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ABSTRACT

We investigate the historical origins of mistrust within Africa. Combining contemporary household survey data with historic data on slave shipments, we show that individuals whose ancestors were heavily raided during the slave trade today exhibit less trust in neighbors, relatives, and their local government. We confirm that the relationship is causal by using the historic distance from the coast of a respondent's ancestors as an instrument for the intensity of the slave trade, while controlling for the individual's current distance from the coast. We undertake a number of falsification tests, all of which suggest that the necessary exclusion restriction is satisfied. Exploiting variation among individuals who live in locations different from their ancestors, we show that most of the impact of the slave trade works through factors that are internal to the individual, such as cultural norms, beliefs, and values.

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1. Introduction

In a recent study, Nunn (2008) examines the long-term impacts of Africa's slave trade. He finds that the slave trade, which occurred over a period of more than 400 years, had a significant negative effect on long-term economic development. Although the paper arguably identifies a negative causal relationship between the slave trade and income today, the analysis is unable to pin down the exact causal mechanisms underlying the reduced form relationship documented in the paper.

In this paper, we examine one of the channels through which the slave trade may affect economic development today. Using fine-grained individual-level survey data, we test whether the slave trade caused a culture of mistrust to develop within Africa. Early in the slave trade, slaves were primarily captured through state organized raids and warfare. By the end of the trade, because of the environment of ubiquitous insecurity that had developed, individuals - even friends and family members - began to turn on one another, kidnapping, tricking, and selling each other into slavery (e.g., Koelle, 1854, Hair, 1965, Piot, 1996). We hypothesize that in this environment, where everyone had to constantly be on guard against being sold or tricked into slavery by those around them, a culture of mistrust may have evolved, and that this mistrust may continue to persist today.

Our hypothesis builds on the well-established result from cultural anthropology that in environments where information acquisition is either costly or imperfect, the use of heuristic decision making strategies or 'rules-of-thumb' can be an optimal strategy (Boyd and Richerson, 1985, 1995). These general rules or beliefs about what the 'right' action is in different situations saves the individual from the costs of information acquisition. Of course, these norms or rules-of-thumb do not develop in a vacuum, but evolve according to which norms yield the highest payoff. Our view is that in areas more exposed to the slave trade, rules-of-thumb or beliefs based on the mistrust of others would have been more beneficial relative to norms of trust and therefore would have become more prevalent over time. In other words, our hypothesis is that the slave trade would have engendered a culture of mistrust. Because these beliefs and norms persist, particularly in environments where they remain optimal, the relationship between these norms and a history of the slave trade may still exist in the data today – almost 100 years after the slave trade has ended. Alternatively, the culture of mistrust that was a consequence of the slave trade may be an outcome that is stable. In other words, the slave trade may have caused a permanent change in the level

of mistrust in the society. Recent contributions, like Tabellini (2008) and Guiso, Sapienza, and Zingales (2007*c*), provide models that show how this can occur.

To test our hypothesis, we use data from the 2005 round of the Afrobarometer survey and examine whether individuals belonging to an ethnic group that was heavily targeted in the past are less trusting of others today. Because of the richness of the Afrobarometer survey, we are able to test for the effect of the slave trade on the amount of trust that each respondent places in different individuals. Specifically, we examine the effects of the slave trade on individuals' trust in (*i*) their relatives, (*ii*) their neighbors, and (*iii*) their local government council. We find that individuals, belonging to ethnicities that were exposed to the slave trades, today exhibit lower levels of trust in their relatives, neighbors, and their local government. This finding is consistent with the historical fact that by the end of the slave trade, it had become very common for individuals to be sold into slavery by neighbors, friends, and family members.

An alternative explanation for our finding is that more slaves were supplied by ethnic groups that initially had lower levels of trust of those around them, and that these lower levels of trust continue to persist today. We pursue a number of strategies to identify the direction of causality in our OLS estimates. One strategy we pursue is to use the historic distance from the coast of an ethnic group as an instrument for the number of slaves taken from that ethnic group. There is ample historical evidence suggesting that the instrument is relevant, but it is far less clear that it satisfies the necessary exclusion restriction. The most likely reason why the exclusion restriction may fail is that the historic distance from the coast of an individual's ancestors is correlated with the current distance from the coast of the respondent, and this in turn is negatively correlated with income (Rappaport and Sachs, 2003), which is positively correlated with trust (Alesina and La Ferrara, 2002).[1] For this reason, in our IV estimates, where we use the *historic* distance from the coast of a respondent's ancestors as an instrument, we also control for the respondent's *current* distance from the coast. The IV estimation produces estimates very similar to the OLS estimates. They provide evidence that the slave trade caused the descendants of those targeted by the trade to be less trusting today.

As is generally the case with instruments, it is possible that despite our second stage controls, our instrument still does not satisfy the necessary exclusion restriction. For this reason, we also perform a number of falsification exercises to assess the validity of our identification strategy. We

[1] Note that this actually results in IV estimates that are biased towards zero.

examine the reduced form relationship between distance from the coast and trust within Africa and in two samples outside of Africa using data from the World Values Surveys and the Asiabarometer. Within Africa, we find a strong positive relationship between distance from the coast and trust. This is expected given our IV estimates. Places further from the coast had less slaves taken in the past, and therefore exhibit higher levels of trust today. Our IV strategy relies on the assumption that the distance from the coast only affects trust through the slave trade. Therefore, if our exclusion restriction is satisfied, then when we examine the reduced form relationship between distance from the coast and trust outside of Africa where there was no slave trade, we expect to see no relationship. This is exactly what we find. In our samples outside of Africa, we estimate a statistically insignificant relationship between distance from the coast and trust. We also perform a similar exercise looking within Africa. We find that within the regions of Africa that were not exposed to the slave trade, no relationship exists between an individual's distance from the coast and trust today. We also find that the relationship increases the more exposed a region was to the slave trade.

After establishing that the slave trade had an adverse effect on trust, we then turn to the task of distinguishing between the two most likely channels through which this could have occurred. One channel, which is the focus of our paper, is that the slave trade altered the cultural norms of the ethnic groups exposed to the trade, making them inherently less trusting. However, there is also a second channel, which a priori is as plausible and as important. The slave trade resulted in a long-term deterioration of legal and political institutions, and such weak institutions enable citizens to cheat others more easily and, for this reason, individuals are less trusting of those around them.

We undertake two exercises that attempt to identify the relative importance of these two channels. First, we look more closely at the determinants of respondents' trust in their local government. We examine how the estimated effect of the slave trade changes when we control for a number of measures of individuals' perceptions about the quality of their local government. By doing this, we attempt to control for differences in the external environment of each respondent and more closely isolate the beliefs and values internal to the individual. This exercise follows the same logic as other studies that seek to identify internal norms and beliefs by either controlling for, or holding constant, the external environment of individuals (Henrich, Boyd, Bowles, Camerer, Gintis, McElreath, and Fehr, 2001, Miguel and Fisman, 2007, Miguel, Saiegh, and Satyanath, 2008). We find that when controlling for measures of individuals' perceived quality of the government,

the estimated coefficient for slave exports decreases by about 50%, but remain precisely estimated and highly significant.

The next strategy we undertake is to construct a second measure of slave exports, which is the average number of slaves that were taken from the geographic location where each individual is living today. This is different from our baseline measure, which is the average number of slaves taken from an individual's ethnic group. The logic behind the two measures derives from the fact that when an individual relocates, the individual's internal beliefs move with them, but the external environment changes. In other words, an individual's external environment is geographically fixed, while the individual's internal beliefs and values are mobile and move with the individual.

If one accepts that the slave trade had a causal effect on trust, then the two variables can be used to distinguish between the extent to which the slave trade affects trust through internal factors (that are geographically mobile) like individuals' internal beliefs and values, and external factors like institutions, the organization of societies, and political, legal and social structures, all of which are less geographically mobile. If the slave trade affects trust primarily through internal beliefs and values, then when looking across individuals, what should matter is whether an individual's ancestors were heavily impacted by the slave trade. If the slave trade affects trust primarily through its deterioration of institutions, social structures, or any other factors external to the individual, then what should matter is whether the external environment the individual is living in today was heavily exposed to the slave trade.

Our results suggest that the slave trade adversely affected trust by altering both individuals' internal beliefs and values, and by affecting factors external to the individual, like domestic political and legal institutions. We also find that the internal channel accounts for about 75% of the slave trade's total effect on trust.

The logic of this test is the same as that used in previous studies by Guiso, Sapienza, and Zingales (2004), Giuliano (2007), and Fernandez and Fogli (2007).[2] Giuliano (2007) tests for the cultural determinants of living arrangements of second generation migrants to the United States. Examining the change between 1970 and 2000 in the propensity of youth to live with their parents, she finds that the pattern of second generation immigrants mirrors the changes in the country of origin over the same time period. Fernandez and Fogli (2007) also utilize a similar logic and examine the labor force participation and fertility of second generation migrants to the U.S. They

[2]Also related is the early study by Ichino and Maggi (2000).

find that the labor force participation and fertility of their home country is highly correlated with the same variables among second generation migrants living in the U.S. today. In Guiso *et al.* (2004), the authors examine the relationship between measures of social capital and financial development. Looking at individuals that have moved, they estimate the relationship between the level social capital in the province where the individual is currently living and their financial decisions, as well as the relationship between social capital in the province where the individual was born and their financial decisions. They find an important role for both the environment where a person was raised and the environment where they currently live.

Taken as a whole, the results of our paper complement the findings of a number of recent studies that document the importance of trust for economic development (Tabellini, 2007, Knack and Keefer, 1997, Fafchamps, 2006), for international trade (Greif, 1989, Butter and Mosch, 2003, Guiso, Sapienza, and Zingales, 2007*a*), for political institutions (Putnam, 2000), and for firm management practices (Bloom, Sadun, and Van Reenan, 2008).[3] Given the mounting evidence of the importance of trust, the intended contribution of the paper is to begin to understand the origins of trust. The evidence presented here most naturally complement the few studies that also consider the historical determinants of differences in cultural norms of behavior. Specifically, the evidence presented here dovetails nicely with Guiso *et al.*'s (2007*c*) study empirically linking differences in social capital within Italy to whether cities were independent in the 11th to 14th centuries, as well as Tabellini's (2007) study showing that within Europe, the levels of education, and the extent of democracy in the 18th century are determinants of current levels of interpersonal trust.

It is important to understand that our focus on the long-term historic determinants of cultural norms does not mean that short-run determinants are not important. In fact, there is evidence that non-historic determinants of trust, such as current experiences, income, education, information flows, and organization membership are also very important (e.g. Fisman and Khanna, 1999, Alesina and La Ferrara, 2002, Bellows and Miguel, 2008). Although these short-term determinants of trust are not the focus of this paper, our results also provide additional evidence of the importance of similar non-historic factors within the African context.

We begin our analysis in section 2 by first laying out the historical and conceptual groundwork. We discuss the theoretical literature that seeks to understand how and why norms evolve, as well as the historical literature that describes the slave trade and the environment of insecurity that it

[3]For a summary of these and other relevant studies see the review article by Guiso and Sapienze (2006).

generated. We then turn, in section 3, to a description of the data, before reporting our OLS and IV estimates in section 4. In section 5, we turn to the specific channels underlying this relationship and attempt to distinguish between the two potential reasons why the slave trades may affect trust: (*i*) by affecting internal cultural norms, and (*ii*) by affecting the institutional and legal structures of societies, which affects the trustworthiness of its citizens. In the penultimate section, section 6, we highlight some suggestive evidence of the potential consequences of mistrust. We show that an individual's mistrust is strongly correlated with their political participation and civic engagement, as well as their attitudes towards political violence. Section 7 concludes.

2. Historical Background and Conceptual Framework

A. *Historical Background*

Early in the slave trade, those sold into slavery were almost exclusively taken as prisoners of war. Because raids often involved villages raiding other villages, this form of slave procurement often caused relations between villages to turn hostile, and created an environment of extreme insecurity outside of the local community (Azevedo, 1982, Hubbell, 2001, Inikori, 2000, Klein, 2001). This environment of external insecurity, in turn, causes insecurity within villages, as individuals began to turn on one another within their community - including those closest to them, such as neighbors, friends and even family. To defend oneself, an individual required weapons, which could be obtained from Europeans or slave merchants. But to trade for weapons one needed slaves, and these were often obtained through local kidnappings and other forms of small scale violence (Mahadi, 1992, Hawthorne, 1999). Slave merchants and raiders also played a role in promoting this internal conflict, forming strategic alliances with key groups inside villages and states in order to extract slaves (Barry, 1992, Inikori, 2003, Klein, 2003).

Walter Hawthorne (2003), in his book *Planting Rice and Harvesting Slaves*, documents the decentralized and interpersonal nature of slave capture among the Beafares in the Guinea-Bissau region of Africa. He writes that "the Atlantic slave trade was insidious because its effects penetrated deep into the social fabric of the Upper Guinea Coast—beyond the level of the state and to the level of the village and household . . . Hence, in many areas, the slave trade pitted neighbor against neighbor." (Hawthorne, 2003, pp. 106–107). Hawthorne also provides a particularly telling example, taken from Almada (1984). Households located near ports were able to profit from the slave trade by

'tricking' unsuspecting strangers and then selling them to merchants. Almada writes that "these Beafares are so smart, that if a yokel arrives from the interior, they pretend that they want to give him shelter, and they receive him into their homes. After a few days have passed, they persuade him that they have friends on the ships, and that they would like to take him and have a party. But when they go to the ships, they sell him. In this way they trick many yokels." (Almada, 1984, p. 121) [4]

Akyeampong (2001) describes the experience of a drumming group that was tricked into slavery in Atorkor (in what is modern day Ghana) in the 1850s. The chief of Whuti, who was also a slave trader, was jealous of the leader of a local drumming group because he fancied the chief's wife. The chief then arranged with a slave merchant named Dokutsu, who had contact with European slave traders, for the entire group of 40 drummers to be sold into slavery. It was arranged with the Europeans that the group of drummers would be tricked on board the slave ship. The drummers were told that the Europeans on board the ship were interested in their drums and would like to hear them perform. The drummers were served rum on board the ship and became drunk, and before they were able to realize what was happening, the ship was headed for the New World.

Even Africans that worked for Europeans as boatmen, deck-hands, and translators were not immune to the insecurity and predatory atmosphere that existed during the slave trade. African mariners and traders were also enslaved directly by the Europeans or by other Africans (Akyeampong, 2001, pp. 8–9). Bolster (1997, p. 52) writes that the "African mariners in the slave trade exhibited the nervous detachment of men simultaneously smug about their own favored positions and constantly leery of their European employers' potential duplicity or of other Africans' revenge".

Data on the manner of enslavement in the 19th century confirm the descriptive evidence suggesting that by the end of the slave trade, slaves were being taken in a variety of different ways, including being sold into slavery by acquaintances, friends, and family. Table 1 reports information of the manner of enslavement for a sample of 144 slaves from Free Town, Sierra Leone, interviewed by linguist Sigismund Koelle (1854) in the 1840s.

In the sample, the most common manner of enslavement was kidnapping, with just over 40% of the slaves in the sample being taken in this manner. The next most common manner of enslavement was the capture of slaves during wars, with just under 25% of the slaves captured in this manner. Amazingly, almost 20% of the slaves were sold by relatives or friends. The survey

[4] Also see the discussion in Hawthorne (2003, p. 106).

Table 1: Data on the method of enslavement among Koelle's informants

Manner of Enslavement	Percentage
Kidnapped or seized	40.3%
Taken in a war	24.3%
Sold/tricked by a relative, friend, etc.	19.4%
Through a judicial process	16.0%

Notes: The data are from Sigismund Koelle's (1854) Linguistic Census. The sample consists of 144 informants interviewed by Koelle for which their means of enslavement is known.

by Koelle (1854) documents numerous accounts of individuals being sold into slavery by family members, relatives, and "supposed friends". One of the more notable accounts is of a slave that was sold into slavery after being "enticed on board of a Portuguese vessel" by "a treacherous friend". An extreme example is the Kabre of Northern Togo, who during the nineteenth century developed the custom of selling their own kin into slavery (Piot, 1996). The final category reported in the table is for slaves that entered slavery through the judicial process; 16% of the slaves in the sample entered slavery in this way. This shows that another common method of obtaining slaves was to accuse others of crimes such as witchcraft, theft, adultery, or murder. If found guilty, the accused, and often their family as well, would entered slavery (Lovejoy, 2000, pp. 86–90). It even became common for the leaders of local communities to obtain slaves in this manner (Hawthorne, 1999, 2003, Klein, 2001).

The fact that slaves were often taken or tricked into slavery by others close to them, such as acquaintances, co-ethnics, friends, and even family, suggests that the slave trade may have affected individual's trust of those around them, even those closest to them. Because, historically, chiefs were often slave traders or they were forced to sell their own people into slavery, the slave trade may have also resulted in an evolution of mistrust of political figures, particularly local leaders.

Informal evidence of the long-term effects of the slave trade can be found in the oral traditions that demonstrate a history of mistrust that have their roots in the slave trade. In Benin, untrustworthiness is defined as being capable of tricking one's friend or neighbor into slavery. This can be most clearly seen from the common Fon saying: "*Me elo na sa we du*", which translates to "This person will sell you and enjoy it". This is a common saying that is used to describe someone who is deceitful. The Wolof saying, "*Ki meun na la diaye, lekke sa ndiegue*", also has a similar meaning,

linking deceit directly to the selling of others into slavery. The Yoruba saying "*Bí a bá ta ará ilé ẹni lọ́pọ̀, a kì í rí i rà lọ́wọ̀n-ọ́n mọ́*" provides evidence about how common the selling of one's family members may have been. The saying which translates to "If one sells a member of one's household cheap, one will not be able to buy him back at a great value", is meant to be a warning against talking bad about ones family. These examples illustrate the extent to which the slave trade has permeated deep into the culture of many African societies, and the extent that the slave trade is linked directly with mistrust.

B. *Conceptual Framework*

The working definition of culture used throughout this paper is taken from research in evolutionary anthropology that models culture as heuristic rules-of-thumb that are used in environments where decision making is complex. Using theoretic models, Boyd and Richerson (1985, 2005) show that when making decisions, if information acquisition is either costly or imperfect, then it is optimal for individuals to develop heuristics, or general 'rules-of-thumb' in decision making. By relying on general beliefs about the "right" thing to do in different situations, individuals may not behave in a manner that is optimal in every instance, but they save on the costs required to obtain the information necessary to behave optimally in every situation. They show that in an evolutionary environment, culture, or behavioral 'rules-of-thumb', can arise optimally. In these models, the prevalence of different behavioral rules evolve through a process of natural selection determined by the relative payoffs of the different rules-of-thumb.[5]

The theoretical structure of Boyd and Richerson (1985, 2005) helps to understand recent empirical research showing that individuals from different backgrounds behave in systematically different ways when faced with the same decision, the same environment, and the same payoffs (e.g., Nisbett and Cohen, 1996, Henrich *et al.*, 2001, Fernandez and Fogli, 2007, Giuliano, 2007, Miguel and Fisman, 2007, Miguel *et al.*, 2008). The natural question that faces these studies is why individuals behave differently, and why they do not simply maximize their payoffs in every situation, resulting in the same behavior. The notion of culture as 'rules-of-thumb' provides one answer. Because individuals from different backgrounds have developed different 'rules-of-thumb'

[5]Throughout the paper, we use the terms rules-of-thumb, culture, beliefs, values, and norms interchangeably. We use these terms to capture individuals' decision making heuristics, which we describe here. We do not take a stance on what motivates individuals in the use of different heuristics (e.g., feelings, beliefs, values, etc.), and therefore we do not take a stance on what the best descriptive term is.

for decision making, they behave very differently even when faced with the same decision, the same payoffs, and the same constraints.

Relying on the notion of culture as information and cost saving heuristics in decision making, the hypothesis being tested in this paper is that the environment of insecurity caused by the slave trade increased the relative returns of rules-of-thumb based on mistrust relative to rules-of-thumb based on trust, causing a culture of greater mistrust to develop.

The natural question that arises is why, 100 years after the end of the slave trade, do we still find evidence of increased mistrust in the areas exposed to the trade? For insights into this empirical finding we turn to the theoretical literature in economics, which provide additional insights into the transmission and evolution of culture over time (e.g., Bisin and Verdier, 2000, 2001, Guiso *et al.*, 2007*c*, Tabellini, 2008). The recent models developed by Guiso *et al.* (2007*c*) and Tabellini (2008), show that multiple cultural equilibria can arise. They thus provide one explanation for the persistent effects of the slave trade – a permanent movement to an equilibrium characterized by high levels of mistrust. In the model developed by Guiso *et al.* (2007*c*), where parents transmit to their children their priors about how trustworthy others are, multiple equilibria levels of trust can arise. In one of the equilibria, a community is permanently trapped in an equilibrium with low trust. In this equilibrium, individuals have priors that others cannot be trusted. Because of these beliefs, individuals do not interact with others, and this lack of interaction results in a lack of learning and updating of their priors of mistrust. In their model, a large negative shock, like the slave trade, can permanently decrease the equilibrium level of trust in a society.

Another explanation for the persistence of mistrust is that it is a result of a complementarity between cultural norms and domestic institutions. This channel is highlighted in the model developed by Tabellini (2008). In his model, individuals inherit norms of cooperation from their parents and make political choices (through voting) that determine the quality of domestic institutions. Through this mechanism, norms of cooperation affect the equilibrium quality of domestic institutions. When there is a negative shock to internal norms of cooperation, not only will the next generation be less trusting, but they will also choose weaker institutions, and the low levels of trust and the weak institutions will persists among future generations. Applied to Africa, the model suggests that areas with low levels of trust developed weaker institutions, and the weaker institutions in turn resulted in lower levels of trust and cooperation. These societies remain trapped in an equilibrium of uncooperative behavior, mistrust, and poor institutions.

It is also possible that our results do not arise because African societies remain trapped in low trust equilibria, but because the shocks caused by the slave trade – an event lasting for over 400 years – have not yet fully dissipated. This explanation requires that cultural change and social learning occur relatively slowly. One of the few pieces of evidence on the speed of cultural change is from Alesina and Fuchs-Schündeln's (2007) study of the effects of the division of Germany between 1945 and 1990 on individuals' beliefs about the benefits of redistribution and government intervention. They find that, controlling for observable characteristics, East Germans view government intervention more favorably than West Germans, and that the beliefs of East Germans eventually converge to those of West Germans after reunification. Although, the shock being examined here lasted only 45 years, the authors still find that the differences arising from the shock will take 20 to 40 years to diminish to zero. Therefore, at least in this specific environment, the effects of the shock persist for as long as the duration of the shock itself. In our case, the negative shock lasted well over 400 years and its effects are being examined 100 years later. Therefore, it is possible that the effects of the shock on norms of mistrust may continue to be felt today, even if the effects are temporary and will eventually die out in the long-run.

We have implicitly assumed that because the slave trade increased the relative payoffs to rules-of-thumb based on mistrust, through social learning these rules-of-thumb became more prevalent in the population. The mechanism of social learning is consistent with the dominant framework in economics where cultural norms evolve as they are transmitted from parents to children (e.g., Bisin and Verdier, 2001). When deciding what values to teach to their children, parents take into account the relative returns to different values, but evaluate these with their own preferences.[6]

It is also possible that the change in cultural norms during the slave trade arose not because of cultural evolution, but because a disproportionately greater number of inherently more trusting individuals were captured and shipped from the continent, leaving a greater proportion of the inherently less trusting individuals within Africa. That is, even without any social learning the slave trade could still have had a large effect on mistrust. This explanation requires that mistrust be an inherent or hard-wired characteristic. This would occur for example if an individual's proclivity to trust others was completely determined by genetics. Although it is clear that an individual's beliefs about their ability to trust others is not completely an intrinsic characteristic,

[6]For examples more recent papers that also use this same framework see Hauk and Saez-Marti (2002), Francois and Zabojnik (2005), Francois (2008), and Tabellini (2008). For an overview of the theoretical literature modeling cultural transmission see Bisin and Verdier (2008).

recent studies have argued that genetics may play some role. Cesarini, Dawes, Fowler, Johannesson, and Lichtenstein (2008*a*) conduct standard trust games among a sample of monozygotic and dizygotic twins in the United States and Sweden. The study, which compares the similarity of behavior between the monozygotic and dizygotic twins, finds that monozygotic twins exhibit behavior that is much more similar than dizygotic twins. The authors argue that since monozygotic and dizygotic twins both share the same environment, but only monozygotic twins have exactly the same genetic make-up, the results show that a large part of trust is genetically determined. According to their best estimates, 20% is genetically inherited in the Swedish sample and 10% in the American sample.[7]

Our analysis is not able to distinguish between these different transmission mechanisms and different explanations for the persistent impact of slave trade on a culture of mistrust. Instead, our goal and intended contribution is to empirically estimate the long-term causal effects of the slave trade on trust, and identify the extent to which this relationship arises because of the slave trade's effects on norms, beliefs, and rules-of-thumb that are internal to the individual.

3. Data Sources and Description

A. *Afrobarometer Data*

Data on the trust of individuals in Africa are from the third (2005) round of the Afrobarometer survey. The nationally standardized questionnaire measures economic conditions, the political atmosphere, social capital, and individual attitudes about a variety of topics, including democracy, and civil society. Each survey is based on interviews conducted in the local languages of a random sample of either 1,200 or 2,400 individuals in each country. The 2005 Afrobarometer covers the following 17 sub-Sahara African countries: Benin, Botswana, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali, Mozambique, Namibia, Nigeria, Senegal, South Africa, Tanzania, Uganda, Zambia, and Zimbabwe.[8]

A quick look at the countries in the sample reveals that they are not a random sample. The countries tend to be concentrated in West Africa, Eastern Africa, and Southern Africa. All of West

[7]For other studies that argue that other traits are, in part, genetically determined see Clark (2008) and Cesarini, Dawes, Johannesson, Lichtenstein, and Wallace (2009), Cesarini, Johannesson, Lichtenstein, Örjan Sandewall, and Wallace (2008*b*).

[8]The survey also includes the Cape Verde Islands. However, because this survey does not record the ethnicity of the respondents, it is not included in our analysis.

Table 2: Overview of the Afrobarometer trust questions.

	How much do you trust each of the following:									
Response	Your relatives?		Your neighbors?		Your elected local government council?		People from your own ethnic group or tribe?		People from other ethnic groups?	
Not at all	1,402	7%	2,719	13%	3,981	20%	2,797	14%	4,471	22%
Just a little	3,705	18%	5,770	28%	4,869	24%	6,304	31%	7,278	36%
Somewhat	5,154	25%	6,317	31%	5,314	26%	6,119	30%	5,266	26%
A lot	10,357	50%	5,774	28%	6,046	30%	5,282	26%	3,286	16%
Total	20,618	100%	20,580	100%	20,210	100%	20,502	100%	20,301	100%

Notes: The table reports summary statistics for five measures of trust from the 2005 Afrobarometer survey. The five trust questions are from questions 55d, 84a, 84b, 84c, and 84d of the survey. Respondents also have the option of answering "Don't know". The number of respondents answering this to each of the five question (in order from the left to right column) are: 43, 78, 1,484, 156, and 353. For some observations, the data are also listed as "missing". The number of respondents for which this is the case is: 5, 8, 8, 8 and 12. The Zimbabwe survey only asks about individuals' trust in the local council, and therefore for the four interpersonal trust questions an additional 1,036 potential observations are missing.

Central Africa is not included (e.g., Cameroon, Gabon Democratic Republic of Congo, Angola, etc.), as well as countries inland of the Red Sea (e.g., Sudan, Ethiopia, Eritrea, etc.). Given this, it is important to keep in mind that all of the results in the paper apply only to the 17 sub-Sahara African countries included in our sample. The effects of the slave trade for the countries not included in our analysis may be different from the effects we estimate here.

From the surveys of the 17 countries, we have a potential sample of 21,822 respondents. Within this sample, 120 of the respondents either: (*i*) list 'other' as their ethnicity (*ii*) list their ethnicity as their country (*iii*) belong to an ethnic group that is not an indigenous Africa ethnicity, or (*iv*) list an indigenous ethnicity that could not be cleanly matched to the slave trade data. Removing these observations leaves a total of 21,702 potential observations.

The Afrobarometer asks respondents how much they trust their relatives, neighbors, and their locally elected government council. They also ask about their trust of others in their country from a different ethnic group and others in their country from the same ethnic group. The exact wording of each question is shown in table 2.[9] The respondents chose between four possible answers: (*i*) not at all, (*ii*) just a little, (*iii*) somewhat, or (*iv*) a lot.[10] The distribution of responses for each

[9]For the question about other ethnic groups, the question was country specific. For example, respondents from *Kenya* are asked how much they trust "*Kenyans* from other ethnic groups".

[10]They also had the option of answering that they "do not know", and for a very small number of individuals the response is listed as "missing". See the notes of table 2 for the number of individuals that answer "don't know" for each trust question.

question are also reported in table 2.[11] A number of characteristics of the responses are notable. As expected, the level of trust of individuals closer to the respondent, such as relatives, is higher than those further from the respondent, such as neighbors or those from different ethnic groups. However, a non-trivial number of respondents still report that they do not trust their relatives at all.

Since respondents' answers to the trust questions are categorical in nature, a number of different empirical strategies are possible. The first is to convert the categorical responses into a variable that assigns a number to each response. Following this strategy, we construct a measure of trust which takes on the value of 0, 1, 2, or 3, where 0 corresponds to the response "not at all", 1 to "just a little", 2 to "somewhat", and 3 to the response "a lot". (These are the numeric values assigned to each question in the Afrobarometer survey.) An alternative strategy is to maintain the qualitative nature of the data and estimate an ordered logit model. We also follow this alternative strategy and show that the estimates are qualitatively identical whether one uses OLS or an ordered logit model.

The Afrobarometer trust questions have some advantages over more general trust questions that are typically asked in other surveys such as the World Values Surveys. The trust question in other surveys is: "Generally speaking, would you say that most people can be trusted or that you can't be too careful when dealing with people?" One advantage of the Afrobarometer trust questions is that they specify explicitly the object of the respondent's trust: relatives, neighbors, the local government council, individuals in the same country and in the same ethnic group, and individuals in the same country but in other ethnic groups. An additional shortcoming of trust questions is that the action that the object is expected to perform is not specified. In other words, when a respondent is asked whether he or she trusts another individual, it is not specified what they are trusting them to do. We feel that the more narrowly the question specifies the object of trust, the more narrow the set of actions that the respondents will have in their minds, and therefore the more precise the trust measure.

Among the five trust questions reported in table 2, we feel that the first three, that ask about the trust of neighbors, relatives, and the local government council, are the most precise measures,

[11] The number of actual observations for each question is below the number of potential observations, which is 21,702. This can is explained both by the observations coded as "don't know" or "missing", and by the fact that the four interpersonal trust questions were not asked in the Zimbabwe survey. In this survey, only the local council trust question was asked. This results in a reduction of the sample by 1,036 observations for these four questions.

and that the two questions asking about the respondent's trust of those within and outside of the respondent's ethnic group are less precise. This is because the object of an individuals trust is much more finely defined in the former set of questions relative to the latter set. Given this, we report results using each of the five trust questions, but place the most confidence in estimates using the three more precise measures of trust.

In a recent study, Glaeser, Laibson, Scheinkman, and Soutter (2000) express concern about trust questions of the type being examined here. In the study the authors show that, among a sample of 200 Harvard undergraduates, questions about an individual's trust of others are more strongly correlated with the individual's trustworthiness than with their trust. These results have recently been re-examined by Fehr, Fischbacher, Schupp, von Rosenbladt, and Wagner (2003) and Sapienza, Toldra, and Zingales (2007). Fehr *et al.* (2003) randomly surveyed a sample of 429 German adults who answered a questionnaire containing trust questions and also participated in controlled trust experiments. The authors find that questions about each individual's past trusting behavior and their trust of strangers does correlate strongly with their trusting behavior in the experiment. Further, contrary to Glaeser *et al.*'s (2000) finding among Harvard students, Fehr *et al.* (2003) find that the trust questions are not correlated with trustworthy behavior.

Sapienza *et al.* reconcile the contradictory findings from the two studies by appealing to the difference in the homogeneity of the two populations. The participants of the trust game in Glaeser *et al.* were Harvard undergraduate students enrolled in an introductory economics class, while the participants from Fehr *et al.* were a broad cross-section of German citizens. Sapienza *et al.* argue and provide evidence that in homogenous populations an individual's trust in others is strongly influenced by the individual's own trustworthiness. However, in more heterogenous populations this is not the case.

The heterogeneity in the Afrobarometer sample is much more similar to Fehr *et al.*'s sample than the sample from Glaeser *et al.*. Like Fehr *et al.*'s German sample, the Afrobarometer contains a random sample of all adults in the country being surveyed. Therefore, the trust questions most likely reflect the trust of an individual and not the trustworthiness of the individual. However, it is important to keep in mind the possibility that the questions may also reflect to a some extent the trustworthiness of the individual being surveyed.

A final concern is that the translated word "trust" may have different meanings in different languages. Similarly, the meaning of "relatives" and "neighbors" may be different in different

languages. The results that we report below are robust to the inclusion of 130 language of interview fixed effects. The point estimates of the coefficients of interest barely change and they remain statistically significant.

B. ***Ethnicity Level Slave Export Data***

The construction of estimates of the number of slaves taken from each ethnic group within Africa relies on the previously constructed country-level slave export estimates from Nunn (2008). The country-level estimates are constructed by combining data on the total number of slaves shipped from all ports and regions of Africa with data on the ethnic origins of slaves shipped from Africa. The estimates cover all four of Africa's slave trades - the trans-Atlantic, Indian Ocean, Red Sea, and trans-Saharan - between 1400 and 1900. Full details of the underlying data, their sources, and the construction procedure are provided in Nunn (2008).

We disaggregate the country-level slave export figures to the ethnicity level using the same ethnicity samples that were used in Nunn (2008). Only two of the four slave trades (the trans-Atlantic and Indian Ocean) have ethnicity data detailed enough to construct reliable estimates of the number of slaves taken from each ethnicity. For the trans-Atlantic slave trade, Nunn (2008) has collected a sample of 80,656 slaves for which their ethnic identity is known. The aggregate sample is comprised of 54 different samples that report 229 distinct ethnic designations. The individual samples are originally from a variety of historical records, such as slave runaway notices, plantation inventories, marriage records, death records, etc. For the Indian Ocean slave trade, an aggregate sample of over 21,048 slaves was collected, covering 80 distinct ethnic groups.

A crucial step in our construction of the number of slaves taken from each ethnic group is matching the ethnic groups in the historic documents to a common classification scheme. Using a variety of different sources, the original ethnic groups are linked to the ethnic classification constructed and mapped by Murdock (1959). The authors of the secondary sources, from which much of the data were taken, generally provide a detailed analysis of the meanings and locations of the ethnicities in the historical records. In most of the secondary sources, the authors also provide maps showing the historic locations of the ethnic groups. This helped significantly in mapping the different ethnic designations into a common ethnicity classification. Full details about these mappings are provided in Nunn (2008).

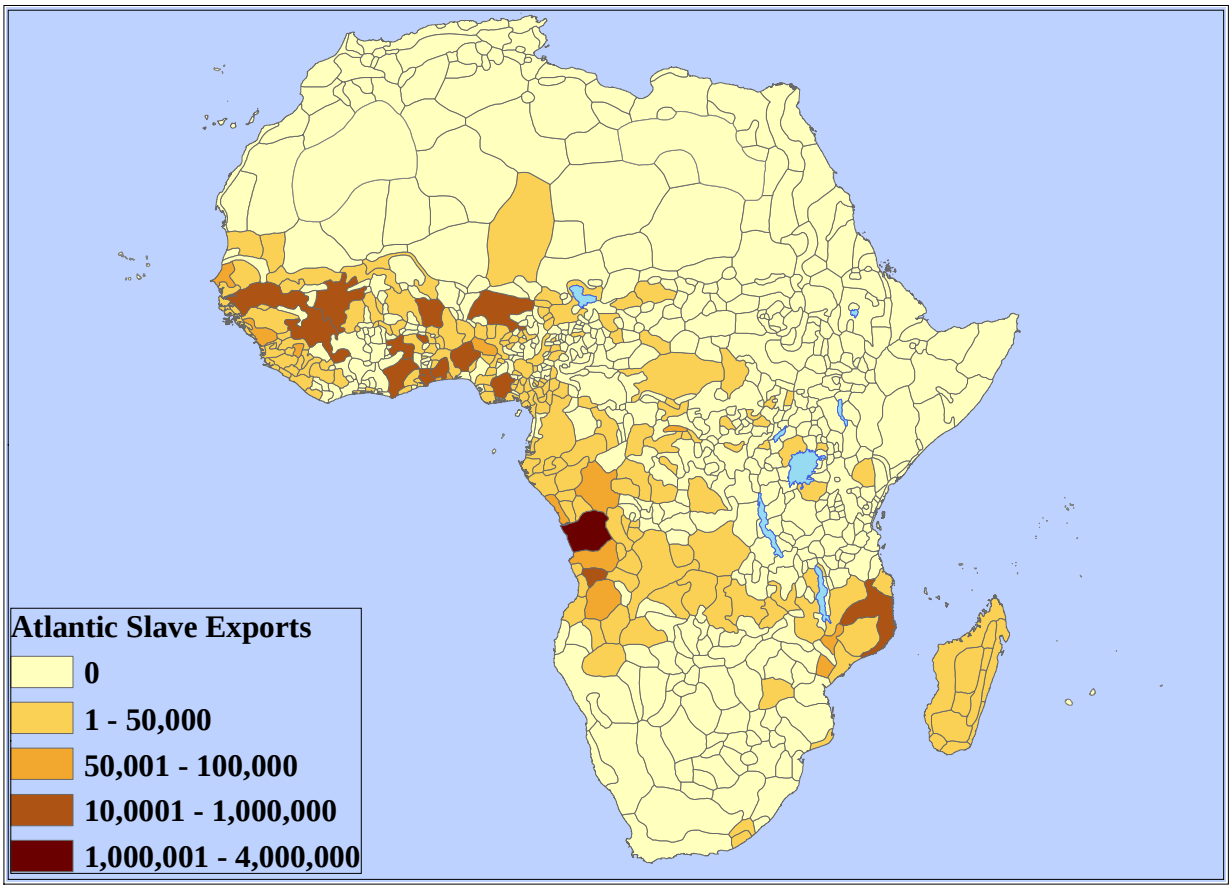

Figure 1: Map displaying the number of slaves of each ethnicity shipped during the trans-Atlantic slave trade.

Because the ethnicity data for the Red Sea and trans-Saharan slave trade are not fine enough to construct estimates of the number of slaves taken from each ethnic group, we restrict our analysis to the trans-Atlantic and Indian Ocean slave trades. Since the trans-Atlantic slave trade was by far the largest of the slave trades, the omission of the Red Sea and trans-Saharan slave trades will not likely have a large impact. As well, the countries that were most impacted by the Red Sea and trans-Saharan slave trades - Sudan, Ethiopia, and Chad - are not included in our analysis. Further, Nunn (2008) has shown that the impact of the slave trades as a whole is driven almost solely by the trans-Atlantic slave trade. As we report below, our results are robust to omitting observations from the four countries in our sample that shipped a non-zero amount of slaves during either the trans-Saharan or Red Sea slave trades.[12]

In figures 1 and 2 we report maps that display the number of slaves shipped from each ethnic

[12]The four countries are: Kenya, Mali, Nigeria, and Senegal. This is based on the figures reported in table 2 of Nunn (2008).

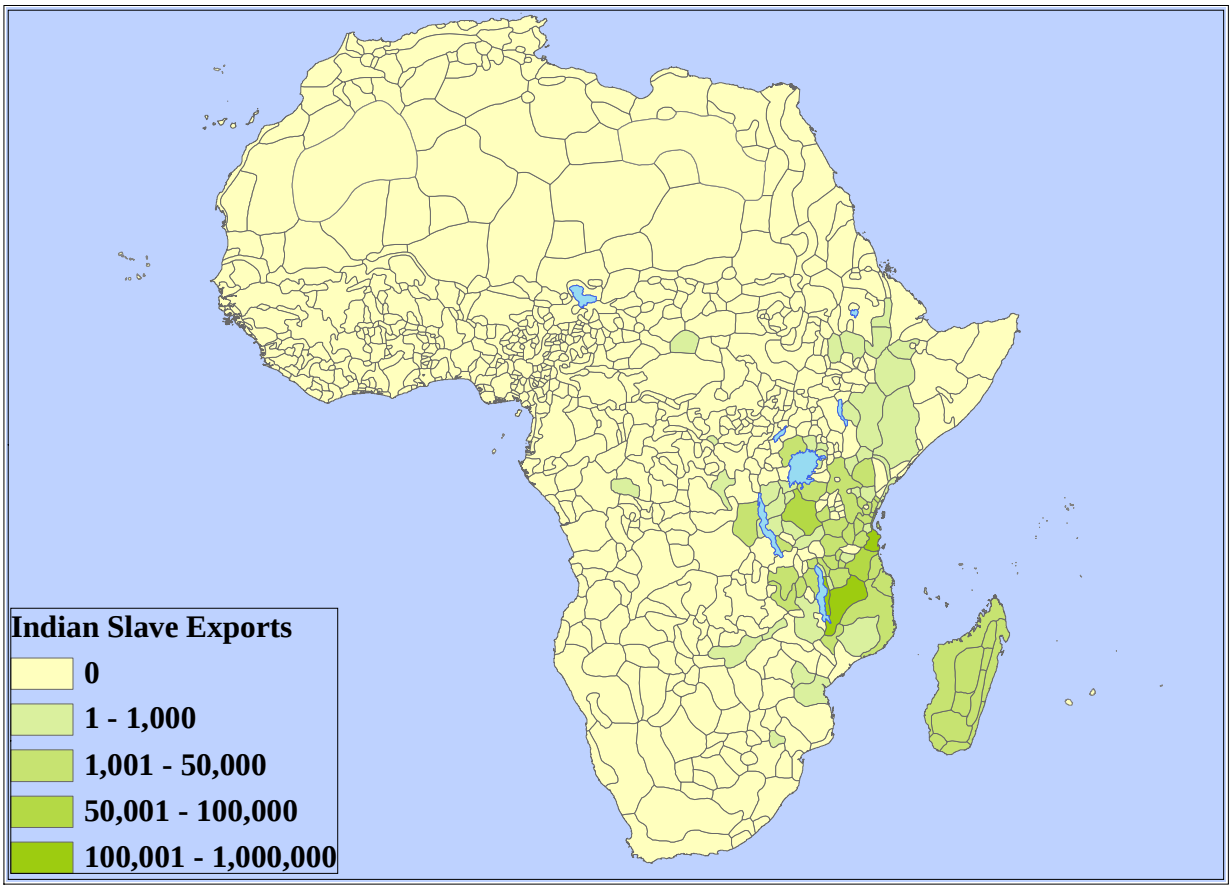

Figure 2: Map displaying the number of slaves of each ethnicity shipped during the Indian Ocean slave trade.

group during the trans-Atlantic and Indian Ocean slave trades. The two maps show the historic boundaries of each ethnic group (in the 19th century); this information is from Murdock (1959). The shade of each polygon indicates the range of the estimated number of slaves from that ethnicity taken during the relevant slave trade between 1400 and 1900. We want to make clear that our constructed slave exports variable is a measure of the number of slaves taken from each ethnic group during the slave trade. In figures 1 and 2 we have grouped the estimates into broader categories only to facilitate a visual display of the data. Our analysis does not use the broad categories shown in the maps.

As figure 1 shows, the trans-Atlantic slave trade impacted much of the African continent. Not only were slaves taken from West Africa and West-Central Africa, but also from Eastern Africa and Madagascar as well. The much smaller Indian Ocean slave trade was confined primarily to Eastern Africa. The patterns of slaving observed in the data are consistent with the qualitative evidence on

the sources of slaves taken during the trans-Atlantic and Indian Ocean slave trades (e.g., Manning, 1990, Lovejoy, 2000).

4. Estimating Equations and Empirical Results

A. *OLS Estimates*

We begin our analysis by first testing for an empirical relationship between the number of slaves taken from an individual's ethnic group in the past and the individual's current level of trust today. We examine this relationship with the following estimating equation:

$$\text{trust}_{i,e,d,c} = \alpha_c + \beta \,\text{slave exports}_e + X'_{i,e,d,c}\,\delta + \gamma_1 \,\text{EF}_{d,c} + \gamma_2 \,\text{E}_{e,d,c}/\text{Pop}_{d,c} + \gamma_3 \,\text{M}_e + \varepsilon_{i,e,d,c} \quad (1)$$

where i indexes individuals, e ethnic groups, d districts and c countries. The variable $\text{trust}_{i,e,d,c}$ denotes one of our five measures of trust, which vary across individuals; α_c denote country fixed effects; slave exports_e is a measure of the number of slaves taken from ethnic group e during the slave trade. We describe this measure in detail below. The vector $X'_{i,e,d,c}$ denotes a set of individual level characteristics that we include as control variables. The variables include: an indicator variable for the respondent's sex, the respondent's age and age squared, an indicator variable for whether the respondent lives in an urban or rural area, 5 fixed effects for the respondent's living conditions, 10 fixed effects for the educational attainment of the respondent, 20 religion fixed effects, and 25 occupation fixed effects. Details of these controls are reported in the data appendix.

A number of these controls are intended to serve as proxy measures for the income of each individual. Although we do not have a direct measure of the income, we feel that the occupation, education, and living condition fixed effects are reasonable proxies, and that our estimating equation does a good job of controlling for income, which has been shown to be highly correlated with trust. Occupation, as well as proxying for income, may also be an important determinant of trust itself. Francois and van Ypersele (2008) provide evidence showing that within the United States individuals that work in sectors that are more competitive have higher levels of trust.

The country fixed effects are included to capture country-specific factors that are potentially important determinants of trust, such as government regulation (see Aghion, Algan, Cahuc, and Shleifer, 2008*b*, Aghion, Algan, and Cahuc, 2008*a*). They also capture differences in colonial strategies or outcomes that differ at the colony level, such as legal origin, and therefore, help to

separate the effects of colonial rule from the slave trade. We also include a second measure to capture the impact early European contact that did not occur during the slave trade. Using data from Roome (1924), we construct measures of the historic prevalence of European missions during colonial rule. The measure, M_e, is the total number of missions (per square kilometer) in 1924 located on land that was inhabited by ethnic group e at the time.

We also include a number of measures that are meant to capture the ethnic composition of the area where each respondent lives. The first measure, $EF_{d,c}$, is the ethnic fractionalization of the district that the respondent lives in. Previous studies, such as Easterly and Levine (1997), have documented a relationship between ethnic fractionalization and income. Through this channel, the ethnic fractionalization of a respondent's location may affect the respondent's trust.[13] Based on similar logic, we also control for the share of the district's population that is the same ethnicity of the respondent. This variable is denoted $E_{e,d,c}/Pop_{d,c}$ in (1). When respondents are among the ethnic minority, they may be less trusting of others. Evidence of this has been found in the context of the United States by Alesina and La Ferrara (2002). Both measures, $EF_{d,c}$ and $E_{e,d,c}/Pop_{d,c}$, are constructed from the sample of individuals in the Afrobarometer sample.

Our coefficient of interest is β, the estimated relationship between the historic slave exports of an individual's ethnic group and the individual's measure of trust today. Because our key explanatory variable, slave $exports_e$, only varies at the ethnicity level, all standard errors are clustered at the ethnicity level.

An alternative estimation strategy to equation (1) is to aggregate all data to the ethnicity level and estimate an equation where the unit of observation is an ethnic group. The results are robust to this alternative procedure. We choose the individual level regressions as our baseline strategy for a number of reasons. First, it allows us to control for individual level characteristics, resulting in more precise estimates of β. Second, in subsequent analysis, where we tackle issues of causality and the exact channels underlying the OLS estimates, our empirical strategies rely on variation across individuals, and we are not able to perform these tests with data at the ethnicity level.

Estimates of equation (1) with trust measured by individuals' trust in their neighbors are reported in table 3. The first three columns report OLS estimates of (1). In the first column we use the total number of slaves taken from an ethnic group (measured in millions of people) as our measure of the intensity of the slave trade. The estimated coefficient for slave exports, β, is

[13] Ethnic fractionalization is constructed in the standard manner. See Easterly and Levine (1997) for details.

Table 3: Estimates of the determinants of the trust of neighbors.

	Dependent variable: Trust of your neighbors											
	Full sample						Restricted sample: Kenya and Mali omitted					
	OLS			Ordered logit			OLS			Ordered logit		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
slave exports (millions)	-.690***			-1.41***			-.716***			-1.43***		
	(.140)			(.289)			(.146)			(.305)		
exports/area		-.018***			-.032***			-.018***			-.037***	
		(.005)			(.006)			(.005)			(.011)	
ln (1+exports/area)			-.156***			-.320***			-.160***			-.324***
			(.034)			(.071)			(.036)			(.075)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District ethnicity controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colonial missions control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,027	20,027	20,027	20,027	20,027	20,027	17,682	17,682	17,682	17,682	17,682	17,682
Number of clusters	185	185	185	185	185	185	151	151	151	151	151	151
R-squared	0.16	0.16	0.16	0.07	0.05	0.07	0.16	0.16	0.16	0.07	0.07	0.07

Notes: The unit of observation is an individual. Standard errors are clustered at the ethnicity level. The individual controls are for age, age squared, a gender indicator variable, 5 living conditions fixed effects, 10 education fixed effects, 20 religion fixed effects, 25 occupation fixed effects, and an indicator for whether the respondent lives in an urban location. The district ethnicity controls include a measure of ethnic fractionalization at the district level and the share of the district's population that is the same ethnicity as the respondent. The colonial missions variable is the density of mission stations (number per thousand square kilometers) located in the area of Africa historically inhabited by the respondent's ethnic group. ***, ** and * indicates significance at the 1, 5 and 10% level.

Table 4: Marginal effects of the ordered logit estimates.

	Marginal effects, dP_i/dx:					
	Full sample			Restricted sample: Kenya and Mali omitted		
Response to: How much do you trust your neighbors?	exports	exports/area	ln (1+exports/area)	exports	exports/area	ln (1+exports/area)
	(1)	(2)	(3)	(4)	(5)	(6)
Not at all	.136***	.0032***	.031***	.146***	.0038***	.033***
	(.028)	(.0007)	(.007)	(.031)	(.0011)	(.007)
Just a little	.200***	.0044***	.046***	.199***	.0052***	.045***
	(.042)	(.0009)	(.011)	(.044)	(.0016)	(.011)
Somewhat	-.070***	-.0015***	-.016***	-.080***	-.0021***	-.018***
	(.017)	(.0004)	(.004)	(.019)	(.0007)	(.005)
A lot	-.266***	-.0061***	-.061***	-.265***	-.0069***	-.060***
	(.055)	(.0012)	(.014)	(.057)	(.0021)	(.014)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
District ethnicity controls	Yes	Yes	Yes	Yes	Yes	Yes
Colonial missions control	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,027	20,027	20,027	17,682	17,682	17,682
Number of clusters	185	185	185	150	150	150
Pseudo R-squared	0.07	0.05	0.07	0.07	0.07	0.07

Notes: The table reports marginal effects evaluated at the means from the ordered logit regressions of columns 4-6 and 10-12 of table 3. The unit of observation is an individual. Standard errors are clustered at the ethnicity level. The individual controls are for age, age squared, a gender indicator variable, 5 living conditions fixed effects, 10 education fixed effects, 20 religion fixed effects, 25 occupation fixed effects, and an indicator for whether the respondent lives in an urban location. The district ethnicity controls include a measure of ethnic fractionalization at the district level and the share of the district's population that are the same ethnicity as the respondent. The colonial missions variable is the density of mission stations (number per thousand square kilometers) located in the area of Africa historically inhabited by the respondent's ethnic group. ***, ** and * indicates significance at the 1, 5 and 10% level.

negative and statistically significant, which is consistent with the slave trade adversely affecting individuals' trust of those around them.

One problem with using the total number of slaves as a measure of the impact of the slave trade is that it does not account for differences in the initial sizes of different ethnic groups. In the second column, we use an alternative measure where the number of slaves taken is normalized by the size of the land inhabited by the ethnic group during the 19th century. The measure of land area is calculated using the map of the historic locations of ethnic groups produced by Murdock (1959). As reported in column 2, the results are similar with this alternative measure. Next, in column 3, because the distribution of the exports/area is highly left skewed, with a small number of observations taking on large values, in the third column, we take the natural log of one plus the normalized measure from column 2. The results are similar when this measure of slave exports is used. In further analysis, we use this as our baseline measure of the intensity of the slave trade.

Ideally, we would prefer to use a measure of slave exports normalized by the populations of each ethnic group prior to the slave trade. Unfortunately, these data are unavailable. Some historic population data are available from Murdock (1959), but they are from after the slave trade and they only exist for just over half of the ethnic groups. Although we do not report the results here, we find that normalizing slave exports by this population measure also yields estimates of β that are negative and statistically significant. However, the number of ethnic groups included in the analysis is reduced from 185 to 109.

In columns 4–6 of table 3, we re-estimate the specification from columns 1–3 using an ordered logit model. The estimated coefficients are negative and statistically significant, confirming the OLS estimates. Because one cannot interpret the estimated coefficients directly, we report the marginal effects in columns 1–3 of table 4. The first four rows of each column report the marginal effects for the four possible responses to each trust question. For each of the three measures of slave exports, the marginal effects show that if an individual's ancestors were more heavily impacted by the slave trade, then he or she is more likely to answer "Not at all" or "Just a little" when asked whether they trust their neighbors, and less likely to answer "Somewhat" or "A lot".

In columns 7–12 of table 3, we re-estimate the OLS and ordered logit estimates of columns 1–6, omitting respondents living in Kenya and Mali – the two countries in our sample that were significantly enslaved during the trans-Saharan and Red Sea slave trades. The marginal effects from the ordered logit estimates are reported in columns 4–6 of table 4. The results show that

the estimates remain robust to the omission of these two countries. The point estimates of the coefficients are essentially identical, and they remain highly significant. One also obtains similar results if the sample is further restricted to exclude Nigeria and Senegal, the remaining countries in the sample that had a non-zero number of slaves taken during the trans-Saharan or Red Sea slave trades. Given that the results change little when we omit the countries affected by the Red Sea and trans-Saharan slave trades, for the remainder of the paper we use the full sample of Afrobarometer countries in our analysis. Similarly, since the results are qualitatively identical if equation (1) is estimated using OLS or an ordered logit model, for the remainder of the paper we report OLS estimates, which have the advantage of being simpler to interpret and easier to report.

To save space, throughout the paper we do not report the estimates for the control variables. The coefficients of the individual level control variables are generally in agreement with the findings from previous studies. Consistent with Alesina and La Ferrara's (2002) findings from a U.S. sample, we find that trust is increasing, but at a decreasing rate, in age and is higher for males than for females. We also find trust to be uncorrelated with educational attainment. This is in contrast to Alesina and La Ferrara's (2002) finding that trust is increasing with education. The difference might be explained by the different samples (Africa vs. USA) or by the fact that we also include occupation fixed effects and living standard fixed effects, both of which are highly collinear with the education fixed effects. We also find that individuals living in urban areas are less trusting than those in rural areas. We find neither of the district level ethnicity measures ($EF_{d,c}$ and $E_{e,d,c}/Pop_{d,c}$), nor the colonial missionary penetration measure (M_e), to be robustly correlated with trust.

Table 5 reports our baseline OLS estimates for the other trust measures. The first three columns report the results for trust in relatives, neighbors, and the local government, which are our three preferred measures of trust. The estimates show clearly that the slave trade is negatively correlated with all three measures of trust. These relationships are consistent with the historical evidence that the effects of the slave trade penetrated deep into the social fabric of societies and eventually turned friends, families, and neighbors against each other. In columns 4 and 5, we also report the estimates using our less preferred measures of trust: trust of others within your ethnic group and trust of others outside of your ethnic group. As shown, one also finds a negative and statistically significant relationship between the slave trade and trust using these alternative trust measures.

Since the construction of our ethnicity-level slave export measure requires us to cleanly identify the ethnicity of the respondent in the survey, our hypothesized relationship will be much weaker if

Table 5: OLS estimates of the determinants of the trust of others.

	Full sample					Restricted sample: Languages and ethnicity are the same				
	Trust of relatives	Trust of neighbors	Trust of local council	Intra-group trust	Inter-group trust	Trust of relatives	Trust of neighbors	Trust of local council	Intra-group trust	Inter-group trust
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
ln normalized slave exports	-.131***	-.156***	-.109***	-.138***	-.093***	-.156***	-.210***	-.149***	-.170***	-.141***
	(.036)	(.034)	(.022)	(.031)	(.028)	(.045)	(.039)	(.031)	(.041)	(.043)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District ethnicity controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colonial missions control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,062	20,027	19,733	19,952	19,765	7,309	7,298	6,803	7,263	7,168
Number of clusters	185	185	185	185	185	71	71	71	71	71
R-squared	0.13	0.16	0.20	0.15	0.11	0.15	0.18	0.20	0.16	0.12

Notes: The table reports OLS estimates. The unit of observation is an individual. Standard errors are clustered at the ethnicity level. The individual controls are for age, age squared, a gender indicator variable, 5 living conditions fixed effects, 10 education fixed effects, 20 religion fixed effects, 25 occupation fixed effects, and an indicator for whether the respondent lives in an urban location. The district ethnicity controls include a measure of ethnic fractionalization at the district level and the share of the district's population that are the same ethnicity as the respondent. The colonial missions variable is the density of mission stations (number per thousand square kilometers) located in the area of Africa historically inhabited by the respondent's ethnic group. ***, ** and * indicates significance at the 1, 5 and 10% level.

an individual cannot be cleanly linked to a single ethnic group. This will occur, for example, if the respondent is the child of parents belonging to two different ethnic groups. Although we do not observe the ethnicity of the respondent's parents, we do have variables that may indicate that the respondent has parents of different ethnicities. In addition to the respondent's reported ethnicity, we also observe his or her primary language, as well as the language of the interview. When the ethnicity, primary language, and language of interview are not the same, this may provide evidence that the individual is of mixed ethnicity. For robustness, we re-estimate equation (1) using only observations for which the ethnicity, primary language, and language of interview are the same. The results are reported in columns 6–10 of table 5. As shown, the estimates are robust to the use of this smaller sample, which consists of 7,000 respondents belonging to 71 different ethnic groups.

Before turning to the issue of causality in the next section, we pause to first examine the magnitudes of our OLS estimates for slave exports. It turns out that by chance, the standard deviation for our slave export variable is very close to one (.95).[14] Our measure of the number of missions in 1924 located on land that was inhabited by an ethnic group includes Protestant missions, Catholic missions, and BFBS Bible depots. Data on the location of ethnic groups is from Murdock (1959), while data on the location of missions are from Roome (1924). As well, the standard deviations of each trust measure are also close to one, ranging from .96 to 1.10).

[14] See table 13.

Therefore, the coefficients are very close to standardized beta coefficients, which report the number of standard deviation changes in the dependent variable for a one standard deviation change in the independent variable. In general the coefficients for slave exports range from about $-.10$ to $-.15$, in the full sample. These effects are not enormous, but they are not trivial either.

An alternative way to assess the magnitude of the slave exports coefficient is to compare its explanatory power against other variables in the regression. We compare the slave exports variable to all other variables in the estimating equation, except for the country fixed effects and the colonial missions control. We do this because these are variables that national policy could potentially effect. We are therefore comparing the magnitude of the historic determinant of trust to policy relevant contemporary determinants of trust. Using the estimates from column 3 of table 3, and performing a standard variance decomposition, one finds that together slave exports and the policy relevant variables explain 5.04% of the total variation of trust across the sample, and slave exports explains between 17 and 25% of this variation.

Although, we find evidence of a statistically significant, and economically non-trivial role of the slave trade on trust today, our results in no way imply that Africa is doomed because of its past. Our comparison show that short-run factors that can be affected by policy (like education, income, etc.) together have a larger effect on trust than the slave trade.

B. *IV Estimates*

Our hypothesis is that the negative correlation between slave exports and trusts exists because ethnic groups that were exposed to the slave trade became less trusting of those around them. The historical evidence reviewed in section 2 indicates that this is a plausible explanation for the correlation. However, it is also possible that ethnic groups that were inherently less trusting were more likely to be taken during the slave trades, and that these groups continue to be less trusting today. In our view, the history of the slave trade does not provide strong support for this explanation. The historic accounts that we have reviewed suggest that it may actually have been the individuals that were more trusting, not less trusting, that were more likely to have been kidnapped or tricked into slavery. (Recall the examples from Koelle and the story of the drumming group from Anlo, Ghana.)

In this section, our goal is to determine whether the correlations documented to this point are in fact causal. To do this we use instrumental variables (IV). This requires an instrument that is

correlated with slave exports, but uncorrelated with any characteristics of the ethnic groups that may affect trust today. We use the historic distance of each ethnic group from the coast as an instrument for the number of slaves taken during the slave trade. The measure is constructed using data from Murdock (1959) on the historic borders of ethnic groups during the 19th century (which are shown in figures 1 and 2). The measure we use is the distance from the centroid of an ethnic group to the closest point along the coast.

The history of Africa's slave trades leave little doubt that the instrument is relevant. History and our first stage results show clearly that places closer to the coast had more slaves taken.[15] The critical issue is then whether the instrument satisfies the necessary exclusion restriction. That is, whether an ethnic group's historic distance from the coast is correlated with factors other than the slave trade that may affect how trusting the ethnic group is today.

The most obvious reason why the exclusion restrictions may not be satisfied arises because the historic distance from the coast of an individual's ethnic group will be positively correlated with the individual's current distance from the coast, and this may be correlated with the individual's current income (Rappaport and Sachs, 2003, Frankel and Romer, 1999) which may in turn affect trust (Alesina and La Ferrara, 2002, Guiso *et al.*, 2007*a*).[16] Because of this potential violation, as well as other similar violations that arise because of the correlation between an individual's current distance from the coast and their ancestor's historic distance from the coast, in our IV estimates we control for the current distance from the coast of the respondents in our sample. An individual's current distance from the coast is calculated from the location of the respondent, which is recorded in the Afrobarometer surveys. The Afrobarometer records the town or village of each rural respondent. For urban respondents, the district or neighborhood of the city in which the individual resides is recorded.[17] The geographic locations of the respondents are shown in figure 3. In total, there are over 3,000 different locations recorded in the 2005 Afrobarometer survey. Using ARC GIS software, we calculate the distance from the town to the nearest point along the coast. This is our measure of how close the respondent is from the coast today.

In figure 4, we compare the two distance measures. From the figure it is clear that an individual's current distance from the coast is strongly correlated with the historic distance from the coast

[15] See for example Miller (1988) who describes the slave trade as progressing in waves of destruction originating from the coast.

[16] Note that this violation of the exclusion restriction actually results in IV estimates that are biased towards zero.

[17] The geographic coordinates of each location were determined using a number of digitized global gazetteers provided by Harvard's Africa Map project. Details of this procedure are provided in the data appendix.

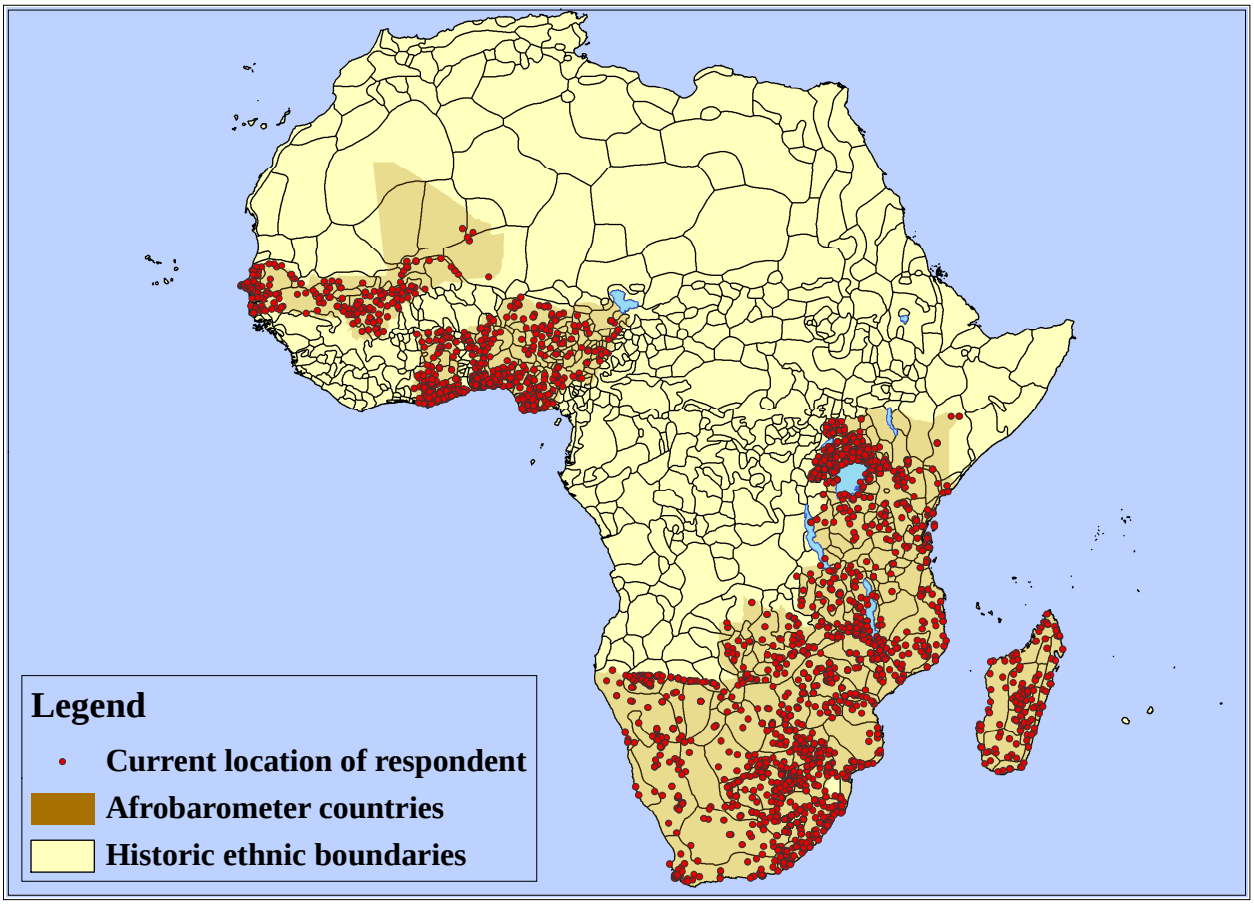

Figure 3: Map showing the historic location of ethnic groups and the current locations of respondents in the Afrobarometer surveys.

of the individual's ethnic group. If the two measures were equal, all observations would lie on a 45 degree ray from the origin. It is clear that a large mass of observations actually lie on this line. However, for many individuals the two measures are different. In the IV estimates that we report below, identification is driven by these individuals, and therefore the IV estimates will be an average estimate of the effect of the slave trade on the trust of individuals that live in a location different from their ancestors. This is an important point to keep in mind. We return to this point below and show explicitly the differences between these individuals and the rest of the population.

The IV estimates are reported in table 6. The first stage estimates are reported in the bottom panel and the second stage estimates are reported in the top panel. The first three columns report IV estimates for each of our three measures of trust without controlling for each respondent's current distance from the coast in the second stage. In the first stage, the historic distance from the coast is strongly correlated with slave exports. As expected, ethnic groups that were further

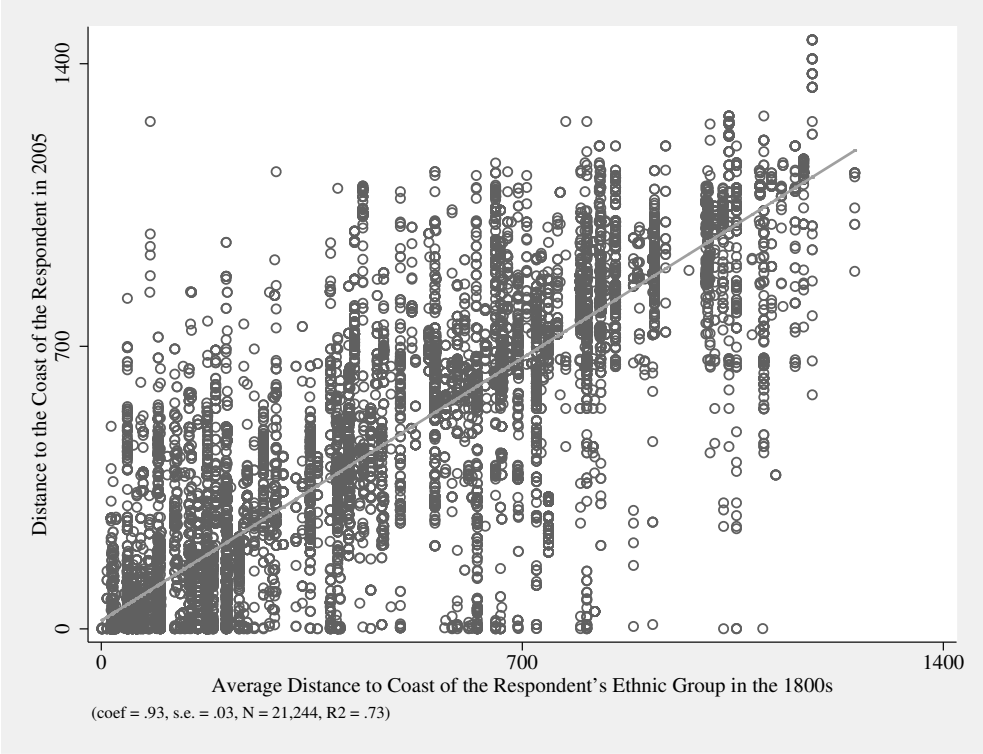

Figure 4: Correlation between the distance to the coast of the respondent in 2005 and the average distance to the coast of the respondent's ethnic group in 1800s.

from the coast historically exported fewer slaves. In columns 4–6, we report IV estimates with the current distance from the coast included as a control variable. When we control for the current distance from the coast, both the historic and current distances from the coast are included in the first stage. The variation in historic slave exports is primarily explained by the historic distance from the coast rather than by individuals' current distance from the coast. This is reassuring, since logically it is the historic distance that should matter for historic slave exports. The fact that some of the variation is explained by current distance may be explained by the fact that the current distance of the individual from the coast is more precisely measured than the historic distance of ethnic group from the coast.

The second stage results show that even after controlling for each individual's current distance from the coast, the IV estimates still report a statistically significant negative effect of a history of the slave trade on an individual's trust today. The magnitudes of the estimates are slightly larger, but similar in magnitude to the OLS estimates. In fact, in all specifications but one, the Durbin-Wu-Hausman (DWH) test cannot reject the null hypothesis of the consistency of the OLS estimates at any standard significance level. These results provide evidence that selection into the

Table 6: IV estimates of the effect of the slave trade on trust.

	Full sample						Omitting Kenya and Tanzania			Omitting observations with less precise data on current location		
	Trust of relatives	Trust of neighbors	Trust of local council	Trust of relatives	Trust of neighbors	Trust of local council	Trust of relatives	Trust of neighbors	Trust of local council	Trust of relatives	Trust of neighbors	Trust of local council
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
	Second stage: Dependent variable is an individual's trust											
ln normalized slave exports	-.225***	-.253***	-.226***	-.207**	-.152*	-.169**	-.256***	-.179**	-.123*	-.205**	-.183**	-.178**
	(.065)	(.069)	(.056)	(.091)	(.086)	(.078)	(.087)	(.077)	(.074)	(.088)	(.080)	(.075)
Current distance of respondent from coast				.0001	.0002**	.0001	.0001	.0003***	.0001	.0000	.0002*	.0001
				(.0001)	(.0001)	(.0001)	(.0001)	(.0001)	(.0001)	(.0001)	(.0001)	(.0001)
Hausman test (p-value)	0.14	0.15	0.02	0.31	0.81	0.29	0.06	0.50	0.68	0.25	0.38	0.18
R-squared	0.13	0.15	0.19	0.13	0.16	0.19	0.13	0.16	0.19	0.14	0.16	0.20
	First stage: Dependent variable is ln normalized slave exports of an ethnic group											
Historic distance of ethnic group from coast	-.0013***	-.0013***	-.0012***	-.0010***	-.0010***	-.0010***	-.0011***	-.0011***	-.0011***	-.0011***	-.0011***	-.0011***
	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)	(.0002)	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)	(.0003)
Current distance of respondent from coast				-.0006***	-.0006***	-.0005***	-.0007***	-.0007***	-.0006***	-.0005***	-.0005***	-.0005***
				(.0002)	(.0002)	(.0002)	(.0002)	(.0002)	(.0002)	(.0002)	(.0002)	(.0002)
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
District ethnicity controls	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Colonial missions control	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	20,062	20,027	19,733	19,618	19,585	19,298	17,754	17,721	17,514	13,986	13,956	13,591
Number of clusters	185	185	185	184	184	184	151	151	151	182	182	182
F -statistic	70.41	57.19	78.26	139.55	99.65	153.85	200.02	133.22	156.34	116.47	99.28	103.95
F -stat of excl. instrument	19.22	19.25	19.30	14.86	14.89	15.15	14.08	14.09	14.29	16.96	17.02	16.85
R-squared	0.68	0.68	0.69	0.69	0.69	0.70	0.69	0.69	0.72	0.70	0.70	0.72

Notes: The table reports IV estimates. The top panel reports the second stage estimates and the bottom panel reports first stage estimates. Columns 1-6 reports estimates with the full sample of observations. Columns 7-9 report estimates with Kenya and Tanzania omitted from the sample, and columns 10-12 report estimates where observations with less precise current location data are omitted from the sample. All standard errors are clustered at the ethnicity level. The individual controls are for age, age squared, a gender indicator variable, 5 'living conditions' fixed effects, 10 education fixed effects, 20 religion fixed effects, 25 occupation fixed effects and an indicator for whether the respondent lives in an urban location. The district ethnicity controls include a measure of ethnic fractionalization at the district level and the share of the district's population that are the same ethnicity as the respondent. The colonial missions variable is the density of mission stations (number per thousand square kilometers) located in the area of Africa historically inhabited by the respondent's ethnic group. The null hypothesis of the Hausman test is that the OLS estimates are consistent. ***, **, and * indicates significance at the 1, 5 and 10% levels.

slave trade is not strongly biasing the OLS estimates. This is consistent with the findings in Nunn (2008), where the IV estimates of the effect of the slave trade on per capita income across countries were very similar to the OLS estimates.

For much of Africa, prior to European contact in the late 15th century, there was no overseas contact with the outside world. This fact provide one reason why the historic distance from the coast may not affect trust today through channels other than the slave trade. However, strictly speaking, this is not true for the northern coast of Eastern Africa, which was in contact with Swahili traders since at least 800 AD. For this reason, in columns 7–9 we re-estimate the specifications from columns 4–6 omitting Tanzania and Kenya, the two countries in our sample where there was early contact with overseas traders. Although this reduces the sample by roughly 2,000 observations and the number of ethnicities by 33, the results remain robust. The estimated effects of the slave trade on our trust measures remain negative and significant, and for all three trust measures, the DWH test cannot reject the null hypothesis of the consistency of the OLS estimates.

For all observations, the location data are very precise. As noted, typically, for individuals living in large cities we know the district within the city that they live in, and for those living in

rural villages we know the location of the village. However, for some observations the data are slightly less precise. Instead of knowing the district of the city, we only know the city, and instead of knowing the rural village, we only know the more general vicinity that the village is located in. As a final robustness check, in columns 10–12 we report estimates, omitting the observations for which the information on the current location of the respondent is less precise. The estimates remain completely robust to the omission of these observations. The coefficients barely change and remain highly significant.

C. *Falsification Tests*

As is generally the case with IV estimates, there remains uncertainty about whether our instrument satisfies the necessary exclusion restrictions. To provide the reader with some sense of the validity of our instrument, we undertake a number of falsifications tests.

If one estimates the reduced form relationship between the historic distance from the coast and trust today, a strong positive relationship is found. Individuals whose ancestors lived further from the coast are more trusting today. A similar relationship is also found if one examines the relationship between current distance from the coast and trust. These results are completely consistent with the first and second stage IV estimates reported in table 6. Individuals with ancestors who lived closer to the coast were more exposed to the slave trade and their descendants are less trusting today. Our identification assumes that this is the only channel through which distance from the coast affects trust. Therefore, if our identification assumption is satisfied, then we should not observe a similar positive relationship between distance from the coast and trust in the parts of the world where the slave trade did not occur.

These are exactly the falsification exercises that we undertake. Specifically, we search for surveys that ask the same or very similar trust questions as in the Afrobarometer survey and that also report the locations of the respondents in the survey. We have found two data sources with both types of information: the 2003 Asiabarometer and a portion of the 1990 World Values Survey.

The first non-African sample that we consider uses data from the ten Asian countries reported in the Asiabarometer: Japan, South Korea, China, Malaysia, Thailand, Vietnam, Myanmar, India, Sri Lanka, and Uzbekistan. In the survey, the region where each individual lives is provided. Using this information we are able to calculate a measure of the minimum distance to the coast of respondents in the sample. It is important to note that this distance measure is slightly different

than the distance measure used in the African sample. In the Asian sample, it is a measure of the current distance from the coast of the respondent, but in the Africa data, it is a measure of the historic distance from the coast of the respondent's ethnic group. However, give the persistence in families' locations over time, and the strong correlation between historic and current distances from the coast in the Africa, this is still a meaningful measure to consider.

A second important difference in the two samples is in the exact wording of the trust question. In the Asiabarometer the question is: "How much do you trust your local government?", which is slightly different from the wording in the Afrobarometer: "How much do you trust your locally elected government council?". The available answers for the two questions are the same, and we construct our dependent variable in the same manner for both samples. Because income, occupation, and ethnic fractionalization measures are unavailable in the Asiabarometer sample, these covariates are not included in the estimating equations of either the African or Asian samples. Even for the covariates that exist in both samples, they are measured slightly differently. For this reason, we also report all specifications with only country fixed effects and no covariates.

The reduced form estimates of the relationship between distance from the coast and trust in the local government within Africa are reported in the first two columns of table 7. With or without the set of control variables, there is a strong positive relationship between an ethnic group's historic distance from the coast and their trust in their local council. The relationship is very similar if current distance from the coast is used instead of the historic distance from the coast. Columns 3 and 4 report the same reduced form estimates for the 10 Asian countries from the 2003 Asiabarometer. Unlike the African sample, the Asian sample shows no systematic relationship between the distance from the coast and trust.

In the remaining columns of the table we repeat this same exercise, but use a the countries from the 1990 World Values Survey (WVS) for which the necessary data are available. These countries are: Chile, Norway, Sweden, Great Britain, and Northern Ireland. These are the only countries in the first four rounds of the WVS where the survey collects information on the location of each respondent, and asks a trust question similar to one of the questions being examined here is asked. The question from the WVS is: "How much do you trust <nationality> people in general?". The similar Afrobarometer question reads: "How much do you trust <nationality> people from other ethnic groups?". The categories for the respondent's answers in the WVS are slightly different from the Afrobarometer. They are: "not at all", "not very much", "neither trust nor distrust", "a

Table 7: Reduced form relationship between the distance from the coast and trust within Africa and outside of Africa.

	Trust of local government council				Inter-group trust				
	Afrobarometer sample		Asiabarometer sample		Afrobarometer sample		WVS non-Africa sample		WVS Nigeria
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Distance from the coast	.0004***	.0003***	.0001	-.0082	.0004***	.0004***	-.0003	-.0002	.0008***
	(.0001)	(.0001)	(.0001)	(.0075)	(.0001)	(.0001)	(.0002)	(.0002)	(.0001)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	n/a
Individual controls	No	Yes	No	Yes	No	Yes	No	Yes	Yes
Number of observations	19,859	19,859	5,409	5,409	19,970	19,970	10,308	10,308	974
Number of clusters	185	185	57	57	185	185	107	107	16
R-squared	0.16	0.18	0.19	0.22	0.09	0.10	0.09	0.11	0.06

Notes: The table reports OLS estimates. The unit of observation is an individual. The dependent variable in the Asiabarometer sample is the respondent's answer to the question: "How much do you trust your local government?". The categories for the answers are the same in the Asiabarometer as in the Afrobarometer. The dependent variable in the WVS sample is the respondent's answer to the question: "How much do you trust <nationality> people in general?". The categories for the respondent's answers are: "not at all", "not very much", "neither trust nor distrust", "a little", completely. The responses take on the values 0, 1, 2, 3, 4. Standard errors are clustered at the ethnicity level in the Afrobarometer regressions and at the location level in the Asiabarometer and the WVS samples. When the dependent variable is trust in the local government council, the individual controls are for age, age squared, a gender indicator, education fixed effects, and religion fixed effects. When the dependent variable is inter-group trust, the individual controls are for age, age squared, a gender indicator, an indicator for living in an urban location, and occupation fixed effects. ***, **, and * indicates significance at the 1, 5, and 10% levels.

little", and "completely". The core difference with the Afrobarometer question is that in the WVS, respondents are given a choice of five different responses, not four. As a consequence, the WVS variable ranges from 0 to 4 and takes on the value 0, 1, 2, 3, or 4. Because the WVS survey does not include measures of education, living conditions or religion, these measures are not included among the individual level controls when comparing the results inside and outside of Africa.

The estimation results are reported in columns 5–9 of table 7. Columns 5 and 6 report the reduced form relationship within Africa, with and without the set of controls. Again, we find a positive relationship between distance from the coast and trust. Columns 7 and 8 report the same estimates with the sample of countries from the WVS. Again, like the Asian sample, we do not find evidence of a positive relationship between distance from the coast and trust outside of Africa.

One concern is that the differences in the relationship between distance and trust within and outside of Africa may be driven by differences in the two surveys. This could occur, for example, if there were differences in the unintentional priming of respondents in the two surveys or if the location measures are more noisy in the non-African surveys. However, as shown in column 9, even if we look at respondents from African countries within the WVS (the only country being Nigeria), we find a very strong positive relationship between distance from the coast and trust. Therefore, it is unlikely that the different relationships between distance from the coast and trust

within Africa and outside of Africa can be explained by the fact that the data are from different underlying surveys.

One objection to our falsification test is that countries outside of Africa are very different from African countries in many ways other than their history of the slave trade. Because of this concern, the ideal comparison would be with a counterfactual Africa that is otherwise identical except that the slave trade did not occur. While this comparison clearly is not possible, we can compare the portions of Africa that experienced the slave trade to the portions of Africa that did not and examine whether the reduced form relationship between distance from the coast and trust is absent in the parts of Africa that were not exposed to the slave trade. This comparison can even be refined further. Some countries, like South Africa and Namibia, barely experienced the slave trade. For these countries the relationship between distance from the coast and trust today should be very weak and close to zero. Further, the relationship should be stronger the more impacted an area was by the slave trade. In other words, if the exclusion restrictions are satisfied, the more exposed a region was to the slave trade, the stronger should be the reduced form relationship between historic distance from the coast and trust today; and for the countries that did not experience the slave trade at all, we should not observe any relationship.

We test for these patterns in the data by estimating the following equation:

$$\begin{aligned} \text{trust}_{i,e,d,c} &= \alpha_c + \beta_1 \text{ distance from coast}_e + \beta_2 \text{ distance from coast}_e \times \text{slave exports}_c \\ &\quad + X'_{i,e,d,c}\,\delta + \gamma_1 \,\text{EF}_{d,c} + \gamma_2 \,\text{E}_{e,d,c}/\text{Pop}_{d,c} + \gamma_3 \,\text{M}_e + \varepsilon_{i,e,d,c} \end{aligned} \tag{2}$$

where all variables are as defined as in equation (1). The variable distance from coast_e denotes the historic distance from the coast of ethnic group e. To capture the fact that the relationship between distance from the coast and trust may differ according to whether the country was impacted by the slave trade, we interact this variable with slave exports_c, the natural log of the number of slaves taken from country c, which is taken from Nunn (2008). To facilitate the comparison of β_1 and β_2, we transform our country-level slave export measure so that it ranges from 0 to 1, by dividing by the maximum value of the variable. Given this transformation, for countries unaffected by the slave trade the relationship between distance from the coast and trust is β_1, and for the country most affected by the slave trade the relationship is given by $\beta_1 + \beta_2$.

If our exclusion restrictions are satisfied, then we expect to see that the relationship between the historic distance from the coast and trust today should be much stronger in the regions that were

Table 8: Reduced form relationship between distance from the coast and trust within Africa.

	Trust of relatives		Trust of neighbors		Trust of local council	
	(1)	(2)	(3)	(4)	(5)	(6)
Historic distance from the coast$_e$	-.0004**	-.0003**	-.0004*	-.0003*	-.00026**	-.0002**
	(.0002)	(.00015)	(.0002)	(.00017)	(.00015)	(.00012)
Historic distance from coast$_e$ × Country level slave exports$_c$	.0012***	.0010***	.0014***	.0010***	.0010***	.0008***
	(.0003)	(.0002)	(.0003)	(.0003)	(.0002)	(.0002)
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
All control variables	No	Yes	No	Yes	No	Yes
Number of observations	20,062	20,062	20,027	20,027	19,733	19,733
Number of clusters	185	185	185	185	185	185
R-squared	0.12	0.14	0.12	0.15	0.16	0.20

Notes: The table reports OLS estimates. The unit of observation is an individual. Standard errors are clustered at the ethnicity level. The individual controls are for age, age squared, a gender indicator variable, 5 'living conditions' fixed effects, 10 education fixed effects, 20 religion fixed effects, 25 occupation fixed effects, an indicator for whether the respondent lives in an urban or rural location, ethnic fractionalization in the respondent's district, the share of the population of the respondent's ethnic group in the district, and the density of mission stations located in the area of Africa historically inhabited by the respondent's ethnic group. `Country level slave exports' is the log normalized number of slaves taken from each country. The variable has been normalized to range between 0 to 1. It has a mean of 0.59 and a standard deviation of 0.32. ***, **, and * indicates significance at the 1, 5 and 10% levels.

most exposed to the slave trade: $\beta_2 > 0$. Further, we should observe a non-positive relationship in the countries where there was no slave trade: ($\beta_1 \leq 0$).

Estimates of equation (2) are reported in table 8. For each of our three measures of trust, the estimated coefficients for β_1 are close to zero and always negative, while the coefficients for the interaction between distance from the coast and with slave exports β_2 is positive and statistically significant. This suggests that where there was no slave trade, there is no relationship between historic distance from the coast and trust today, or if anything a negative relationship. It is only in areas with involvement in the slave trade where we see a positive reduced form relationship between historic distance from the coast and trust.

Taken together, the results of tables 7 and 8 are highly suggestive, and provide strong evidence supporting the validity of our identification strategy. In the sample of countries where the slave trade occurred, we see a very strong robust positive relationship between distance from the coast and trust.[18] In the other parts of the world where the slave trade was absent, the estimated relationship between distance from the coast and trust is zero. This is true whether the comparison

[18]This is true whether we use historic or current distance from the coast.

is between Africa and the rest of the world or between countries within Africa.

5. Testing for Channels of Causality: Internal Norms versus External Factors

Our goal to this point has been to document a causal relationship between the extent to which a respondent's ancestors were impacted by the slave trade and the individual's level of trust today. Although the data provide strong evidence that the slave trade caused the descendants of those exposed to the trade to become less trusting, the underlying channel of causality remains unclear. It is possible that the evolution of vertically transmitted norms were influenced during the 400 year period of the slave trade and that this is the cause of the relationship being captured. Those exposed to the trade, and their descendants, became less trusting over time and remain less trusting today. However, a second explanation is also possible. We know that the slave trade also resulted in the deterioration of pre-existing states, institutions, and legal structures. The slave trades may be correlated with lower trust today because they resulted in poorly functioning legal systems that still persist today, and the reason that people have lower levels of trust is because a weak rule of law allows people to behave badly and therefore they cannot be trusted.

We undertake two empirical exercises to distinguish between these two channels. In the first exercise, we focus on individuals' reported trust in their local government council. Part of the reason that respondents with a history of slaving may have a lower level of trust in their local council is because the slave trade had an adverse effect on the long-term development of local institutions. That is, there may be mistrust of the local council, not because individuals have developed internal norms of mistrust, but because the council is not trustworthy.

We attempt to isolate the effect of the slave trades working through individuals' internal norms by controlling directly for three measures of the perceived performance of the local government council. Respondents are asked three questions about the perceived performance of their local council. They were asked whether they approve or disapprove of the way their locally elected government councillor has performed his/her job over the past 12 months. Respondents then chose between the following responses: strongly disapprove, disapprove, approve, or strongly approve. The responses were coded to a variable that takes on the values 0, 1, 2 or 3, where strongly disapprove is coded as 0 and strongly approve is coded as 3. Respondents were also asked two additional questions: (*i*) how many of their locally elected councillors were corrupt, and (*ii*) whether their local council members listen to their concerns. For the corruption question,

the respondents were given the option of answering: none, some, most, or all of the councillors were corrupt. For the question about whether councillors listen, the respondents were given the option of answering: never, only sometimes, often, or always. Again, we code each response as 0, 1, 2 and 3, respectively.

The results of this exercise are reported in table 9. In the first three columns, the dependent variable is each of the three measures of the perceived quality of the local council. In each of the three regressions, the dependent variable is regressed on the full set of covariates from equation (1). For all three measures, individuals' perceived performance of their council is adversely affected by a history of past slave exports. This may be because the slave trade resulted in a deterioration of local political structures and networks historically, and these past institutions are an important foundation for well-functioning local politics today.

In column 4, we re-estimate our baseline estimating equation (1) (with trust in the local council as the dependent variable), using a restricted sample of observations for which data on the perceived of quality of the local council are available. The estimates from this restricted sample are qualitatively identical to the results from the larger sample reported in column 3 of table 5.

In column 5, we include the three measures of the perceived quality of the local council as additional controls. In column 6, we more flexibly control for the three variables, including three sets of fixed effects, constructed from the responses to each question. In the final column of the table, we also include controls for objective measures of the quality of the local government. The Afrobarometer survey records whether electricity, piped water, sewage, health clinics, and schools are available in each respondent's village or neighborhood. Using this information we construct five indicator variables that equal one if the respondent has access to each of the five public goods. Including these objective measures has no effect on the estimated effect of the slave trade on trust.

In all three specifications, the estimated relationship between slave exports and trust remains negative and highly significant. The decrease in the magnitude of the estimated coefficient suggests that about half of the estimated relationship between slave exports and trust in the local council occurs through a deterioration in the quality of the local council, and half occurs through norms of mistrust.

In a second strategy aimed at distinguishing between the two channels of causality, we construct an alternative measure of slave exports that is meant to capture the effect of the slave trade on an individual's external environment. Recall that our baseline measure is the average number

Table 9: OLS estimates of the determinants of the trust in the local government, controlling for actual performance.

	Performance of local council	Corruption of local council	Councillors listen?	Trust of local council			
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
ln normalized slave exports	-.079***	.077***	-.050**	-.114***	-.059***	-.057***	-.057***
	(.018)	(.032)	(.025)	(.022)	(.016)	(.015)	(.014)
Performance of local council					.337***		
					(.013)		
Corruption of local council	n/a	n/a	n/a		-.214***		
					(.014)		
Councillors listen?	n/a	n/a	n/a		.135***		
					(.014)		
Performance of local council fixed effects	n/a	n/a	n/a	No	No	Yes	Yes
Corruption of local council fixed effects	n/a	n/a	n/a	No	No	Yes	Yes
Councillors listen fixed effects	n/a	n/a	n/a	No	No	Yes	Yes
Five public goods fixed effects	n/a	n/a	n/a	No	No	No	Yes
All control variables	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	18,540	17,266	18,436	15,748	15,748	15,748	15,748
Number of clusters	185	185	185	185	185	185	185
R-squared	0.15	0.15	0.09	0.20	0.36	0.36	0.36

Notes: The table reports OLS estimates. The unit of observation is an individual. Standard errors are clustered at the ethnicity level. The 'Five public goods fixed effects' are for the existence of the following public goods in the responedent's town or village: school, health clinic, sewage, piped water, and electricity. 'All control variables' includes our full set of individual level control variables, district ethnicity control variables, and our measure of colonial missions. ***, ** and * indicate significance at the 1, 5 and 10% levels.

of slaves taken from an individual's ethnic group. This variable measures how intensively an individual's ancestors were impacted by the slave trade. The alternative measure that we construct quantifies the number of slaves that were taken from the geographic location where the individual is living today. In practice, the variable is constructed by identifying the current location that the individual is living in (these are the points indicated in figure 3), and then determining which historic ethnic group this point lies within. The variable for the individual takes on the normalized slave exports measure from the ethnic group that was historically living in this location. If an individual currently lives where his ancestors lived, then the two measures will be the same. Otherwise, the two slave export measures will differ.

The motivation for constructing the two measures comes from the insight that when an individual relocates, the individual's cultural beliefs, norms and values, move with them, but the external environment the individual faces is left behind. In other words, factors external to the individual are much more geographically fixed, relative to cultural norms, which are internal to the individual and therefore mobile.

If one accepts that the slave trade had a causal effect on trust, then the two variables can be used to distinguish between the effect of the slave trade on trust through factors internal to the individual (like norms and beliefs) and factors external to individuals (like the domestic institutions). If the slave trade affects trust primarily through internal factors, then an individual's mistrust should be correlated with the extent to which their ancestors were heavily impacted by the slave trade. If the slave trade affects trust primarily through its deterioration of domestic institutions and other external factors, then mistrust should be correlated with whether the external environment that the individual is living in today was heavily impacted by the slave trade. We identify the effect of the slave trade through these two channels by including both the ethnicity based and geography based measures of slave exports in our baseline estimating equation (1).

Not surprisingly, we find that the geography- and ethnicity-based measures of slave exports are highly correlated (the correlation coefficient is 0.62). For approximately 45% of the respondents in the sample, both variables take on the same value. These individuals currently live in the same general location as their ancestors. The other 55% of the sample can be explained by either migration at some point in the past, or by measurement error in either the current or historic location data. We refer to the group who no longer live in the same area as their ancestors,

according to our data, as 'movers'.[19]

Table 10 summarizes the characteristics of, and differences between, the 'movers' and the 'non-movers' in the sample. The table shows that movers tend to currently live in an urban area, to be younger, be closer to the coast, and to live in districts with less co-ethnics. These characteristics are consistent with the general migration patterns within Africa, where younger individuals, in search of work, are moving from their more ethnically homogenous rural villages to large cities, which tend to be located closer to the coast. Movers also have higher average levels of trust in their relatives and neighbors. Although we do not know for certain, it may be that individuals are more likely to migrate if they are more trusting of those around them, especially those that they do not know well. It is also possible that movers are more optimistic and that this is positively correlated with trust.

Given the differences between the two groups, it is important to keep in mind that the estimation results with both slave export variables is an average effect among the movers only. The estimates may not apply to the population more generally. However, since the movers constitute 45% of the population, we feel that even estimating an average effect among this group is informative.

Estimates of equation (1), with both slave export variables included, are reported in table 11. The table reports estimates for each of our three baseline measures of trust. In the odd numbered columns, we report estimates using all observations, and in the even numbered columns, we report the same estimates using only movers. The estimated coefficients for both variables are generally negative and significant. However, the estimated coefficients for the ethnicity based slave exports variable is much more robust, and is always at least twice the magnitude of the location based slave exports variable.

The estimates suggest that the slave trades adversely affected trust through factors internal to the individual, such as cultural norms, as well as factors external to the individual, such as institutions and social structures, but that the magnitude of the internal channel is approximately twice the magnitude of the external channel. This finding is in line with other studies that also find internal factors to be more important than the external environment. For example, Ichino and Maggi (2000) examine the determinants of employee shirking in Italian banks and find that an

[19]The correlation between the two slave export variables among the movers in the sample is 0.12.

Table 10: Differences between movers and non-movers.

	Movers		Non-movers		Difference: (Movers - Non-movers)	
Variable	Obs.	Mean	Obs.	Mean	Mean	S.d.
Trust measures:						
Trust of relatives	9,049	2.243	11,113	2.141	0.102***	0.014
Trust of neighbors	9,029	1.810	11,097	1.683	0.122***	0.014
Trust of local council	8,791	1.665	10,973	1.676	-0.011	0.016
Slave export measures:						
ln normalized ethnicity based slave export measure	9,381	0.458	11,863	0.473	-0.015	0.012
ln normalized location based slave export measure	9,381	0.603	11,863	0.473	0.130***	0.016
Control variables:						
Currently living in an urban city indicator	9,381	0.387	11,863	0.351	0.037***	0.007
Age	9,260	35.63	11,730	37.08	-1.443***	0.204
Male indicator	9,381	0.501	11,863	0.499	0.002	0.007
Secondary school education or higher indicator	9,354	0.441	11,812	0.440	0.001	0.007
Ethnic fractionalization in current district	9,381	0.431	11,863	0.388	0.044***	0.004
Share of ethnic group in current district	9,381	0.531	11,863	0.649	-0.118***	0.005
Current distance from coast	9,381	421.41	11,863	441.83	-20.41***	4.66
Historic prevalence of colonial missions	9,381	0.235	11,863	0.202	0.033***	0.005

Notes: The table reports means of, and the difference in means between movers and non-movers in the sample. Movers are defined as those individuals who live in a different location today that is different from their ethnic group lived in the 19th century. Non-movers are those living in the same location. 'ln normalized ethnicity based slave export measure' is our baseline measure of slave exports used throughout the paper. It is the log of the number of slaves taken from an individual's ethnic group (normalized by land area). 'ln normalized location based slave export measure' is our alternative measure of slave exports, which is the log of the number of slaves taken from the location where an individual is currently living (normalized by land area). ***, **, and * indicate significance at the 1, 5 and 10% levels.

Table 11: Channels of causality: Distinguishing between internal norms and external factors.

	Trust of relatives		Trust of neighbors		Trust of local council	
	Full sample	Movers only	Full sample	Movers only	Full sample	Movers only
	(1)	(2)	(3)	(4)	(5)	(6)
ln normalized ethnicity based slave export measure	-.108***	-.085***	-.136***	-.076***	-.100***	-.068***
	(.030)	(.031)	(.029)	(.030)	(.020)	(.022)
ln normalized location based slave export measure	-.057***	-.039**	-.055***	-.024	-.029**	.000
	(.011)	(.017)	(.014)	(.016)	(.013)	(.021)
All control variables	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	19,618	8,787	19,585	8,768	19,298	8,566
Number of clusters	184	162	184	162	184	162
R-squared	0.14	0.14	0.16	0.18	0.19	0.21

Notes: The table reports OLS estimates. The unit of observation is an individual. Movers are defined as those individuals who live in a different location today that is different from their ethnic group lived in the 19th century. Standard errors are clustered at the ethnicity level. 'ln normalized ethnicity based slave export measure' is our baseline measure of slave exports used throughout the paper; it is the log of the number of slaves taken from an individual's ethnic group (normalized by land area). 'ln normalized location based slave export measure' is our alternative measure of slave exports, which is the log of the number of slaves taken from the location where an individual is currently living (normalized by land area). 'All control variables' includes our full set of individual level control variables, district ethnicity control variables, and our measure of colonial missions. ***, ** and * indicates significance at the 1, 5 and 10% level.

individual's background is a much more important determinant of shirking than the employees current environment.

6. Some Potential Consequences of Mistrust

Having provided evidence of the causal effects of the slave trades on trust, we now provide exploratory evidence that highlights some of the potential consequences of lower trust. As we highlight, the data show that individuals with lower levels of trust in their local government council are also less likely to attend local council meetings, less likely to contact a local councillor about a problem, and more likely to feel that violence is sometimes justified.

These correlations are summarized in table 12. In the first two columns, the dependent variable is a quantification of respondents' answers to the following question: "Have you personally attended a community meeting in the past year?" Respondents answered: (*i*) no, would never do this, (*ii*) no, but would do if had the chance, (*iii*) yes, once or twice, (*iv*) yes, several times, or (*v*) yes, often. Their answers were coded into a variable that took on the values 0, 1, 2, 3, 4, where 0 corresponds to the first category and 4 to the fifth category. Our results show that the higher an individual's trust in the local council, the more likely he or she is to attend local community meetings. As shown in the second column, this remains true even after controlling for the three measures of individuals' perceptions of the performance of their local government council.

In columns 3 and 4 of the table, the dependent variable is based on respondents' answers to the following question: "During the past year, how often have you contacted a local government councillor?" The respondents answered: (*i*) never, (*ii*) only once, (*iii*) a few times, and (*iv*) often. The responses were coded in a variable taking on the values 0, 1, 2, and 3. The results show that respondents who trust their local councillors more also tend to contact their local councilor more often. Again, this result remains robust when our three measures of individuals' perceived performance of their local government council are controlled for.

The final outcome considered is each respondent's attitude towards political violence. The respondents were given two statements: (*A*) "The use of violence is never justified in <country name's> politics today", and (*B*) "In this country, it is sometimes necessary to use violence in support of a just cause". Respondents were then instructed to choose one of the following responses about the extent to which they agree or disagree with the two statements: (*i*) agree very strongly with *A*, (*ii*) agree with *A*, (*iii*) agree with *B*, or (*iv*) agree very strongly with *B*. Respondents were also

Table 12: The relationship between individuals' trust and their behavior.

	Attend community meetings		Contacted local government councillor		Feel political violence is sometimes justified	
	(1)	(2)	(3)	(4)	(5)	(6)
Trust of local council	.049***	.027***	.050***	.020**	-.053***	-.042***
	(.009)	(.010)	(.007)	(.008)	(.007)	(.008)
Council quality fixed effects	No	Yes	No	Yes	No	Yes
Individual controls	Yes	Yes	Yes	Yes	Yes	Yes
District ethnicity controls	Yes	Yes	Yes	Yes	Yes	Yes
Colonial missions control	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Number of observations	15,696	15,696	14,793	14,793	15,166	15,166
R-squared	0.19	0.19	0.17	0.18	0.07	0.07

Notes: The table reports OLS estimates. The unit of observation is an individual. The individual controls are for age, age squared, a gender indicator variable, 5 living conditions fixed effects, 10 education fixed effects, 20 religion fixed effects, 25 occupation fixed effects, and an indicator for whether the respondent lives in an urban location. The district ethnicity controls include a measure of ethnic fractionalization at the district level and the share of the district's population that are the same ethnicity as the respondent. The colonial missions variable is the density of mission stations (number per thousand square kilometers) located in the area of Africa historically inhabited by the respondent's ethnic group. ***, ** and * indicates significance at the 1, 5 and 10% level.

allowed to answer that they agree with neither, or that they do not know. We omit observations that choose either of these two responses, and construct a measure that takes on the values 0, 1, 2, and 3, each number corresponding to (*i*), (*ii*), (*iii*) and (*iv*), respectively. As shown in columns 5 and 6, individuals who trust their local councillor are less likely to feel that political violence is sometimes justified. Again, this is robust to controlling for the perceived quality of the local government.

Overall, the results from table 12 show that an individual's level of trust in their local government council is strongly correlated with their local civic participation, which may in turn have strong impact on the well-functioning political institutions in a region or country. These results provide micro-level evidence of the importance of trust for civic participation and a well functioning democracy (see Putnam, Leonardi, and Nanetti, 1993), which may be one channel that explains the large estimated effects of trust on long-term economic development shown in studies like Algan and Cahuc (2007).

7. Conclusions

The evidence presented in this paper adds to a new and growing literature in economics that seeks to better understand the role that culture, norms, and beliefs play in the decision making of individuals. The focus of the empirical literature has generally been to either show empirically that culture exist (e.g., Giuliano, 2007, Fernandez and Fogli, 2007, Miguel and Fisman, 2007, Miguel *et al.*, 2008); or to identify the economic impacts of cultural differences (e.g., Guiso *et al.*, 2004, 2007*a*, Algan and Cahuc, 2007, Bloom *et al.*, 2008). The natural next step is to try and understand the origins of cultural differences. Our study, like the recent contributions by Guiso, Sapienza, and Zingales (2007*b*) and Tabellini (2007), seeks to explain cultural differences by looking back into history.

We have shown that the low levels of trust in Africa can be traced back to the legacy of the slave trade. In particular, we find that individuals' trust in their relatives, neighbors, and local government is lower if their ancestors were heavily threatened by the slave trade. To determine whether this relationship is causal, we provide IV estimates using the historic distance from the coast of an individual's ethnic group as an instrument for slave exports, while controlling for the individual's current distance from the coast. Our IV estimates also find a negative effect of the slave trade on trust today. We undertake a number of falsification tests to assess the validity of our instrument. We show that within Africa, one observes a robust positive reduced-form relationship between distance from the coast and trust, while outside of Africa, the two measures are uncorrelated. Similarly, within the regions of Africa unaffected by the slave trade, no relationship exists. These correlations are consistent with the notion that distance from the coast affects trust only through the slave trade.

We then turn to the question of how and why the slave trade affects trust today. We examine the two most likely explanations for the relationship. The first is that over the 400 years of insecurity generated by the slave trade, general beliefs or 'rules-of-thumb' based on mistrust evolved. These beliefs were then transmitted from parents to children over time, and continue to manifest themselves today over 100 years after the end of the slave trade. The second is that the slave trade resulted in a deterioration in legal institutions and the rule of law in general. Because these poor legal institutions continue to persist today, individuals are not constrained to act in a trustworthy manner, and this results in low levels of trust.

We undertake a number of tests to try and distinguish between the two channels. We find evidence in the data for both channels of causality. The evidence suggests that the slave trade had an adverse effect on the external environment and this affects the trust of others around them. We also find strong evidence that the slave trades alters the trust of the descendants of those impacted by the slave trade in the past through factors internal to the individual, such as internal norms, beliefs, and values.

Appendix A. Data Appendix

Estimates of the total number of slaves shipped from each ethnic group during the trans-Atlantic and Indian Ocean slave trade are constructed by disaggregating the country level estimates from Nunn (2008) to the ethnicity level. This is done separately for each century between 1400 and 1900. The procedure relies on data on the ethnic identity of over 80,656 slaves shipped from Africa during the trans-Atlantic Slave trade and over 21,048 slaves shipped during the Indian Ocean slave trade. A full description of the data and their sources is provided in Nunn (2008).

The individual-level survey data used in our analysis is taken from the third round of the Afrobarometer survey, which was conducted in 2005. The data are publicly available and can be downloaded at: `www.afrobarometer.org`. The Afrobarometer is an independent and non-partisan research project conducted by the Center for Democratic Development (CDD), Institute for Democracy in South Africa (IDASA), and Michigan State University (MSU). The ethnicity level slave export figures were merged with the Afrobarometer data using the self reported ethnicity of each respondent (question q79 in the survey). The ethnic groups listed in the two sources are matched using information on synonyms and alternative spellings of ethnic groups documented in Murdock (1959). For the vast majority of ethnic groups reported in the Afrobarometer a match to the slave exports data was possible. The exceptions are European ethnic designations, which we omit from our analysis (there are 28 individuals for which this is the case). For an additional 78 individuals from Ghana their ethnic designations are reported as "Other northern languages". These individuals are also omitted from our analysis. We also were unable to match eight ethnic groups in the Afrobarometer survey. These are: Arabe (6 people), Gabawen (3), Garmug (1), and Mchegu (1), Ombuya (1).

We construct the average historic distance of each ethnic group from the coast using a digitized version of the map of the 19th century location of ethnic groups within Africa from Murdock

(1959). Using ARCGIS software, we first determined the centroid of each ethnic group, and then calculate the distance from the centroid to the closest point along the coast. To construct measures of each respondent's current distance from the coast, we first identify the geographic location of each respondent using the information on the location in which the respondent lives. The Afrobarometer database provides the name of the village of each respondent. When the respondent lives in a large city, the neighborhood of the city is also provided. Using this information, we were able to determine the latitude and longitude of the respondents using a number of global gazetteers that report the location of villages, towns, cities, and neighborhoods of cities. The gazetteers are accessible through Harvard's AfricaMap project. The primary gazetteer that was used is Geonames, which can also be accessed directly at: `www.geonames.org`.

The living condition fixed effects included as controls in our estimating equations are based on the respondent's view of their present living conditions: (*i*) very bad, (*ii*) fairly bad, (*iii*) neither good nor bad, (*iv*) fairly good, or (*v*) very good. The education fixed effects are for the following categories: (*i*) no formal schooling, (*ii*) informal schooling only, (*iii*) some primary schooling, (*iv*) primary school completed, (*v*) some secondary school/high school, (*vi*) secondary school completed/high school, (*vii*) post-secondary qualifications, but no university, (*viii*) some university, (*ix*) university completed, and (*x*) post-graduate. The ethnic fractionalization of each district, and the share of each ethnicity in a district are calculated using the random sample of individuals from the Afrobarometer. The district-level measure of ethnic fractionalization uses the same formula that is typically used at the country level, which is one minus the Herfindahl index (see e.g., Easterly and Levine, 1997). Our measure of the number of missions in 1924 located on land that was inhabited by an ethnic group includes Protestant missions, Catholic missions, and BFBS Bible depots. Data on the location of ethnic groups is from Murdock (1959), while data on the location of missions are from Roome (1924).

Table 13: Summary statistics for the slave trade and trust variables.

	Summary Statistics				
Variable	Obs.	Mean	S.d.	Min.	Max.
Trust variables:					
Trust relatives	20,618	2.19	0.96	0	3
Trust neighbors	20,580	1.74	1.01	0	3
Trust local council	20,210	1.66	1.10	0	3
Intra-group trust	20,502	1.67	1.00	0	3
Inter-group trust	20,301	1.36	1.00	0	3
Slave trade variables:					
ln(1+exports/area)	21,702	0.54	0.95	0	3.7
exports/area	21,702	2.67	7.68	0	37.7
slave exports (millions)	21,702	0.09	0.21	0	0.9

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