

Fostering Hopes? Impact of Chinese Aid on Economic Expectations

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Abstract

In this paper, I build on the concepts underpinning economic expectations to examine whether Chinese aid affects the economic expectations of citizens in Ghana. I match geocoded data on Chinese aid projects located in Ghana from 2000 and 2014 to 8,157 respondents from rounds 2 to 6 of the Afrobarometer survey and conduct a differential analysis on the economic expectations of individuals based on their proximity to Chinese aid project sites. I find robust evidence that Chinese aid induces positive economic expectations. The optimistic expectations, amidst other factors, result from the improvement in living conditions associated with Chinese aid projects. Added to that, individuals deem aid projects as signals of good governance and therefore expect better times ahead.

Keywords: Chinese aid, Ghana, Economic expectations, Afrobarometer, Geocoded data

JEL classification: C23; F21; O10

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1 Introduction

The multi-faceted impacts associated with international aid flows have received tremendous attention in research; nevertheless, researchers draw contrasting conclusions on its effectiveness, especially to recipient economies; thus, making aid research a quite controversial field (Qian, 2015). Some proponents highlight desirable impacts of aid such as its significant contribution to poverty eradication (Hirano and Otsubo, 2014; Sachs, 2006), growth (Arndt et al., 2015; Galiani et al., 2017) and institutional quality (Isaksson and Durevall, 2021). Despite these positives, studies also document that aid rather degrades institutions and harm progress in beneficiary countries (Deaton, 2013; Easterly, 2008; Knack, 2001). The contrasting results seem so because the effectiveness of aid is as well dependent on other related policies (Burnside and Dollar, 2000; Collier and Dollar, 2002). Nevertheless, aid flows have continued unabated and even welcomed new donors whose motives and approaches to disbursement are worth assessing and therefore necessitates the need for continuous research on aid flows.

Of the new donors to have ascended the list of major donors, China stands as the most significant. Its aid flows in recent decades rivals that of the traditional Western donors (Dreher et al., 2018, 2021b). As expected, a rising number of studies have subsequently focused on assessing China's motives for its aid flows and how these flows are disbursed. Some studies show that Chinese aid is effective in meeting the needs of recipient countries and involves fewer bureaucracies (Fuchs et al., 2015; Brautigam, 2011). This is however contended by findings revealing that these aid flows are aimed at securing commercial advantages for Chinese firms operating in developing economies and kindling institutional inefficiencies in order to access natural resource deposits (Kaplinsky et al., 2007; Marantidou and Glosserman, 2015; Tan-Mullins et al., 2010; Tull, 2006). These critics, therefore, conclude that Chinese aid is ineffective and rather detrimental to the economic performance of beneficiary economies (Crouigneau and Hiault, 2006; Onjala, 2018).

Obtaining a comprehensive understanding of Chinese aid and its concomitant effects

consequently requires more research insight than what is currently available. Accordingly, this study aims at contributing to the rising body of knowledge on Chinese aid. I examine public attitudes towards Chinese aid by asking whether Chinese aid affects citizens' economic expectations in Ghana. Previous research shows that economic expectations are shaped by a myriad of factors, both objective and subjective (Bârgăoanu et al., 2013; Kiewiet, 1983) such as information from the media (Goidel et al., 2010) and living conditions (Lischka, 2015). I build on the determinants of economic expectations to show that the implementation of Chinese aid projects affects the economic expectations of the local population. I focus on Ghana because the nation has significant bilateral ties with China and is one of the top 10 recipients of Chinese aid, globally, having received aid worth about \$2.5 billion.¹

Our estimation approach involves matching geocoded data on Chinese aid projects located in Ghana between 2000 to 2014 to 8,157 respondents from rounds 2 to 6 of Afrobarometer survey and conduct a differential analysis on the economic expectations of respondents living close to project sites. I conduct a difference-in-difference type of analysis by comparing the responses of individuals living close to sites where a Chinese aid project is under implementation during the time of the survey (active sites) to those living close to a site where a Chinese aid project is scheduled to be located but implementation had not commenced at the time of the survey (inactive sites). Two measures of expectations are considered; expectations for the country's economic condition and that of respondents' personal economic conditions. The findings robustly affirm that Chinese aid induces positive economic expectations for both country and personal living conditions. Particularly, compared to individuals living close to inactive sites, those living close to active sites are more likely to indicate that the economic conditions in the country and their personal living conditions will be better in the months ahead. The observed influence, amidst other factors, is apparently due to the improvement in the living conditions of individuals living close to project sites. Individuals also deem the aid projects as signals of good governance and therefore expect better times ahead.

¹AidData: <https://www.aiddata.org/china-official-finance>

This paper falls within the recently emerging studies using geocoded data on Chinese aid project locations around the world (Brazys and Vadlamannati, 2021; Cruzatti C et al., 2020; Dolan and McDade, 2020; Dreher et al., 2021b; Guo and Jiang, 2020; Sanfilippo et al., 2020). This paper, therefore, contributes to this field of literature.

More importantly, to the best of our knowledge, this paper is the first to use geocoded data on Chinese aid to examine how exposure to Chinese aid influences economic expectations. Consequently, the findings provide novel insight into public attitudes towards Chinese aid in Ghana and also adds to the limited studies on the relationship between Chinese aid and citizenry perceptions and attitudes (Huang and Cao, 2019; Isaksson, 2020; Knutsen and Kotsadam, 2020; Xu and Zhang, 2020).

2 Chinese Aid and Economic Expectations

Economic expectations are integral to decision-making. What people expect the economic condition to be like in the foreseeable future influences their decisions such as consumption (Van Raaij, 1989); voting preferences (Duch and Stevenson, 2008; Erikson et al., 2000; Lewis-Beck, 1990; MacKuen et al., 1992) and their attitudes towards immigration and welfare policies (Burns and Gimpel, 2000; Mayda, 2006). Economic expectations also influence public advocacy for regional integration (De Vreese and Boomgaarden, 2005; Gabel, 1998) including national identity issues (Muñoz and Torros, 2015). As such what individuals expect to happen tomorrow to a significant extent influence what they would do today.

These expectations don't spring up randomly. As elaborated by John Muth in his seminal paper on rational expectations (Muth, 1961), people comb all available sources of information; both past and present in order to arrive at expectations for the future. The rational choice theory posits that individuals do not have absolute knowledge of all happenings in the economy (Downs, 1957), thus, their economic expectations are founded on both objective facts as well as their subjective perceptions of the state of the economy (Bângăoanu et al., 2013; Kiewiet, 1983). The interplay of these factors

unearth some reasons why individuals' perceptions may not be reflective of reality; the metrics individuals use in assessing the performance of the economy vary from person to person ([Hetherington, 1996](#)). These perceptions are also very much likely to be influenced by partisanship ([Kramer, 1983](#); [Tilley and Hobolt, 2011](#); [Ward and Tavits, 2019](#)); individuals are more likely to give better evaluations of the economy when they support the ruling party ([Carlson, 2016](#); [van der Eijk et al., 2007](#)). Since varying sources can provide varying information on the state of the economy, individuals' evaluations based on these varying sources might exhibit significant deviation from what is on the ground ([Boomgaarden et al., 2011](#)).

Studies on economic expectations reveal varying ways in which people's economic expectations are determined. The mass media is one of the notable sources of economic expectations ([Goidel et al., 2010](#); [Sanders et al., 1993](#); [Sanders and Gavin, 2004](#); [Zaller et al., 1992](#)). Through mass media, citizens get enlightened on the state of the economy and other issues and are thus able to guess what to expect in the times ahead. According to [Goidel et al. \(2010\)](#) and [Lischka \(2015\)](#), the economic expectations individuals hold are also influenced by their personal economic conditions. [Goidel et al. \(2010\)](#) show that the retrospective evaluations individuals make of the state of their personal finances significantly inform their economic expectations ([Haller and Norpoth, 1994](#)). [Lischka \(2015\)](#) further adds that indicators that people witness in their daily lives, such as shopping bustles or construction activities in the city have the potential of influencing their economic sentiments. Political preference has also been identified as crucial to economic expectations ([Anderson et al., 2004](#); [Duch and Stevenson, 2011](#); [Ladner and Wlezien, 2007](#)).

Building on these sources of economic expectations, this paper argues that the implementation of aid projects influences citizens' economic expectations. As aid projects are being implemented, news about the implementation will likely be shared on various mass media platforms in the country and hence increase the awareness of these projects. Awareness is also likely to spread through interactions between people. The

construction of roads, schools, hospitals and other infrastructure emit positive signals to citizens about the state of the economy. Thus, people are likely to develop positive economic sentiments as they get exposed to such projects ([Lischka, 2015](#)). After all, good governance to a large extent concerns the state's capacity in providing such public goods and services ([Bank, 1992](#); [World, 1997](#)).

Personal economic experience is also one of the significant, if not be the most potent channel, through which the implementation of aid projects could inform economic expectations. The implementation of an aid project such as the construction of a hospital would require construction workers as well as other categories of workers, construction materials may also be sourced from local agents. When the construction is ongoing at a site where needed construction inputs such as water and electricity are not available, making these inputs accessible at the project site may even be the first phase of work to be done before the main construction work begins. Hence, it is obvious that the implementation of projects is associated with direct and indirect employment opportunities as well as other positive spillovers that have the potential of improving economic conditions and citizenry livelihood; thus, making it appealing to citizens. People who therefore experience improved economic conditions as a result of the implementation of the aid projects are more likely to hold positive economic expectations.

Further, since the full-blown benefits of the aid projects are only manifest when implementation is completed and the project is in use, expectations are also likely to be positive during the implementation stage for people who anticipate the benefits that would emanate from the project in the foreseeable future. For example, it shouldn't be surprising if citizens who witness the construction of broad transportation networks, electricity-generating dams and other infrastructure expect the economic condition in the country to get better because of the projects that are being implemented. An unemployed construction worker, who realizes that a project is scheduled to be implemented in his/her community for which construction workers are being sought, is likely to be optimistic about his/her personal economic expectations in the months ahead. The

same would apply to the trader who finds out a market is about to be erected in the community and the unattached teacher who realizes a school will be operating soon in the area. It is therefore a cogent assertion to expect individuals' economic expectations to be influenced by the implementation of aid projects.

Between 2000 and 2014, a total of 95 projects located in Ghana have been funded by aid from China (Dreher et al., 2021b).² These Chinese aid projects have the potential of impacting the livelihood and welfare of citizens and the economy at large and thus influence economic expectations. Chinese aid has been found to stimulate short-term economic growth (Dreher et al., 2021a) and development in beneficiary economies (Dreher et al., 2021b). At the micro-level, studies that analyze the localized effects of Chinese aid projects provide convincing evidence that suggests that Chinese aid projects have significant effects on the welfare of locals living close to project sites, though characterized by some nuances. These findings outline that Chinese aid improves infant mortality and education (Sanfilippo et al., 2020)³; as well as local employment (Guo and Jiang, 2020) and agricultural productivity (Lartey, 2004).

These findings therefore suggest that Chinese aid projects impact the economic conditions of the local population, particularly, those living close to project sites. Accordingly, we can therefore expect the economic expectations of individuals living close to these project sites to be influenced by the implementation of these projects. This hypothesis is also buttressed by studies that find significant peculiarities in the attitude of people living close to Chinese aid project sites. For instance, people living close to Chinese aid project sites have a positive perception of China (Xu and Zhang, 2020); prefer economic experts to run the economy (Huang and Cao, 2019) and are exposed to widespread corruption (Isaksson and Kotsadam, 2018). Against this background, it is therefore interesting to empirically assess whether individuals who are exposed to the implementation of Chinese aid projects are more likely to have better economic expectations.

²Some of the projects are however yet to be implemented.

³Cruzatti C et al. (2020), however, argue that Chinese aid rather decreases infant mortality at the country level but increases it at the subnational level.

3 Data and Estimation Strategy

3.1 Data

I obtain data on Chinese aid projects in Ghana from AidData’s Geocoded Global Chinese Official Finance Dataset (Version 1.0.1) (Bluhm et al., 2018). The dataset covers Chinese funded aid projects across the globe. China’s reluctance in disclosing information on its foreign aid outflows has limited available reliable data on these outflows. Bluhm et al. (2018) therefore employ a media-based Tracking Underreported Financial Flows (TUFF) methodology to collect data on China’s financial outflows to other nations.⁴

All the projects in the dataset are assigned latitude and longitude coordinates making it possible to identify the location of the project sites. The locations are, however, at varying levels of precision. The precision levels range from 1 to 8 in a decreasing level of granularity or precision. Following Dreher et al. (2019), I only consider precisions levels 1 to 4; where 1 is representative of coordinates corresponding to an exact location; 2 means that the specified location is near, in the ‘area’ of, or up to 25 km away from the exact location; locations assigned precision level of 3 is indicative that the location is, or is analogous to, a second-order administrative division (ADM2), such as a district or municipality; while precision level 4 relates to a first-order administrative division (ADM1), such as a province or state.

Projects in the dataset are grouped into three categories; Official Development Assistance (ODA), Other Official Flows (OOF) or Vague Flows (VF). ODA are aid flows from official agencies to developing economies that are listed in the Development Assistance Committee (DAC)’s ODA recipients. ODA must be channeled towards improving welfare and economic development and must be concessional with a grant element of 25% or more.⁵ OOF refers to flows that do not meet the requirements of ODA; VF captures flows that do not qualify to be categorized as ODA or OOF. Since our purpose

⁴See Strange et al. (2017) for a detailed discussion on the TUFF methodology.

⁵OECD-DAC Glossary of Key Terms and Concepts: <http://www.oecd.org/dac/dac-glossary.htm>

is to assess the impact of aid, I only consider ODA projects.

To assess whether the implementation of Chinese aid projects affects the economic expectations of the local population, identifying the start and end dates of the projects is necessary. Thus, I drop projects whose start and end dates are not available in the data set, even after a manual search for these dates. This limits the sample to 36 project locations in Ghana. Table 1 presents the sectoral decomposition of the projects.

Table 1: Sectoral Distribution of Chinese Aid Projects

Sector	Frequency	Percentage
Communications	9	25
Education	3	8.33
Energy Generation and Supply	4	11.11
Government and Civil Society	3	8.33
Health	4	11.11
Non-food commodity assistance	1	2.78
Other Social infrastructure and services	3	8.33
Transport and Storage	9	25
Total	36	100

I geographically match the aid projects to 8,157 respondents from rounds 2-6 of the Afrobarometer survey in Ghana conducted over the period 2002 to 2014. The Afrobarometer surveys are nationally representative surveys conducted to gather public perceptions on democracy, governance, the economy and society in African countries⁶ and is a widely accepted data for empirical analyses of public attitude (Depetris-Chauvin et al., 2020; Isaksson and Durevall, 2021; Knutsen and Kotsadam, 2020, see). The matching is feasible because the survey data also contains point coordinates of the enumeration areas (EAs); the EAs correspond to villages, towns or neighborhoods. In conducting the matching, I follow the approach of Knutsen et al. (2017). I measure the distance between the location of aid projects and the center points of the EAs and analyze the expectations of respondents in EAs that fall within a specified cut-off distance from at least one aid project location. Our analysis focuses on respondents living within 25 km, which is the specified cut-off distance, of a Chinese aid project site. Fig. 1 depicts the location of Chinese aid projects and Afrobarometer survey EAs.

⁶<https://afrobarometer.org/about>

I consider two measures of economic expectations; the first is individuals' responses on what they expect the economic condition of the country to be like in the next 12 months. The second focuses on expectations they have for their personal economic (living) conditions. The responses are according to the following scale; 1 "Much worse", 2 "Worse", 3 "Same", 4 "Better", 5 "Much better".⁷ I code the responses for each question into a dummy to determine whether individuals expect better conditions or otherwise. The dummy, *Country*, captures individuals' expectations on the country's economic condition and assumes 1 for response categories 4 'Better' or 5 'Much better' and 0 otherwise. *Personal* is the dummy that measures expectations on personal living conditions and follows the same coding approach for *Country*.

3.2 Estimation Strategy

I follow [Knutsen et al. \(2017\)](#)'s strategy in estimating the causal impact of Chinese aid on expectations. Specifically, I compare the expectations of individuals living close (within 25 km) to active project sites to those living near inactive ones and perform differential analysis on their respective expectations. This approach is reflected in the baseline regression as follows;

$$Y_{ict} = \beta_1 Active_{ict} + \beta_2 Inactive_{ict} + \gamma X_{it} + \varphi_c + \delta_c + \rho_t + \epsilon_{ict} \quad (1)$$

where Y is a dummy indicating expectation on economic conditions (country and personal) and assumes the value of 1 if the individual i in cluster c in year t expects the economic condition to be better or much better in the next 12 months and 0 otherwise. *Active* is a dummy variable capturing whether the respondent lives within 25 km of an ongoing Chinese aid project; the dummy *Inactive* denotes respondents living within 25 km of a site where a Chinese aid project is to be located but implementation had not begun at the time of the survey (inactive site). X_{it} is a vector of individual controls

⁷Expectations on personal economic (living) conditions are only available for rounds 2-5 and not captured during the round 6 survey.

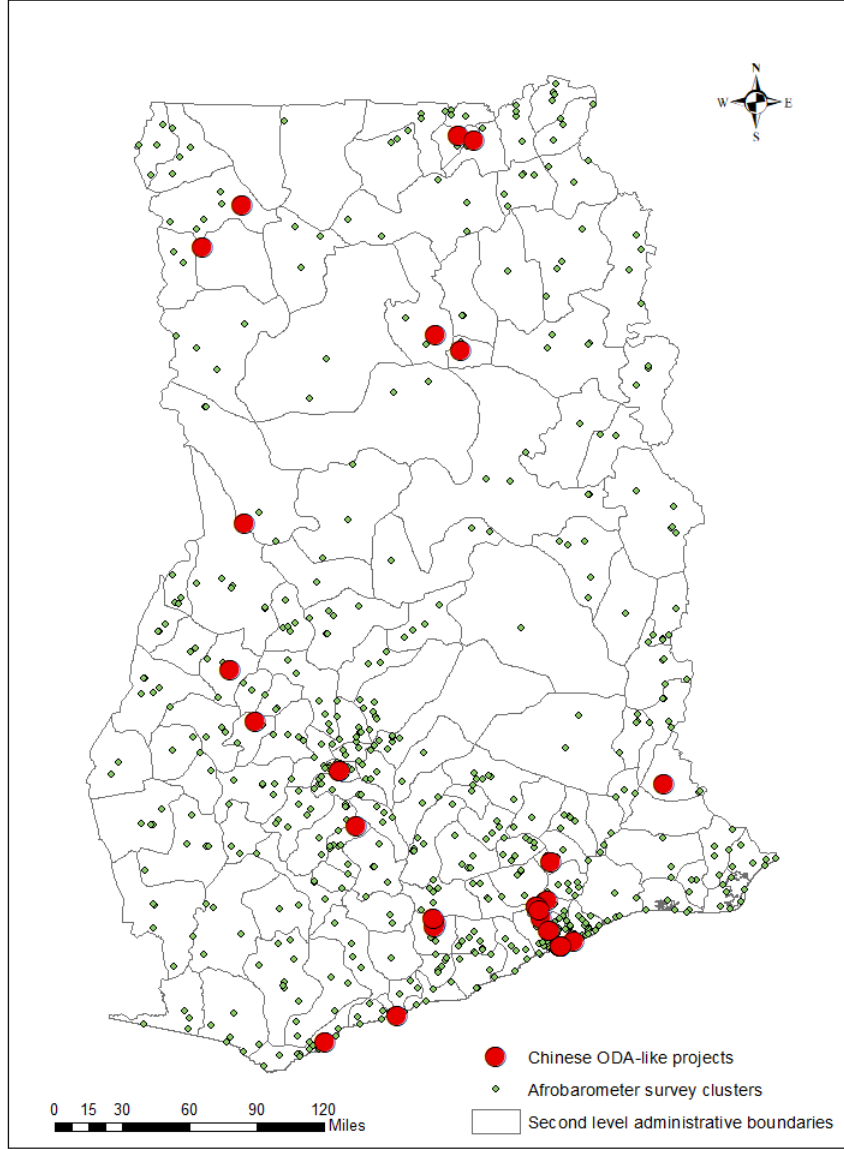


Figure 1: Location of Chinese Aid Projects and Afrobarometer Survey Clusters

which include; urban/rural residence, gender, age, age squared, educational level and employment status. φ_c is spatial characteristics of EAs, comprising subnational area population count, subnational area population density⁸, land area, water area, distance to the capital city, distance to national border, distance to airport, distance to port;⁹ δ_c and ρ_t are region and year fixed effects to control for variations across regions and years, respectively. Standard errors are clustered at EA to cater for correlated errors.

⁸I interpolate the missing years for the population data.

⁹The distance measures are the shortest distance to the closest facility or destination.

Simultaneously capturing active and inactive in the model allows the comparison of active project sites to inactive ones in order to identify the causal impact of Chinese aid projects on expectations. Thus, implementing a difference-in-difference (DiD) framework between active and inactive ($\beta_1 - \beta_2$) controls for unobservable time-invariant characteristics that may impact the selection of Chinese aid project sites. Accordingly, $(\beta_1 - \beta_2)$ gives the treatment effect of Chinese aid projects on the local people's expectations. I estimate equation (1) using linear probability models (LPM).

I must notify that classifying projects as either active or inactive doesn't follow a sequential pattern suggesting that projects implemented earlier are categorized as active while those implemented at later dates denoted inactive. For instance, if projects A and B are implemented in 2002 and 2004, respectively, it isn't a straightforward decision to code project A as active and B as inactive. Rather, denoting a project as active or inactive is dependent on the state of the project during the time the Afrobarometer survey was conducted. Thus, any particular project could be denoted as active or inactive. Building on our earlier example, assuming the survey was conducted in 2001 in the location where project A was to be sited in 2002, project A would be denoted as inactive since the implementation of the project had not commenced when the survey was conducted. Following the same thought, should the survey be conducted in 2003 where the implementation of project B was already ongoing, project B would be denoted active since the implementation of the project had already commenced at the time of the survey.

4 Results

4.1 Baseline results: Chinese aid and Economic Expectations

The estimation results show that Chinese aid projects stimulate better expectations among the local population. Table 2 presents the baseline estimation results; column 1 captures expectations on the country's economic condition while column 2 captures

expectations on the individuals' personal living conditions. In both columns, individual and location characteristics are controlled for, including region and year fixed effects. In column 1, the coefficient of active implies that compared to those not living close to any Chinese aid project sites, respondents living within 25 km of an ongoing Chinese aid project site are more likely to have better expectations of the future.

However, the coefficient of active, β_1 , can't be solely interpreted as the causal impact of Chinese aid projects on citizens' expectations; that would mean assuming that the location of aid projects is uncorrelated with the pre-existing levels of citizenry expectations, a seemingly weak assumption. The coefficient of inactive does not provide evidence to suggest that Chinese aid projects are sited in locations that stand out in terms of the pre-existing levels of expectations. To cater for the possible endogenous location of projects and to obtain the causal impact, I compare active sites to inactive sites and analyze the estimated differential effects. Consequently, the DiD estimates together with the F-test score and p-value are the main results of interest.

As can be observed, the DiD estimates ($\beta_1 - \beta_2$) which measure the causal effect of Chinese aid projects are positive and significant in both columns as verified by the F-test scores and p-values. The results thus indicate that Chinese aid projects stimulate positive economic expectations in localities where these projects are ongoing; individuals living close (within 25 km) to active projects sites are more likely to have positive expectations compared to those living close to inactive project sites.

4.2 Sensitivity Analysis

[Knutsen et al. \(2017\)](#) explain that determining the ideal cut-off distance to use for the estimations is a trade-off between the size of the treatment group and noise. Smaller cut-off distances will capture few individuals in the treatment group while larger distances are likely to capture untreated individuals and lead to an attenuation bias. Therefore, in examining how our baseline results would respond to altering the cut-off distance, I consider two other cut-off distances; 10 km and 50 km. The results are presented

Table 2: Chinese aid and Economic Expectation

VARIABLES	(1) Country	(2) Personal
Active (25 km)	0.167*** (0.035)	0.134*** (0.037)
Inactive (25 km)	0.031 (0.023)	0.005 (0.022)
Observations	6,907	5,185
R-squared	0.188	0.120
Baseline controls	YES	YES
Region FE	YES	YES
Year FE	YES	YES
Difference	0.136	0.128
F-test: active-inactive=0	12.23	10.71
F-test: p-value	0.000	0.001

The baseline controls include urban residence, age, age2, gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the F-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** $p < .01$, ** $p < .05$, * $p < .1$.

in Table 3. For the 10 km cut-off distance, the DiD estimate for expectations on the country’s economic condition is not significant while that of personal condition is significant at 10%. From Table 1, only 1.9% of the respondents are captured in the treatment group, as such, the small number might be a contributing factor to the insignificance. Increasing the cut-off to 50 km, the DiD estimates in both columns become significant.

4.3 Heterogenous timing effects

Perhaps, the expectations in sites where projects were implemented at a later period within the time I consider might may exhibit some endogenous variation from locations where projects were implemented earlier. Considering this possibility, implementing year fixed-effects to control for variations across time will not sufficiently deal with

Table 3: Sensitivity Analysis

VARIABLES	(1) Country	(2) Personal	(3) Country	(4) Personal
Active (10 km)	0.116** (0.053)	0.095* (0.057)		
Inactive (10 km)	0.033 (0.029)	-0.011 (0.026)		
Active (50 km)			0.142*** (0.031)	0.081** (0.032)
Inactive (50 km)			0.028 (0.023)	-0.009 (0.023)
Observations	6,907	5,185	6,907	5,185
R-squared	0.186	0.118	0.188	0.119
Baseline controls	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Difference	0.083	0.106	0.114	0.090
F-test: active-inactive=0	2.024	3.138	12.16	7.533
F-test: p-value	0.155	0.077	0.001	0.006

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of sub-national area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the F-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

the potential endogeneity. To deal with this issue, I factor the timing of projects in the analysis presented in Table 4. Time until start is the difference between the Afrobarometer survey interview date and the start date of a project¹⁰ and therefore accounts for possible heterogeneous timing in the choice of location for Chinese aid projects. The DiD estimates remain stable. The coefficient of Time until start is insignificant in both columns, confirming that the results are not influenced by the heterogeneous timing in the choice of Chinese aid project sites.

¹⁰In order to maintain the full sample for the estimations I assign zeros to those living either close to active project sites or beyond 25 km of any project sites.

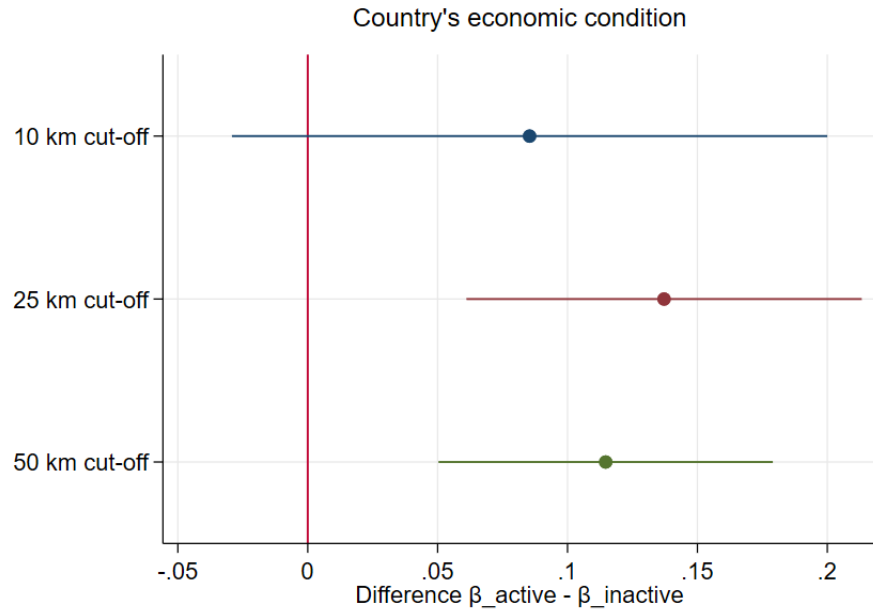


Figure 2: Estimated Effect for Expectations on Country's Economic Condition

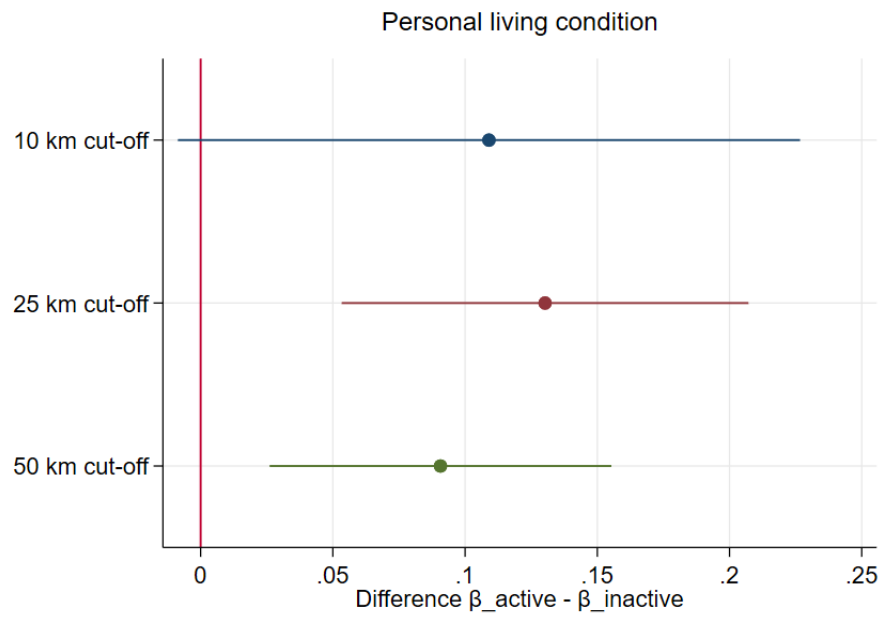


Figure 3: Estimated Effect for Expectations on Personal Living Condition

Table 4: Timing Effects

VARIABLES	(1) Country	(2) Personal
Active (25 km)	0.167*** (0.035)	0.133*** (0.037)
Inactive (25 km)	0.032 (0.035)	-0.000 (0.033)
Time until start	0.000 (0.000)	-0.000 (0.000)
Observations	6,907	5,185
R-squared	0.188	0.120
Baseline controls	YES	YES
Region FE	YES	YES
Year FE	YES	YES
Difference	0.135	0.133
F-test: active-inactive=0	8.534	8.578
F-test: p-value	0.004	0.004

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the F-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

4.4 Partisanship and Trust

A considerable number of studies show that political preferences play a significant role in determining people’s economic expectations ([Anderson et al., 2004](#); [Conover et al., 1987](#); [Duch and Stevenson, 2011](#); [Ladner and Wlezien, 2007](#); [Wlezien et al., 1997](#)). Supporters of the ruling party are more likely to trust in the government, favor its policies and be optimistic about the future. Table 5 presents the regression results capturing party support and trust. Party support is a dummy variable indicating whether the individual supports or feels close to the ruling party. Trust is also a dummy that assumes 1 if the respondent holds some level of trust in the ruling party and 0 if the respondent doesn’t trust the ruling party. The results are as expected, corroborating that of earlier studies. Party support and trust are positive and significant in both columns, suggesting that

individuals are more likely to have positive economic expectations if they support and trust the ruling party. The DiD estimate remains significant in both columns.

Table 5: Controlling for Partisanship and Trust

VARIABLES	(1) Country	(2) Personal
Active (25 km)	0.145*** (0.039)	0.113*** (0.040)
Inactive (25 km)	0.023 (0.026)	-0.005 (0.025)
Party Support	0.114*** (0.013)	0.093*** (0.013)
Trust	0.110*** (0.015)	0.077*** (0.019)
Observations	6,060	4,454
R-squared	0.234	0.139
Baseline controls	YES	YES
Region FE	YES	YES
Year FE	YES	YES
Difference	0.121	0.117
F-test: active-inactive=0	7.641	7.487
F-test: p-value	0.006	0.006

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the F-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

4.5 Heterogeneous Analysis

I decompose our sample population into subgroups based on their characteristics to estimate how the expectations vary across the subgroups. The subgroups are rural and urban residence; male and female; employed and unemployed; non-tertiary and tertiary. Employed denotes respondents who are part or full-time employed while those without any form of employment are denoted unemployed. Tertiary comprises respondents who have completed university education; non-tertiary refers to those who haven’t.

The regression results presented in Table 6 represent expectations for the country's economic condition. Across the subgroups, the DiD estimate is insignificant in only the tertiary subgroup. Thus, according to columns 7 and 8, we observe that individuals who haven't completed university education are more likely to have positive economic expectations in comparison to those who have completed university education. The results do not vary much from what is obtained for personal economic expectations presented in Table 7. The tertiary subgroup remains the only nonsignificant subgroup. The small sample size of the tertiary subgroup in both tables 6 and 7 is a concern and may account for its insignificance.

Table 6: Population Heterogeneity: Expectations on country's Economic Condition

VARIABLES	Expectations on Country's Economic Condition							
	(1) Rural	(2) Urban	(3) Female	(4) Male	(5) Unemployed	(6) Employed	(7) Non_Tertiary	(8) Tertiary
Active (25 km)	0.176*** (0.044)	0.170*** (0.050)	0.159*** (0.050)	0.185*** (0.045)	0.100** (0.050)	0.223*** (0.050)	0.165*** (0.035)	-0.013 (0.431)
Inactive (25 km)	-0.031 (0.031)	0.074** (0.035)	0.047 (0.033)	0.002 (0.031)	-0.006 (0.037)	0.049 (0.030)	0.034 (0.023)	-0.088 (0.210)
Observations	3,435	3,472	3,371	3,536	2,964	3,943	6,678	229
R-squared	0.212	0.228	0.232	0.213	0.243	0.206	0.190	0.755
Baseline controls	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Difference	0.206	0.0964	0.112	0.182	0.106	0.174	0.131	0.0751
F-test: active-inactive=0	17.39	2.967	3.908	13.46	3.478	10.33	11.16	0.0286
F-test: p-value	0.000	0.086	0.048	0.000	0.063	0.001	0.001	0.866

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the F-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

Table 7: Population Heterogeneity: Personal Economic Expectations

VARIABLES	Personal Economic Expectations							
	(1) Rural	(2) Urban	(3) Female	(4) Male	(5) Unemployed	(6) Employed	(7) Non_Tertiary	(8) Tertiary
Active (25 km)	0.145*** (0.043)	0.117** (0.052)	0.137*** (0.049)	0.138*** (0.049)	0.094** (0.047)	0.146*** (0.055)	0.133*** (0.037)	-0.610 (0.588)
Inactive (25 km)	-0.011 (0.029)	0.021 (0.032)	0.012 (0.031)	-0.006 (0.030)	-0.017 (0.034)	0.010 (0.030)	0.009 (0.022)	-0.039 (0.258)
Observations	2,679	2,506	2,552	2,633	2,335	2,850	5,046	139
R-squared	0.182	0.152	0.153	0.178	0.193	0.159	0.122	0.810
Baseline controls	YES	YES	YES	YES	YES	YES	YES	YES
Region FE	YES	YES	YES	YES	YES	YES	YES	YES
Year FE	YES	YES	YES	YES	YES	YES	YES	YES
Difference	0.156	0.0962	0.126	0.145	0.111	0.135	0.124	-0.571
F-test: active-inactive=0	10.07	2.905	5.292	7.733	4.335	5.748	9.872	0.904
F-test: p-value	0.002	0.089	0.022	0.006	0.038	0.017	0.002	0.344

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the F-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

4.6 Robustness to alternative estimations models

4.6.1 Using probit, logit, and ordered logit and ordered probit models

I extend the estimations using logit and probit models to test the robustness of the main findings. I particularly re-run the baseline model for both dependent variables using both logit and probit models. Tables A1 and A2 present the results of the logit and probit estimations, respectively. In columns 1 and 2 of both tables, the dependent variables are dummy, in columns 3 and 4, they are ordinal. For all the estimations, the DiD estimate is significant in all columns of both tables and confirms the initial finding that people living close to active project sites are more likely to have better expectations of the country’s economic condition and their economic condition.

4.7 Exploring Theoretical Mechanisms

The estimation results so far consistently show that Chinese aid projects fuel positive economic expectations. I, therefore, explore the mechanisms through which aid projects may cause individuals to have positive economic expectations. I suggest two primary mechanisms. First, the implementation of aid projects is associated with both direct and indirect employment opportunities and other positive spillovers capable of improving the living conditions of people living close to active project sites. Should this be the case, we can expect the improvement in living conditions to foster positive economic expectations. To test this mechanism, I estimate the impact of Chinese aid on respondents’ self-reported living conditions. The estimation results are presented in column 1 of Table 8.

We observe that individuals living near active project sites are more likely to indicate improvement in their living conditions compared to those living near inactive sites. This suggests that the implementation of Chinese aid projects stimulates improvements in the living conditions of residents living close to project sites and therefore contributes to the positive expectations of these respondents.

I also hypothesize that citizens are more likely to have positive economic expectations

if they believe the current government is managing the economy well and agree that the country is headed in the right direction. Previous studies show that people’s economic expectations are founded on both objective facts as well as their subjective perception of the state of the economy (Bârgăoanu et al., 2013; Duch and Stevenson, 2011; Kiewiet, 1983). Thus, if an individual believes the economy is being managed right and that the country is on the right path towards progress, their expectations are likely to be positive. The result for this test is presented in columns 2 and 3 of Table 8. In column 1, the dependent variable is a dummy and captures individuals’ assessment of how well the government is managing the economy. It takes the value of 1 for responses that the government is managing the economy fairly or very well and 0 otherwise. In column 2, country direction is a dummy that assumes 1 if the respondent answers that the country is headed in the right direction and 0 if headed in the wrong direction. The DiD estimates in both columns are positive and significant. Thus, those living close to active sites are more likely to indicate that the government is managing the economy well and that the country is headed in the right direction.

The findings on the proposed mechanisms, therefore, sufficiently buttress the argument that people living close to active project sites view these projects as signs of good governance; leading them to have much better economic prospects.

5 Conclusion

The economic expectations citizens hold hinge on a myriad of factors, both objective and subjective. In this study, I build on the conceptual underpinnings of economic expectations to show how the implementation of Chinese aid projects informs the economic expectations of the local population. I match geocoded data on Chinese aid projects in Ghana between 2000 and 2014 to 8,157 respondents from 5 waves of Afrobarometer survey conducted between 2002 and 2014 and conduct a differential analysis on the economic expectations of individuals living close to active and inactive project sites. Our findings show that Chinese aid induces positive economic expectations. Compared to

Table 8: Exploring Theoretical Mechanisms

VARIABLES	(1) Personal Condition	(2) Economic Management	(3) Country direction
Active (25 km)	0.085** (0.037)	0.206*** (0.038)	0.042 (0.052)
Inactive (25 km)	0.009 (0.021)	0.006 (0.027)	-0.139* (0.074)
Observations	8,134	7,925	4,487
R-squared	0.092	0.187	0.200
Baseline controls	YES	YES	YES
Region FE	YES	YES	YES
Year FE	YES	YES	YES
Difference	0.0766	0.200	0.181
F-test: active-inactive=0	3.800	23.45	4.159
F-test: p-value	0.052	0.000	0.042

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the F-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

those living close to inactive project sites, individuals living close to active project sites are more likely to indicate that the economic condition of the country, as well as their living conditions, will get better in the months ahead. These findings are resistant to a battery of robustness checks. In addition, I explore the theoretical mechanisms through which Chinese aid influences citizens’ economic expectations. The findings suggest that the implementation of Chinese aid projects is associated with conditions that improve the living conditions of people living close to active project sites. Citizens also view the implementation of these aid projects as signals of good governance and thus shape their economic expectations accordingly.

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Appendix

A.1: Logit estimation

VARIABLES	Logit		Ordered Logit	
	(1) Country	(2) Personal	(3) Country	(4) Personal
Active (25 km)	0.871*** (0.186)	0.750*** (0.206)	0.777*** (0.140)	0.712*** (0.173)
Inactive (25 km)	0.173 (0.123)	0.007 (0.124)	0.200** (0.099)	0.066 (0.101)
Observations	6,894	4,974	6,907	5,185
Baseline controls	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Difference	0.698	0.743	0.577	0.646
Wald-test: active-inactive=0	11.71	11.57	13.86	12.67
Wald-test: p-value	0.001	0.001	0.000	0.000

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the Wald-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

A.2: Probit estimation

VARIABLES	Probit		Ordered Probit	
	(1) Country	(2) Personal	(3) Country	(4) Personal
Active (25 km)	0.525*** (0.110)	0.448*** (0.121)	0.474*** (0.080)	0.429*** (0.095)
Inactive (25 km)	0.097 (0.072)	0.011 (0.072)	0.127** (0.056)	0.055 (0.056)
Observations	6,894	4,974	6,907	5,185
Baseline controls	YES	YES	YES	YES
Region FE	YES	YES	YES	YES
Year FE	YES	YES	YES	YES
Difference	0.428	0.437	0.347	0.374
Wald-test: active-inactive=0	12.61	11.65	15.56	13.81
Wald-test: p-value	0.000	0.001	0.000	0.000

The baseline controls include urban residence, age, age², gender, educational level, employment status, distance to capital city, population count of subnational area, population density of subnational area, water area, land area, distance to closest airport, national border and port. Difference is the “difference in difference” result between active and inactive project sites accompanied by the Wald-test and its p-value. Robust standard errors clustered at enumeration areas are in parentheses; *** p < .01, ** p < .05, * p < .1.

A.3: Descriptive Statistics

Variable	Obs	Mean	Std. Dev.	Min	Max
Country expectations	6,926	.647	.478	0	1
Personal expectations	5,205	.769	.421	0	1
Active 10 km	8,157	.019	.137	0	1
Inactive 10 km	8,157	.06	.238	0	1
Active 25 km	8,157	.037	.188	0	1
Inactive 25 km	8,157	.122	.327	0	1
Active 50 km	8,157	.062	.24	0	1
Inactive 50 km	8,157	.192	.394	0	1
Urban residence	8,157	.508	.5	0	1
Age	8,157	38.683	15.699	18	110
Age ² (divided by 100)	8,157	17.428	14.678	3.24	121
Gender	8,157	.5	.5	0	1
Education	8,157	3.027	2.043	0	9
Employment	8,157	.581	.493	0	1
Population count	8,157	419,811.17	657,668.27	47,652.398	2,469,995
Population density	8,157	1,832.77	3,621.597	8.312	12,723.972
Distance to capital city (km)	8,157	209.187	163.707	1.308	645.635
Distance to airport (km)	8,157	66.426	53.102	1.57	250.01
Distance to border (km)	8,157	146.679	56.966	.723	293.629
Distance to port (km)	8,157	192.813	167.854	1.937	655.651
Water area (km ²)	8,157	24.826	113.734	0	1,078.932
Land area (km ²)	8,157	1,103.9	1,285.819	38.343	8,554.945
Time until start	8,157	-142.403	473.288	-3,885	0
Party support	6,076	.367	.482	0	1
Trust	6,076	.753	.431	0	1
Living conditions	8,157	2.364	1.326	1	5
Economic management	7,949	.501	.5	0	1
Country direction	4,487	.27	.444	0	1

A.4: Variable Definition and Source

Variable		Description	Source
Country	eco- nomic expecta- tions	Dummy variable that equals 1 if respondent expects the economic condition to be better or much better in 12 months' time any and 0 otherwise.	Afrobarometer
Personal	eco- nomic expecta- tions	Dummy variable that equals 1 if respondent expects his/her personal living condition to be better or much better in 12 months' time any and 0 otherwise.	Afrobarometer
Active		Dummy variable that equals 1 if respondent lives close to the specified distance (10, 25 or 50 km) of a site where implementation of a Chinese project was ongoing at the time of the Afrobarometer survey, 0 otherwise.	AidData
Inactive		Dummy variable that equals 1 if respondent lives within a specified distance (10, 25 or 50 km) of a site where a Chinese project was scheduled to be located but implementation had not begun at the time of the survey, 0 otherwise.	AidData
Urban residence		Dummy variable that equals 1 if respondent lives in an urban area and 0 otherwise.	Afrobarometer
Age		Respondents' age in years, and its squared from divided by 100.	Afrobarometer
Gender		Dummy variable that equals 1 if respondent is a male and 0 if female.	Afrobarometer

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Variable	Description	Source
Education	Highest level of education respondent has completed.	Afrobarometer
Employment	Employment status of respondent.	Afrobarometer
Population count	The UN WPP-adjusted population count of human population in subnational area.	Center for International Earth Science Information Network (CIESIN) at Columbia University 2018
Population density	Population density of subnational area.	CIESIN
Water area (km ²)	Total water surface area in kilometers square, including permanent ice and water, per pixel.	CIESIN
Land area (km ²)	Total land surface area in kilometers square, excluding permanent ice and water, per pixel.	CIESIN
Distance to capital city (km)	The shortest geodesic distance (in kilometers) to Accra, the capital city of Ghana.	Author's own calculation
Distance to airport (km)	The shortest geodesic distance (in kilometers) to the closest active airport.	Logistics Capacity Assessments (LCAs)
Distance to border (km)	The shortest geodesic distance (in kilometers) to the closest national border.	LCAs
Distance to port (km)	The shortest geodesic distance (in kilometers) to the closest port.	LCAs

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Variable	Description	Source
Time until start	The difference between the Afrobarometer survey interview date and the planned start date of Chinese aid project for inactive project sites.	Author's calculation based on Afrobarometer data
Party support	Dummy variable that equals 1 if the respondent feels close to the political party in government and 0 otherwise.	Afrobarometer
Trust	Dummy variable that equals 1 if respondent indicates any level of trust in the ruling party and 0 otherwise.	Afrobarometer
Living condition	Dummy variable that equals 1 if respondent answers that their present living condition is fairly or very good and 0 otherwise.	Afrobarometer
Economic management	Dummy variable that equals 1 if respondent answers that the government is managing the economy fairly or very well and 0 otherwise.	Afrobarometer
Country direction	Dummy variable that equals 1 if respondent answers that the country is headed in the right direction and 0 otherwise.	Afrobarometer