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Abstract

The political economy literature highlights the redistribution of resources to political support groups – often along *regional* or *ethnic* lines – as a dominant feature of political systems. Against this assumption, Kasara (2007) documents a puzzling result of discriminatory rent extraction by political leaders from farmers in their ethnic home region. Linking a new database on the ethnic and regional affiliation of political leaders to fine-grained survey data, I disentangle *ethnic* and *regional* affiliations and show that their intersection explains the phenomenon which I will label in the following "reversed favoritism." More specifically, I provide evidence that agricultural price hikes indeed do not reduce poverty among co-ethnic farmers in the leader's birth region. Results indicate that farmers are aware of the unfavorable taxation as they express lower tax support. Yet, leaders seem to act politically rational as they only apply this treatment in regions where they enjoy high trust. An exploratory analysis suggests that the counter-intuitive support of discriminatory policies can be explained by transfers in other areas, namely development aid.

1 Introduction

For a long time, the political economy literature has considered redistributive politics as a powerful means to ensure political support (Dixit and Londregan, 1996; Bueno De Mesquita, 2005). Based on subnational survey data, several studies provide empirical evidence that politicians use resource allocation based on regional (Hodler et al., 2017; Bommer et al., 2019) and ethnic affiliation (Franck and Rainer, 2012) to garner political support. The redistribution along political fault lines – often labeled as favoritism – would, thus, be a global "axiom of politics" (De Luca et al., 2018). However, the African farming sector offers a puzzling anomaly in this literature, which is supported both by qualitative and quantitative evidence. Consider, for instance, qualitative evidence from Kenya's farming sector. Kanyinga (1994) indicates that Kenya's first president Kenyatta, extracted resources from his home region Gatundu, which was relatively underdeveloped compared to other regions in the country. Kasara (2007) supports this evidence for a broader cross-country sample and demonstrates that crops that are grown in the ethnographic home region of the leader are taxed discriminatorily. Nevertheless, this is contrasted by cross-country evidence underpinning a positive bias towards farmers from the leader's regional support group (Bates and Block, 2009, 2010).

This research note addresses the apparent contradiction, linking newly available data on the regional and ethnic affiliation of leaders (Dreher et al., 2021) to high-resolution geolocated survey data on poverty for 30 African countries (Afrobarometer, 2018) and remote sensing data on expected agricultural price hikes (Monfreda et al., 2008; World Bank, 2018; IMF, 2018). Results show that neither ethnic nor regional affiliation affects farmers' poverty when considered separately. However, accounting for the formerly unconsidered interaction of ethnic and regional affiliation, results reveal a "reversed favoritism" against farmers who share the leader's ethnicity and are living in their birth region. Thus, distinguishing the concepts of ethnic and regional favoritism contributes to solving the puzzle of reversed favoritism in African agriculture. Still, why would leaders treat their core supporters unfavorably?

Kasara discusses several mechanisms. First, (indirect) agricultural taxation via lower farm-gate prices may be harder to observe for farmers than direct taxation. Second, farmers may support

a co-ethnic political leadership, where having a non-benevolent co-ethnic leader seems preferable over a non-benevolent leader from another ethnicity (Padró i Miquel, 2007). Third, leaders may compensate for the unfavorable treatment in agricultural prices with transfers in other fields, where, however, so far, a lack of information on "missing transfers" constrained analyses.

This paper advances Kasara's discussion by using Afrobarometer survey data on perceptions to test for those underlying channels. More specifically, I show that co-ethnic farmers with a double affiliation (ethnic and regional) are less approving of taxes, but remain supportive of the leader in power. On the first look, this seems at odds with reciprocity and social contract theory (Besley, 2020). However, other transfers may compensate for the discriminatory tax treatment. For instance, anecdotal evidence suggests that Malawi's former president Bingu wa Mutharika targeted a large-scale maize subsidy program towards his ethnicity (Abman and Carney, 2020) and later also received support from international donors for those policies. Based on geolocated information on World Bank development aid projects (AidData, 2017), I address the issue of "missing transfers." An exploratory analysis suggests that development aid compensates co-ethnic farmers in the leader's birth region and lends support that reversed favoritism is following political rationales.

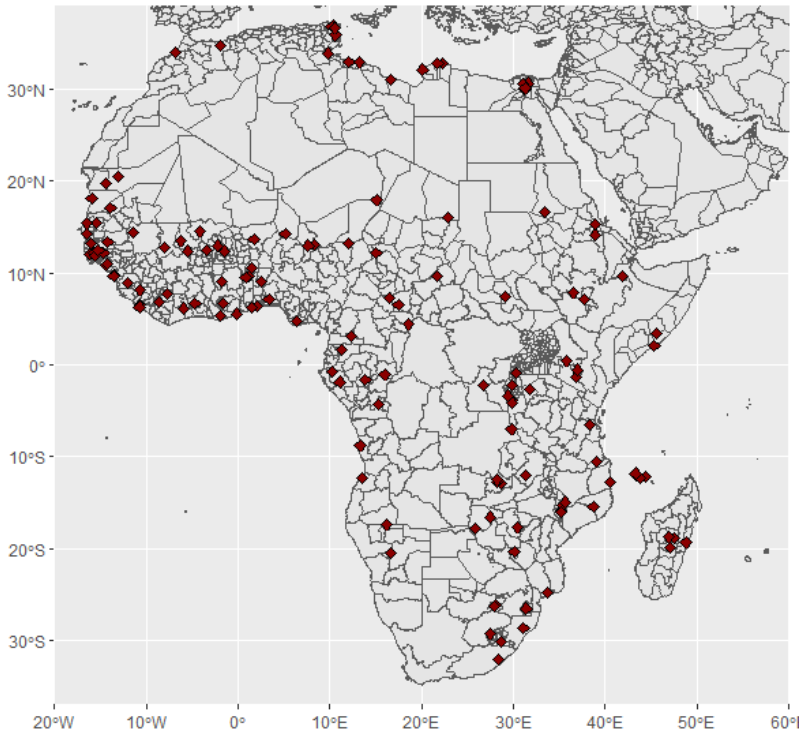
Beyond shedding more light on the puzzling results of Kasara (2007), this paper contributes to the broader literature on favoritism in two ways. First, results suggest that a careful consideration of the intersection of different types of favoritism can help to create valuable insights into the underlying mechanisms. Second, the article highlights that favoritism needs to be examined across policy arenas to gain a more comprehensive picture. The following section introduces the underlying data as well as the empirical approach, while Section 3 presents results. Section 4 discusses the findings and concludes.

2 Data and Empirical Strategy

An important recent advancement in the political economy literature has been the broad use of geospatial data. Systematic research distinguishing regional and ethnic affiliation has, however, so far been constrained by the scarcity of publicly available data. In the Political Leaders' Affiliation

Database (PLAD), Dreher et al. (2021) compile leader birthplaces with exact point locations via the GeoNames database. Those data are used to link leaders' birth regions to regions at the first administrative level (e.g., provinces) from the GADM database version 2.8 of Hijmans et al. (2012). Figure 1 depicts leaders' birth regions and shows that those are distributed broadly across countries.

Figure 1: Leaders' Birth Regions



Note: Red dots indicate African leaders' birthplaces, where the most precise point location from our dataset was taken. Borders refer to first-order administrative regions (ADM1).
Source: Author's depiction based on own data collection.

Ghana's 4^{th} republic serves as a good illustration. After having three consecutive presidents hailing from three different regions of the South, Jerry Rawlings, John Kufuor, and John Atta Mills, a president from the North was elected, John Mahama. However above regional affiliation, the ethnic origin of a leader may play a distinct role in resource redistribution. The PLAD database also offers rich data on leaders' ethnic origins. This way, I link individual survey respondents' affiliation to

leaders, both ethnically and regionally.

Figure 2: Regional and Ethnic Affiliation of Respondents

Birth Region \ Ethnicity	0	1
0	62.64%	25.17%
1	4.16%	8.02%

Note: Co-ethnicity considers only respondents from the same country.
Source: Author's calculation based on his own data collection Dreher et al. (2021) and Afrobarometer (2018).

Although there is obviously a strong positive correlation between living in a leaders' birth region and sharing the leader's ethnicity, there are distinct heterogeneities in ethnic segregation across countries (Ejdemyr et al., 2018; Hodler et al., 2017). Figure 2 indicates that in the underlying dataset, a considerable fraction of the leaders' co-ethnics lives in other provinces. Similarly, a substantial number of other ethnicities reside in the home region of the leader.

Above drawing on the ethnic identifiers in the Afrobarometer, this study also uses these data to obtain information on the primary outcome – poverty. Following the capabilities approach of Sen (1993) and its empirical application (e.g., Klasen, 2000), I consider different dimensions of well-being. Along the lines of **?**, I construct an index based on the five items in the Afrobarometer which refer to poverty. The survey questions read "Over the past year, how often, if ever, have you or your family gone without: food to eat/clean water for home use/medicines or medical treatment/fuel to cook/cash income." These items are listed on a 1 ("never") to 5 ("always") scale and are aggregated into an unweighted poverty index.[1] Focusing on Afrobarometer rounds 3, 6, and 7, which contain both information on agricultural employment and ethnic affiliation, I am left with around 17,500 observations from 67 surveys conducted in 30 countries and 419 subnational regions. Afrobarometer

[1] Nightlight luminosity, DHS, or Living Standard Measurement Surveys would be alternative data sources to assess poverty on the subnational level. While I prefer Afrobarometer data due to its more comprehensive information on ethnicity and employment, I show that indicators are meaningfully correlated in the appendix.

samples data randomly but does not provide a panel structure of respondents. Thus, the study relies on repeated cross-sections with gaps.[2]

The Afrobarometer data offer opportunities to distinguish more clearly regional and ethnic affiliations and to consider the channels outlined by Kasara (2007). More specifically, the research note examines the role of tax support and whether reversed favoritism relates to the level of trust the farmers express towards the leader. For this purpose, I consider the survey items "The tax authorities always have the right to make people pay taxes" and "How much do you trust the president, or haven't you heard enough about her/him to say?"

I rely on a proxy variable for agricultural producer prices for the main treatment on farmers' potential gains. The reason for using a proxy is twofold: First, regional price measures are usually not available for a larger panel of countries. Second, regional price measures could be potentially affected by political affiliation and local poverty and, thus, would be endogenous. The proxy variable follows the basic idea that global commodity prices would more strongly affect regions that are particularly suitable to grow those crops (Berman and Couttenier, 2015; **?**). More specifically, I employ data on commodity prices of five main cash crops cocoa, coffee, cotton, tea, and tobacco (World Bank, 2018; IMF, 2018).[3] The information is then matched with an agricultural market exposure measure, where I rely on crops' regional share of the harvested area from Monfreda et al. (2008), who combine information from national censuses as well as UN agencies. This localized producer price index (PPI) can be summarized as:

$$PPI_{crt} = \sum_{j=1}^{n} P_{jt} \times S_{cjr}, \tag{1}$$

where P_{jt} is the price of good j in period t, which is indexed for each product at 100 for the first Afrobarometer period (July to December 1999).[4] S_{cjr} are local production capacities to grow commodity j in the respective country-region cr. In order to reduce endogeneity concerns, I use

[2]As Afrobarometer surveys are not necessarily representative at the regional level, I truncate the sample at the 10% level of regions with the lowest number of observations. However, I provide regressions with the full sample in Appendix Table B.8, where results remain robust.

[3]I chose these particular crops as they are among the most important African export commodities and play a smaller role for domestic consumption (Akiyama and Larson, 1994).

[4]Certainly, producer prices are correlated with the consumption side, which can influence individual well-being drastically (Hendrix and Haggard, 2015). Considering cash crops for the PPI reduces this issue.

initial production capacity from the year 2000. The global price of each commodity is then interacted with those local capacities. As the temporal variation comes from global commodity prices, the changes are arguably exogenous concerning local conditions in subnational localities, especially, when conditioning the econometric analysis on a rich set of fixed effects. The intuition of expected price shocks is similar to the reduced form of a shift-share instrument (Bartik, 1991) as increasingly used in the literature (Colantone and Stanig, 2018a,b). For the exploratory analysis of compensating transfers, I employ data from AidData (2017) on World Bank development aid as an alternative treatment. Those data are available for the years 1995-2012 but only overlap with the required information on agricultural employment and leader ethnicity for the third Afrobarometer round.

Empirical Strategy

In order to formally test if changes in producer prices differentially affect the poverty status of farmers contingent on ethnic or regional political affiliation, I estimate the following specification:

$$\begin{aligned} W_{cirt} = \alpha + \beta_1 \Delta PPI_{crt} + \beta_2 \Delta PPI_{crt} \times Birth_{crt} \times Ethnicity_{cirt} + \beta_3 \Delta PPI_{crt} \\ \times Birth_{crt} + \beta_4 \Delta PPI_{crt} \times Ethnicity_{cirt} + \beta_5 Birth_{crt} \times Ethnicity_{cirt} \\ + \beta_6 Birth_{crt} + \beta_7 Ethnicity_{cirt} + X_i \beta_8 + \theta_{ct} + \gamma_s + \kappa_{cr} \times t + \epsilon_{cirt}, \end{aligned} \tag{2}$$

where W_{cirt} is the welfare indicator of an individual i in country-region cr in period t, ΔPPI_{crt} is the first difference of the corresponding producer price index for cash crops in country-region cr and period t. Since taxation may only apply to gains, I truncate the changes in producer prices at zero.[5] ΔPPI_{crt} is interacted with $Birth_{crt}$, a binary indicator for a country-region cr being the leader's birth region in period t, and with $Ethnicity_{cirt}$, being a dichotomous variable, which is one if the respondent i shares the ethnicity of country c's leader in period t. In order to increase efficiency, all regressions account for individual covariates X_i related to poverty, e.g., age, education, gender, and rural/urban residence. Furthermore, all specifications include country-period fixed effects, θ_{ct}, survey round fixed effects, γ_s, and country-region fixed effects, κ_{cr}. The country-period fixed effects capture all country-specific events in a particular six-month period, including, for instance, famines, food riots, or political turmoil. Country-region fixed effects account at the first level of

[5] In a robustness exercise in Table B.9, I show that considering negative values does not change the main result.

sub-national administrative areas for all time-invariant factors, including average poverty or cultural fundamentals. While the rich set of control variables and fixed effects reduces endogeneity concerns partly, using an interaction of global commodity prices with local productive capacities allows me to exploit arguably exogenous variation in producer prices at the local level.[6] For the analysis of development aid, I add further interactions of aid with the dichotomous indicators for $Birth_{crt}$ and $Ethnicity_{cirt}$. Due to the limited overlap with the Afrobarometer data, I can only employ a reduced set of fixed effects for this cross-section, namely period and state fixed effects, but no fixed effects for administrative regions. To tackle potential endogeneity, I rely again on a Bartik-style, which was initially suggested in Nunn and Qian (2014) and refined in Dreher et al. (2020) and Lang (2016). For a discussion of the aid data and the instrumental variable, please see the online appendix.

3 Results

3.1 Main Results

In order to assess how favoritism differentially affects agricultural rents depending on individual affiliation, Table 1 introduces the concepts of *regional* and *ethnic* affiliation both separately and as an interaction. Column 1 depicts the baseline results and suggests that farmers' poverty is negatively correlated with the prices of cash crops in line with expectations. A one standard deviation increase in producer prices would be associated with a 0.14 standard deviation decrease in the poverty index. Results in column 2 do not indicate differential effects across regional (*Birth*) or ethnic (*Ethnicity*) affiliation and lend no support to (reversed) favoritism.

However, as regional and ethnic affiliation may overlap, considering only the individual coefficients may mask other interactive effects. To address this point, I also examine the interaction of the two concepts (column 3). While there is still evidence for poverty-reducing effects of farming, there is an even larger opposing coefficient of $\Delta PPI \times Ethnicity \times Birth$. Testing the significance of

[6] Although cropland shares are already less likely to be affected by political favoritism than actual yields, taking pre-determined values from the year 2000 reduces endogeneity concerns even further. The country-region fixed effects capture those initial crop shares in harvested area.

Table 1: Different Types of Favoritism – Main Results

Dep. Variable: Poverty Index of individual i in region r in country c			
PPI	-1.2133***	-1.2740***	-1.2576***
	(0.4504)	(0.4449)	(0.4466)
$PPI \times Birth\,(1)$		0.3739	0.1544
		(0.4707)	(0.4366)
$PPI \times Ethnicity\,(1)$		0.1222	0.0606
		(0.1624)	(0.1812)
$PPI \times Birth\,(1) \times Ethnicity\,(1)$			1.4482***
			(0.3403)
N	15731	15731	15731

Note: Only the main interactions are displayed for brevity. All regressions include country-period, survey round, and regional (province) level fixed effects. All models include individual control variables. Standard errors two-way clustered by region and by country-period in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

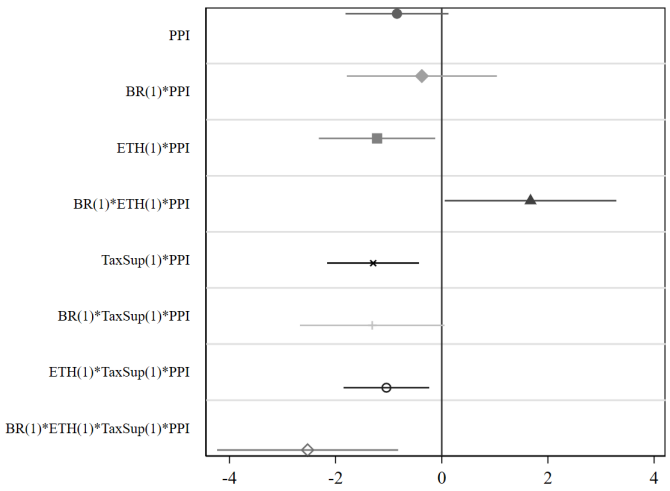
the linear combination of coefficients in column 3 implies that co-ethnic farmers in the leader's birth region would not benefit from increasing prices ($p = 0.856$). This finding corresponds with Kasara's claim that denser ethnic networks in the home region improve monitoring and, thus, rent extraction capacities.[7] Nevertheless, the question remains why leaders would induce a discriminatory treatment of co-ethnics and why farmers would accept it.

3.2 Support of Taxes and Political Leaders

The previous section indicated that farmers with a double affiliation to the leader in terms of ethnicity and region do not benefit from agricultural price increases. Figures 3 and 4 consider respondents' perceptions from the Afrobarometer to understand whether and why farmers with a double affiliation accept this reversed favoritism. For this purpose, I build on a regression analogous to column 3 of Table 1. Instead of splitting the sample, I interact the main variables of interest to ease comparability. For this purpose, I estimate interactions with a dummy variable, which equals one for respondents with high tax support (Figure 3) and high trust in the president (Figure 4). Figures 3 and 4 display linear combinations of the coefficients for sub-groups and provide confidence

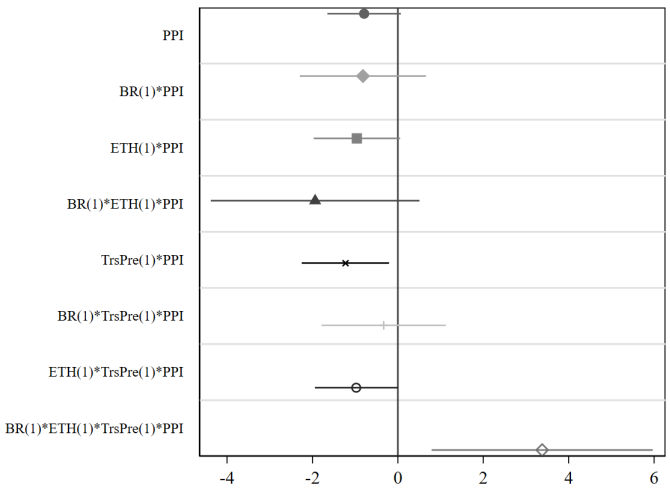
[7]Indeed, contemporary ethnic heterogeneity in Kenyatta's home region Kiambu (0.0328) is much lower than in Daniel arap Moi's birth region Baringo (0.4506) (Gershman and Rivera, 2018).

Figure 3: Support for Taxes



Note: The figure shows linear combinations of the respective effect sizes. TaxSup equals one if the respondents agreed or strongly agreed to the statement "The tax authorities always have the right to make people pay taxes." All regressions include country-period, survey round, regional (province) level fixed effects, and individual control variables. Standard errors two-way clustered by region and country-period in parentheses, where confidence intervals refer to * ($p < 0.10$).

Figure 4: Trust in the president



Note: The figure shows linear combinations of the respective effect sizes. TrsPre would equal one if the respondents indicated that they trust the president "somewhat" or "a lot." All regressions include country-period, survey round, regional (province) level fixed effects, and individual control variables. Standard errors two-way clustered by region and by country-period in parentheses, where confidence intervals refer to * ($p < 0.10$).

intervals for those linear combinations. The underlying point estimates are depicted in Appendix Table B.10. The coefficients in Figure 3 suggest that the main results in Table 1 are driven by individuals with low support for taxes. This is in line with Kasara's presumption that co-ethnics are aware of their differential treatment. Even so, this does not affect trust in political leaders, where coefficients in Figure 4 indicate that producer price changes only affect individuals who put high trust in the leader. While positive price changes reduce poverty among farmers who are neither ethnically nor regionally affiliated to the leader, they increase poverty among farmers with a double affiliation and high trust in the president. Hence, leaders seem to take farmers' perceptions into account when deciding on resource extraction. But why do co-ethnic farmers in the leader's birth region express a high level of trust while experiencing unfavorable treatment? A question which I consider in the following paragraph concerning development aid as a (so far) "missing transfer."

3.3 Development aid as a compensating transfer

In her seminal work, Kasara (2007) discusses "missing transfers" to farmers as an alternative explanation as to why farmers would accept this unfavorable treatment. While her study states that it is problematic to derive any implications on net effects without considering other important transfers, previous data availability constrained the analysis of transfers on a sub-national level. Due to its high fungibility, development aid is one transfer, which may be particularly susceptible to favoritism.

To test this notion, I add to the model from Table 1 column 3 interactions of $Birth$ and $Ethnicity$ with $log(AID_{t-1} + 0.01)$. Table 2 column 1 depicts results for World Bank aid on poverty from an OLS regression. The statistically significant coefficients suggest that development aid would reduce poverty for co-ethnic farmers in the leader's birth region while leaving all other farmers' poverty status unaffected. Yet, one concern may be that donors do not allocate aid randomly but consider poverty as an allocation criterion. Hence, the distribution of development aid may be endogenous to where it is most effective or needed. For this reason, I make use of an instrumental variable approach, where I interact the arguably exogenous availability of the World Bank's surplus resources with the regional probability of receiving aid. Results support the notion that political

Table 2: Channel – World Bank Aid

Dep. Variable: Poverty Index of individual i in region r in country c		
	(1)	(2)
	OLS	IV
$ln(Aid_{t-1})$	-0.0365	-0.0401
	(0.0636)	(0.0838)
$ln(Aid_{t-1}) \times Birth\,(1)$	-0.0298	-0.0046
	(0.0298)	(0.0262)
$ln(Aid_{t-1}) \times Ethnicity\,(1)$	-0.0461	-0.0841**
	(0.0466)	(0.0288)
$ln(Aid_{t-1}) \times Birth\,(1) \times Ethnicity\,(1)$	-0.1177**	-0.0785*
	(0.0543)	(0.0431)
N	4151	4151

Note: Only the main interactions are displayed for brevity. All regressions include country and period fixed effects. All models include individual control variables. Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

leaders provide other transfers, namely development aid, as compensation for the foregone rents from agriculture. Findings correspond to Bates (2014), who suggests that agricultural subsidies and taxation may co-exist. Targeted project-based policies (e.g., aid-financed subsidies) compensate for pricing-based disincentives (e.g., agricultural taxation). This supports previous evidence that private goods are effective means of favoritism (Abman and Carney, 2020). Yet, the results on development aid should be considered as suggestive evidence as one should keep in mind that the underlying data only allowed me to consider a cross-section of farmers in contrast to the more comprehensive analysis of price changes.

4 Discussion and Conclusion

This research note addressed an open puzzle of the political economy literature on "reversed favoritism" in African agriculture by assessing whether political leaders would favor (Bates and Block, 2009) or discriminate against (Kasara, 2007) their core support group. More specifically, this re-

search paper was able to assess these hypotheses and underlying mechanisms more carefully linking high-resolution geospatial data, including the Afrobarometer survey data from 30 African countries, to the new PLAD database (Dreher et al., 2021) which provides information on leader's affiliation.

Results support Kasara (2007) by showing that price hikes for commodities that can be produced in the leader's birth region benefit co-ethnic farmers significantly *less*. A complimentary analysis on channels suggests that those discriminated farmers are less supportive of taxes while surprisingly maintaining positive perceptions about the country's chief executive. This finding leaves the question of why a particular group of co-ethnic farmers in the leader's birth region would express *less* discontent than other groups despite this unfavorable treatment. Kasara (2007) suggests that farmers may be compensated in other areas for the reversed favoritism but could not empirically test this channel due to a lack of data on these "missing transfers." Based on geolocalized data on development aid, which recently became available, I demonstrate that those co-ethnic farmers in the leader's birth region benefit *more* from World Bank development aid than other farmers in the country.

These findings are in line with previous evidence from **?**, who suggest that distributional implications might highly depend on the policy area considered and "the outcome one studies affects the answer one gets." While this study was concerned with the existing puzzle in African agriculture, further research may want to examine other general equilibrium effects as leader support may help affiliated farmers move to other sectors. Hence, besides aid, other public transfers (in other sectors) may matter. In this regard, the underlying data and empirical analysis offer further avenues to initiate relevant research on political favoritism.

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Appendix :.1 Data Appendix

Table B.1: Sampled Countries and Years

Afrobarometer Round	Years	Sampled Countries
Round 3:	2005-2006	Benin, Botswana, Ghana, Lesotho, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, Zimbabwe
Round 6:	2014-2015	Algeria, Benin, Botswana, Burkina Faso, Cameroon, Egypt, Gabon, Ghana, Guinea, Ivory Coast, Kenya, Lesotho, Liberia, Madagascar, Malawi, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, Sierra Leone, South Africa, Sudan, Swaziland, Tanzania, Togo, Tunisia, Uganda, Zambia, Zimbabwe
Round 7:	2016-2018	Algeria, Benin, Botswana, Burkina Faso, Cameroon, Gambia, Gabon, Ghana, Guinea, Lesotho, Liberia, Madagascar, Mali, Mauritius, Morocco, Mozambique, Namibia, Niger, Senegal, Sierra Leone, South Africa, Tanzania, Togo, Uganda, Zambia, Zimbabwe

Table B.2: Data Sources

Variable Name	Description	Years Available	Source
Poverty	Aggregate of five individual poverty assessments ranging each from 1 "Never" to 5 "Always."	1999-2018	Afrobarometer (2018)
Leader Ethnicity	Information on leader's ethnicity combined with information on individual ethnicity from Afrobarometer Round 3-7: "What is your tribe? You know, your ethnic or cultural group."	2005-2018	Own data collection, Dreher et al. (2021) & Afrobarometer (2018)
Leader	Binary indicator if administrative region was the leader birth region.	1980-2018	Own data collection, Dreher et al. (2021)
PPI	Self-constructed index of agricultural producer and consumer prices using prices and production capacity data.	1980-2018	IMF (2018), World Bank (2018), Monfreda et al. (2008)
WB Aid	log of WB Aid disbursements per region-year	2000-2012	AidData (2017)
bsuptax	Binary indicator distinguishing low (strongly disagree; disagree) and high (agree; strongly agree) agreement to "The tax authorities always has the right to make people pay taxes." in t	1999-2018	Afrobarometer (2018)
btrspre	Binary indicator distinguishing low (not at all;just a little) and high (somewhat;a lot) agreement to item "How much do you trust the president, or haven't you heard enough about her/him to say?"	1999-2018	Afrobarometer (2018)
Administrative Boundaries	Boundaries of subnational administrative divisions.	1980-2015	Hijmans et al. (2012)
Socio-economic indicators	Gender, Age, Education (four categories), Urban/Rural.	1999-2015	Afrobarometer (2018)

Appendix :.2 Analytical Appendix

Table B.3: Descriptives - Main Variables

	N	Mean	SD	Max	Min
Poverty Index	202,384	10.9	4.8	25.0	0.0
Tax support	171,265	3.8	1.2	5.0	1.0
Producer Price Index	202,384	2.3	4.9	36.8	0.0
Democracy	202,384	0.5	0.5	1.0	0.0
Leader Region	202,384	0.1	0.3	1.0	0.0
Leader Ethnicity	135,930	0.3	0.5	1.0	0.0
Age	200,357	34.4	15.7	130.0	0.0
Education	201,703	2.4	1.0	4.0	1.0
Urban Residence	201,504	0.6	0.5	1.0	0.0

Note: Survey items on tax support and ethnicity were not collected across all rounds.

Alternative measures of well-being

Three alternative data sources come to mind to assess poverty on the subnational level. First, DHS data offers information on assets and ethnicity and would allow for a comparable analysis. However, it is questionable that assets respond quickly to volatile cash crop price movements. Second, the Living Standard Measurement Surveys (LSMS) offer information on per capita expenditure for a limited subsample of countries (Malawi, Niger, Nigeria, Tanzania). However, those data are not well suited for the main analysis of interest as the LSMS do not provide information on individuals' ethnicity and analysis is, thus, confined to leader birth regions. Third, another potential indicator for regional economic well-being considered in recent scholarly work is night-light output. Although regional light intensity is arguably a viable measure for local economic activity, it is again hard to discern intra-group heterogeneity with this measure. Moreover, while lights might be well-suited to measure industrial productivity, its suitability for agricultural output is questionable. In order to test, if the poverty measure based on Afrobarometer data corresponds to other survey-based indicators, Tables B.4, B.5 and B.6 report correlations. Regions with a higher poverty index show indeed a negative correlation with per capita expenditure, the asset-based wealth index and nightlights. For the main results, I thus rely on the Afrobarometer data.

Table B.4: Correlation of Poverty Index and Expenditure

Dep. Variable: Regional average of Poverty Index (0-25)		
	(1)	
$Expenditurep.c._{c,r,t}$	-0.0021***	-0.0017**
	(0.0000)	(0.0001)
N	75	75
Country FE:	No	Yes
Year FE:	No	Yes

Note: Expenditure data is based on LSMS. Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B.5: Correlations - DHS

Average of Wealth Quintile in country-region cr in period t		
	(1)	(2)
$PovertyIndex$	-0.0341***	-0.0941*
	(0.0076)	(0.0447)
N	271	269
Country FE:	No	Yes
Year FE:	No	Yes

Note: Standard errors clustered by country in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Instrumental Variable Approach for Development Aid

For the aid variable, I consider the log of development aid disbursed by the World Bank's lending arm the International Development Association. As development aid disbursements are usually correlated with need (Kotsadam et al., 2018) and, thus, endogenous, I apply an instrumental variable approach to address this issue.

Along the lines of (Dreher et al., 2017), I construct my instrument by using the interaction between exogenous temporal variation in the WB's IDA liquidity and the regional probability to receive development aid. Variation in the funding position, defined as "the extent to which IDA

Table B.6: Correlations - Lights

Log of night light emission in country-region cr in period t		
	(1)	(2)
PPI	-0.0066	
	(0.0042)	
$PovertyIndex$		-0.0018
		(0.0016)
N	1088	1088

Note: All regressions include period and regional (province) level fixed effects. Standard errors clustered by region and by country-period in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

can commit to new financing of loans, grants, and guarantees given its financial position" (World Bank, 2015), can be caused by repayments by large borrowers including India or the timing of shareholders' timing of payments.

As Afrobarometer does not provide a panel, but only repeated cross-sections, the instrument would suffer from a weak instrument issue. In order to achieve sufficient strength of my instrumental variable, I employ an out of sample prediction based on 1677 sub-national regions from 1995-2012. Results of the first stage are depicted in Table B.7 and indicate that the interacted instrument $IDA - Position \times Prob_{t-1}$ is a significant positive predictor of more development aid.

Robustness – Definition of Producer Price Indicator

Table B.8 provides results analogous to Table 1, but dropping observations from the 10% of regions with least observations. The main results of a co-ethnic discrimination remain unchanged. Table B.9 presents results when also considering negative price movements. Results are by and large unchanged and in line with the pattern of "reversed favoritism."

Table B.7: First Stage – IDA Position and World Bank Aid

Dep. Variable: Log of WB Aid in region r in country c	
$Prob_{t-1}$	-39.4080***
	(6.2044)
$IDA\,Position \times\ Prob_{t-1}$	46.1960***
	(5.4390)
Kleibergen-Paap F-Stat:	78.504
N	28449

Note: Estimates include country, year and sub-national region fixed effects. p-values refer to two-way clustered standard errors by country-year and subnational region: * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B.8: Baseline – Non-truncated Sample

Dep. Variable: Poverty Index of individual i in region r in country c			
PPI	-1.0505**	-1.1013***	-1.0922***
	(0.4186)	(0.4041)	(0.4069)
$PPI \times Birth\,(1)$		0.4307	0.2703
		(0.4125)	(0.3844)
$PPI \times Ethnicity\,(1)$		0.0740	0.0320
		(0.1633)	(0.1769)
$PPI \times Birth\,(1) \times Ethnicity\,(1)$			0.8417***
			(0.3141)
N	17782	17782	17782

Note: Estimates resemble Table 1 using a non-truncated sample, where the 10% of regions with the lowest number of observations are included. Standard errors clustered by region and by country-period in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B.9: Baseline – Including Negative price Differences

Dep. Variable: Poverty Index of individual i in region r in country c			
PPI	-1.2495***	-1.2913***	-1.2818***
	(0.4634)	(0.4543)	(0.4558)
$PPI \times Birth\,(1)$		0.4322	0.2994
		(0.4426)	(0.4256)
$PPI \times Ehtnicity\,(1)$		0.0846	0.0465
		(0.1719)	(0.1852)
$PPI \times Birth\,(1) \times Ehtnicity\,(1)$			0.8032**
			(0.3120)
N	15997	15997	15997

Note: Estimates resemble Table 1, where, however, both positive and negative changes of the producer price index are considered. Standard errors clustered by region and by country-period in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.

Table B.10: Channels – Interactions

Dep. Variable: Poverty Index of individual i in region r in country c				
	Low Tax Support	High Tax Support	Low Trust in Pres.	High Trust in Pres.
PPI	-0.8864	-0.3982*	-0.7882	-0.3951**
	(0.6369)	(0.2260)	(0.5382)	(0.1925)
$PPI \times Birth\,(1)$	0.5570	-0.5089	0.3179	0.5790*
	(0.6416)	(0.3791)	(0.5867)	(0.3413)
$PPI \times Ethnicity\,(1)$	-0.3343	0.5583	-0.1580	0.4135
	(0.3934)	(0.3587)	(0.2241)	(0.2856)
$PPI \times Birth\,(1) \times Ethnicity$	2.3259***	-1.9659***	-1.2614	2.8074**
	(0.6221)	(0.5217)	(1.0561)	(1.1807)
N	13880	13880	12435	12435

Note: Only the main interactions are displayed for brevity. Columns (1-2) as well as (3-4) refer to one regression, but are displayed next to each other for comparability. All regressions include country-period, survey round and regional (province) level fixed effects. All models include individual control variables. Standard errors clustered by region and by country-period in parentheses. * $p < 0.10$, ** $p < 0.05$, *** $p < 0.01$.