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Abstract

I examine the possibility that the trans-Atlantic slave trades influenced the political institutions of villages and towns in precolonial Africa. Using anthropological data, I show that villages and towns of ethnic groups with higher slave exports were more politically fragmented during the precolonial era. I use instrumental variables to show that the relationship is at least partly causal. I argue this fragmentation is important for relative economic development because it still influences political institutions today. I support this argument by using more contemporary data to show that areas with higher precolonial political fragmentation have a higher incidence of bribery.

1 Introduction

The rise of the Atlantic trades fundamentally transformed the regions involved. In Europe it coincided with the rise of the merchant class. In Africa it changed the direction of trade, away from the Sahara and towards the Atlantic. There is little doubt that some participants in the Atlantic trade greatly benefited from it. There is however a growing literature that suggests that the Atlantic trades fundamentally altered the structure of the societies involved. Acemoglu, Johnson and Robinson (2005b) argue that the Atlantic trades contributed to European growth through an indirect institutional channel. They argue that in some parts of Western Europe, the Atlantic trades generated large profits for commercial interests distinctly different from the monarchy. These profits “swung the balance of political power away from the monarchy and induced

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significant reforms in political institutions". These reformed political institutions went on to play an important role in subsequent economic outcomes. The Atlantic trades in Africa was dominated by trading in slaves. Various studies have documented negative long term impacts of the slave trades on subsequent economic development in Africa. Nunn (2008) shows that countries with higher slave export intensity – slave exports normalized by the size of the population - had lower per capita GDP in 2000. This showed that the slave trade had long term negative consequences on African development. Whatley and Gillezeau (2011) further argue that the slave trade likely constrained the growth of ethnicity based states. These studies suggest that the slave trade may have affected the development of communities perhaps through its effect on political institutions. However Obikili (2013) shows that higher slave export intensity is correlated with lower literacy even across small geographical area in Nigeria and Ghana. The slave trades appear to still matter even after accounting for ethnic fragmentation. This suggests that the effects may work through political institutions, not just for the entire ethnic group as a whole, but within villages and towns of ethnic groups as well.

In this paper I examine further the slave trades and its effect on local political institutions in Africa. I focus in particular on local political fragmentation which I define as the number of distinct political groups involved in the decision making process in individual villages and towns. This definition of fragmentation is close to that used by Ricciuti (2004) described as size fragmentation. I test to see if the slave trade altered these villages and towns by promoting institutions that were more fragmented. Acemoglu, Johnson and Robinson (2005a, 2005b), North and Thomas (1973), Benhabib and Przeworski (2006) have all argued the importance of political institutions on economic development. I find that ethnic groups with higher slave export intensity had more fragmented political institutions in their villages and towns during the precolonial era. I use the sailing distance of each ethnic group to the locations of demand for slave labor as instruments to show that the effect of the slave trades on political fragmentation is at least partly causal.

I argue that this political fragmentation was important for development because it promoted political institutions that more likely influenced the development of economic institutions. Individual political groups were not necessarily interested in the development of the villages and towns as a whole, but more interested in the capture of economic rents for their individual units. The slave trade likely promoted and empowered these units, increasing their ability to disrupt and influence local politics, and to changes which may have benefitted towns as a whole but not their units specifically. I argue that this local political fragmentation has persisted over time and continues to influence villages and towns today. Using data from contemporary Nigeria, I show that communities with higher precolonial political fragmentation have a higher incidence of bribery. This is consistent with the idea that the fragmented political units were disruptive. Although Whatley (2012) shows an effect of the slave trade on the quality of precolonial institutions, this is the first paper to show that the slave trades altered the structure of these political institutions before the colonial era.

The paper is organized as follows. Section 2 reviews the historical evidence on the slave trade and its effect on political fragmentation in Africa. Section 3 discusses the data. Section 4 discusses the methodology and results on the impact of the slave trade on political fragmentation. Section 5 discusses the nature of precolonial political fragmentation, its persistence and effect on modern day bribery. Section 6 concludes.

2 Historical background

Various studies have highlighted the role of political institutions in economic development. Acemoglu, Johnson and Robinson (2005a) for example argue that political institutions are important for economic growth. They argue that political institutions and the balance of political power determine what kind of economic institutions are chosen. These economic institutions influence the incentives of agents in societies which further influences economic growth. Hall and Jones (1999), Acemoglu, Johnson and Robinson (2002), and Rodrik, Subramanian, and Trebbi (2002) all argue for a link between various types of political institutions and sustained economic growth. In the context of this paper Acemoglu and Robinson (2000) argue that influential political actors can and do block the development of economic institutions. They argue that influential political actors who fear that a change to economic institutions might erode their political power block changes to economic institutions. These political actors thus may prevent societies with bad economic institutions from improving the quality of these institutions and thus act as a barrier to improved economic growth.

In this paper I argue that the trans-Atlantic slave trade altered African political institutions and promoted political institutions that acted as barriers to change in economic institutions. The nature of the slave trade in Africa suggests that it created opportunities for multiple parties to participate and gain political power. In Africa the profits from the slave trade were likely captured by local political strongmen, anyone who could organize a raiding party. The most common manner in which slaves were taken was through villages or states raiding one another (Northrup, 1978; Lovejoy, 1994). It is likely that the profits from this activity would be captured by the parties leading or in charge of the raids. Lovejoy (2000) writes of the collapse of preexisting forms of government, replaced by smaller groups usually controlled by an established chief or warlord. Other popular methods of capturing slaves, such as through perversion of legal systems (Koelle, 1854; Northrup, 1978; Lovejoy, 2000) or kidnapping (Hawthorne, 1999) were likely driven by local leaders and elite.

One symptom of this change in the distribution of political power is in the dissolution of larger states or state collapse. Local chiefs and warlords participating heavily in the slave trades and profiting from it might have had more incentives to break away from larger states. For instance, Bowen (1968) wrote that Yoruba politics and regional warfare were fueled by the internal political splits between factions in favor of continuation of the slave trade and factions

against the enslavement of the Yoruba. Indeed Whatley and Gillezeau (2011) show that in Africa there is a causal relationship between the slave trade and ethnic stratification, measured as the number of distinct ethnic group within a particular land area.

However Obikili (2013) shows that even across areas dominated by single ethnic groups, the slave trade was still bad for economic development. In essence even after accounting for ethnic stratification, the slave trade seems to influence the development of these already splintered ethnic groups. This suggests that the lasting effects of the slave trade may work through channels besides the collapse of larger more centralized states. In this paper I argue that the same political frictions which caused sections of larger ethnic groups to break up into smaller units also influenced politics in communities. However whereas with disagreements across ethnic groups as a whole a solution would have been to break away, within specific villages and towns such a solution is impractical. I argue that the solution to this problem in towns was to create political institutions that allowed various groups in society to block action by other groups within the same communities. Individuals and families faced with the threat of being sold into slavery might have mobilized to protect themselves and to prevent any other members from gaining enough political power to sell them into slavery. I argue that as a result the slave trade likely promoted more fragmented political institutions making it difficult for any individual groups to influence economic institutions or make social investments.

In this paper I show first of all that the Atlantic trade promoted political fragmentation in villages and towns for ethnic groups more involved in the trade. Ethnic groups with higher slave exports had villages with more fragmented political institutions after the slave trade had ended but before the onset of European colonization. I exploit distances of ethnic groups from the coast and to major slave markets to show that this relation is at least partly causal. Finally I argue that this political fragmentation served as an impediment to changes in institutions and mattered for subsequent economic development.

3 Data

3.1 Slave export intensity

The focus of this paper is on the long run effects of the trans-Atlantic slave trade on the development of political institutions in Africa. As described above, I explore this relationship by examining the relationship between ethnic groups' slave export intensity and their level of precolonial political fragmentation. Estimates of slave exports during the trans-Atlantic slave trades are taken from Nunn and Wantchekon (2011). They calculate the total number of slaves exported by each ethnic group. They do this by combining data on the number of slaves shipped from all ports and regions of Africa with records of the slaves' ethnic identities. Figure 1 maps the historical boundaries according to Murdock

(1959) and total slave exports during the trans-Atlantic slave trades. Areas with darker shades represent ethnic groups with greater number of slave exports. As figure 10 shows, the trans-Atlantic slave trade affected much of Africa. The bulk of slaves were taken from West and Central Africa. These patterns of enslavement are consistent with the qualitative evidence on the sources of slaves taken during the trans-Atlantic slave trades (e.g. Manning 1990 and Lovejoy 2000).

The trans-Atlantic slave trades is only one of four major slave trades in African history. The Indian ocean slave trades, the trans Saharan slave trades and the Red Sea slave trades are all part of Africa's slave trade history. Nunn (2008) however shows that the trans-Atlantic slave trade was by far the largest of the slave trades. The omission of the other slave trades is therefore likely to have little impact. As an extra robustness check I include slave exports from the Indian Ocean slave trades separately as an extra control variable. Including slave exports from the Indian Ocean slave trades does not significantly alter the results. I do not have detailed ethnicity data on the trans Sahara and Red Sea slave trades and therefore cannot include them in my estimations.

I normalize slave exports by the size of land area occupied by ethnic groups as in Nunn (2008). This gives a measure of slave export intensity as larger ethnic groups may be expected to have a larger number of exports. However using other measures of slave export intensity does not alter the results as I will show below.

3.2 Precolonial political fragmentation

My primary measure of precolonial political fragmentation is taken from the Ethnographic Atlas by Murdock (1967). Between 1962 and 1967 George P. Murdock published about 60 variables describing the social, political and economic characteristics of various ethnic groups around the world. His data summarizes the work of different individual field studies done between 1850 and 1950. For Africa in particular specific care was taken by Murdock to describe ethnic groups as they were before colonization. This was done to prevent a misrepresentation of colonial political institutions as ethnic institutions. This data therefore measures characteristics of African ethnic groups as they originally were before the onset of European administration.

One of the characteristics Murdock measures is the political structure within the villages and towns, what he calls the jurisdictional hierarchy within the local community. With this variable he is trying to capture the political structure not of the ethnic group as a whole but the political structure within the villages and towns. I argue that this variable to some extent measures political fragmentation within these villages and towns. This variable is an ordered variable ranging from 2 to 4. A score of 2 represents villages of ethnic groups with the simplest political structure. Ethnic groups under this category had villages with independent nuclear or polygynous families and some kind of village leadership. At the other end ethnic groups with a score of 4 represents groups with at least four distinct political hierarchies within the village or town. For instance such a town may have some kind of organized political leadership within the extended

family, another set of leaders for members of the same kin, and another set of leaders for the entire town. I describe this duplicity of political structures within the villages and towns as more fragmented political institutions.

The Angas tribe from Central Nigeria with a score of 2, for example, had all local political authority vested in a hereditary headman. In essence there was only one political institution outside the family in charge of their individual villages and towns. I argue that the Angas were less politically fragmented. On the other hand, villages and towns for the Isoko ethnic group also in Nigeria were organized in a very different manner. Isoko villages are recorded as having four distinct political levels. There is a local headman, described as the leader of his extended family, a council of elders with a paramount chief, and then an age-grade organization. All these politically organized units operated within the same villages and towns. I argue that ethnic groups such as the Isoko were more politically fragmented.

In general I argue that ethnic groups with villages and towns with a score of two are less politically fragmented. Ethnic groups with towns with a score of four are more politically fragmented. As shown in Figure 2, there is a decent amount of variation in the level of local political fragmentation across ethnic groups.

4 Results

4.1 Ordered and OLS Logit estimates

I begin by examining the relationship between slave export intensity and political fragmentation within villages and town. I test the idea that the towns of ethnic groups with higher slave export intensity became more politically fragmented during the precolonial era. To do this I estimate a regression of the form:

$$Y_i = B_0 + B_1 S_i + B_2 X_i + E \quad (1)$$

where Y_i is the level of political fragmentation in villages and towns of ethnic group i , S_i is my measure of slave export intensity for ethnic group i and X_i is a vector of other characteristics of ethnic group i that may plausibly be correlated with the level of political fragmentation. E is a disturbance term. The measure of political fragmentation is a categorical variable ranging between 2 and 4. Using OLS to estimate the effect of slave exports leaves open the possibility that there are observations of political fragmentation less than 2 or greater than 4. Such a scenario is not possible given Murdock's definition of political fragmentation. OLS estimates also treat the political fragmentation variable as though it were measured on an ordinal scale which may not necessarily be the case. For example, ethnic groups with three jurisdictional levels can be thought as more fragmented than groups with 2 jurisdictional levels. They can also be thought of as less fragmented than ethnic groups with 4 jurisdictional levels. They cannot however be thought of as being 50% more fragmented or 25% less fragmented than ethnic groups with 2 and 4 jurisdictional levels respectively.

As a strategy to deal with the categorical nature of my measure of political fragmentation, I estimate the effect using an ordered logit model.

Table 2 presents the first set of results. Column 1 includes slave export intensity as the only explanatory variable. I find a positive and significant correlation between slave export intensity and political fragmentation. This is consistent with the theory that ethnic groups with relatively higher slave export intensity during the trans-Atlantic slave trades had more political fragmentation as opposed to ethnic groups with lower slave export intensity.

In column 2 I account for the possibility that other characteristics of ethnic groups may drive the seeming correlation between local political fragmentation and slave export intensity. The presence of class stratification, for example, may have resulted in the need for some kind of political participation amongst different social classes. Weaker social classes may have had incentives to organize amongst themselves as a mechanism to compete with other more dominating classes hence resulting in the seeming presence of greater political fragmentation within the community. To account for this I control for the presence of class stratification within the local community. Another factor that could influence the level of political fragmentation is the size of the communities. The probability of observing fragmented political institutions should be smaller in communities with smaller populations in each town or village. On the other hand, communities with larger populations in towns may have had more incentives to organize politically simply because they are bigger. In order to account for this I control for the average size of the local community, that is, the average population of towns for each ethnic group. Finally there could be something about the way the communities are structured that may have required them to develop more fragmented political institutions. I include the pattern of family organization to account for potential differences in family structure. Communities with large connected extended families, for instance may have political representatives within the family and also have political arrangements for the community as a whole. On the other hand communities centered on small nuclear family units may not require separate political units within the family. This difference in family organization may result in communities with large extended families appearing more fragmented than communities with small nuclear families. I include the type of family organization to account for this. All three characteristics of local communities are taken from Murdock's ethnographic atlas. The correlation between slave export intensity and political fragmentation remains positive and significant.

In column 3 I control for some geographic factors which may have influenced the level of political fragmentation. For much of Africa's early history, trade was based around the trans Saharan trade routes. Trade between sub Saharan Africa, North Africa, the Middle East and Europe did not occur through the Atlantic but through land routes across the Sahara desert. The exposure of ethnic groups to opportunities for trade across the Sahara may have resulted in greater prosperity perhaps leading to faster development of the ethnic groups exposed to these trade routes. This could possibly have increased the likelihood of political fragmentation within local communities as well. To account for this

I include the distance of each ethnic group to the Saharan trade routes in thousands of kilometers as a proxy for exposure to trade before the Atlantic trade. Agricultural productivity may also have influenced the development of ethnic groups and as a result the level of political fragmentation within its communities. Ethnic groups more dependent on agriculture may have experienced an expansion in productivity which may not have been possible for ethnic groups dependent on other economic activities such as hunting or fishing. This expansion of productivity could have led to development of communities and as a result differences in the local politics within these communities. In column 3 I include all these variables as well as controlling for other characteristics of the ethnic groups as in column 2. The correlation between slave export intensity and political fragmentation remains positive and significant. The negative and significant coefficient on distance to the Saharan trade routes also suggest that it wasn't trade in general that promoted political fragmentation but the Atlantic trade in particular.

The results in columns 1, 2 and 3 use only slave exports from the trans-Atlantic slave trades in measuring slave export intensity. As mentioned earlier there were three other slave trades in African history; The Indian ocean slave trades, the Red sea slave trades and the trans Sahara slave trades. This paper is focused on the trans-Atlantic slave trades however it is possible that the other slave trades might have influenced political fragmentation as well. To account for this possibility I include slave exports from the Indian Ocean slave trades as an extra control variable. Both measures of slave exports are also normalized by the size of land area occupied by each ethnic group. Ethnicity level data from the Red Sea and trans Sahara slave trades is unfortunately not available. Columns 4, 5 and 6 of table 2 mirror columns 1, 2 and 3 with the exception of using the alternative measure of slave export intensity which includes exports during the Indian Ocean slave trades. The correlation between political organization and trans-Atlantic slave export intensity remains positive and significant for all three specifications. The results are also of similar magnitude as in columns 1, 2 and 3. The Indian Ocean slave trade appears to have a negative correlation with political fragmentation but that result is not stable. It becomes insignificant once other characteristics of ethnic groups are controlled for. This is consistent with Nunn (2008) and Nunn and Wantchekon (2010) who suggest that the long term effects of the slave trades were driven primarily by the trans-Atlantic slave trades.

For the estimates in table 2 I normalize slave exports by the size of land area occupied by each ethnic group. I do this to get a measure of slave export intensity which takes into account the size of the ethnic group. One possible disadvantage of this approach is that the land area does not truly represent the size of the ethnic group. The population of the ethnic group would be the ideal variable to normalize slave exports. Unfortunately data on the population of ethnic groups during the slave trades is unavailable. The earliest available data on the size of the population of ethnic groups reported by Murdock is from early during the colonial era. These numbers were recorded after the slave trades had taken place. These population numbers however provide a rough estimate of

the size of ethnic groups and an alternative way to normalize slave exports. Table 3 reports estimates using slave exports normalized population. The full set of control variables from table 2 are also used. In column 1 I use only slave exports from the trans-Atlantic trade while in column 2 I include slave exports from the Indian Ocean slave trades as an extra control variable. In both cases the effect of the trans-Atlantic trade on political fragmentation remains positive and significant.

The measure of political fragmentation is a categorical variable ranging between 2 and 4. Estimating the relationship using OLS however produces results that are qualitatively identical to the ordered logit estimates. Table 4 presents results using OLS.

The correlation between slave export intensity and local political fragmentation is apparent with all specifications. The results are also statistically meaningful. The standard deviation of my measure of political fragmentation is about 0.66 and the standard deviation of my measures of slave export intensity range from 0.45 to 0.48. In this context the OLS coefficients on slave export intensity, which range from 0.11 to 0.21 are large effects.

4.2 Causality issues: IV estimates

The positive correlation identified in the previous section is consistent with my hypotheses that the trans-Atlantic slave trades promoted local political fragmentation. However an alternative explanation is that some communities were already more politically fragmented and this prior fragmentation enabled them export more slaves. Another explanation could be that there is some other factor which influenced both the slave export intensity and the level of political fragmentation. In order to properly identify the effect of slave exports on local political fragmentation I use the distance of each ethnic group from the coast, and the sailing distance from the point on the coast closest to each ethnic group, to the closest major market for slaves in the Americas during the Atlantic slave trades, as used in Nunn (2008).

Instrumental variable regressions require the use of instruments that are correlated with the slave export intensity of ethnic groups but uncorrelated with any other unobservable factors which may be correlated with political fragmentation. The distance of ethnic groups from the coast captures the exposure of ethnic groups to the slave trades since slaves were first transported to the ports and purchased by European merchants before being shipped to the Americas. Ethnic groups closer to the coast would have found it easier to trade slaves with European merchants. There is little doubt that the proximity to the coast is correlated with exposure to slave trades. Miller (1996) describes the slave trades as progressing in waves of destruction that originated from the coast. Nunn and Wantchekon (2011) also show a positive correlation between an ethnic groups distance to the coast and its slave exports. It is also unlikely that this proximity to the coast is correlated with factors other than the slave trades that might have influenced political fragmentation. For most ethnic groups, overseas trade did not take place prior to the trans-Atlantic slave trades and Indian Ocean

slave trades. I calculate the distance of ethnic groups to the coast using data from Murdock (1959) which shows the historical borders of ethnic groups during the 19th century. I calculate the distance from the centroid of each ethnic group to the closest point on the coast in thousands of kilometers.

The second instrument used is the sailing distance from the closest point on the coast to the closest major market for slaves during the trans-Atlantic slave trades as used in Nunn (2008). These markets were usually located in the Americas. The idea behind using this as an instrument is that the demand for slaves was higher for ethnic groups closer to major slave markets and smaller for ethnic groups further away from slave markets. However, proximity to major slave markets did not influence the location of ethnic groups. It would also be unlikely that this distance to major slave markets is correlated with other factors which may influence local political fragmentation. This is because there was little or no trade between ethnic groups and these markets prior to the trans-Atlantic slave trades. I calculate the sailing distance from the closest point on the coast for each ethnic group to the closest of nine of the largest importers of slaves in thousands of kilometers. These were Virginia, USA; Havana, Cuba; Haiti; Kingston, Jamaica; Dominica; Martinique; Guyana; Salvador, Brazil; and Rio de Janeiro, Brazil. These destination are as used in Nunn (2008).

The IV estimates are reported in Table 5. I use the full set of controls as in the ordered logit and OLS regressions. In column 1 I report the estimates from the regression of slave exports normalized by land area. In column 2 I report estimates using slave exports normalized by the earliest reported population. Columns 3 and 4 mirror columns 1 and 2 but include the slave exports from the Indian Ocean slave trade as an extra control variable. In all specifications the coefficients on the distance to the coast and the sailing distance to major slave markets are negative and significant. This is consistent with the idea that ethnic groups further away from the coast and from major slave markets exported fewer slaves. The second stage regressions are reported in the upper section of Table 5. The coefficients on slave export intensity are positive and significant for all specifications.

Overall, the IV results confirm the positive and causal relationship between slave export intensity and local political fragmentation estimated by the ordered logit and OLS models. They also suggest that OLS estimates are biased towards zero. Hence OLS tends to under estimate the magnitude of the effect of the slave trade.

5 How did the slave trade cause political fragmentation?

I argue that the manner of slave exporting made it difficult for rulers in villages and towns with simple and less fragmented political structures to maintain order and control. The slave trade likely created opportunities for wealth generation by anyone who could mobilize people to raid other villages or organize kidnap-

pings. This implies that maintaining simple less fragmented political structures would have been more difficult for groups participating in the slave trades.

A couple of papers have discussed the role of African local leaders and elites in the slave trades. Fenoaltea (1999) argues that the magnitude and duration of the slave trade required the presence of domestic elite willing and able to purchase luxury goods from European merchants in exchange for slaves. Thomas (1997) writes that treaties were made directly with African rulers for the purchase of slaves. An example is given of Prince Henry who in 1458 sent Diego Gomes to negotiate with African rulers, ensuring that slaves would not be stolen but would be paid for. He writes that African monarchs and chiefs sanctioned the sale of slaves and showed “overwhelming willingness” to advance their own interests by supplying their own natives as slaves.

It is clear that there were opportunities for wealth generation by local chiefs and other elite from the export of slaves. There is also documentation of these elites manipulating the system to increase their influence in their villages and trade, and also to undermine centralized authority. Thomas (1997) wrote about King Afonso of Congo who, as a result of insatiable Portuguese demand for slaves and his inability to meet the demand, modified his royal monopoly on supplying slaves, allowing others outside the monarchy to sell slaves. Manning (1982) writes of the Gun kingdom in Porto Novo where although the King was absolute in theory, he could not deal with the complications of being both King and merchant. He had to “entrench an aristocracy consisting of his ministers, numerous princes, and rich merchants”. In all these cases the growth of slave trading made it difficult for kings and chiefs in these areas to rule independently. The creation of more local political units would have been necessary for effective administration of their villages and towns and for the continuation of slave trading. It is also likely that this pressure from the slave trades affected not just the political institutions of the ethnic group as a whole but of the villages and towns as well.

5.1 Did This Political Fragmentation Matter for Economic Development

The effect of the slave trade on local political fragmentation is clear from the results shown earlier. However the nature of these more fragmented political institutions and their effect on subsequent development is unclear. I argue that the nature of slave exporting from Africa led to the political fragmentation which made decision making in villages and towns more difficult. I argue that this is because political units were more interested in protecting their power and protecting the narrow interests of their political units. This implies that making decisions, such as building a school, would have been more difficult. This kind of polarized fragmentation is rarely conducive for economic development.

I attempt to substantiate the hypothesis that increased political fragmentation during the precolonial era made decision making more difficult and mattered for economic development. Empirical evidence showing a correlation between the higher local political fragmentation and a measure of political obstruction

will lend credence to this hypothesis. Unfortunately I do not have a proper measure of political obstruction for the period directly after the slave trades. I use modern data on bribery in Nigeria to get around this problem. Bribery typically represents an extractive or rent seeking activity and is a good proxy for the level of political obstruction. Areas with more fragmented obstructive political units should have a higher incidence of bribery than areas with less fragmented political units. The number of units needed to be “settled” before changes to economic institutions can be implemented or before social investments can be made should be higher in areas where more political groups can obstruct things. Tanzi (1994) argues that greater government size creates a potential for more corruption. Brownsberger (1983) also argues that, at least in the case of Nigeria, political fragmentation is a key driver of corruption. Examining ethnic groups in Nigeria alone allows me to control for other colonial or national institutional factors which may also affect the incidence of bribery. Using modern data also serves as evidence that the impact of the increased political fragmentation is still relevant today.

The data on bribery is taken from the 2005 round of the Afrobarometer survey. The survey is based on interviews conducted in the local language of a random sample of 2400 individuals of voting age in Nigeria. The survey asks respondents how often, if ever, they have had to pay a bribe, give a gift, or do a favor to a local government official in order to get a document or a permit. They are also asked how often they have had to pay a bribe to get a household service like piped water, electricity or a phone. In Nigeria piped water, electricity and fixed line telephones were only provided by government corporations mostly run by local officials. Respondents choose between four possible answers: Never, once or twice, a few times, or often. The responses to these questions represent a relative measure of obstruction by politicians. Individuals who report having had to give more bribes can be thought of as living in areas with a higher level of obstruction by political units.

The respondents report their current location in the survey. This allows me to match respondents to areas historically occupied by particular ethnic groups, and the historical level of political fragmentation of ethnic groups in that area. To estimate the relationship between current incidence of bribery and precolonial political fragmentation in local communities I estimate a model of the form:

$$B_{i,e,d} = \alpha_c + \beta_1 P_e + \beta_2 C_{i,e,d} + \epsilon$$

where $B_{i,e,d}$ is the incidence of bribery for an individual i , in an area historically occupied by ethnic group e , and in local district d . P_e represents the level of precolonial political fragmentation in the local community. I include extra control variables to account for other individual, ethnic, or district level factors which may influence the level of bribery. I control for the age and gender of the respondent. I also control for the level of education, religion, if the respondent is in a rural or urban area, the reported living conditions, the ethnic fractionalization of the district and the fraction of the respondents ethnic group in the district. The level of precolonial political fragmentation varies by ethnic group

and not by respondent. To account for this I report clustered standard errors in all cases.

There are two ways to estimate the relationship between the incidence of bribery and precolonial political fragmentation. In columns 1 and 2 of table 6, I use OLS to estimate this relationship. In column (1) the dependent variable is the response of individuals to how often they have had to pay a bribe for a document or permit in the last year. Column (2) uses responses to how often a bribe has been paid for a household service. In both cases the relationship is positive and significant. This suggests that areas with a higher level of precolonial political fragmentation are associated with increased incidence of bribery today.

The answers to question on bribery in the Afrobarometer survey are categorical. An alternative strategy to estimating the relationship between the incidence of bribery and precolonial political fragmentation will be to use an ordered logit model. Columns 3 and 4 mirror columns 1 and 2 but use an ordered logit estimator. In both cases the relationship is still positive and significant.

An alternative explanation is that the correlation is in some way related to other channels through which the slave trade matters for current development. For instance this precolonial political fragmentation may in some be related to ethnic stratification which Whatley and Gillezeau (2011) argue is a channel through which the slave trade matters for current development. Political Fragmentation may also be serving as proxy for levels of trust which Nunn and Wantchekon (2011) argue is also a channel through which the slave trade matters for current development. However including these variables in the baseline regression does not influence the correlations between fragmentation and the incidence of bribery. In table 7 I include a measure of ethnic fractionalization, constructed in the standard manner as in Easterly and Levine (1997), as an extra control variable. I also include different measures of trust from the Afrobarometer survey. Columns 1, 2, 3 and 4 include measures of trust in relatives, neighbours, people from the respondents' ethnic group, and people from other ethnic groups. In all cases the relationship between precolonial political fragmentation and the incidence of bribery is still positive and significant. This suggests that political fragmentation is not related to ethnic fractionalization or trust in any obvious way.

The results in Table 6 suggest that areas that were more politically fragmented during the precolonial era have a more obstructive set of political institutions today. This supports the hypothesis that the increased political fragmentation during the slave trade still matters for subsequent economic development.

6 Conclusion

In this paper I show that in Africa, ethnic groups with a relatively larger slave export intensity during the trans-Atlantic trades have communities had communities with more fragmented political institutions. To determine whether the relation is causal I use the historic distance of ethnic groups from the coast and

the sailing distance from the closest point on the coast to the nearest major slave market in the Americas as instruments for the intensity of slave exports. The instrumental variable estimates confirm the hypothesis that the slave trades did lead to greater political fragmentation within local communities.

I suggest that this political fragmentation in local communities matters for development. I argue that this was most likely because the distribution of political power in villages promoted more obstructive political institutions. Evaluation of the relationship between the aforementioned measure of precolonial political fragmentation within local communities and current levels of bribery seem to support that claim.

My findings are consistent with Nunn (2008) who shows that the slave trades retarded African development. The finding help provide evidence on the channels through which the slave trades affected modern African development.

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Table 1: Summary Statistics

	OBS	Mean	Std. Dev.	Min	Max
In(Slave exports /Area) (Atlantic)	324	0.175	0.551	0	3.656
In(Slave export /Area) (Atlantic + Indian)	325	0.205	0.578	0	3.656
In(Slave exports /Population) (Atlantic)	209	0.051	0.220	0	1.939
In (slave export)	396	2.643	3.950	0	15.161
Precolonial political fragmentation	325	2.931	0.66	2	4
Bribery Variables:					
for document or permit	925	0.557	0.869	0	3
for household service	996	0.548	0.880	0	3

Table 2: Estimates of the relationship between slave export intensity and political fragmentation

	(1)	(2)	(3)	(4)	(5)	(6)
Slave Exports / Area	0.610***	0.440**	0.470**	0.595***	0.427**	0.456**
	(0.178)	(0.199)	(0.202)	(0.178)	(0.199)	(0.202)
Slave Export/Area (Indian Ocean)				-1.610**	-1.697	-1.153
				(0.856)	(1.104)	(0.970)
Class stratification		-0.076	-0.064		-0.259	-0.059
		(0.084)	(0.085)		(0.022)	(0.086)
Mean size of local community		0.262***	0.237***		0.065***	0.235***
		(0.152)	(0.053)		(0.013)	(0.053)
Pattern of family organization		0.624***	0.636***		0.167***	0.635***
		(0.069)	(0.071)		(0.015)	(0.071)
Distance to Saharan trade route			-0.334***			-0.309***
			(0.101)			(0.103)
Dependence on Agriculture			0.100			0.106
			(0.069)			(0.069)
R ²	0.016	0.214	0.235	0.043	0.220	0.238
Number of Observations	394	331	331	394	331	331

Notes. The dependent variable is the precolonial political fragmentation. Coefficients are reported with standard errors in brackets. ***, **, * indicate significance at the 1%, 5%, and 10% levels

Table 3: Alternative measures of slave export intensity

	(1)	(2)
	Slave Exports / Population	Slave Exports
Slave export intensity (Atlantic)	0.172**	0.168**
	(0.080)	(0.081)
Slave Export Intensity (Indian Ocean)		-0.222*
		(0.134)
Pattern of family organization	YES	YES
R ²	0.259	0.266
Number of Observations	208	208

Table 4: Estimates of the relationship between slave export intensity and political fragmentation – OLS

	(1)	(2)	(3)
Slave export intensity	0.215***	0.115**	0.121**
	(0.059)	(0.052)	(0.052)
Class stratification		-0.119	-0.017
		(0.022)	(0.021)
Mean size of local community		0.066***	0.058***
		(0.013)	(0.013)
Pattern of family organization		0.168***	0.165***
		(0.015)	(0.015)
Distance to Saharan trade route			-0.084***
			(0.025)
Dependence on Agriculture			0.021
			(0.017)
R ²	0.032	0.358	0.383
Number of Observations	394	331	331

Notes. The dependent variable is the precolonial political fragmentation. Coefficients are reported with standard errors in brackets. ***, **, * indicate significance at the 1%, 5%, and 10% levels

Table 5: Estimates of the relationship between slave export intensity and political fragmentation – IV regressions

	(1)	(2)	(3)
Slave Export Intensity (Trans – Atlantic)	1.167***	0.307***	1.154***
	(0.280)	(0.070)	(0.279)
Slave Export Intensity (Indian Ocean)			-0.082
			(0.212)
F-Stat	5.36	8.39	4.77
Obs	331	208	331
Distance to the Coast	-0.233***	-0.887***	-0.242***
	(0.073)	(0.309)	(0.074)
Sailing Distance to Major Slave Market	-0.029***	-0.156***	-0.028***
	(0.010)	(0.039)	(0.010)
F-Stat	13.100	16.505	13.084
Hausman test (p-value)	0.000	0.000	0.000
Sargan test (p-value)	0.169	0.573	0.182

Notes. The dependent variable is precolonial political fragmentation. Coefficients are reported with standard errors in brackets. ***, **, * indicate significance at the 1%, 5% and 10% levels.

Table 6: Estimates of the relationship between bribery and precolonial political fragmentation

	(1)	(2)	(3)	(4)
	ORDERED LOGIT		OLS	
Precolonial political fragmentation	0.381**	0.430**	0.157**	0.161**
	(0.181)	(0.197)	(0.056)	(0.064)
District controls	Yes	Yes	Yes	Yes
Ethnic controls	Yes	Yes	Yes	Yes
Individual controls	Yes	Yes	Yes	Yes
Country controls	Yes	Yes	Yes	Yes
No of Observations	790	866	790	866
No. of Ethnic Clusters	21	20	21	20
R ²	0.089	0.071	0.160	0.115

Notes. Coefficients are reported with clustered standard errors in brackets. ***, **, * indicate significance at the 1%, 5%, and 10% levels

Table 7: Estimates of the relationship between bribery and precolonial political fragmentation controlling for trust

	(1)	(2)	(3)	(4)
Precolonial political fragmentation	0.376**	0.382**	0.391**	0.402**
	(0.177)	(0.176)	(0.173)	(0.183)
Trust	-0.149*	-0.069	-0.012	0.054
	(0.088)	(0.076)	(0.063)	(0.053)
Ethnic Fractionalization	0.744	0.839	0.834	0.738
	(0.530)	(.525)	(0.514)	(0.519)
Full Controls	Yes	Yes	Yes	Yes
No of Observations	789	790	790	784
No. of Ethnic Clusters	21	21	21	21
R ²	0.090	0.082	0.089	0.089

Notes. Coefficients are reported with clustered standard errors in brackets. ***, **, * indicate significance at the 1%, 5%, and 10% levels

Figure 1: Ethnic boundaries defined by Murdock (1959) and Slave Exports.

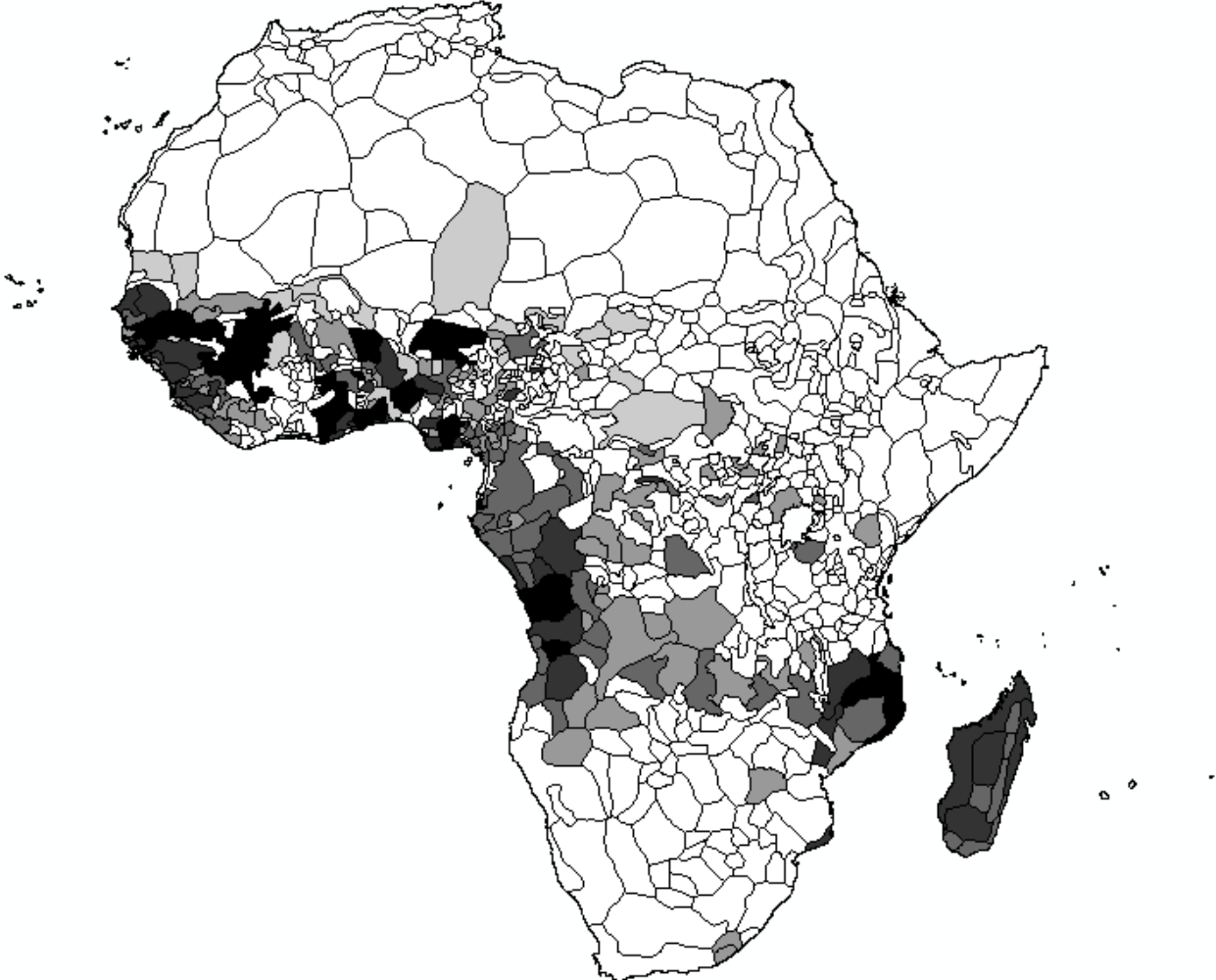


Figure 2: Ethnic boundaries defined by Murdock (1959) and local political fragmentation.

