international community was required "*to assist the transitional authorities of Mali in the preparation of such a roadmap, including the conduct of an electoral process based on consensually established ground rules*" (Art. 1). By the same token, the authorized African-led International Support Mis-

[7] See the Gallup study at https://bit.ly/3BTjKhf.
[8] See the S/RES 2017 full text (12 October 2012) at https://bit.ly/43pLTZ3.
[9] See the S/RES 2085 full text at https://bit.ly/3Wv1tjN.

sion in Mali (AFISMA) was not only aimed at "*support[ing] the Malian authorities in recovering the areas in the north of its territory under the control of terrorist, extremist and armed groups*" (Art. 9.b). But it was a mission "*which shall take all necessary measures to contribute to the rebuilding of the capacity of the Malian Defence and Security Forces*" (Art. 9.a) and "*to transition to stabilization activities to support the Malian authorities in maintaining security and consolidate State authority through appropriate capacities*" (Art. 9.c).

In sum, the resolution previewed, in addition to the military intervention, a road map of actions to take, from the defeat of the rebels to the country's reunification to the restoration of democratic elections of a new legitimate government. Hence, its announcement was likely to signal a state-building process, whose credibility relies on the endorsement made by the international community.

3 Data description

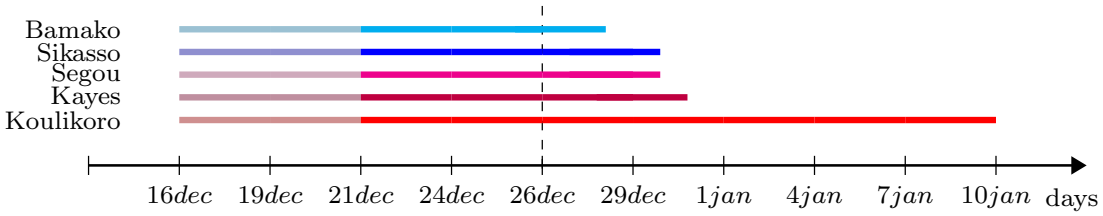
3.1 The survey design

Our main source of data is the high-quality surveys conducted by Afrobarometer (AfB). The AfB interviews are administered by professional scholars who pose questions in local languages. The surveys collect a large set of Africans' attitudes, beliefs, and motivations on a wide range of topics, including their characteristics. Precious information on the Primary Sample Units (PSUs), either an urban area or a rural village, is also collected during the fieldwork. We opportunistically focus on Mali and on AfB Round 5 (Afrobarometer, 2011), although we will use other rounds and countries in our validation analyses. This survey covers the entire territory of Southern Mali,[10] that is composed of the capital region of Bamako and the regions of Sikasso, Segou, Kayes, and Koulikoro. More information on the AfB-5 survey design in Mali is provided in Online Appendix Section B.

Mali's AfB Round 5 survey was rolled out starting from December 16, 2012, to January 10, 2013. In Figure 1 we illustrate the survey coverage by day and region. Full coverage is observed during the 16th to 28th of December window; the survey continued until the 10th of January but only in the region of Koulikoro. For this reason, in our baseline analysis, we focus on a ten-day window spanning

[10]The Northern regions have not been sampled because they were reputed unsafe.

Figure 1: Interviews timeline in the South Malian regions



Notes. Days before the announcement of the foreign military intervention are colored in grey; the days after are depicted in vivid colors. The vertical dashed line indicates the upper limit of the baseline sample.

from December 16 to December 26—a period that gathers a total of 700 individuals. In Online Appendix Figure A2, we further illustrate the daily distribution of the number of respondents. The histogram makes clear that the period we focus on is stable in terms of coverage. Later on, however, we will also show that our results are not sensitive to this choice and hold when we expand the window of analysis.

As we explained in Section 2, the 2086 UNSC resolution was taken in New York at 3:45 p.m. (that is, at 7:45 p.m. in Bamako local time). At that time, AfB interviews were over for the day. For this reason, we treat interviewees surveyed starting from the days after December 20 as those exposed to the news regarding the resolution. Importantly, the interview period includes this date allowing us to compare individuals interviewed the days before (in grey in Figure 1) and respondents interviewed the days after (colored in Figure 1).

3.2 Proxies of demand for state building

We examine a wide range of motivations to participate in state-building processes by looking primarily at the individual motivations to comply with taxes. Our major source of variation in individual motivations to pay taxes comes from the use of a 5-point scale variable, based on the coding of individual's responses to the following question (question Q48C in AfB-5): "*Please tell me whether you disagree or agree with the following statement: People must pay taxes,*" where 1 means "*Strongly disagree*" and 5 "*Strongly agree.*" This variable hints at a moral obligation of individuals

in complying with taxes and is the closest to the concept of tax morale typically studied in the literature (e.g., Andreoni, Erard and Feinstein, 1998; Luttmer and Singhal, 2014). As we illustrate in Online Appendix Table A1 (where we report the main summary statistics), its average attests at 3.99 out of 5. However, a closer inspection of its distribution (see Figure A3) reveals a substantial variation around the mean (standard deviation is 1.05). We also examine other related questions. We look at the share of respondents that would never refuse to pay tax or fee to the government (i.e., the share of individuals that responded 0 to the AfB-5 question Q26C) and at the share of respondents that would evade if had chances (i.e., the share of individuals that responded 1 to the AfB-5 question Q26C).[11] We also employ the share of respondents who consider not paying the taxes wrong and punishable.[12] On average, 83% of the interviewees declare that would never refuse to pay taxes, 14% declared that would evade if had the chance, while 66% think that evasion must be punished.

3.3 Related attitudes

To better interpret our results we employ an additional set of variables capturing a wide range of related attitudes, motivations, and beliefs. First, we explore perceived corruption. We compare shifts in generalized perception of corruption, captured by the coding of question Q60C (*"How many government officials do you think are involved in corruption, or haven't you heard enough about them to say?,"* where 0 means *"none"* and 3 indicates *"all of them"*), and perceived corruption committed by tax officers. For the second belief we use the coding of individual responses to the question Q60F: *"How many tax officials (e.g., Ministry of Finance officials or Local Government tax collectors) do you think are involved in corruption, or haven't you heard enough about them to say?,"* where 0 means *"none"* and 3 indicates *"all of them"*. Perceived corruption is on average higher (1.69) when referred to the entire body of public servants than to the tax department only (1.59).

[11] Question Q26C goes as follow: "*Would you refuse to pay a tax or fee to the government if you have the chance?*" Responses are coded as 0 if the answer is "*No, would never do this,*" 1 if it is "*No, but would do if had the chance,*" 2 if "*Yes, once or twice,*" 3 if "*Yes, several times,*" and 4 if "*Yes, often.*"

[12] This is the share of respondents answering 3 to question Q76B: "*please tell me whether you think that not paying the taxes is (1) not wrong at all, (2) wrong but understandable, or (3) wrong and punishable.*"

Second, we use question Q75C to leverage variation in the perceived level of fiscal capacity. The question asks whether evading taxes is difficult. A value of 1 means "*Very easy*;" 4 means "*Very difficult*." On average, respondents feel around difficult to evade taxes (the average value is 3.30).

Third, we examine patriotism and nationalism (relative to ethnic identities). Specifically, we analyze the following two variables: (*i*) "*how proud are you of your country*" (question Q85C), with 1 meaning "*Strongly disagree*" and 5 "*Strongly agree*" and "*Let us suppose that you had to choose between being a national identity and being an ethnic group identity*" (question Q85B), with 1 meaning "*I feel only ethnic group identity*", 2 "*I feel more ethnic group identity than national ID,*" 3 "*I feel equally national ID and ethnic group identity*", 4 "*I feel more national ID than ethnic group identity,*" 5 "*I feel only national identity.* We follow Depetris-Chauvin, Durante, and Campante (2020) and code the latter as a binary variable taking value 1 for interviewees responding either 4 or 5 to question Q85B.

Fourth, we follow Ali, Fjeldstad, and Sjursen (2014) and Acemoglu et al. (2020) and examine to what extent citizens perceive state actors as service providers. With this purpose, we analyze question Q12 ("*If you were a victim of crime in this country, who, if anyone, would you go to first for assistance?"*) and construct a dummy variable which is coded as 1 if the respondent mentions the police or a local government official. Non-state actors' assistance is categorized as 0; this includes (relative frequency above 10%) "*a traditional leader or traditional court,*" "*a powerful local person or local gang,*" "*your own family or friends.*"

Fifth, we use question Q78A1 ("*How useful is the help of the African Union?*") to test whether South Malians have been more grateful to the African Union after the foreign military intervention was announced. We code individuals' responses through a 0-3 scale variable, where 0 means "*not at all*" and 3 "*help a lot,*" that has mean value of 2.10.

3.4 Information on transmission channels

We also gather additional information to explore transmission channels linking the expectation of a state-building process and tax morale development.

State presence. We first assemble data on the presence of primary public goods and services in the PSU to exploit variation in the degree of local state capacity.

This information is collected by the AfB interviewers during the fieldwork (assisted by local guides) and concerns a wide range of services at the PSU level: (*i*) electricity grid in most houses; (*ii*) piped water system; (*iii*) sewage system; (*iv*) cell phone service; (*v*) post-office; (*vi*) school; (*vii*) police station; (*viii*) health clinic; (*ix*) market stalls; (*x*) tarred or paved road. We use this information to construct ten dummy variables each taking a value of 1 if the interviewer has evidence of the availability of the public good in the PSU (0 if not). In Online Appendix Table A3 we report the main summary statistics for these variables. Since the information is at the PSU (i.e., it is the same for all the interviewees in the PSU) we collapse the database at the relevant level of analysis for this exercise. From this descriptive analysis, it emerges that cell phone signal and schooling are the most available public goods in our sample. 90% of the PSUs are covered by cell phone service and 95% have at least one school. Post offices, sewage systems, and police stations are rather the least available public goods (6%, 14%, and 20%, respectively). Since the data account for little variation in the distribution of these goods across PSUs, we will be cautious in interpreting their heterogeneous impacts on the effect on tax morale.

Other public goods and services are more evenly distributed within our PSUs sample. Electric power is provided in 28% of them; piped water, as well as paved (or tarred) roads, are more diffused (their shares are 35%). Health clinics and market stalls are available, within a walking distance, in 63% and 59% of them, respectively.

Ethnic diversity. Second, we use individual-level information on ethnic belonging and construct an index of ethnic diversity at the PSU level that we compute as 1 minus the Herfindhal index of the ethnic groups. A higher value of the index indicates a more ethnically diversified PSU. The average PSU takes a value, between 0 and 1, of 0.45 (see Online Appendix Table A1).

Perceived ethnic discrimination by the state. Third, we use question Q85A ("*How often is the respondent's ethnic group treated unfairly by the government?*) which is coded as 0 "*Never*," 1 "*Sometimes*," 2 "*Often*," and 3 "*Always*." The average perceived level of ethnic discrimination by the government is relatively low (0.34), but the variation is substantial (standard deviation = 0.85).

Access to the news. Finally, we use the information on whether the interviewee

has access to news by using data on the ownership of radios and TVs.[13] We construct a binary variable that takes value 1 if the interviewee has either a radio device or a TV (and 0 otherwise). Two third of respondents own, on average, either of the two devices. The standard deviation is 0.43.

3.5 Information on respondents' characteristics

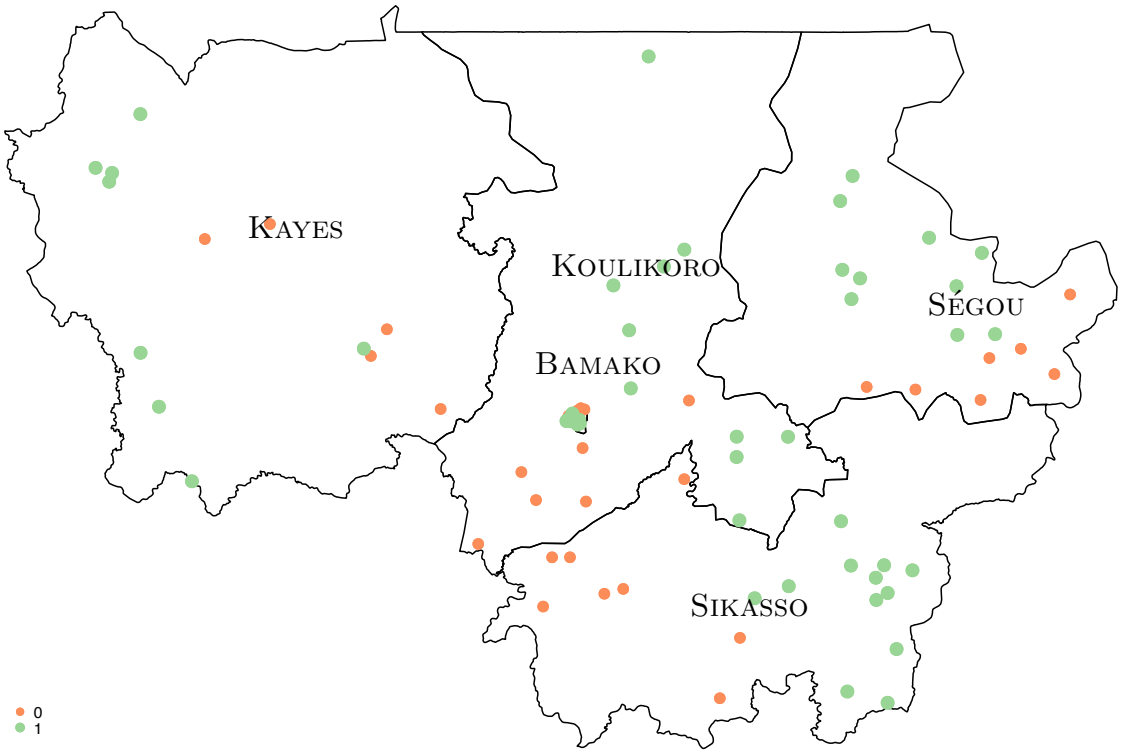
In Table A2 we report the main statistics for a set of individual characteristics we control for in our regression analysis. The average interviewee is 39 years old, has some primary schooling,[14] is a member of Bambara (the major ethnic group) and has an even probability to be male or female (by survey design, see Online Appendix Section B). 69% of the interviewees reside, on average, in a rural PSU, and 85% are not employed in a formal job market. We also use the information on the interviewees' religious group membership using question Q25A ("*Could you tell me whether you are 0 not a member, 1 an inactive member, 2 an active member, 3 an official leader*") and on the number of public goods and services provided in the PSU where the respondent resides (0 means none, 10 means all among those collected by the AfB interviewers, see the next section on it).

We also use the information on the interviewers as well as on the way interviews have been conducted. Interviewers are prevalently females and with a high educational level (the average level is 8.05 meaning that the average interviewer has at least a university degree). 41% spoke the same language of the interviewee. Lastly, only 1% of them thought that the respondent was influenced by others during the interview.

[13] We also have information on whether the interviewee self-declares to own a cell phone. According to Afb-5, around 58% of respondents held one. Unfortunately, AfB-5 does not tell us whether having a phone allows the owner to go to the web (possibly to get news). We check this using data provided by Manacorda and Tesei (2020), which makes available $0.5^o \times 0.5^o$ cell-level information on the availability of 2G or 3G internet connection in Africa. According to this database, in 2012, only 2% of the total cells of Mali had access to 2G internet connection (which arguably makes it difficult to open simple websites) and none of them had 3G internet connection. We conclude that having a cell phone is not a good proxy for access to news.

[14] Education is coded as follows: 0 = No formal schooling; 1 = Informal schooling only; 2 = Some primary schooling; 3 = Primary school completed; 4 = Some secondary school/high school; 5 = Secondary school completed/high school completed; 6 = Post-secondary qualifications, other than university (e.g. a diploma or degree from polytechnic or college); 7 = Some university; 8 = University completed; 9 = A post-graduate degree.

Figure 2: Sampled villages' location and the treatment



Notes. Treated PSUs are in green, control PSUs are in orange.

4 Empirical framework

4.1 Empirical strategy

We use the timing of the survey as an instrument for exposure to the announcement of the foreign military intervention. Our instrument is therefore a binary variable, $Post^{UN}$, that switches on to 1 for respondents in PSUs sampled for interview the days after the United Nations adopted the Resolution #2085. We illustrate the empirical strategy in Figure 2 that maps PSUs using the geocoded information provided by AfB (BenYishay et al., 2017). Colors reflect the receipt of the treatment. PSUs sampled before, or on the 20th of December, are drawn in orange; those sampled the days after the 20th of December in green. We therefore estimate the difference

in tax morale, our main outcome of interest, between interviewees interviewed the days immediately after the announcement (in green) and those interviewed the days immediately before (in orange). This difference is captured by the coefficient β in the following regression:

$$y_{ijer} = \alpha + \beta\, Post_{ij}^{UN} + X'_{ij}\gamma_1 + R'_{ij}\gamma_2 + \Theta_{er} + \varepsilon_{ijer}, \tag{1}$$

where i indicates the respondent, j the PSU, e the belonging to a specific ethnic group,[15] and r the administration region of the PSU. The vector X_{ij} includes the individual's and PSU's characteristics, that is the interviewee's age (and its square) and educational level, whether the respondent is a male, whether she/he lives in a rural area, whether she/he is not formally employed, whether she/he is a member of a religious group, whether she/he is a member of the major ethnic group (i.e., Bambara), and the number of public goods and services provided in the PSU where she/he resides (among those listed in Section 3.4). To ensure that the interviews have been conducted in exactly the same way in the two groups we include the vector R_{ij} which gathers the following interviewer's characteristics: interviewer's gender and education, whether the interviewer speaks the same respondent's language, and whether the interviewer thought anyone influenced the respondent's answers. In the most demanding estimation, we also include a set of region-by-ethnic group fixed effects, Θ_{er}, that ensure a comparison of individuals that live in the same region and have the same ethnicity. Finally, ε_{ijer} is an individual-specific error. We do not assume independence of residuals within a PSU and, consequently, we cluster standard errors at the PSU level. Later on, we will show estimates under alternate, less conservative clustering approaches.

4.2 Identifying assumption

The identification of β relies on the fact that the announcement of the military intervention splits the AfB sample in a way to generate two equally representative samples of the underlined population, thus making for a valid comparison between

[15] Following Eifert, Miguel and Posner (2010) and Depetris-Chauvin, Durante, and Campante (2020) we use the information on the main language spoken at home as a proxy for ethnic background. While as many as 17 languages are recorded, 65% of South Malians speak Bambara in our sample. We will show below that our results are not sensitive to using self-reported ethnic groups as an alternative.

the two. The only difference between the two samples should be that the interviewees interviewed *after* the announcement received relevant news on the country's future level of state capacity, while those interviewed *before* did not. In this section, we discuss and bring evidence in support of our identifying assumption.

4.2.1 Respondent's characteristics

Our assumption implies that the two samples of interviewees need to have similar characteristics along a wide range of dimensions. We check this by conducting a balance test for the individuals' characteristics included in the vector X_{ij}. The resulting test is presented in Table 1. Column 1 reports the estimated difference in the means between the sample of individuals interviewed the days after the 20th of December 2012 ($\bar{x}_1^j$) and the sample of respondents the days before ($\bar{x}_0^j$) for each covariate j (each raw of Table 1). In column 2, we present the *t-test* on the difference computed in column 1. As one can see, none of these statistics are above the standard thresholds. One issue we might face is that 700 is a small sample that artificially keeps the *t-statistics* low.[16] In column 3, we then additionally report the normalized difference proposed by Imbens and Wooldridge (2009). Such difference is standardized by the square root of the sum of the variances rather than by the standard error and, therefore, does not depend on the sample size.[17] None of the normalized differences presented in column 3 exceed 0.25, that is the threshold suggested by Imbens and Rubin (2015) for establishing the balance between two samples. All our regressions, as we pointed out in Equation 1, control for all these factors. However, from this analysis, it is clear that dropping them does not affect our results.

[16] Recall that the *t-statistics* denominator is the standard error that is inversely proportional to the sample size.

[17] In more detail, the normalized difference is computed by dividing the difference in column 1 by the square root of the sum of the variances (i.e., $(s_0^j)^2$ and $(s_1^j)^2$):

$$\frac{\bar{x}_1^j - \bar{x}_0^j}{\sqrt{(s_0^j)^2 + (s_1^j)^2}}.$$

4.2.2 PSU's characteristics

Next, we check whether the PSUs in the two samples are similar with respect to the availability of critical public goods and services. This is important because the literature identifies state capacity and tax morale as strategic complements at the steady state, implying that areas with a larger state presence have a higher level of tax morale (e.g., Besley, 2020). In Table 2, we report the results from this balance test. As one can see, *t-statistics* are all below the standard threshold (column 2) and normalized differences are all below 0.25. We therefore conclude that differences in state capacity are unlikely to explain the difference in tax morale between the two samples.

4.2.3 Other concerns

Despite the checks we have run above are both reassuring, we further reflect on the possibility that the two samples are different along other spatial or temporal dimensions. These validation analyses are conducted in Section 8. There, we check (i) whether geographical areas that are more distant to the capital Bamako (and, because of that, more likely to be selected into the treatment) have a higher level of tax morale; (ii) whether the occurrence of the Christmas feast or (iii) other time-variant aspects, such as the weather, can explain why we find a higher level of tax morale after December 20th. (iv) We then check whether the effect is, as we expect, specific to Mali or is a common shock that hit simultaneously more sub-Saharan African countries; or (v) whether it is the result of an expectation of a direct involvement in the conflict, against the rebel, held by males in the enlistment age. Finally, we look at (vi) the attrition rate as well as at (vii) the role of the perceived sponsorship. Reassuringly, all these analyses point to a causal interpretation of our coefficient β in Equation 1.

5 Main results

5.1 Baseline estimation

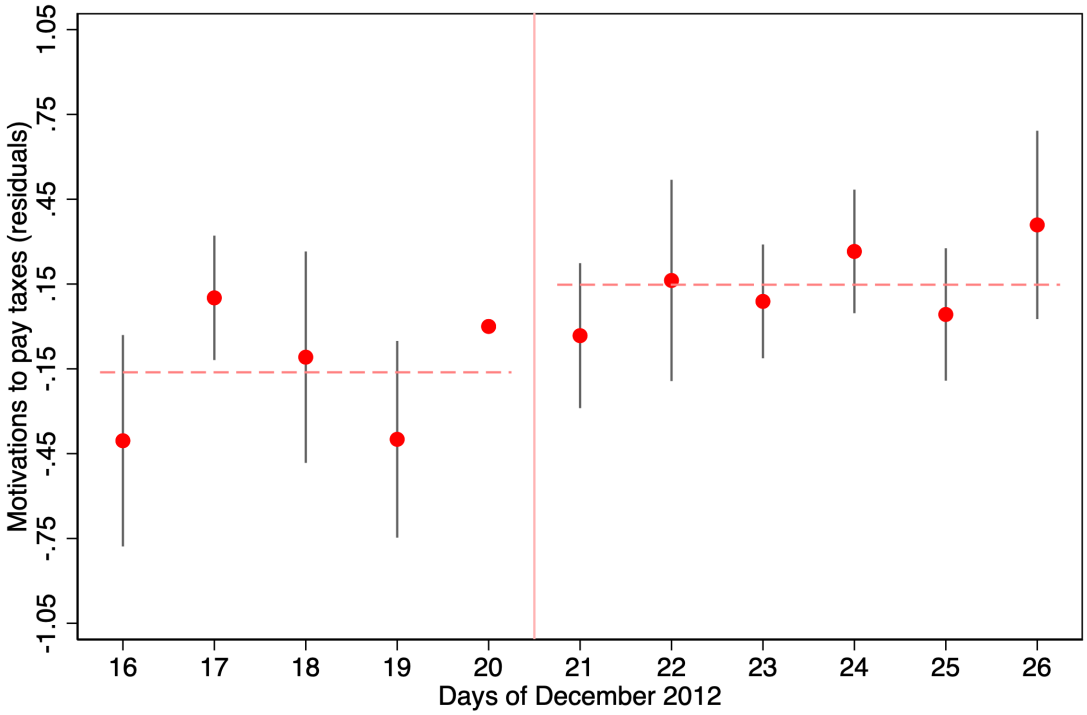
In Table 3 we present our baseline estimation of β. In column 1, we present a simple correlation between our dummy of interest, $Post^{UN}$, and tax morale that reveals a

positive statistically significant relationship between motivation to pay taxes and the expectation of the foreign military intervantion. As expected, no relevant differences in our estimation emerge when we control this relationship for the respondents' characteristics (column 2) as well as for the features of the interviews (column 3). In columns 4 and 5 we add language group and region fixed effects, respectively, restricting our comparison within individuals with the same ethnic group (in column 4) and in the same region (in column 5). In column 6 we add both, while in column 7 we include language $\times$ region fixed effects. This is important as this specification allows us to hold fixed all those factors that operate within an ethnic group of a specific region that may explain variation in individual motivations to pay taxes (i.e., culture, regional laws, differences in the enforcement level, etc).

The effect is quite stable along these specifications and it is always positive and statistically significant: South Malians interviewed the days after the announcement of the UNSC resolution display higher motivations to pay taxes relative to those interviewed the days after. The effect is also economically important. Focusing on column 7, we obtain that this shift equals to 0.26, accounting for about a quarter of the standard deviation of our 1-to-5 scale definition of tax morale (recall from Table A1 that a standard deviation is 1.05).

Online Appendix Table A4 shows that our results are not sensitive to a specific way of coding tax morale (columns 2, 3, and 4) and to the specific econometric model employed in the analysis (in column 5 we use an ordered logit model to estimate our focal effect). For example, using an alternative binary definition of tax morale, that takes on the value of 1 if the respondent either agrees or strongly agrees on the statement that people must pay taxes (0 if not), we estimate that the share of interviewees with a higher level of tax morale increases by 10.8 p.p. in the post-announcement period, from a baseline of 79 p.p. (column 2 of Table A4). Table A5 additionally shows that our results are not sensitive to expanding the time window of respondents to interviews conducted up to two weeks after the UNSC resolution (column 2) and up to three weeks (column 3), the furthest horizon we can possibly use from AfB-5. Table A6 indicates that our results are robust to the use of self-declared ethnic group fixed effects in place of language group fixed effects. Finally, Table A7 suggests that the estimation precision vary imperceptibly when we use alternate clustering strategies, such as language group times region, or

Figure 3: Residuals of tax morale estimated on a daily basis



Notes. Each dot is a point estimate of β_τ using Equation 2. The baseline category is day 20 December 2012. 95% confidence intervals are plotted around the point estimate (the red circle), based on heteroskedastic-robust standard errors clustered at the PSU level. The length of the y-axis from the origin is equal to a standard deviation in tax morale.

when we allow for spatial correlation of the residuals.[18] Other robustness checks are discussed at length in Section 8.

5.2 The event study

We additionally document that our results are not driven by a specific pre-trend in motivations to pay taxes before the United Nations announced the resolution. To do so, we code 11 dummies, I_τ, each for a day τ. Denoting as τ_{20} the dummy for the day 20^{th} of December and the base level category, we estimate the following flexible

[18] In Online Appendix Table A7 columns 3 to 5, we use the algorithm provided in Colella et al. (2023) to compute spatial standard errors within a distance of 10km, 100km, and 187km (the average distance to the capital Bamako), respectively.

regression:

$$y_{ijer} = \alpha + \sum_{\tau \neq \tau_{20}} \beta_\tau I_\tau + X'_{ij}\gamma_1 + R'_{ij}\gamma_2 + \Theta_{er} + \varepsilon_{ijer}, \quad (2)$$

where β_τ indicates the residual of tax morale in the day τ relative to the baseline category, τ_{20}, for individuals with similar characteristics, with the same ethnic background, interviewed in the same region.

We offer a graphical accounting of the estimates of our parameters β_τ in Figure 3, where the estimates of each coefficient β_τ, in the y-axis, are plotted against the days τ ($\neq \tau_{20}$), in the x-axis. The distance from the origin in the y-axis is equivalent to a standard deviation in tax morale (i.e., 1.05). Hence, each point estimate can be compared with this distance to better appreciate its magnitude. Vertical lines, around the dots, represent the 95% confidence band of each estimate. While no particular pattern emerges in the pre-period, the plot shows an increase in tax morale in the days after the adoption of the United Nations resolution relative to the baseline category.

We additionally check for a specific pre-trend discontinuity following Imbens and Lemieux (2008) and splitting the control group (i.e., the sample interviewed before the 20th of December 2012) at its empirical median. In this falsification test, the treatment occurs at 17^{th} of December. Hence, all the respondents interviewed before the 17^{th} of December represent the control placebo, while those interviewed the days after or on that day (but before the 21^{st} of December) are the treated placebo group. In Online Appendix Table A9, we show that the placebo effect is small and statistically insignificant. We therefore conclude that pre-existing time trends cannot explain our results.

6 Other attitudes towards taxation

In Table 4 we explore several, additional questions in the AfB that capture other dimensions of tax morale. In column 1 we employ, as the outcome, a dummy which takes 1 if the respondent declares that he/she would never refuse to pay tax or fee to the government. This variable describes the attitudes of people who are deeply committed to comply with taxes irrespective of the context—a typical feature of an intrinsic motivation to pay taxes. We estimate an increase of 12 percentage points in the share of respondents that would never refuse to pay tax or fee to the government

in the post-UNSC resolution period relative to the pre-period—a shift that equals to around 14.5% of the sample average (recall from Table A1 that this variable has mean equals to 0.83).

In column 2 of Table 4 we look at intentions to future behavior by using a dummy which takes 1 if the respondent declares that he/she would refuse to pay tax or fee to the government if had chance. Respondents who answer yes are those with a low level of tax morale but who comply with taxes if they are forced to. Our estimate documents a difference of 9.5 p.p. between respondents interviewed in the post- and pre-period. The effect is substantial. Relative to the sample average share (equal to 0.14), the share of respondents that would refuse to pay tax or fee to the government if had chances decreases by about 72%. The effect is also conceptually important as it brings evidence that a credible signal of state-building can effectively raise voluntary compliance, an asset which is critical for countries, like Mali, with a limited capacity to tax.

Finally, in column 3 of Table 4, we explore whether, in addition to increasing individual motivations to pay taxes, the announcement of the foreign military intervention changed people's view toward tax cheaters. We therefore look at variation in the share of respondents that believe that tax evasion is wrong and must be punished. Our estimate indicates an increase in the stigma of non-compliance. The estimated difference between the respondents interviewed in the post- and the pre-period is around 5 p.p.—which is the 8% of the sample mean. While this result is potentially of particular importance—it indicates that salient events may be effectively conducive to important fiscal reforms aimed at expanding the country's fiscal capacity—we note that it is statistically imprecise.

7 Mechanisms

So far, we have documented that the announcement of the foreign military intervention caused a shift in people's motivations to pay taxes. What does explain this reduced-form impact on tax morale? In this section, we bring suggestive evidence in favor of the following updating mechanism: the expectation of the foreign military intervention, aimed at reunifying the country's territory, defeating rebels, and restoring democracy, sent a state-building signal on the future capacity of the state. The signal raised the expected benefits of participation, including paying

taxes. Other mechanisms we test, higher expected accountability by international organizations or a rise in national identification, are mostly inconsistent with this evidence.

7.1 Updating about state-building

Our most preferred interpretation of the documented effect is that the UNSC resolution announcement signaled a state-building process. Upon receiving the signal, citizens updated their beliefs about the future capability of the state, raising their expected benefits of participation. We test this mechanism's implications from several angles. First, we follow Weigel (2020) and use the following logic: If the UNSC resolution sent a state-building signal, the signal should be stronger in areas with less past exposure to the state. In areas where the state is absent, the expected benefits from a higher-performing state should arguably be larger. Second: If the UNSC resolution sent a state-building signal, the signal should be weaker among individuals who feel discriminated by the state. It is in fact reasonable that people holding a negative view of the state are worried about state-building processes which strengthen the state. Finally, we show a change in a set of beliefs that is consistent with this updating mechanism.

Predetermined state exposure. We exploit predetermined variation in state capacity at the PSU level and test whether the state-building signal is stronger in areas with lower state exposure.[19] As we explained in Section 3.4, we gather information on the availability of ten primary public goods and services in each PSU.[20] We begin with a measure of the state exposure intensity computed as the sum of the number of public goods that are available in the unit. In Online Appendix Figure A6 we plot the PSUs cumulative distribution for this index. It appears that half of the sample has at most three public goods, while the average number of public goods provided is 4.75 (see Online Appendix Table A2). In column 1 of Online Appendix Table A10 we estimate an interaction term regression model where

[19] Weigel (2020) tests whether individuals in neighborhoods with lower state exposure in the past are relatively more likely to engage in political activities. He employs two measures of past state exposure: (i) the number of past visits to the neighborhood from state agents and (2) the number of individuals who report ever having participated in a political protest.

[20] In Online Appendix Figure A5 we display a map of the PSUs that highlights state presence intensity across the country.

the dummy $Post^{UN}$ is multiplied by the sum of public goods available in the PSU. While the estimated coefficient associated with $Post^{UN}$ is positive and statistically significant, the interaction term is estimated as expected with a negative sign. Next, we compute the marginal effects and plot them in Figure 4 for each possible value of this sum. As one can see, the estimated effect is positive and statistically significant in areas with poor state exposure, but not in neighborhoods where the state is highly present.

Columns 2 to 11 of Online Appendix Table A10 present a battery of regression results that consider heterogeneity in the availability of specific public goods: electricity grid in most houses; evidence of a piped water system; evidence of a sewage system; cell phone service; a post-office; a school; a police station; a health clinic; market stalls; tarred or paved road.[21] Similarly to what we have obtained in column 1, we estimate positive and statistically significant coefficients associated with $Post^{UN}$ in all columns; the interaction terms are rather estimated with the negative sign (but for the sewage system). To ease the interpretation of these findings, we compute the marginal effects of each regression and plot the resulting estimates in Figure 5. At the top side of the graph, we plot the battery of point estimates capturing the effect of the announcement of the foreign military intervention in PSUs in which these services are supplied by the state and, at the bottom, the battery of point estimates of the effect in PSUs where these public services are not provided. While the latter effects all lie as expected at the right of the zero vertical line, we highlight that standard errors are particularly large for public goods with little variation, that is for cell phone signal, schooling, post office, sewage system, and police station (see our discussion in Section 3.4). Nonetheless, this visual accounting of our estimates clearly indicates that the shift in motivation to participate in state-building processes is driven by an updating process made by individuals for whose the initial expectation of state capacity was lower.

Perceived relationship with the state. So far, we have implicitly assumed that the state is a good (and not a bad) and that a state-building signal enters with a positive sign in the individual utility function. There are circumstances in which this assumption is clearly wrong. Consider Figure 6, where we display the

[21] We map the distribution of these public goods in Online Appendix Figure A7, also distinguishing for the treatment reception.

mean values of the variable "Feeling treated unfairly by the government" at the ethnic group level. The variable has a mean which is relatively low (it is equal to 0.34, see Online Appendix Table A1), but the figure makes clear that around the mean there is considerable variation. Members of the major group (Bambara) have a mean value of 0.23, but members of ethnic minorities hold opposite beliefs about the government (Bobo for example have a mean value of 1.56—they feel being treated unfairly between "sometimes" and "often"). It is reasonable that people holding a negative view of the state are worried about state-building processes which strengthen the state. If this conjecture is correct, we should observe that those who feel discriminated are not more motivated to pay taxes when receiving state-building signals. We therefore estimate an interaction term model where the dummy $Post^{UN}$ interacts with the above-mentioned variable. Everything else is the same as in Equation 1; thus, it is worth remarking that we include language-by-region fixed effects, Θ_{er}, and that we estimate the effect using variation within a language group and a region. Marginal effects, for each value of the variable "Feeling treated unfairly by the government," are drawn in Figure 7. As expected, only those who believe that the state is good are more prone to participate in state-building processes after receiving a state-building signal.

Change in beliefs consistent with the updating mechanism. The importance of building a sense of cohesion between the citizens and the state for boosting state-building processes has been recently emphasized by Besley and Dray (2024). Here, we show that, upon receiving the state-building signal, citizens self-report more patriotic sentiments. If the UNSC resolution announcement signals a future higher-performing state, this is expected to make citizens prouder of their own country. This is indeed what we find. We rely on a 5-point scale question ("*How proud are you of your nationality?*") that is similar in spirit to that employed in Konrad and Qari (2012).[22] In column 1 of Table 5 we then use patriotism as the outcome of our regression equation. The estimated coefficient is positive (0.303) and statistically significant, as expected. In terms of magnitude, the UNSC resolution announcement explains a shift in patriotic sentiments that is equal to one-third of standard deviations (that is 0.90 as displayed in Table A1).

[22]Using individual survey data, across eight countries, Konrad and Qari (2012) bring evidence that more patriotic individuals display higher motivations to pay taxes.

Likewise, expecting a future higher-performing state should imply developing a better judgment of the state agencies' officers.[23] We test this mechanism's implication by inspecting a battery of questions regarding the perceived corruption of officers employed in the state agencies. Columns 1 through 3 of Table 6 present the estimation results from regressions that employ as the outcome the perceived corruption level of tax collectors, police, and judges, respectively. Consistently with the updating mechanism, we find that citizens expected a lower level of corruption for all these state agencies' officers who represent the state. Interestingly, the estimated effect (-0.214) is larger for tax officials (i.e., Ministry of Finance officials or Local Government tax collectors), accounting for more than one-fifth of standard deviations in the perceived corruption level. Convincing oneself to participate and that it is worth investing part of one's income through taxes, requires one to believe that the people she is giving the money to are not criminals.[24] The effects for police (-0.155) and judges (-0.170) are also statistically significant and economically important, explaining 0.16 and 0.17 standard deviations in the two perceived levels of corruption, respectively. Finally, when we consider all the government officials the effect is sensibly lower (-0.139) and not statistically significant (column 4).

The belief that the state is more efficient and that, in particular, tax collectors are less corrupt and do their jobs should imply that the probability of getting caught if evading taxes is higher. We use variation in this perceived level of fiscal capacity using the following 4-point scale question: "*How difficult is to avoid taxes?*" Consistently with our mechanism, we find that respondents interviewed the days immediately after the UNSC resolution announcement believe that evading taxes is relatively more difficult. The estimated effect, reported in column 2 of Table 5, is 0.155 and it is statistically significant. In terms of magnitude, it explains 0.22 standard deviations of the perceived level of fiscal capacity.

Finally, a better judgment of state actors should imply that if one becomes a victim of a crime she should be more willing to resort to them for protection and assistance. We check this hypothesis, consistent with our mechanism, in column 3 of Table 5. Relative to individuals interviewed the days before the UNSC resolution

[23] As pointed out by Besley and Dray (2024, p. 1) "*building trust is the key to state effectiveness as a means of encouraging voluntary compliance with taxes, laws, rules and regulations for the common good.*"

[24] The importance of the view citizens hold about tax collectors for state-building has been underlined in two recent works, Balan et al. (2022) and Weigel and Ngindu (2023).

announcement, we find those interviewed after are more willing to resort to the police or to local government officers relative to non-state actors, such as traditional rulers, family, or criminal gangs. The estimated effect, which is around 10 p.p., explains one-third of its mean and it is statistically significant at the 1% level.

7.2 Expected accountability by international organizations

An alternative mechanism to the updating one is that alongside the foreign military intervention citizens expect a larger involvement by international organizations in domestic politics and public provision. One of the most pressing issues in developing countries is what World Bank (2003) defines the breaks in "the long route of accountability" in the provision of public goods and services, which passes by politicians and policymakers. Anticipating better monitoring of these figures' duties by external agencies might therefore explain why citizens hold higher expectations about the state's future performance and higher expected benefits of participation. We test the implications of this mechanism by exploring whether, after receiving the state-building signal, perceived corruption made by political agencies' officers falls. We find limited evidence of this channel in Table 6. Citizens did not update their beliefs on corruption made by the President as well as by the members of his office (column 5); nor by the members of the local government council (column 6); nor by the members of the Parliament (column 7). We therefore conclude that expected political accountability is unlikely to explain the effect on tax morale.

7.3 National identification

The UNSC resolution announcement can also be seen as a nationwide shared collective experience. Such experiences have been proven to weaken ethnic identification and help build a nation (e.g Eifert, Miguel and Posner, 2010; Depetris-Chauvin, Durante, and Campante, 2020). Part of the effect on tax morale can arguably be explained by this shift in national sentiment. We do not find evidence of this mechanism. We use as the outcome of our regression equation a dummy variable which is 1 if the respondent feels more national identity (relative to ethnic identity) and obtain an estimated effect of the UNSC resolution announcement that is small (-0.063) and statistically not different from zero (standard error is 0.050, see column 4 of Ta-

ble 5). We therefore conclude that an increase in national identification is unlikely to explain our findings.

7.4 Other channels of transmission

Finally, we explore further heterogeneity and examine three channels of transmission of the UNSC resolution effect.

7.4.1 Ethnic diversity

First, we explore whether ethnic diversity is a hurdle for state-building. Alesina, Baqir, and Easterly (1999) documented that ethnic fragmentation negatively affects support for productive public goods at the local level as well as at a higher level. Here, we further document less support for state-building processes in more ethnically diverse areas. To this purpose, we compute an ethnic fragmentation index at the PSU level derived as 1 minus the Herfindahl index over the ethnic groups that populate the PSU. Thus, a higher value of the index indicates a more ethnically diverse PSU. In Online Appendix Figure A4 we illustrate the PSU-level distribution of the index. As one can see, in more than one-fifth of the PSUs the index takes a value of 0 indicating no fragmentation in the PSU. However, the histogram also shows a considerable variation across PSUs and substantial mass in the upper tail.

We then use this variation in an interaction term model where we include the interaction between our dummy $Post^{UN}$ and the ethnic fragmentation index, the dummy as well as the index. Next, we compute the marginal effects for several quantiles of the index distribution. These effects are illustrated graphically in Figure 8 for the 95th, the 75th, the 50th (i.e., the median), the 25th, and the 5th percentile in the y-axis. Interestingly, the effect of the UNSC resolution announcement on tax morale disappears in PSUs with considerable ethnic fragmentation (i.e., the 95th and the 75th percentiles) and is large (the estimated coefficient is 0.45) in PSUs with little or no ethnic diversity (i.e., the 5th percentile). We therefore conclude that the state-building signal is less intense in ethnically diverse areas.

7.4.2 Attitudes towards African Union

Next, we explore a channel of transmission that brings credibility to our analysis: the beliefs South Malians hold about African Union. African Union, in fact, ac-

tively took part in the 2012 Malian events by putting pressure on the international community and by assuming an active role in the peace-building operations starting from January 2013. Hence, if our story is correct, it is reasonable to observe that the increase in tax morale goes hand-in-hand with a positive shift in the South Malians' attitudes towards African Union. As we explained in Section 3, we use a 0-3 scale variable with higher values indicating African Union is helpful to the respondent. In column 5 of Table 5 we test this hypothesis. The estimated coefficient is indeed positive and statistically significant. We find that respondents interviewed after December 20 display 0.23 standard deviations higher, relative to those interviewed before, in good attitudes towards African Union.[25]

7.4.3 News exposure intensity

Finally, we explore the plausibility of our story by checking whether, other things equal, the effect of the announcement is larger in respondents with access to news. This is of particular importance because a number of recent studies have documented the particular attention given by Africans to media content (Yanagizawa-Drott, 2014; Blouin and Mukand, 2019; Manacorda and Tesei, 2020). We proxy exposure to news by the availability of a medium device at home. We therefore examine the responses' pattern and check whether the respondent self-declares to owning a radio or a TV. In the regression analysis, we interact the binary variable $Post^{UN}$ and the one indicating the interviewee owns either a radio or a TV. We illustrate the marginal effects graphically in Figure 9. As expected we find a positive and statistically significant effect of the UNSC resolution announcement *only* for those who have access to news.

8 Robustness checks

In this section, we check whether factors other than the UNSC resolution announcement explained or affected, around its adoption date, the shift in tax morale resulting

[25] A Gallup study documents in a similar fashion an increase in faith in the Western powers which promoted military intervention at the international level. According to the study, Malians interviewed in October/November 2012 show a high rate of approval of the leadership of the U.S. (87%), U.K. (80%), and France (70%). See `https://bit.ly/3BTjKhf`.

in a bias in our estimates. To absorb these potential effects, we use below a set of intertwined strategies.

8.1 Instrumenting news exposure using distance to Bamako

A potential violation of our identification strategy appears from a closer look at Figure 2: apparently, PSUs selected into the treatment are more distant to the capital Bamako. Despite we have checked above that treated interviewees and non-treated ones balance along a wide range of dimensions, in this section we further ask whether we might have missed an unobservable aspect that can tell something about the geographical distribution of the treatment. This is important because this unobservable can in turn be correlated with tax morale and therefore introduce an omitted variable bias in our analysis.

What can explain this pattern in the treatment? We have checked this issue with the AfB team. What we have been told is that the survey rollout from one PSU to another follows organizational and travel cost reduction strategies. Interviews started in Bamako, where AfB has its Malian headquarter, and spread across the most proximate, randomly selected PSUs (see Online Appendix Section B for details).[26] Hence, the most distant PSUs to Bamako have to be more likely to be treated as they were interviewed at a later date. This is indeed what we show in Online Appendix Figure A9 for the three regions (i.e. Kayes, Koulikoro, and Sikasso) that according to AfB and because of proximity to Bamako followed this strategy. We compute ventiles of the PSUs distribution according to the distance to Bamako and, for each bin, we calculate the share of PSUs interviewed the days after December 20. A strong association between the distance to Bamako and the share of treated PSUs appears in Figure A9: as we will document below (column 2 of Table 7), we estimate that a standard deviation increment in the distance to Bamako[27]

[26] We back-checked this conjecture on a map that we illustrate in Online Appendix Figure A8. The map displays a gradient of colors reflecting the schedule of the interviews, with darker shades indicating later dates. On top of that, we draw the geographical pattern of the interviews for each region in South Mali. In the region of Kayes, for example, interviews moved from the South-East (the closer area to Bamako) to the North-West. Similarly, in the region of Koulikoro, they proceeded northward (outbound from the capital Bamako), while in Sikasso they moved eastward starting from the northern boundary which is the closest to the capital. Because of the distance to Bamako, in the Ségou region, interviewers followed a different strategy moving from the East to the West.

[27] The average Euclidean distance to Bamako is 1.99 (about 187 kilometers) and the standard

increases the chances of being interviewed after the UNSC resolution announcement by 45 p.p.

Does this mean that more distant areas to Bamako have, for some reason, higher levels of tax morale? To answer rigorously this question we gather geo-coded information on all rounds of AfB where tax morale is collected. These are rounds AfB-2 to AfB-6 where the same regions of Mali were surveyed at different points in time. We therefore run, for each AfB round, the same regression displayed in Equation 1 using the distance to Bamako as the main explanatory variable, that is

$$y_{ijer} = \zeta_0 + \zeta_1 \, Distance_{ij} + X'_{ij}\gamma_1 + R'_{ij}\gamma_2 + \Theta_{er} + u_{ijer}, \tag{3}$$

where $Distance_{ij}$ is the Euclidian distance between the PSU j and the center of Bamako; as above, the vector X_{ij} includes individual's and PSU's characteristics and R_{ij} the interviewer's characteristics.[28] Estimation results of ζ_1 are displayed in Online Appendix Table A8. For a better assessment, we also plot the point estimates and the 95% level confidence bands in Figure 10. Red dots are the estimates of ζ_1 in rounds AfB-2, AfB-3, AfB-4, and AfB-6. In blue we draw the estimate of ζ_1 using data from AfB-5, that is from our survey round of interest. As one can see, only in AfB-5 the distance to Bamako is correlated to tax morale. Put it differently, it appears that tax morale *only* relates to distance to Bamako *because of* the UNSC resolution announcement.[29]

We exploit this fact (our exclusion restriction) in an instrumental variable (IV) analysis where the distance to Bamako serves as an instrument for the exposure to the news on the foreign military intervention by explaining plausibly exogenous variation (where exogeneity comes from AfB organization motives) in the selection

deviation around the mean is 1.03.

[28]The only difference with Equation 1 is that rounds AfB-2 and AfB-3 do not provide the same information on the same set of public goods. Hence, we have excluded the number of public goods from vector X_{ij}.

[29]To further corroborate this statement, we rely on a large literature on regional science that argues that the structure of developing economies is relatively advanced in the main cities but extremely poor in cities' peripheries and in proximate areas (e.g., Chauvin et al., 2017), thus suggesting that *within-region* distance to Bamako should be in normal circumstances unrelated to any attitudes towards tax compliance. According to the information collected by AfB, from Round 2 (2002) to Round 6 (2014), this seems to be the case. We do not have evidence of a higher share of rural PSUs in areas more distant to Bamako in any of the AfB surveys concerning Mali (see Online Appendix Figure A10); nor about more unemployed households (see Online Appendix Figure A11) or about a lower level of education (see Online Appendix Figure A12).

to treatment.[30] Formally, our IV strategy is described by the following two-stage equations system. The first-stage equation is given by the following regression:

$$Post_{ijer}^{UN} = \pi_0 + \pi_1 \, Distance_{ij} + X'_{ij}\gamma_1 + R'_{ij}\gamma_2 + \Theta_{er} + u_{ijer}, \tag{4}$$

where u_{ijer} is the error term. We then use the predicted values of $Post_{ijer}^{UN}$ in the second-stage equation, as follows:

$$y_{ijer} = \theta_0 + \theta_1 \, \widehat{Post_{ijer}^{UN}} + X'_{ij}\gamma_1 + R'_{ij}\gamma_2 + \Theta_{er} + v_{ijer}, \tag{5}$$

where v_{ijer} is the error term.

We report estimation results in Table 7. Column 1 replicates our main OLS analysis for the restricted sample of PSUs in the regions of Kayes, Koulikoro, and Sikasso. As one can see, the estimated effect is comparable to the one obtained in column 7 of Table 3. Column 2 reports the estimated first-stage coefficient π_1. As remarked above, a strong association between the distance to Bamako and the share of treated PSUs appears, resulting in an estimated coefficient that is equal to 0.450: the chances of being interviewed after the UNSC resolution announcement are 46% (1.03×0.45) larger in a PSU which is a standard deviation more distant from the mean. This effect is statistically significant at a 1% level and the Kleibergen-Paap F-statistics (that is equal to 81.174) brings evidence against the hypothesis that the distance to Bamako is a weak instrument.

In column 3 of Table 7, we report the estimate of θ_1, that is estimated using exogenous variation in the probability of being interviewed after the UNSC announcement. The estimated effect is 0.359, it is statistically significant at a 1% level, and it is 15% larger than the one estimated through OLS (column 1). This effect also accounts for around 34% of the tax morale standard deviation (0.359×1.05). Finally, column 4 reports the reduced form estimate that displays a strong association between the distance to Bamako and the interviewees' level of tax morale in our context (the estimated coefficient is 0.162).[31]

[30] This strategy is similar in spirit to Becker and Woessmann (2009) and Aidt and Franck (2015) where the relevant information spread concentrically from a specific place.

[31] Note that the estimated coefficient is slightly different than the one we obtain in column 4 of Online Appendix Table A8 because here we also control for the number of public goods.

8.2 Seasonality

Second, we show that seasonality is unlikely to affect the interpretation of our results. The potential threat we face stems from the fact that the post-announcement period hosts one of the most important feasts of the year, Christmas. Although we observe in our sample that South Malians are preponderantly Muslim, the Christmas mood could have been conducive to a more comprehensive and empathic relationship with the state. Hence, our results could pick up this effect rather than the one working through the UNSC resolution announcement. Below, we provide evidence against these seasonal effects.

South Mali in AfB-4. First, we gather responses to the same items employed in the baseline analysis from AfB-4. The main advantage of using this alternative wave is that the questionnaires were collected in Mali during the same period (i.e., from December 15 to December 31) *but in 2008*. Hence, it allows us to test whether our results are driven by the holiday season. To do this we define a placebo treatment by constructing a dummy, $Post^{2008/12/20}$, equals to 1 the days after the 20th December of 2008. Our estimates, presented in Online Appendix Table A11 for different specifications, are small and imprecise.

Other countries in AfB-5. Second, we investigate the shift in tax morale in countries other than Mali around the date of 20th December of 2012. We do this in Table A12, where we use responses of individuals interviewed in Togo—the only country in AfB-5 where interviews took place around the 20th December of 2012.[32] As there is little reason to believe that the UNSC resolution 2085 was also salient for the Togolese population we do not expect a positive estimate of β in Equation 1. Indeed, our estimates are small and statistically insignificant when we look at a simple correlation between our post dummy and the level of tax morale (column 1), when we include individual controls (column 2), and when we exploit variation within the ethnic group in a given region (column 3).

[32]In Togo, AfB-5 has been administered between December 17 and December 29 (2012). 32% of the sample was interviewed in the pre-announcement period and 68% after. We cannot rather use Lesotho and Nigeria, two other countries in which AfB-5 was run around the 20th of December 2012. While questionnaires were collected between November 26 and December 29 in Lesotho, only 1.42% of the total sample have been interviewed in the post-announcement period. Similarly, in Nigeria, 1.04% of the total respondents have been interviewed in the post-announcement period, despite questionnaires being collected between October 30, 2012 and January 13, 2013.

Summing-up. Figure 11 illustrates graphically the two placebo estimated coefficients (in red Mali AfB-4 and in green Togo AfB-5) against our focal effect (Mali AfB-5). Overall, these placebo analyses indicate that seasonality is unlikely to drive our results.

8.3 Working days, week days, temperature, and the weather

Third, we show that time-varying confounders and unrelated time trends are unlikely to affect the change in tax morale we have documented in Table 3. For one thing, the time-window we examine is arguably short (i.e., about two weeks). For another, we are not aware of any other important event that has occurred during the period we analyze (beside Christmas as discussed in Section 8.2). Nonetheless, time can interact with tax morale in two further, alternate ways. First, people could be happier on Sunday and less happy on Monday. Second, sunny days are also reckoned to make people happier relative to rainy days. Put it differently, the interview day can affect itself the interviewees' responses. In this section, we test whether these two sources of time variation can alternatively explain our findings.

Week days. In Table A13, we take into account differences in the weekdays of the interview. In column 2, we include working days fixed effects to capture differences in the mood of interviewees responding during the weekend time and during the weekdays. Exploiting variation within respondents in these two groups of days, we obtain a similar result relative to our baseline (reported in column 1 for easy comparison). In column 3, we rather include weekday fixed effects. Hence, the estimator uses variation within the group of respondents interviewed, e.g., on Monday, and see whether those interviewed the week after the announcement of the foreign military intervention display a higher level of tax morale. The focal effect remain statistically different from zero and its magnitude increases by around one-third.

Weather. In Table A14, we control for variation in the weather by retrieving regional-by-day level information from the `timeanddate.com` website. Specifically, we retrieve information on the temperature (maximum, minimum, and average values), the average share of clouds covering the sky, and the average share of humidity. Online Appendix Figures A13, A14, and A15 illustrate how these variables change

across the days. Our focal effect does not change considerably neither when we include these variables individually (columns 2 to 6) nor when we pull all of them together (column 7).

8.4 Is the effect specific to Mali? A difference-in-difference analysis

Fourth, we show that our finding is not the result of a common shock hitting Western African countries simultaneously around the date of December 20, 2012. To this purpose, we compare the level of tax morale of interviewees in South Mali and in neighboring countries in a difference-in-difference strategy. We construct a control group of respondents residing in regions of neighboring countries that share one border with the South Mali territory and that were included in AfB-5. Following this criterion we select the regions of Boucle du Mouhoun, Cascades, and Hauts-Bassins in Burkina Faso, Denguele and Savanes in Ivory Coast, Labé, Faranah, and Kankan in Guinea, and Kédougou and Tambacounda in Senegal.[33] This strategy is illustrated graphically in Figure 12. Regions drawn in red are the treated regions in South Mali. Orange regions comprise the control group.

The geographical proximity criterion is of utmost importance for our identification strategy. Along the spatial discontinuities between countries, in fact, the same ethnic groups live as a result of the African scramble that divided the African continent in arbitrary country's borders. This strategy allows us to compare the level of tax morale in the post-announcement period, relative to the pre-period, between interviewees living in South Mali and interviewees living in neighboring countries but with similar characteristics and the same ethnicity (i.e., with the same culture). This difference-in-difference strategy is thus written as follows:

$$y_{ijer} = \alpha + \beta_1 \, Post_{ij}^{UN} + \beta_2 \, I[\text{Mali}]_{ij} + \beta_3 \left[Post_{ij}^{UN} \times I[\text{Mali}]_{ij} \right] + X'_{ij}\gamma_1 + R'_{ij}\gamma_2 + \Theta_e + \varepsilon_{ijer}, \tag{6}$$

where $I(Mali)$ is a dummy variable equal to 1 if the interviewee is South Malian (and 0 otherwise) and Θ_e is a vector of ethic group fixed effects. The rest in Equation 6 follows Equation 1. Unlike the previous analyses, we here do not pose any sample

[33] South Mali also border to the North with Mauritania. However, this country is not included in AfB-5.

restriction in order to have as many observations as possible from the neighbor countries. As the foreign military intervention was likely salient for South Malians only, we expect the difference-in-difference coefficient, β_3, to be positive.

We present our estimates of β_1, β_2, and β_3, using Equation 6, in Table 8. In column 1, where we include neither covariates nor language fixed effects, we estimate an effect of the interaction term equal to 0.618, which slightly lowers to 0.518 when we include the covariates—that is, comparing individuals with similar characteristics (column 2). In column 3 we use only language fixed effects, while in column 4 we run a full-fledged regression controlling for respondents' as well as interviewers' characteristics and for a set of language fixed effects. Overall, Table 8 indicates a robust positive estimate of the difference-in-difference coefficient: South Malians interviewed the days after the adoption of the resolution by the UNSC self-reported higher levels of tax morale, relative to those interviewed the days before, than individuals with the same characteristics and ethnicity living in neighboring countries.

8.5 Males involvement in the war

Fifth, we show that the expectation of a direct involvement in the conflict against the rebels does not affect the estimated effect of the UNSC resolution announcement on tax morale. To test this potential alternative mechanism, we drop from the sample male respondents—i.e., exactly 50% of our sample. Using only female respondents we obtain a positive and statistically significant estimated effect. Moreover, as we illustrate in column 2 of Table A15, estimates are similar in magnitude to what we obtained in our baseline estimation (reported in column 1 of Online Appendix Table A15 for easiness of comparison). In column 3 we refine our exercise by dropping from our sample only males in enlistment age—i.e., those with an age above 18 (and below 40).[34] Again we obtain similar results relative to our baseline.

8.6 Non-response to tax compliance related questions

Sixth, we show that attrition does not explain our results. Turning point events such as the UNSC resolution 2086 might have been conducive to social norms where

[34]See the Mali page at the CIA Factbook website available at https://tinyurl.com/4taayhwy

people might feel guilty to declare that they cheated or have been cheating taxes. If this is true, people with a low level of tax morale might have strategically decided not to answer questions related to tax compliance, resulting in an upward-biased estimation of the effect on tax morale.

To check this, we count the number of '*don't know*' answers provided by interviewees to the tax compliance-related questions — i.e., questions Q48C, Q26C, Q76B, and Q51. Attrition is overall very limited. Less than 0.5% answered '*don't know*' when asking Q48C ("*Please tell me whether you disagree or agree on the following statement: People must pay taxes*"), less than 1% when dealing with question Q26C ("*Would you refused to pay a tax or fee to government if you had the chance?*"), and about 0.6% for the last question, Q76B ("*Please tell me whether you think the action is not wrong at all, wrong but understandable, or wrong and punishable: Not paying the taxes they owe on their income?*"). About 0.25% answered '*don't know*' when asking Q51 ("*Which of the following statements is closest to your view? Statement 1: It is better to pay higher taxes, if it means that there will be more services provided by government. Statement 2: It is better to pay lower taxes, even if it means there will be fewer services provided by government*"). In Table A16 we investigate whether attrition has increased after the UNSC resolution was announced comparing individuals with similar characteristics, with same ethnicity, and in the same region. We find no evidence.

8.7 Perception of the sponsorship

Seventh, we show that a different perception of the survey sponsorship has not affected the shift in tax morale after the UNSC resolution announcement. We construct a binary variable that takes a value of 1 if the respondent believes that the survey is promoted by the government or by a state agency and use it as a control in our regression. As one can see from Online Appendix Table A17, our focal effect is unaffected by this addiction.

9 Conclusions

This paper provides evidence that salient events for state-building, such as a foreign military intervention designed to rebuild a state, raise citizens' motivations to

comply with tax laws. These events also increase the sense of cohesion between the citizens and the state, by making individuals more patriotic and with a better view of the state institutions. Our results therefore indicate that these events can create a window of opportunity to reform the state by making politically feasible investments in fiscal capacity that are typically unpopular.

We use Mali in 2012—a country almost disbanded because of a military coup and a concomitant rebellion that took control of half of its territory—as a quasi-natural experiment to test this theory. Our identification strategy takes advantage of the fact that the UNSC resolution came unexpectedly during the Afrobarometer survey rollout in the country. This gives us the opportunity to interpret causally the shift in Malians' beliefs we document and to study a plausible critical juncture in real-time helping avoid the problem of selecting research contexts on the outcome (Callen, Weigel and Yuchtman, 2024). While specific to Mali, our research is likely to inform on the effects of other foreign military interventions aimed at rebuilding a state. Scholars of peace science have shown that peace-building operations in South Sudan (S/Res/1996) or in Liberia (S/Res/1509), among others, have been accompanied by a detailed roadmap to restore security, build capacity, and help a democratic transition (Di Salvatore et al., 2022)—all aspects that were central in the intervention in Mali.

Finally, we note that we do not observe the actual citizens' decision to comply with tax laws—a limitation that further works should help bridge. While our study shows that the UNSC resolution announcement arguably created a critical juncture, which might have driven Mali to a better institutional equilibrium, a subsequent military intervention by France, in January 2013, overruled the UNSC decision—a circumstance which caused the abandonment of the roadmap of actions previewed in the document (e.g., Bannelier and Christakis, 2013). The institutional trajectory in Mali ultimately remained unchanged, but, as argued by Callen, Weigel and Yuchtman (2024), this does not undermine the importance of our study as critical junctures are by construction contingent with some succeeding and some failing. We see the analysis of other foreign military interventions as an important avenue of future research to inform policymakers and donors about the fully-fledged impacts of these interventions in the targeted countries.

References

Acemoglu, D. (2005). Politics and economics in weak and strong states. Journal of Monetary Economics, 52(7), 1199-1226.

Acemoglu, D., Johnson, S., & Robinson, J. A. (2001). The colonial origins of comparative development: An empirical investigation. American Economic Review, 91(5), 1369-1401.

Acemoglu, D., Ticchi, D., & Vindigni, A. (2010). A theory of military dictatorships. American Economic Journal: Macroeconomics, 2(1), 1-42.

Acemoglu, D., Ticchi, D., & Vindigni, A. (2011). Emergence and persistence of inefficient states. Journal of the European Economic Association, 9(2), 177-208.

Acemoglu, D. & Robinson, J. A. (2012). Why nations fail: The origins of power, prosperity and poverty (pp. 45-47). London: Profile.

Acemoglu, D., Cheema, A., Khwaja, A. I., & Robinson, J. A. (2020). Trust in state and nonstate actors: Evidence from dispute resolution in Pakistan. Journal of Political Economy, 128(8), 3090-3147.

Afrobarometer (2011). Round 5 Survey Manual, Afrobarometer.

Afrobarometer (2015). Data codebook for a Round 5 Afrobarometer survey in 34 African countries, Afrobarometer.

Aidt, T. S., & Franck, R. (2015). Democratization under the threat of revolution: Evidence from the Great Reform Act of 1832. Econometrica, 83(2), 505-547.

Alesina, A., Baqir, R., & Easterly, W. (1999). Public goods and ethnic divisions. The Quarterly Journal of Economics, 114(4), 1243-1284.

Ali, M., Fjeldstad, O. H., & Sjursen, I. H. (2014). To pay or not to pay? Citizens' attitudes toward taxation in Kenya, Tanzania, Uganda, and South Africa. World Development, 64, 828-842.

Andreoni, J., Erard, B., & Feinstein, J. (1998). Tax compliance. Journal of Economic Literature, 36(2), 818-860.

Balan, P., Bergeron, A., Tourek, G., & Weigel, J. L. (2022). Local Elites as State Capacity: How City Chiefs Use Local Information to Increase Tax Compliance in the Democratic Republic of the Congo. American Economic Review, 112(3), 762-97.

Bannelier, K., & Christakis, T. (2013). Under the UN Security Council's watchful eyes: Military intervention by invitation in the Malian conflict. Leiden Journal of International Law, 26(4), 855-874.

Becker, S. O., & Woessmann, L. (2009). Was Weber wrong? A human capital theory of Protestant economic history. The Quarterly Journal of Economics, 124(2), 531-596.

Becker, S. O., Ferrara, A., Melander, E., & Pascali, L. (2020). Wars, taxation and representation: Evidence from five centuries of German history. Centre for Economic Policy Research.

BenYishay, A., Rotberg, R., Wells, J., Lv, Z., Goodman, S., Kovacevic, L., Runfola, D. (2017). Geocoding Afrobarometer Rounds 1 - 6: Methodology & Data Quality. AidData.

Berman, E., Shapiro, J. N., & Felter, J. H. (2011). Can hearts and minds be bought? The economics of counterinsurgency in Iraq. Journal of Political Economy, 119(4), 766-819.

Besley, T. (2020). State capacity, reciprocity, and the social contract. Econometrica, 88(4), 1307-1335.

Besley, T., & Dray, S. (2024). Trust and State Effectiveness: The Political Economy of Compliance. The Economic Journal, 134(662), 2225-2251.

Besley, T., & Persson, T. (2009). The origins of state capacity: Property rights, taxation, and politics. American Economic Review, 99(4), 1218-44.

Besley, T., & Persson, T. (2010). State capacity, conflict, and development. Econometrica, 78(1), 1-34.

Besley, T., & Persson, T. (2011). Pillars of prosperity. In Pillars of Prosperity. Princeton University Press.

Besley, T., & Persson, T. (2014). The causes and consequences of development clusters: State capacity, peace, and income. Annual Review of Economics, 6(1), 927-949.

Besley, T., & Persson, T. (2014). Why do developing countries tax so little? Journal of Economic Perspectives, 28(4), 99-120.

Besley, T., Ilzetzki, E., & Persson, T. (2013). Weak states and steady states: The dynamics of fiscal capacity. American Economic Journal: Macroeconomics, 5(4), 205-35.

Besley, T., Jensen, A., & Persson, T. (2023). Norms, enforcement, and tax evasion. Review of Economics and Statistics, 105(4), 998-1007.

Blouin, A., & Mukand, S. W. (2019). Erasing ethnicity? Propaganda, nation building, and identity in Rwanda. Journal of Political Economy, 127(3), 1008-1062.

Callen, M., Weigel, J. L., & Yuchtman, N. (2024). Experiments about institutions. Annual Review of Economics, 16.

Cantoni, D., Mohr, C., & Weigand, M. (2024). The Rise of Fiscal Capacity: Administration and State Consolidation in the Holy Roman Empire. Econometrica, 92(5), 1439-1472.

Chauvin, J. P., Glaeser, E., Ma, Y., & Tobio, K. (2017). What is different about urbanization in rich and poor countries? Cities in Brazil, China, India and the United States. Journal of Urban Economics, 98, 17-49.

Colella, F., Lalive, R., Sakalli, S. O., & Thoenig, M. (2023). acreg: Arbitrary correlation regression. The Stata Journal, 23(1), 119-147.

Dell, M., & Querubin, P. (2017). Nation building through foreign intervention: Evidence from discontinuities in military strategies. The Quarterly Journal of Economics, 133(2), 701-764.

Depetris-Chauvin, E., Durante, R., & Campante, F. R. (2020). Building Nations Through Shared Experiences: Evidence from African Football. American Economic Review, 110(5), 1572-1602.

Di Salvatore, J., Lundgren, M., Oksamytna, K., & Smidt, H. M. (2022). Introducing the peacekeeping mandates (PEMA) dataset. Journal of Conflict Resolution, 66(4-5), 924-951.

Eifert, B., Miguel E., and Posner D.N. (2010). Political competition and ethnic identification in Africa. American Journal of Political Science, 54 (2), 494-510.

Gennaioli, N., & Voth, H. J. (2015). State capacity and military conflict. The Review of Economic Studies, 82(4), 1409-1448.

Hall B. S. (2011). A History of Race in Muslim West Africa, 1600-1960. Cambridge University Press.

Herbst, J. (2000). States and power in Africa. Princeton University Press.

Imbens, G. W., & Lemieux, T. (2008). Regression discontinuity designs: A guide to practice. Journal of Econometrics, 142(2), 615-635.

Imbens, G. W., & Wooldridge, J. M. (2009). Recent developments in the econometrics of program evaluation. Journal of Economic Literature, 47(1), 5-86.

Imbens, G. W., & Rubin, D. B. (2015). Causal inference in statistics, social, and biomedical sciences. Cambridge University Press.

Konrad, K. A., & Qari, S. (2012). The last refuge of a scoundrel? Patriotism and tax compliance. Economica, 79(315), 516-533.

Luttmer, E. F., & Singhal, M. (2014). Tax morale. Journal of Economic Perspectives, 28(4), 149-68.

Manacorda, M., & Tesei, A. (2020). Liberation technology: Mobile phones and political mobilization in Africa. Econometrica, 88(2), 533-567.

Roberts, R. L. (1987). Warriors, merchants and slaves: the state and the economy in the Middle Niger Valley, 1700-1914. Stanford, CA: Stanford University Press

Robinson, J. A. (2023). Tax aversion and the social contract in Africa. Journal of African Economies, 32(Supplement1), i33-i56.

Sanchez De La Sierra, R. (2020). On the origins of the state: Stationary bandits and taxation in eastern Congo. Journal of Political Economy, 128(1), 32-74.

Weigel, J. L. & Ngindu E. K. (2023). The taxman cometh: Pathways out of a low capacity trap in the Democratic Republic of the Congo. Economica, 90(360), 1362-1396.

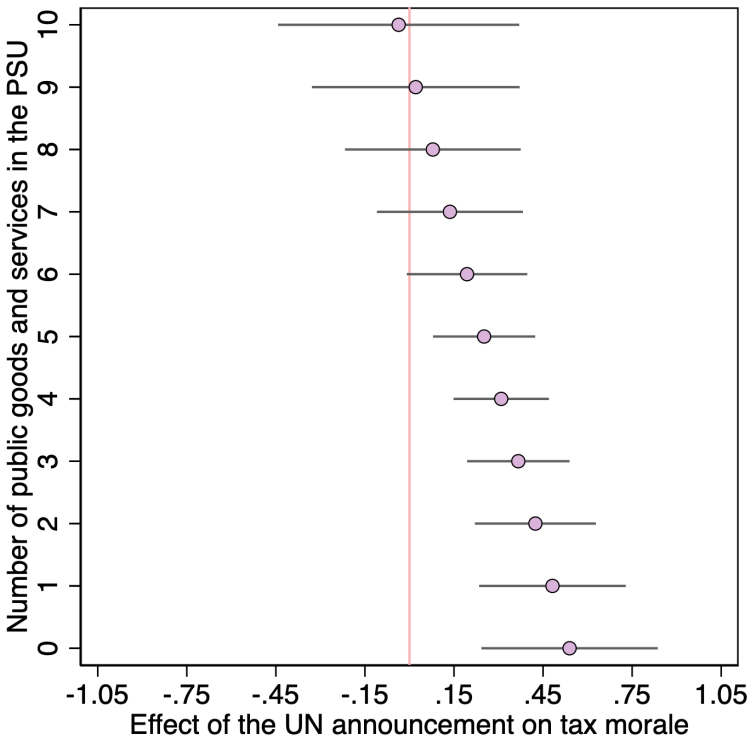
Weigel, J. L. (2020). The participation dividend of taxation: How citizens in Congo engage more with the state when it tries to tax them. The Quarterly Journal of Economics, 135(4), 1849-1903.

Wing, S. D. (2013). Mali: Politics of a crisis. African Affairs, 112(448), 476-485.

World Bank (2003). World development report 2004: making services work for poor people. The World Bank.

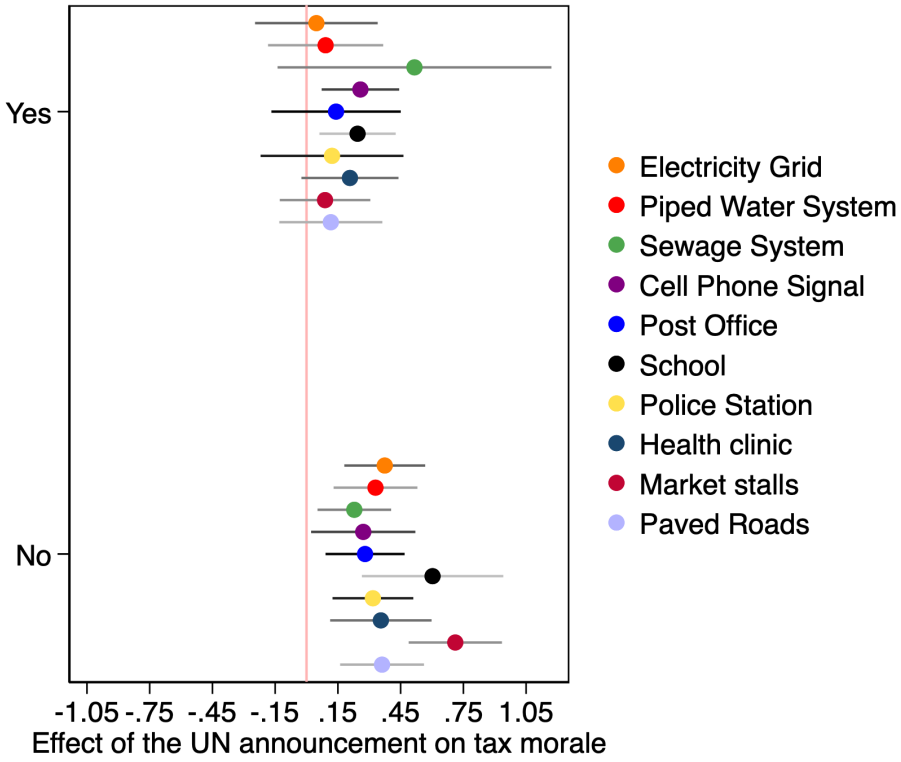
Yanagizawa-Drott, D. (2014). Propaganda and conflict: Evidence from the Rwandan genocide. The Quarterly Journal of Economics, 129(4), 1947-1994.

Figure 4: Marginal effects of the UNSC resolution announcement on tax morale in PSUs with a different degree of state capacity.



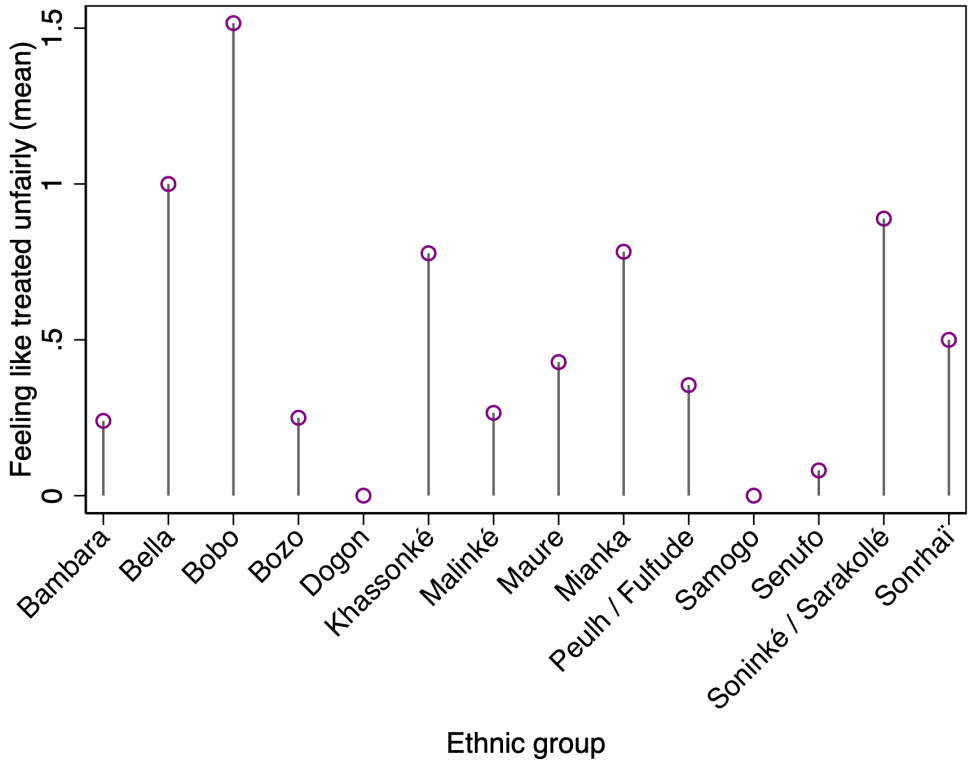
Notes. 0 denotes a PSU without any public goods provided; 12 denotes a PSU with electric power, piped water, a sewage system, a post-office, a school, a police station, a health clinic, market stalls, and tarred or paved roads. A cell phone signal is also available. 95% confidence intervals are drawn around the point estimate (the colored circle), based on heteroskedastic-robust standard errors clustered at the PSU level. The length of the x-axis from the origin equals a standard deviation in tax morale.

Figure 5: Marginal effects of the UNSC resolution announcement on tax morale in PSUs with and without specific public services.



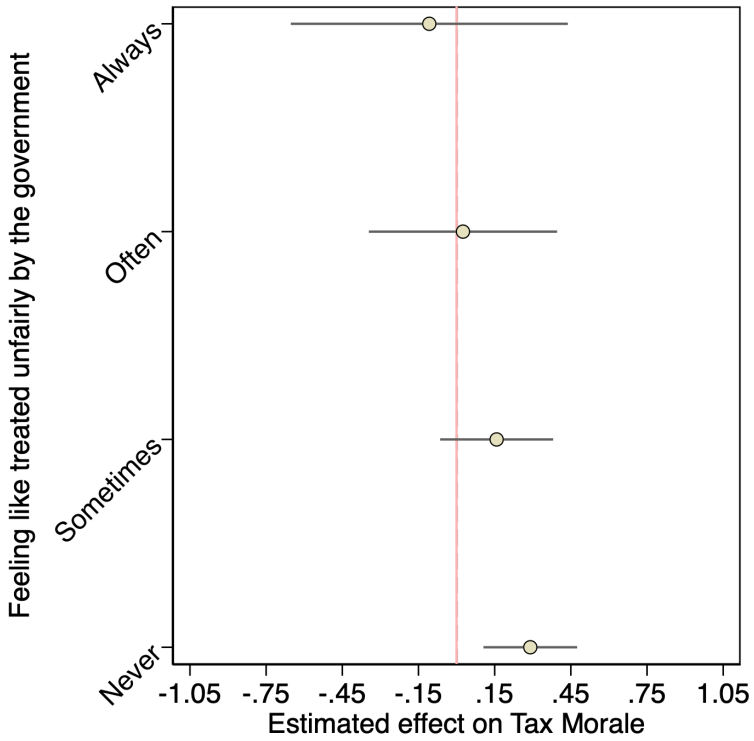
Notes. "No" indicates absence of the public service, "Yes" indicates its presence. 95% confidence intervals are plotted around the point estimate (the colored circle), based on heteroskedastic-robust standard errors clustered at the PSU level. The length of the x-axis from the origin equals a standard deviation in tax morale.

Figure 6: Ethnic group level mean values of the variable "Feeling treated unfairly by the government"



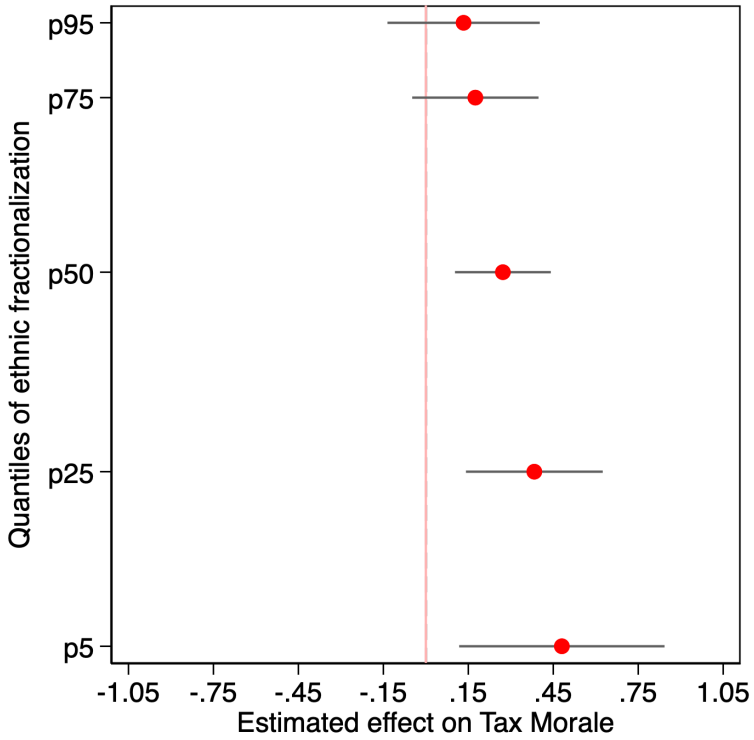
Notes. In the vertical axis is the ethnic-group mean values of the variable Q85A ("*How often is the respondent's ethnic group treated unfairly by the government?*"). 0 means "Never"; 1 "Sometimes"; 2 "Often"; 3 "Always."

Figure 7: Marginal effects of the UNSC resolution announcement on tax morale for various intensities of perceived discrimination.



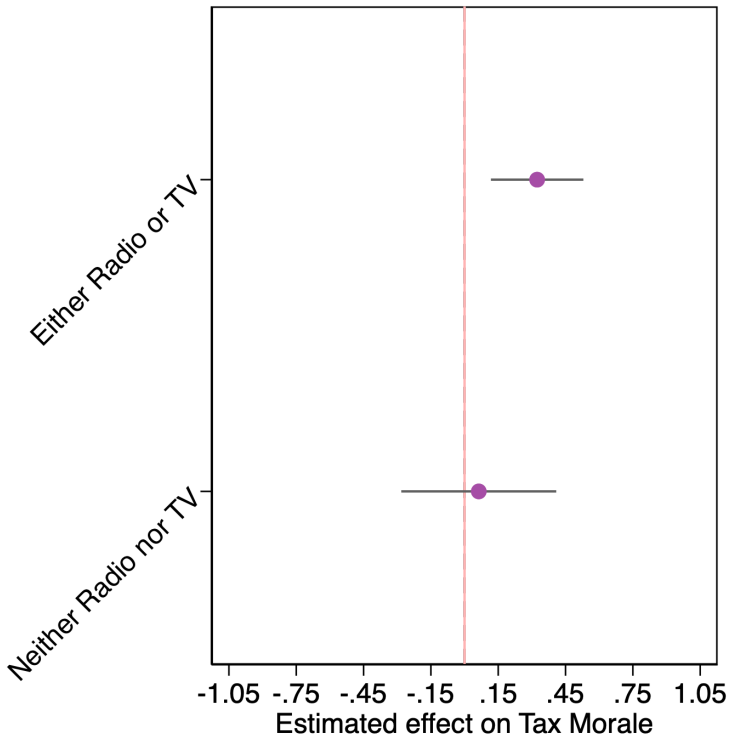
Notes. Point marginal estimates are depicted by gold-colored circles. 95% confidence intervals are based on heteroskedastic-robust standard errors clustered at the PSU level. The length of the x-axis from the origin equals a standard deviation in tax morale.

Figure 8: The effect of the UNSC resolution announcement on tax morale on various ethnic diversity levels



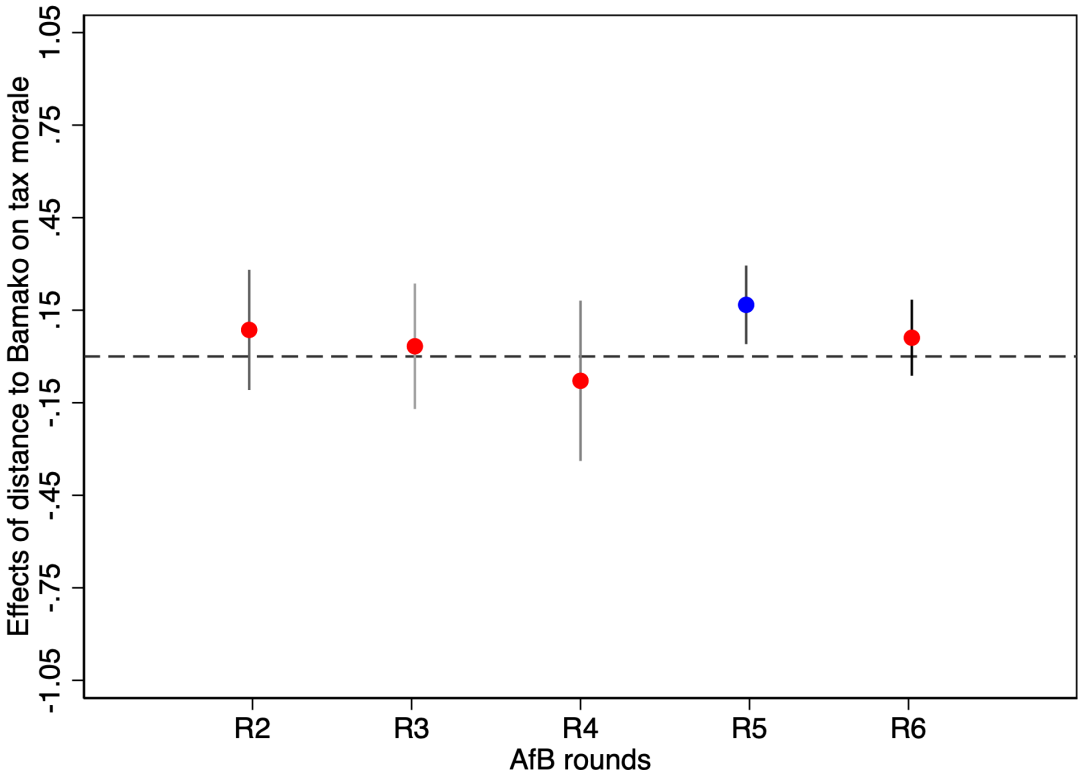
Notes. In the vertical axes is five quantiles of the PSU-level distribution according to the index of ethnic fractionalization. Point marginal estimates are depicted by red-colored circles. 95% confidence intervals are based on heteroskedastic-robust standard errors clustered at the PSU level. The length of the x-axis from the origin equals a standard deviation in tax morale.

Figure 9: Marginal effects of the UNSC resolution announcement on tax morale according to news exposure.



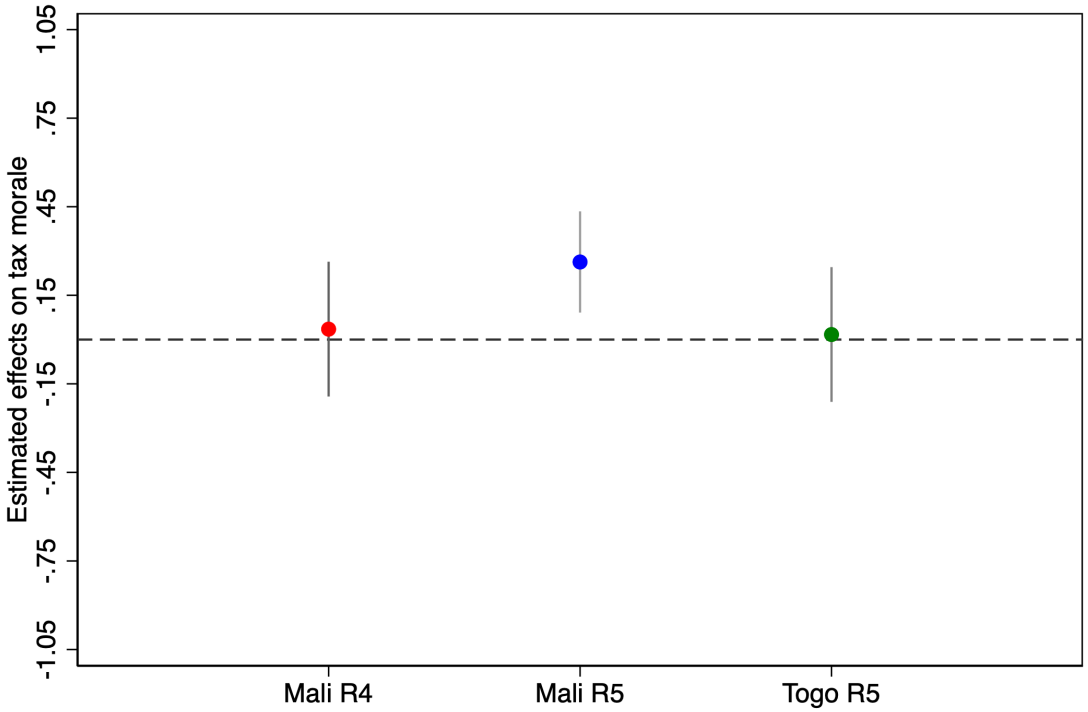
Notes. Point marginal estimates are depicted by violet-colored circles. 95% confidence intervals are based on heteroskedastic-robust standard errors clustered at the PSU level. The length of the x-axis from the origin equals a standard deviation in tax morale.

Figure 10: The effect of the distance to Bamako on tax morale through various AfB rounds



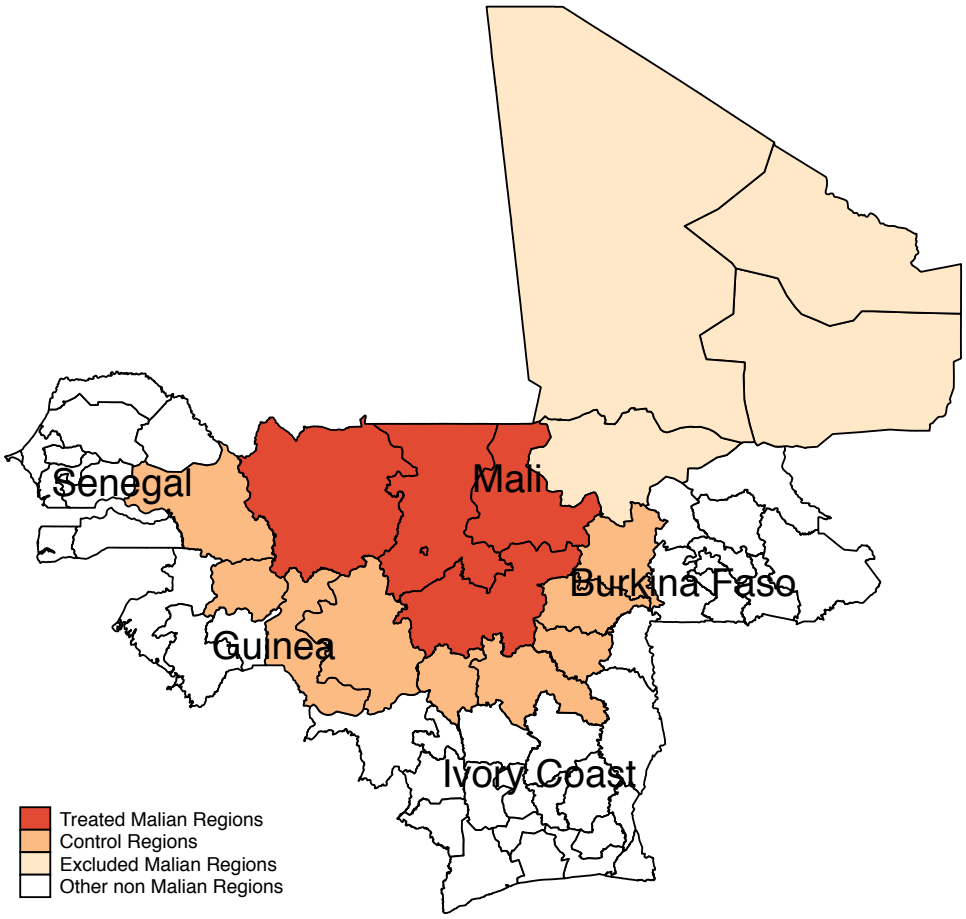
Notes. These are the regression estimates that are displayed in Online Appendix Table A8. We note that regressions do not include the number of public goods as such information is not available for rounds 2 and 3. 95% confidence intervals are drawn around the point estimate (the dot), based on heteroskedastic-robust standard errors clustered at the PSU level. The length of the y-axis from the origin is equal to a standard deviation in tax morale.

Figure 11: Placebo effects on tax morale



Notes. The red dot is the placebo effect on tax morale of being interviewed after the day 2008/12/20 (as reported in column 3 of Online Appendix Table A11). The blue dot is the effect on tax morale of the UNSC resolution announcement in Mali (as reported in column 7 of Table 3). The green dot is the effect on tax morale of the UNSC resolution announcement in Togo (as reported in column 3 of Online Appendix Table A12). Vertical bands draw 95% confidence intervals computed from standard errors clustered at the PSU level. The length of the y-axis from the origin equals a standard deviation in tax morale.

Figure 12: Treated and control regions



Notes. Graphical accounting of the difference-in-difference set-up. Red regions are Malian regions not involved in the conflict. Light salmon regions are Malian regions involved in the conflict, populated by Tuareg ethnic groups, and hence excluded from the analysis. Orange regions are neighbor regions of Senegal, Guinea, Ivory Coast, and Burkina Faso that share one border and the ethnic composition with the treated Malian regions (Mauritania, in the North, is not surveyed by AfB-5). They account for our control group.

Table 1: Balance in covariates

	(1) Difference	(2) $t-$statistics	(3) Normalized Difference
Respondents' characteristics			
Male	-0.001	-0.10	-0.001
Age	-0.466	-0.38	-0.022
Rural	-0.135	-1.27	-0.212
Unemployed	-0.053	-1.86	-0.105
Education	0.281	0.78	0.087
Religious Group Member	-0.034	-0.50	-0.031
Major Ethnicity	0.107	1.20	0.160
Public Goods Provided	0.408	0.65	0.109
Interviewers' characteristics			
Male	0.010	0.39	0.014
Education	-0.007	-0.31	-0.023
Same Language	-0.010	-0.18	-0.014
Influenced by Others	-0.002	-0.21	-0.014
Observations	683	683	683

Column 1 reports estimates from regressing each covariates to the dummy $Post^{UN}$, equals to 1 if the interview has taken place the days after the adoption of the UN resolution. Column 2 reports the $t-$statistics. Robust standard errors clustered at the PSU level in parentheses. Column 3 report normalized difference for establishing unconfoundedness (see Imbens and Wooldridge, 2009).

Table 2: Balance in state capacity measures

	(1) Difference	(2) $t-$statistics	(3) Normalized Difference
Electricity grid in the PSU	0.058	0.58	0.091
Piped water system in the PSU	0.127	1.21	0.190
Sewage system in the PSU	0.059	0.85	0.132
Cell phone service in the PSU	0.006	0.09	0.014
Post office in the PSU or in walking distance	-0.011	-0.21	-0.033
School in the PSU or in walking distance	-0.030	-0.65	-0.100
Police station in the PSU or in walking distance	0.023	0.25	0.040
Health Clinic in the PSU or in walking distance	-0.067	-0.61	-0.097
Market stalls in the PSU or in walking distance	-0.076	-0.69	-0.109
Tarred or paved road	0.017	0.16	0.025
Observations	83	83	83

Column 1 reports estimates from regressing each covariates to the dummy $Post^{UN}$, equals to 1 if the interview has taken place the days after the adoption of the UN resolution. Column 2 reports the $t-$statistics. Robust standard errors in parentheses. Column 3 report normalized difference for establishing unconfoundedness (see Imbens and Wooldridge, 2009).

Table 3: Tax morale before and after the UN resolution announcement

	Dependent variable is: Tax morale						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Post^{UN}$	0.180*	0.174**	0.183**	0.202**	0.176**	0.220**	0.263***
	(0.091)	(0.087)	(0.085)	(0.093)	(0.077)	(0.088)	(0.085)
Respondents' Characteristics	No	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers' Characteristics	No	No	Yes	Yes	Yes	Yes	Yes
Language FE	No	No	No	Yes	No	Yes	No
Region FE	No	No	No	No	Yes	Yes	No
Language × Region FE	No	No	No	No	No	No	Yes
Observations	701	700	700	700	700	700	683
R^2	0.007	0.045	0.051	0.071	0.085	0.101	0.127

Dependent variable is tax morale. The unit of observation is the respondent individual. Columns 2 to 8 include age (and its square), a dummy if male, if rural, if unemployed, if a member of a religious group, if a member of the major ethnic group, the educational level, and the number of public services provided in the PSU. Columns 3 to 8 also include interviewers' characteristics, such as the gender, the education level, whether the interviewer speaks the same language as the interviewee, whether the interviewer thinks the pattern of responses has been influenced by others. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 4: Other dimensions of tax morale

	Dependent variable is:		
	(1)	(2)	(3)
	I would never evade taxes	I would evade if had chances	Evasion must be punished
$Post^{UN}$	0.121***	-0.095***	0.050
	(0.039)	(0.032)	(0.039)
Respondents' Characteristics	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes
Observations	678	678	679
R^2	0.143	0.099	0.240

Dependent variable is tax morale. The unit of observation is the respondent individual. All the columns include age (and its square), a dummy if male, if rural, if unemployed, if a member of a religious group, if a member of the major ethnic group, the educational level, and the number of public services provided in the PSU. They also include interviewers' characteristics, such as gender, the education level, whether the interviewer speaks the same language as the interviewee, whether the interviewer thinks the pattern of responses has been influenced by others. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 5: Additional outcomes

	Dependent variable is:				
	Patriotism	Perceived Fiscal capacity	State-actors Protection	National Identity	Help from African Union
	(1)	(2)	(3)	(4)	(5)
$Post^{UN}$	0.303***	0.155**	0.096***	-0.064	0.252**
	(0.107)	(0.060)	(0.035)	(0.051)	(0.119)
Respondents' Characteristics	Yes	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes	Yes
Observations	685	613	682	682	620
R^2	0.091	0.152	0.373	0.129	0.234

The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 6: Perceived corruption before and after the UN resolution announcement

	Dependent variable is: Perceived corruption						
	State agencies				Political agencies		
	Tax Officials	Police	Judges	Govt Officials	President Office	Loc Govt Councilors	MPs
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Post^{UN}$	-0.214**	-0.155*	-0.170**	-0.139	-0.079	-0.152	-0.045
	(0.098)	(0.088)	(0.076)	(0.086)	(0.085)	(0.110)	(0.089)
Respondents' Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	631	644	629	635	628	645	627
R^2	0.107	0.132	0.121	0.108	0.091	0.108	0.102

The unit of observation is the respondent individual. All the columns include age (and its square), a dummy if male, if rural, if unemployed, if a member of a religious group, if a member of the major ethnic group, the educational level, and the number of public services provided in the PSU. They also include interviewers' characteristics, such as gender, the education level, whether the interviewer speaks the same language as the interviewee, whether the interviewer thinks the pattern of responses has been influenced by others. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 7: Tax morale before and after the UN resolution announcement: IV results based on distance to Bamako

	(1) OLS	(2) 1st stage	(3) 2nd stage	(4) Reduced form
	Tax Morale	$Post^{UN}$	Tax Morale	Tax Morale
$Post^{UN}$	0.311***		0.359***	
	(0.106)		(0.127)	
Distance to Bamako		0.450***		0.162**
		(0.050)		(0.064)
Kleibergen-Paap F-statistic		81.174		
Respondents' Characteristics	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes
Observations	407	407	407	407
R^2	0.221	0.685	0.221	0.216

Dependent variable is tax morale. The unit of observation is the respondent individual. All columns include age (and its square), a dummy if male, if rural, if unemployed, if a member of a religious group, if a member of the major ethnic group, the educational level, and the number of public services provided in the PSU. They also include interviewers' characteristics, such as the gender, the education level, whether the interviewer speaks the same language as the interviewee, whether the interviewer thinks the pattern of responses has been influenced by others. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table 8: Tax morale before and after the UN resolution announcement: Difference-in-difference estimates

	Dependent variable is Tax Morale			
	(1)	(2)	(3)	(4)
$Post^{UN}$	-0.439***	-0.356***	-0.205	-0.251*
	(0.099)	(0.104)	(0.139)	(0.140)
I[Mali]	0.184*	0.111	-0.159	0.003
	(0.099)	(0.115)	(0.178)	(0.222)
$Post^{UN} \times I$[Mali]	0.618***	0.516***	0.361**	0.420**
	(0.131)	(0.133)	(0.163)	(0.163)
Respondents' Characteristics	No	Yes	No	Yes
Interviewers' Characteristics	No	Yes	No	Yes
Language FE	No	No	Yes	Yes
Observations	1844	1823	1844	1823
R^2	0.082	0.115	0.137	0.150

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

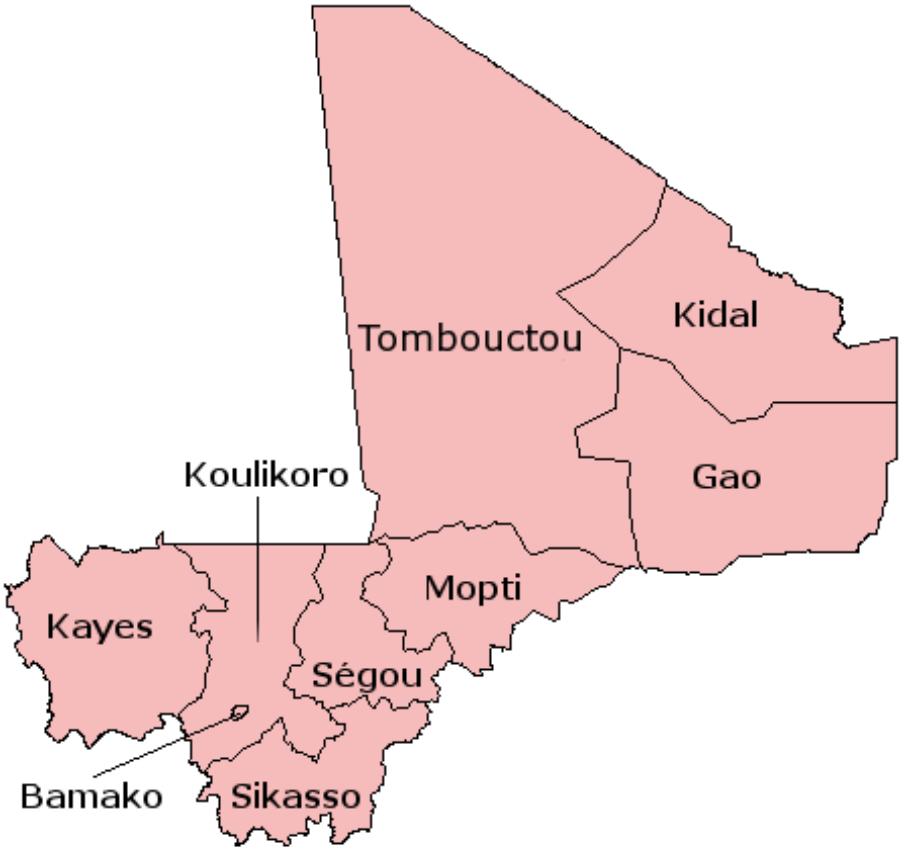
Online Appendix

Expected foreign military intervention and demand for state-building: Evidence from Mali

by *Alessandro Belmonte*
Desiree Teobaldelli
Davide Ticchi

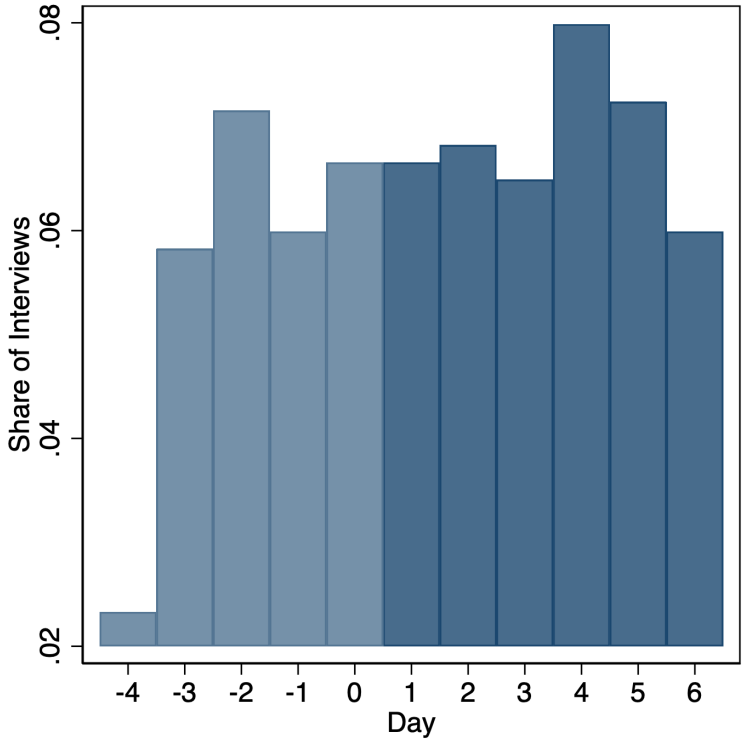
A Additional figures and tables

Figure A1: Map of Mali, with ADM1 division



Notes. This file is licensed by Wikipedia under the Creative Commons Attribution-Share Alike 3.0 Unported license.

Figure A2: Distribution of interviewees across days



Notes. Boxes in light blue indicate the share of interviewees *before* the announcement of the foreign intervention. Boxes in dark blue indicate the share of interviewees *after* the announcement of the foreign intervention. Day 0 is 2012/12/20.

Figure A3: Interviewees' distribution according to their tax morale level

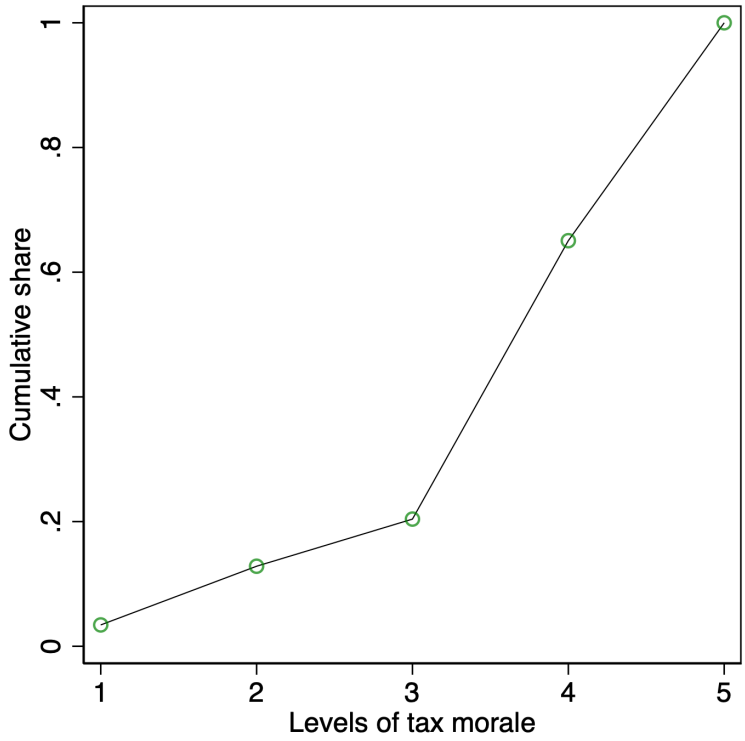


Figure A4: PSUs' distribution according to the ethnic fractionalization index

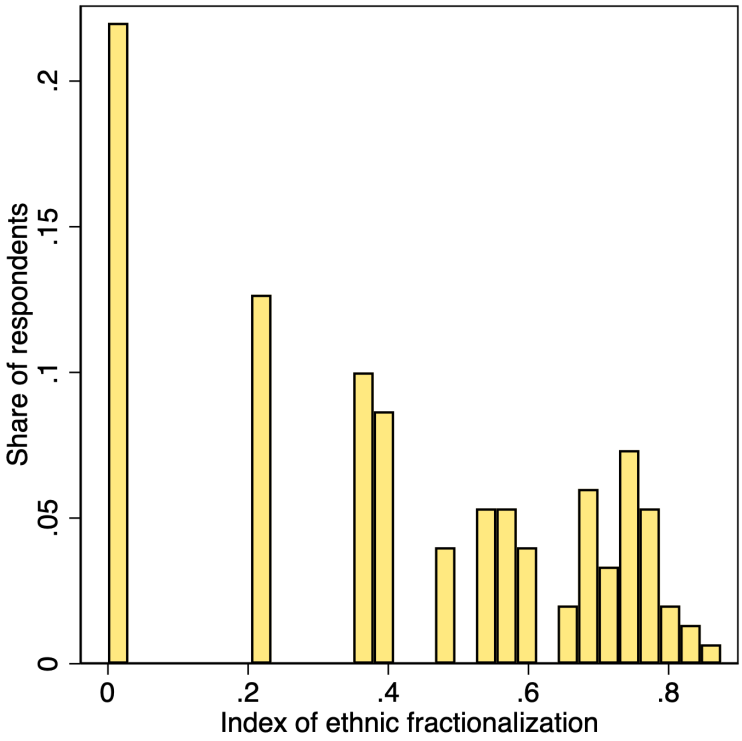
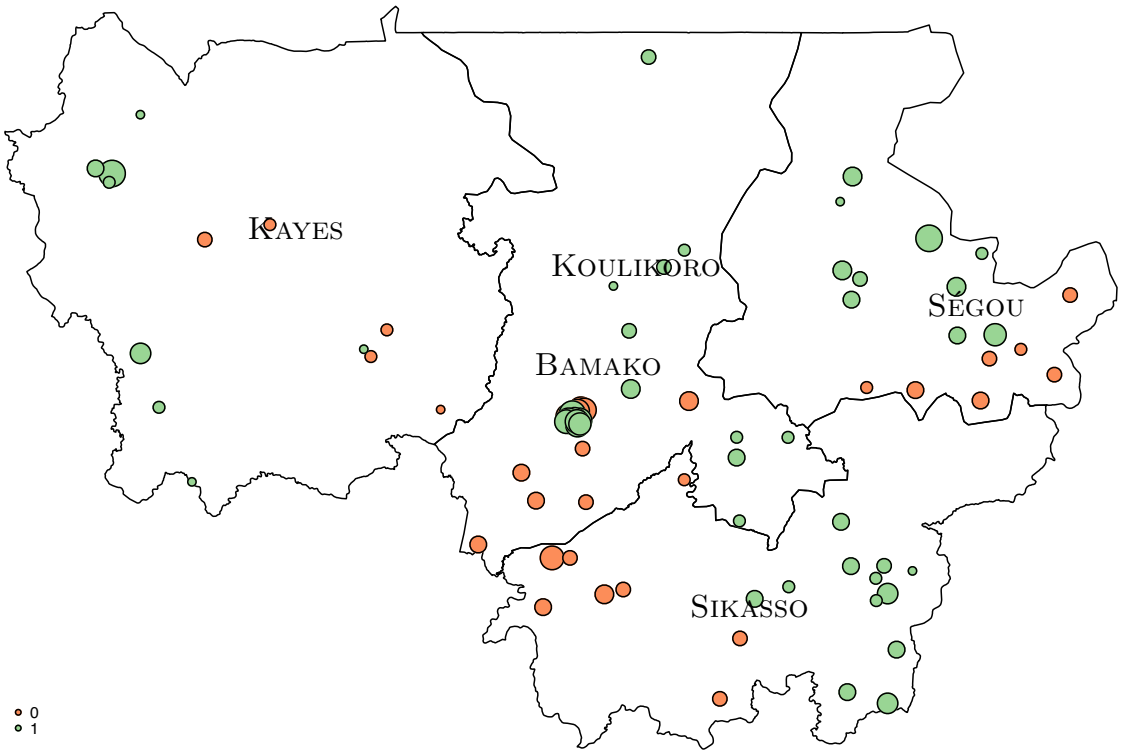


Figure A5: Geographical distribution of PSUs by treatment and state presence intensity



Notes. Treated PSUs are in green, control PSUs are in orange. Dots are proportional to the number of public goods and services available in the PSU.

Figure A6: PSUs' cumulative distribution according to the number of public goods and services

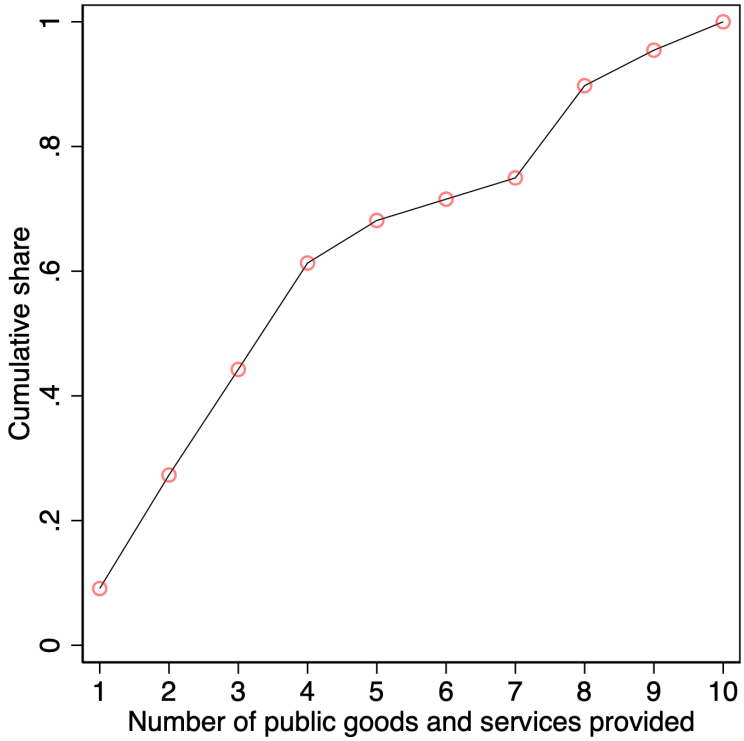
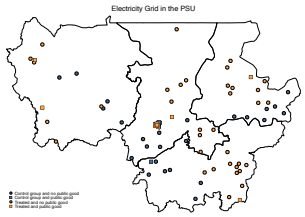
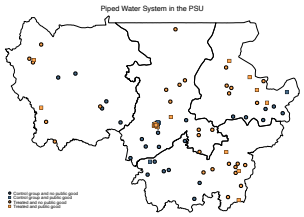


Figure A7: Geographical distribution of PSUs by treatment and availability of specific public goods

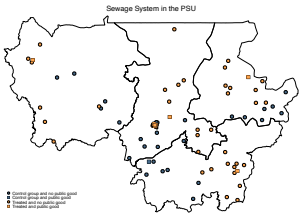
(a) Electricity grid



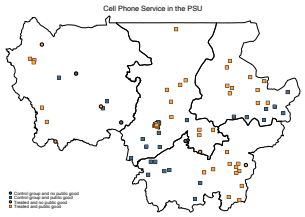
(b) Piped water



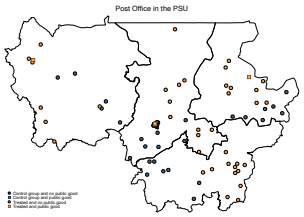
(c) Sewage



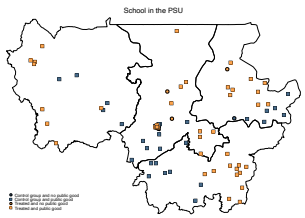
(d) Cell phone service



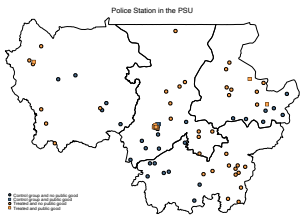
(e) Post office



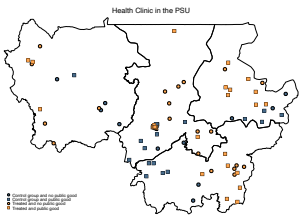
(f) School



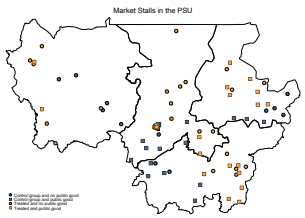
(g) Police station



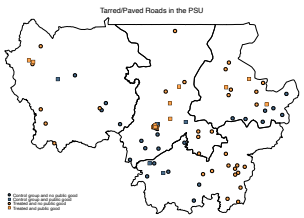
(h) Health clinic



(i) Market stalls

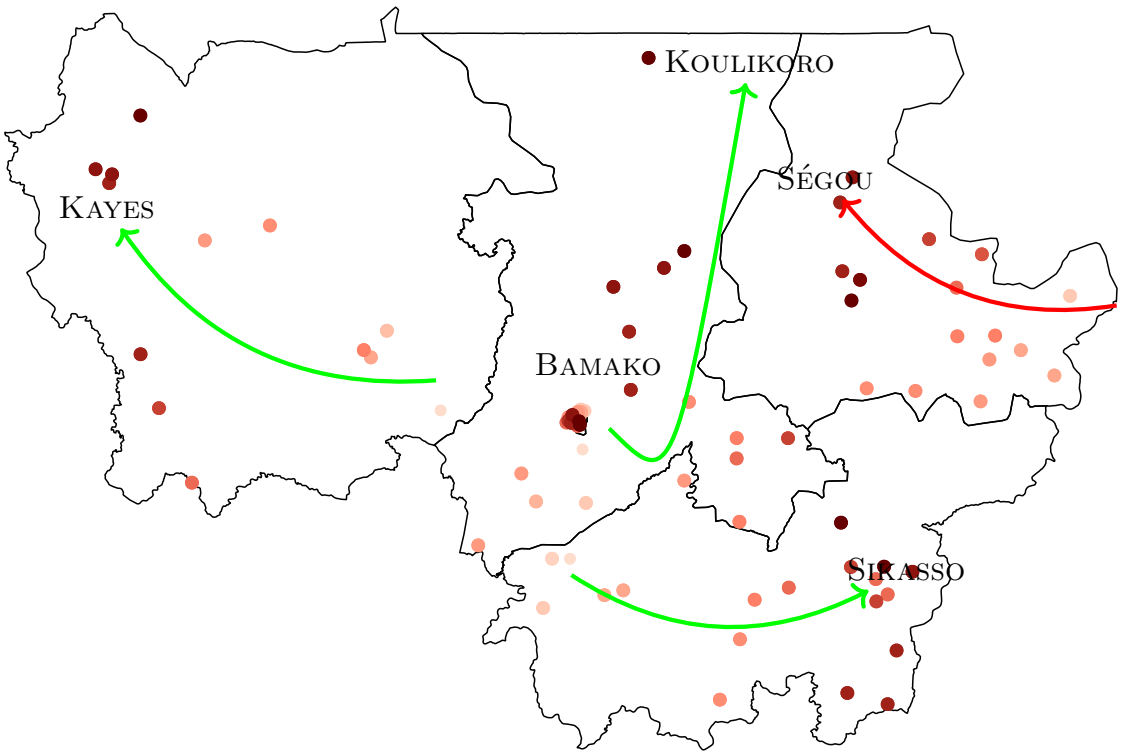


(j) Tarred or paved roads



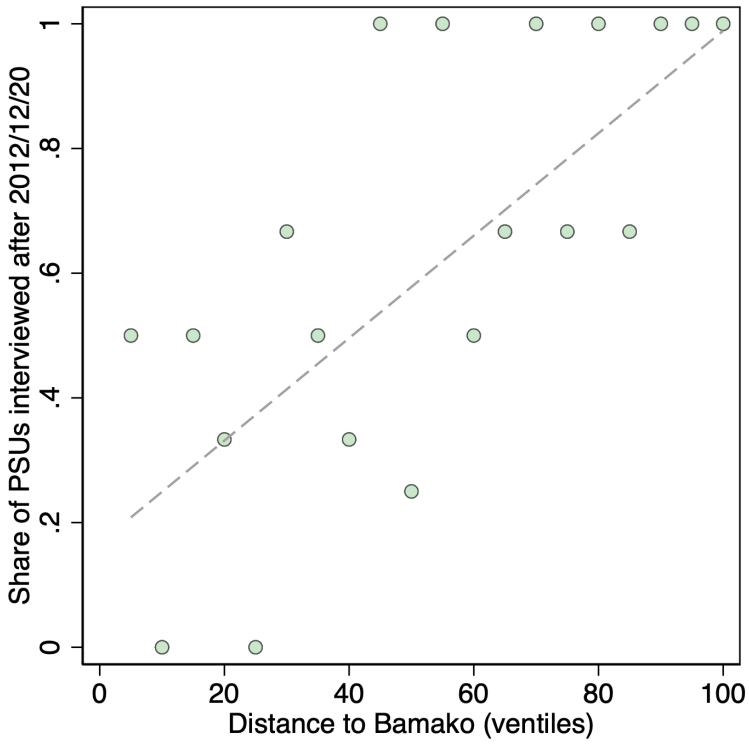
Notes. Treated PSUs are in orange, control PSUs are in navy. Circles indicate PSUs where the public good is not available; squares PSUs where the public good is available.

Figure A8: Sampled villages' location, interview date, and survey rollout routes



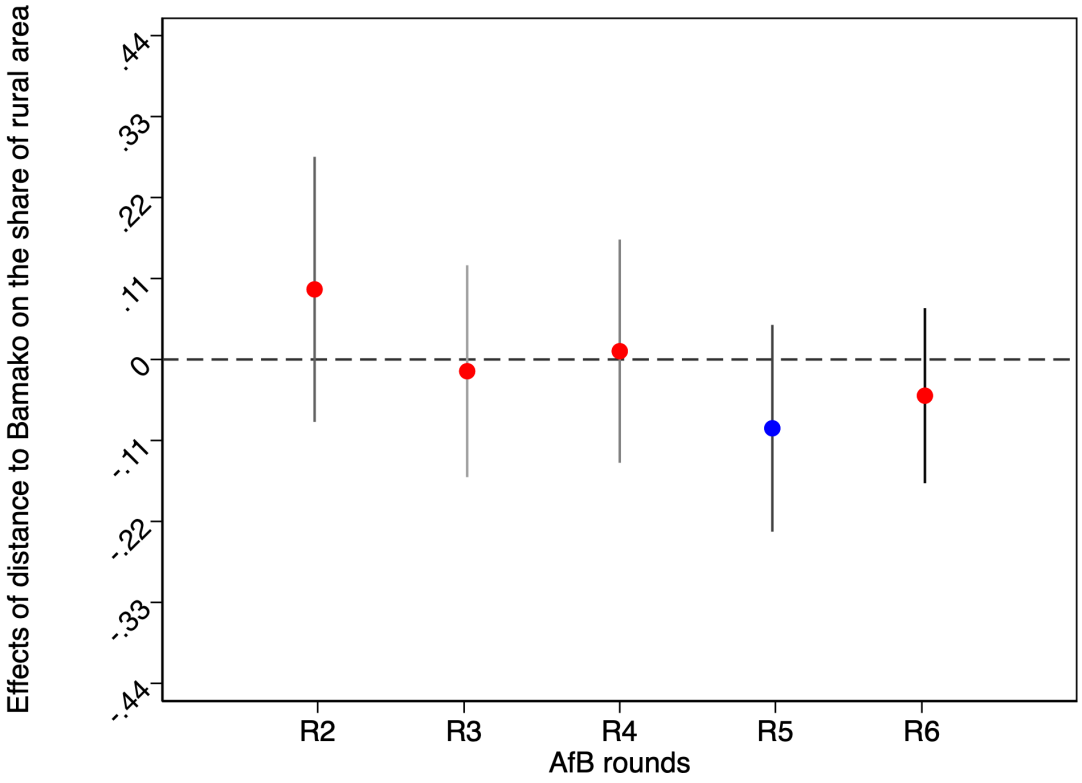
Notes. Darker shades indicate a date of interview closed to December 26th 2012. The capital region of Bamako is easily identifiable by the density of sampled PSUs. Arrows show the temporal and spatial patterns of the interviews. The regions of Ségou is the only one in which the AfB interview team did not start from Bamako (indicated by the red arrow).

Figure A9: Distance to Bamako and the share of treated PSUs



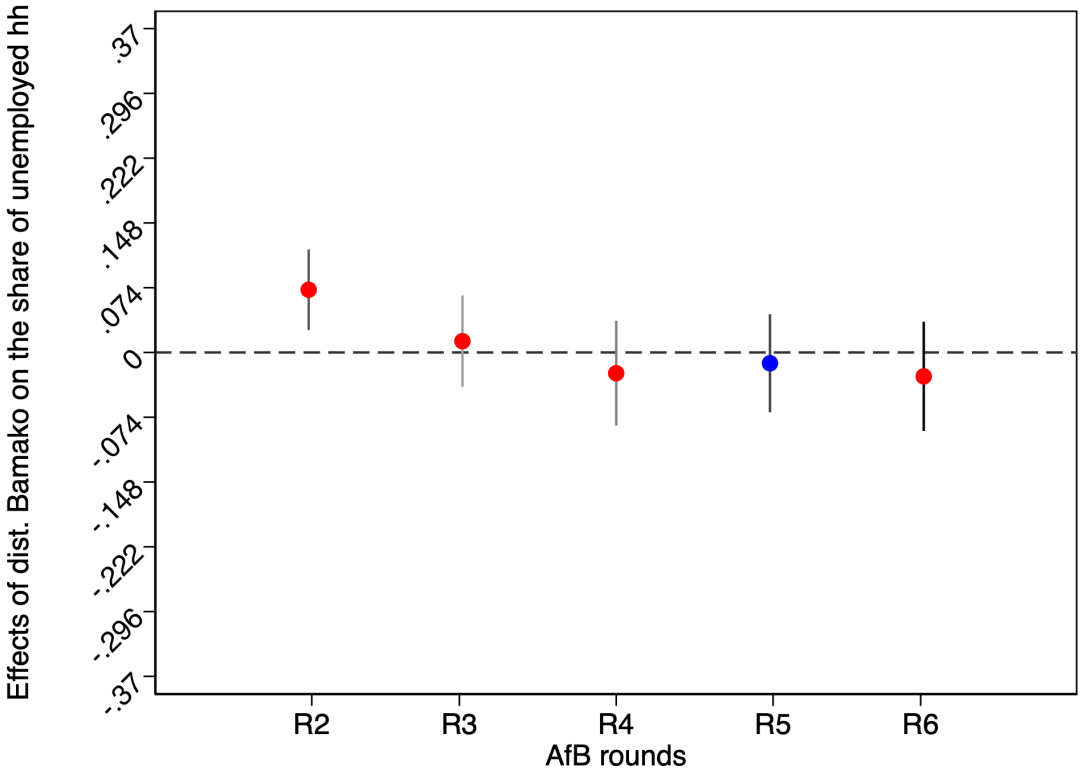
Notes. The distance to Bamako is the Euclidian distance between the PSU and the center of Bamako. Each bin is a ventile of the PSUs distribution.

Figure A10: The effect of the distance from Bamako on the share of rural PSUs through various AfB waves



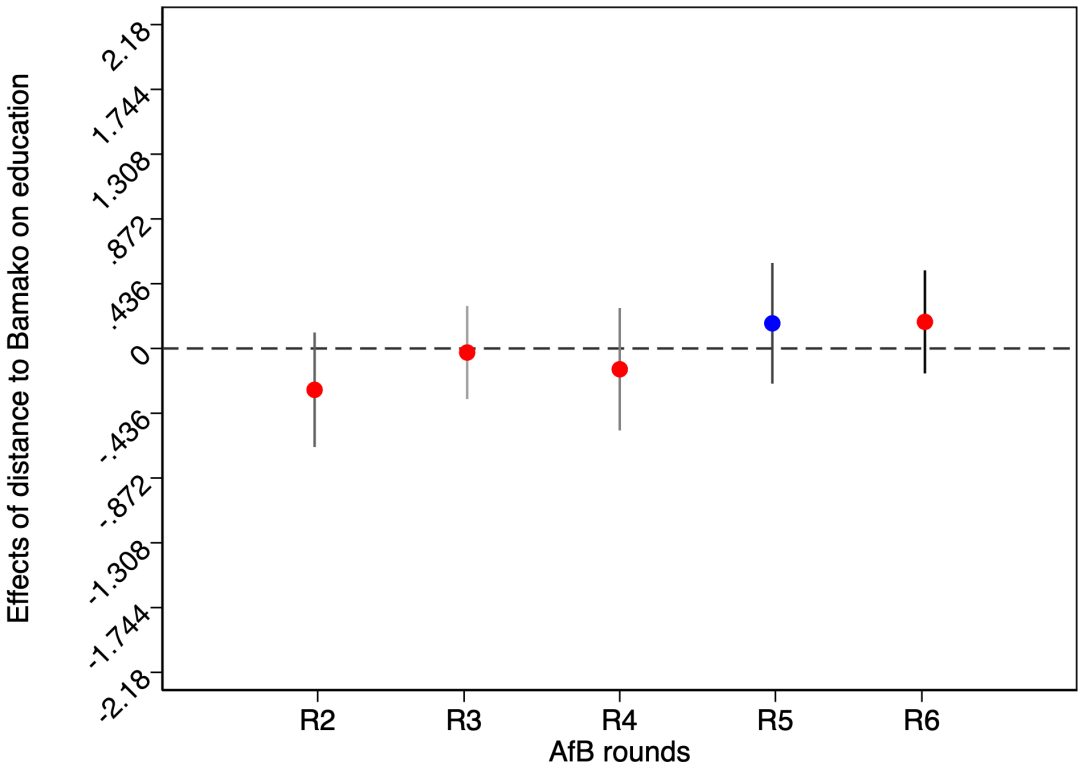
Notes. Each point estimate is obtained from a regression of a dummy indicating the rural status of the PSU where the respondent lives on the distance of the PSU to Bamako. Regressions also control for ethnic group-by-region fixed effects. 95% confidence intervals are drawn around the point estimate (the dot), based on heteroskedastic-robust standard errors clustered at the PSU level.

Figure A11: The effect of the distance from Bamako on the share of unemployed households through various AfB waves



Notes. Each point estimate is obtained from a regression of a dummy indicating the employment status of the respondent (whether is employed in the formal labor market) on the distance of the PSU to Bamako. Regressions also control for ethnic group-by-region fixed effects. 95% confidence intervals are drawn around the point estimate (the dot), based on heteroskedastic-robust standard errors clustered at the PSU level.

Figure A12: The effect of the distance from Bamako on education through various AfB waves



Notes. Each point estimate is obtained from a regression of the respondent's education level on the distance of the PSU to Bamako. Regressions also control for ethnic group-by-region fixed effects. 95% confidence intervals are drawn around the point estimate (the dot), based on heteroskedastic-robust standard errors clustered at the PSU level.

Figure A13: Distribution of temperatures by regions and days

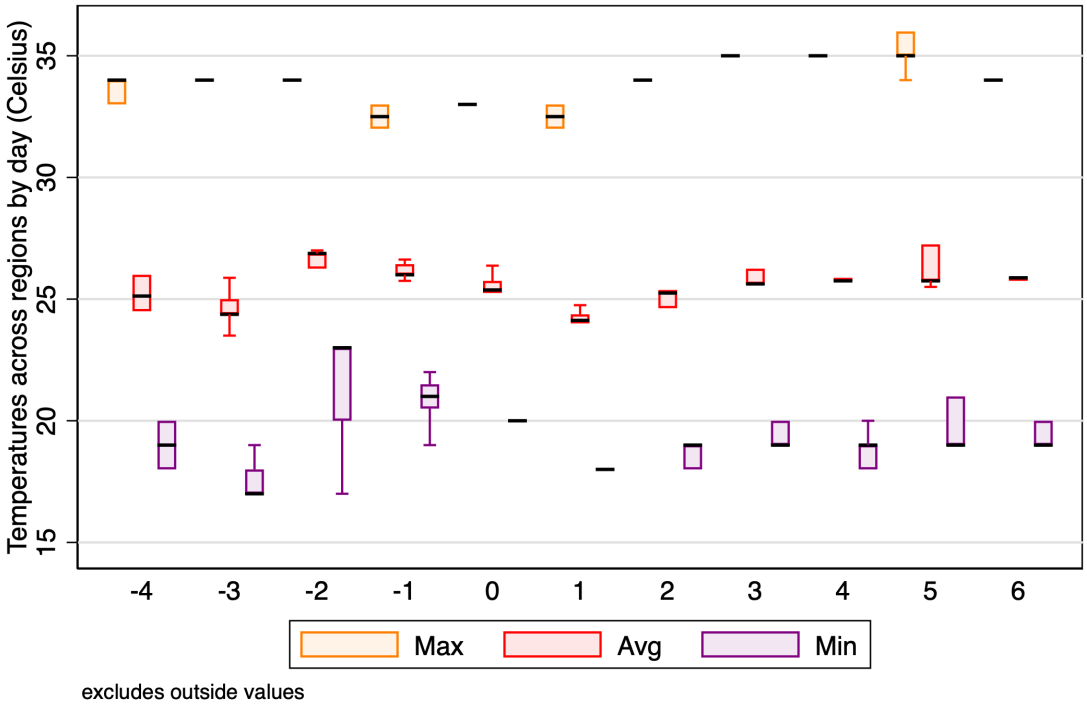


Figure A14: Distribution of cloud coverage by regions and days

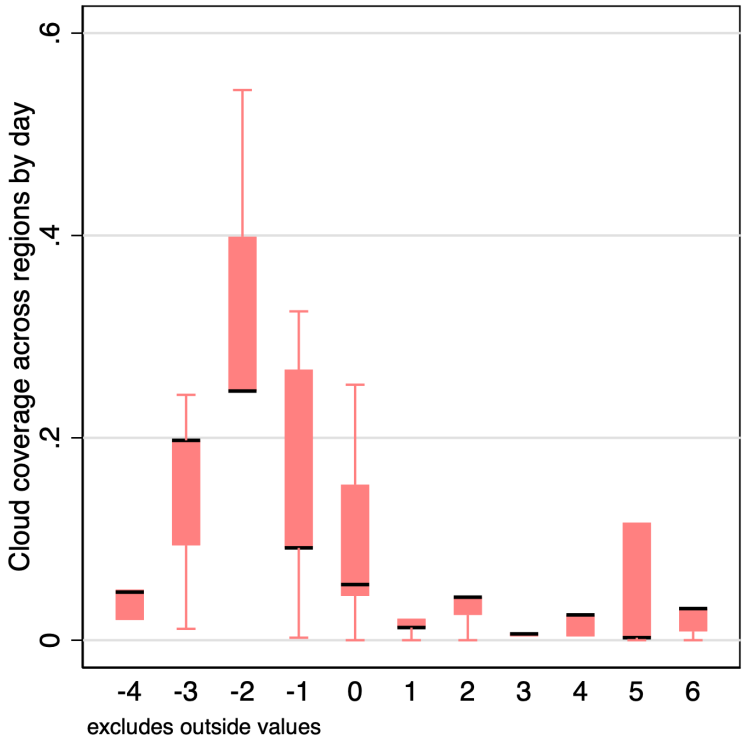


Figure A15: Distribution of humidity by regions and days

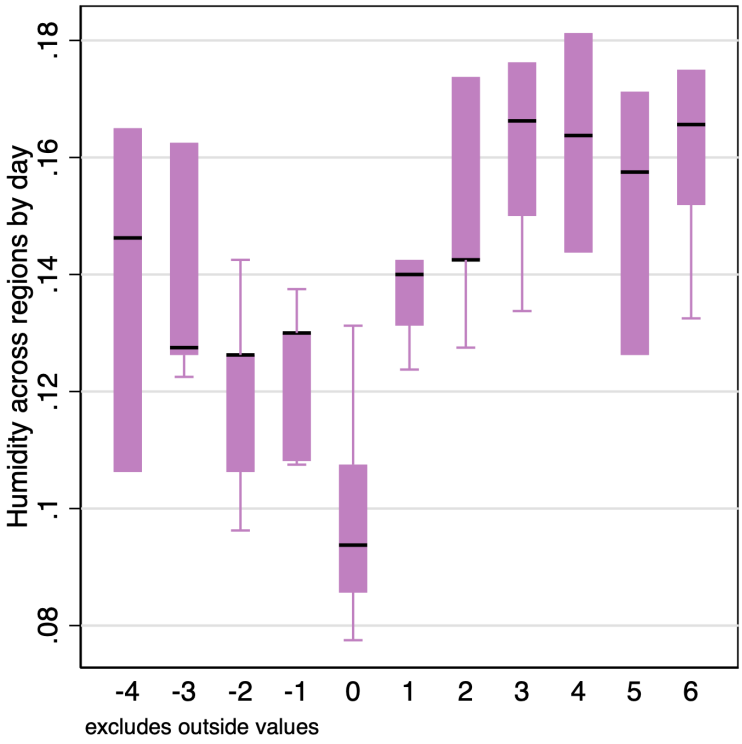


Table A1: Summary statistics for the main outcomes and right-hand side variables

	mean	sd	min	max	count
Outcome variables					
Tax morale	3.993	1.048	1.000	5.000	683
Other attitudes towards taxes:					
Never evade taxes	0.827	0.378	0.000	1.000	677
Evade if had chance	0.139	0.346	0.000	1.000	677
Evasion must be punished	0.663	0.473	0.000	1.000	677
Perceived corruption:					
Tax department	1.544	1.013	0.000	3.000	631
Police	1.572	0.984	0.000	3.000	643
Judges	1.670	0.984	0.000	3.000	630
All civil servants	1.686	0.933	0.000	3.000	634
President (or President office)	1.737	0.956	0.000	3.000	627
Local government	1.470	1.010	0.000	3.000	644
Members of the Parliament	1.621	0.953	0.000	3.000	626
Patriotism	4.594	0.895	1.000	5.000	683
Perceived fiscal capacity	3.309	0.709	1.000	4.000	611
State-actors protection	0.344	0.475	0.000	1.000	681
National identity	0.543	0.498	0.000	1.000	681
Help from African Union	2.102	1.079	0.000	3.000	620
Right-had side variables					
Ethnic diversity index	0.447	0.253	0.000	0.875	683
Treated unfairly from the govt.	0.342	0.850	0.000	3.000	672
Owing either TV or radio	0.753	0.432	0.000	1.000	683

Table A2: Summary statistics for the main covariates

	mean	sd	min	max	count
Respondents' characteristics					
Age	38.987	14.651	18	82	683
Age (squared)	1734.313	1278.062	324	6724	683
Male	0.505	0.500	0	1	683
Rural	0.694	0.461	0	1	683
Unemployed	0.845	0.362	0	1	683
Education	1.735	2.314	0	9	683
Member of Rel. Group	0.452	0.778	0	3	683
Member of Major Group	0.668	0.471	0	1	683
Public Goods	4.556	2.689	1	10	683
Interviewers' characteristics					
Male	0.449	0.498	0	1	683
Same Language	0.416	0.493	0	1	683
Influenced by Others	0.013	0.114	0	1	683
Education	8.047	0.211	8	9	683

Table A3: Summary statistics on the availability of a set of public goods and services

	mean	sd	min	max	count
Electricity grid in the PSU	0.277	0.450	0	1	83
Piped water system in the PSU	0.349	0.480	0	1	83
Sewage system in the PSU	0.108	0.313	0	1	83
Cell phone service in the PSU	0.904	0.297	0	1	83
Post office in the PSU or in walking distance	0.048	0.215	0	1	83
School in the PSU or in walking distance	0.952	0.215	0	1	83
Police station in the PSU or in walking distance	0.217	0.415	0	1	83
Health Clinic in the PSU or in walking distance	0.627	0.487	0	1	83
Market stalls in the PSU or in walking distance	0.590	0.495	0	1	83
Tarred or paved road	0.337	0.476	0	1	83

Table A4: Tax morale before and after the UN resolution announcement: Alternative specifications

	Dependent variable is Tax Morale				
	(1)	(2)	(3)	(4)	(5)
	Tax Morale	Binary	Standardized	Logarithm	Tax Morale
	OLS	OLS	OLS	OLS	Logit
$Post^{UN}$	0.263***	0.108***	0.226***	0.083***	0.529***
	(0.085)	(0.037)	(0.073)	(0.028)	(0.171)
Respondents' Characteristics	Yes	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes	Yes
Observations	683	685	683	683	700
R^2	0.127	0.102	0.127	0.098	
Pseudo-R^2					0.090

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A5: Tax morale before and after the UN resolution announcement: Alternative time-windows

	Dependent variable is: Tax Morale		
	(1)	(2)	(3)
	A week	2 weeks	3 weeks
$Post^{UN}$	0.263***	0.246***	0.241***
	(0.085)	(0.083)	(0.082)
Respondents' Characteristics	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes
Observations	683	974	999
R^2	0.127	0.137	0.141

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A6: Tax morale before and after the UN resolution announcement: Self-reported ethnic groups

	Dependent variable is: Tax Morale	
	(1)	(2)
$Post^{UN}$	0.263***	0.205**
	(0.085)	(0.089)
Respondents' Characteristics	Yes	Yes
Interviewers' Characteristics	Yes	Yes
Language × Region FE	Yes	No
Ethnic group × Region FE	No	Yes
Observations	683	686
R^2	0.127	0.133

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A7: Tax morale before and after the UNSC resolution announcement: alternative clustering strategies

	Clustered		Spatial		
	PSU-level	Ethnic-by Region-level	10km	100km	Avg. distance to Bamako 187km
	(1)	(2)	(3)	(4)	(5)
Standard error	0.085***	0.080***	0.083***	0.093***	0.102***

The table reports alternative standard errors using various clustering strategies. Column 1 replicates the baseline estimation (i.e. column 7 of Table 3) and columns 2 to 5 use the same set of controls. The associated estimated coefficient is 0.263. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A8: Tax morale and distance to Bamako across AfB rounds

	Dependent variable is: Tax Morale				
	(1) AfB-2	(2) AfB-3	(3) AfB-4	(4) AfB-5	(5) AfB-6
Distance to Bamako	0.086	0.033	-0.079	0.167**	0.061
	(0.098)	(0.102)	(0.129)	(0.063)	(0.062)
Respondents' Characteristics	Yes	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes	Yes
Observations	543	562	363	407	495
R^2	0.121	0.164	0.195	0.215	0.130

The unit of observation is the AfB respondent. For a meaningful comparison, we restrict the sample in any AfB rounds to the first 11 days of survey fieldwork (as we do in our baseline sample). Respondents' characteristics are: ... (no number of public goods) Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A9: Tax morale before and after the UN resolution announcement: Placebo treatment

	Dependent variable is: Tax Morale		
	(1)	(2)	(3)
$Post^{2012/12/17}$	-0.039	-0.031	-0.070
	(0.148)	(0.139)	(0.162)
Respondents' Characteristics	No	Yes	Yes
Interviewers' Characteristics	No	Yes	Yes
Language × Region FE	No	No	Yes
Observations	279	279	279
R^2	0.000	0.057	0.176

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A10: Tax morale before and after the UN resolution announcement in PSUs with and without public services

	Dependent variable is: Tax Morale										
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Pubic goods s is		Electricity	Piped water	Sewage	Phone sign.	Post office	School	Police stat.	Health clinic	Market	Tarred road
$Post^{UN}$	0.539***	0.374***	0.330***	0.229**	0.271**	0.280***	0.603***	0.317***	0.355***	0.711***	0.361***
	(0.148)	(0.096)	(0.100)	(0.087)	(0.124)	(0.094)	(0.168)	(0.096)	(0.120)	(0.111)	(0.100)
# Public goods (0 to 10)	0.084***										
	(0.030)										
$Post^{UN}$ × # Public goods (0 to 10)	-0.058*										
	(0.031)										
I[Public good s is available]		0.371*	0.418***	-0.087	0.093	0.252	0.236	0.196	0.009	0.529***	0.523***
		(0.198)	(0.156)	(0.326)	(0.099)	(0.169)	(0.171)	(0.202)	(0.127)	(0.111)	(0.118)
$Post^{UN}$ × I[Public good s is available]		-0.327*	-0.239	0.288	-0.014	-0.139	-0.359*	-0.196	-0.148	-0.623***	-0.245
		(0.170)	(0.164)	(0.331)	(0.140)	(0.186)	(0.195)	(0.192)	(0.165)	(0.147)	(0.152)
Respondents' Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	683	683	683	683	683	683	683	683	683	683	683
R^2	0.131	0.128	0.130	0.127	0.124	0.125	0.125	0.125	0.126	0.140	0.137

Dependent variable is tax morale. The unit of observation is the respondent individual. All the columns include age (and its square), a dummy if male, if rural, if unemployed, if a member of a religious group, if a member of the major ethnic group, the educational level, and the number of public services provided in the PSU. They also include interviewers' characteristics, such as gender, the education level, whether the interviewer speaks the same language as the interviewee, whether the interviewer thinks the pattern of responses has been influenced by others. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A11: Tax morale before and after the 20th of December 2008

	Dependent variable is: Tax Morale		
	(1)	(2)	(3)
$Post^{2008/12/20}$	-0.004	0.001	0.035
	(0.114)	(0.109)	(0.115)
Respondents' Characteristics	No	Yes	Yes
Interviewers' Characteristics	No	Yes	Yes
Language × Region FE	No	No	Yes
Observations	694	683	683
R^2	0.000	0.053	0.150

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A12: Tax morale in Togo before and after the UN resolution announcement

	Dependent variable is: Tax Morale		
	(1)	(2)	(3)
$Post^{UN}$	-0.005	-0.055	0.017
	(0.088)	(0.100)	(0.115)
Respondents' Characteristics	No	Yes	Yes
Interviewers' Characteristics	No	Yes	Yes
Language × Region FE	No	No	Yes
Observations	1126	1095	1095
R^2	0.000	0.048	0.138

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A13: Tax morale before and after the UN resolution announcement: Day fixed effects

	Dependent variable is Tax Morale		
	(1)	(2)	(3)
$Post^{UN}$	0.263***	0.277***	0.372***
	(0.086)	(0.087)	(0.102)
Working Days FE	No	Yes	No
Week Days FE	No	No	Yes
Respondents' Characteristics	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes
Observations	700	700	700
R^2	0.150	0.151	0.161

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A14: Tax morale, the UN resolution announcement, and the weather

	Dependent variable is: Tax Morale						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
$Post^{UN}$	0.263***	0.229**	0.253***	0.265***	0.303***	0.226*	0.296**
	(0.086)	(0.092)	(0.083)	(0.084)	(0.084)	(0.124)	(0.121)
Temperature (max)		0.047					-0.042
		(0.044)					(0.103)
Temperature (min)			-0.012				-0.157
			(0.036)				(0.107)
Temperature (avg)				0.034			0.243
				(0.054)			(0.195)
Cloud coverage (avg)					0.420		0.509
					(0.362)		(0.410)
Humidity (avg)						1.067	-1.918
						(2.251)	(3.051)
Respondents' Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Observations	700	700	700	700	700	700	700
R^2	0.150	0.151	0.150	0.150	0.151	0.150	0.156

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A15: Tax morale before and after the UN resolution announcement: The role of males involvement in the war

	Dependent variable is Tax Morale		
	(1)	(2)	(3)
	Baseline	Males excluded	Males in enlistment age excluded
$Post^{UN}$	0.263***	0.267**	0.274***
	(0.086)	(0.127)	(0.100)
Respondents' Characteristics	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes
Observations	700	350	535
R^2	0.150	0.166	0.145

Dependent variable is tax morale. The unit of observation is at the individual level. Column 2 includes age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A16: Attrition rate before and after the UN resolution announcement

	Dependent variable is: Attrition rate to			
	Q48C	Q26C	Q76B	Q51
	(1)	(2)	(3)	(4)
$Post^{UN}$	-0.002	-0.010	-0.007	0.007
	(0.006)	(0.008)	(0.008)	(0.005)
Respondents' Characteristics	Yes	Yes	Yes	Yes
Interviewers' Characteristics	Yes	Yes	Yes	Yes
Language × Region FE	Yes	Yes	Yes	Yes
Observations	685	685	685	685
R^2	0.038	0.132	0.039	0.030

The unit of observation is the interviewee. Question Q48C is: "*Please tell me whether you disagree or agree: The tax authorities always have the right to make people pay taxes.*" question Q26C is: "*Please tell me whether you, personally, have refused to pay a tax during the past year. If not, would you do this if you had the chance?*" Question Q76B is: "*please tell me whether you think not paying the taxes they owe on their income is not wrong at all, wrong but understandable, or wrong and punishable.*" Question Q51 is: "*Which of the following statements is closest to your view? Statement 1: It is better to pay higher taxes, if it means that there will be more services provided by government. Statement 2: It is better to pay lower taxes, even if it means there will be fewer services provided by government.*" All the columns include age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

Table A17: Tax morale and sponsorship perception before and after the UN resolution announcement

	Dependent Variable is: Tax morale	
	(1)	(2)
$Post^{UN}$	0.263***	0.263***
	(0.085)	(0.085)
Sponsor		-0.002
		(0.080)
Respondents' Characteristics	Yes	Yes
Interviewers' Characteristics	Yes	Yes
Language × Region FE	Yes	Yes
Observations	683	683
R^2	0.127	0.127

Dependent variable is tax morale. The unit of observation is at the individual level. All the columns include age (and its square), a dummy if male, if rural, if unemployed, educational level, ... Column 3 also includes interviewers' characteristics. Standard errors in parentheses are clustered at the PSU level. Symbols: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$

B The AfB-5 design in Mali

The AfB-5 fieldwork in Mali is organized in partnership with the national partner Groupe de Recherche en Economie Appliqueé et Théorique (GREAT), which is based in the capital Bamako.[35] The national partner directly implements survey activities, including the primary sample unit (PSU) sampling, the survey fieldwork, and the organization of the survey rollout. A PSU is either a village in a rural area or an urban area. 150 PSUs are randomly selected, weighing for the population size of the area, for a total of 1,200 interviewees.

The fieldwork is organized in field teams of four interviewers, whose activities are supervised by a field supervisor. The national partner, in collaboration with the field supervisors, delineates the fieldwork deployment plan. The plan details requirements for transport, accommodation, and meals in order to maintain teams in the field with the aim of completing the fieldwork in three weeks. Importantly, the plan deploys a set of route plans linking the sampled PSUs and the estimated dates of the visits. The final route plans are selected with the aim of keeping the travel costs at a minimum.

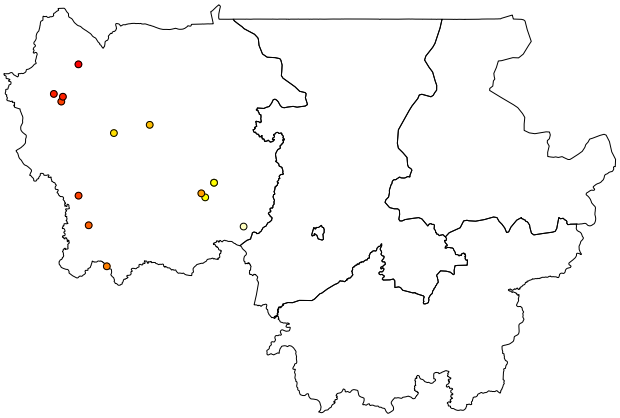
Each interviewer completes four interviews per day; therefore, the team delivers sixteen interviews per day, meaning that each field team covers two PSUs per day. A field team is responsible for the fieldwork in an administrative unit (a region for Mali). We show graphically the temporal and geographical survey rollout in the regions of Kayes, Koulikoro, and Sikasso in Figure B1. The maps make clear that (*i*) each team focuses on a region's fieldwork; (*ii*) the rollout proceeded from one PSU to the most proximate one; and (*iii*) the region's fieldwork started from the closest point to Bamako, meaning that the field teams started interviews in the most proximate area to Bamako.

In each PSU, interviewers depart from randomly chosen points and select each house for every 5/10 buildings. Within the household, the interviewer randomly selects an individual respondent on the basis of a card drawing and by considering gender quota, which ensures the gender balance of the sample.

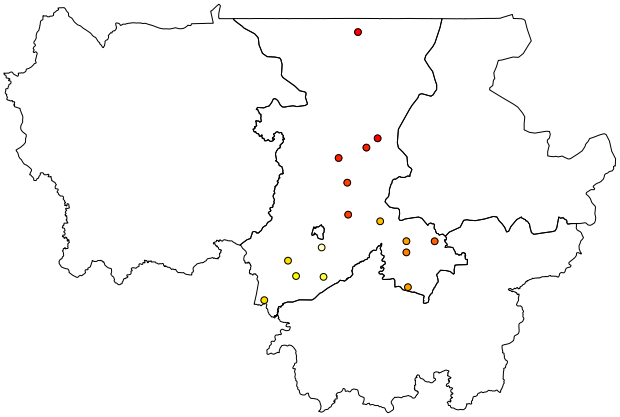
[35] This section is largely based on the AfB-5 survey manual (Afrobarometer, 2011) and on the AfB-5 codebook (Afrobarometer, 2015).

Figure B1: Geographical distribution of interviews in the three proximate regions to Bamako

(a) Team #1: Kayes



(b) Team #2: Koulikoro



(c) Team #3: Sikasso