The transatlantic slave trade and the evolution of political authority in West Africa

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Evolution of Political Authority in West Africa[1]

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Abstract

I trace the impact of the trans-Atlantic slave trade on the evolution of political authority in West Africa. I present econometric evidence showing that the trans-Atlantic slave trade increased absolutism in pre-colonial West Africa by approximately 17% to 35%, while reducing democracy and liberalism. I argue that this slavery-induced absolutism also influenced the structure of African political institutions in the colonial era and beyond. I present aggregate evidence showing that British colonies that exported more slaves in the era of the slave trade were ruled more-indirectly by colonial administrations. I argue that indirect colonial rule relied on sub-national absolutisms to control populations and extract surplus, and in the process transformed absolutist political customs into rule of law. The post-colonial federal authority, like the colonial authority before it, lacked the administrative apparatus and political clout to integrate these local authorities, even when they wanted to. From this perspective, state-failure in West Africa may be rooted in a political and economic history that is unique to Africa in many respects, a history that dates at least as far back as the era of the transatlantic slave trade.

Since the publication of Douglas North's *Structure and Change in Economic History* (1981) social scientists have accumulated an abundance of new evidence showing how institutions shape the structure and performance of economies as they move through time. African economies are no exception. The term patrimonial (or neo-patrimonial) is controversial, but often used to describe a class of post-colonial African nation-states where a weak federal authority attempts to rule over ethnically-based local authorities. Political stability often rests upon an unstable coalition of patrons and clients who extract large amounts of national income through personal networks, intimidation, corruption and bribes.[2] In these kinds of "failed-states" public policy is influenced more by a political calculation to retain the privileges of power than by the authority's credible commitment to improve growth and welfare. The recent spread of democratic institutions like multi-party politics has improved accountability, but stability and violence are often more-pressing concerns. It is difficult for people to prosper under these conditions, unless of course they have access to a personal network of patrons and clients that defines the resources available to them.

What are the historical origins of this type of political system? The traditional view links it to the era of colonial rule and how it birthed a disjointed and decentralized nation-state. Mamdani (1996) is perhaps the best-known proponent of this view. He sees the most-important political outcome of colonial rule to be a kind of dual legal system – European laws for colonial rulers and a variety of "customary" laws for colonial "subjects." In a very real sense, the post-colonial nation-state is like the colonial state adjusted to new political realities like democratic elections, new global economic forces, stronger internal challenges and mounting international debt.

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[2] See Pitcher, Moran and Johnston (2009) for a critical discussion of the term "patrimonial." They argue against the use of the term. I agree with their critique, especially the charge that as a Weberian concept patrimonialism is inappropriately applied. I use the term to characterize a historically-specific solution to a political problem faced by many emerging post-colonial nation-states in Africa. My meaning is similar to the political formations described by van de Walle (2001), Boone (2003), Chabal and Daloz (1999) and Bates (2008), and is similar in many ways to Greif's (1994) description of medieval Genoa before the Podesta, except the clients here are customary local authorities.

In this essay I argue that the historical roots go deeper than colonialism and can be found in the absolutist authority structures that emerged out of the slave trade era. To make my case I link the data on slave exports found in the Transatlantic Slave Trade Database (Eltis, 1999) with data on authority structures found in the Ethnographic Atlas (Murdock, 1967). My purpose is to see if the trans-Atlantic slave trade transformed local political authority in Africa prior to colonial occupation. I find that it did. I then suggest ways in which indirect colonial rule institutionalized these authority structures and transformed them into a kind of local rule of law that continues to extract surplus and challenge federal authority today.

The Search for Origins and Path-Dependence

In his book *States and Power in Africa*, Jeffrey Herbst (2000) advances the idea that a specifically African tradition of political authority is ancient in origin and rooted in Africa's harsh physical environment, an environment that has always constrained population growth and elites' capacity to broadcast political power. Herbst argues that low population density constrained the reach of political authority long before colonial rule. In fact, colonial authorities wrestled with the same physical constraints and failed, leaving behind a state apparatus too weak to govern effectively over its exogenously created political territories.

Herbst is not the only scholar to invoke labor scarcity to explain an African institution. Anthony Hopkins (1973) in his widely-read economic history of Africa uses labor scarcity to explain technological choices and the institution of slavery. John Iliffe (2007), the renowned historian of Africa, uses labor scarcity to explain the institution of polygyny. Gareth Austin (2008) revises and extends the application of the idea, and James Fenske (2010) applies it to property rights.

I believe there is a fundamental truth in this idea. Following the showing of the documentary film *Eve,* which argues that ancient Africans migrated out of Africa and populated the world, I ask my class: "if Africans could populate the world then why couldn't they populate Africa?" If Africa was labor scarce then certainly it was the environment and not the people. The major problem with this view is not the idea but a lack of evidence. There are few census counts of an Africa population prior to the 20th century, and the widely-used estimates for earlier times found

in McEvedy and Jones (1978) are educated guesses and extrapolations of current estimates back in time. These types of exercises rely on a variety of counterfactual assumptions regarding historical rates of population growth and the impact of the slave trades on African populations (see Manning, 1990).

Here I take a different approach. I use the fact that slave exports reduced African population. I then look to see if cross-sectional variations in slave exports can explain cross-sectional variations in institutions often ascribed to environmentally-induced labor scarcity. Thanks to the Trans-Atlantic Slave Trade Database some slave exports can be measured with a high degree of precision. In a very real sense, a focus on the slave trade opens the door to an empirically-grounded assessment of the population hypothesis, albeit a door with a slightly different view. Rather than seeing labor scarcity as the result of a steadfast environmental constraint, a focus on the slave trade emphasizes an economic shock to Africa.[3]

This shock certainly reduced population, but it also set off a chain reaction of warfare and raiding among African societies that "changed the way wars were waged at the lowest level (Thornton, 1999, p. 151)." Robin Law, in his study of the Slave Coast concludes that "by the end of the seventeenth century, the European demand for slaves had brought about a profound transformation of African societies of the Slave Coast. Although this was primarily an economic transformation, it had dramatic effects in the political sphere also, in the collapse of political order leading to the rise of the new state of Dahomey" (Law 1991, p. 345). One finds similar conclusions in Barry's (1998) study of the Senegambia region and Daaku's (1970) study of the Gold Coast. Inikori (1982, 2003) argues that the slave trade encouraged the formation and spread of banditry and small militarized states. And in a review of Herbst's *States and Power in Africa,* James Robinson (2002) argues that we should "…hypothesize that slavery-induced predatory institutions had significant adverse influence on development paths not just in the Americas where the slaves were used, but also in Africa where the slaves originated… Nonetheless, this is ultimately an empirical issue (2002, p. 517-518)."

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[3] For two estimates of the shock see Whatley and Gillezeau (2011a) and Gemery and Hogendorn (1979).

A decade later, and with a few notable exceptions, the idea that the slave trade altered African political institutions remains largely untested. Whatley and Gillezeau (2011a) model both effects mentioned above. They treat the slave trade as an increase in the market value of anyone who can be enslaved. The shock alters factor prices in a way that mimics labor scarcity but it also turns political incentives to build states into economic incentives to raid for slaves. The model predicts decentralized and militarized absolutist political authorities more-interested in raiding for slaves than growing citizens. Nunn and Wantchekon (2011) present evidence showing that centuries of slaving in Africa fomented mistrust among people and towards their institutions, and that this slavery-induced mistrust persists to today. Whatley and Gillezeau (2011b) present evidence that the slave trade increased ethnic fragmentation in Africa and that this too persists to today. Nunn (2008) finds that slaving hampered long-term economic progress. Among the many possible channels is its impact on economic and political institutions.

In this essay I follow these leads and ask if the slave trade influenced the institutions of authority in Africa and whether or not these influences persist over the long-term. I am not concerned with assessing the relative importance of environment versus shock. It could very-well be the case that the slave trade merely tightened a labor constraint that had been binding for millennia. I do not offer a way to distinguish between these two views, nor am I particularly concerned to. My goal is more limited -- to trace the long-term effects of the slave trade on the evolution of political authority in Africa.

As such, the effects, if any, must pass through colonialism. Did slavery-induced pre-colonial authority structures survive colonial occupation? The literature is surprisingly silent on this question. Herbst (2000) devotes an entire chapter of *States and Power* to a discussion of authority in pre-colonial Africa but he never mentions the trans-Atlantic slave trade (2000, pp. 35-57). Recent econometric studies of African political economy show how remnants of pre-colonial authority continue to influence local outcomes in Africa, but none of these studies consider the possibility that the pre-colonial legacies they identify are traditions of authority that date back to the slave trade era (Englebert, 2000; Gennaioli and Rainer, 2007; Michalopoulos and Papailoannou, 2010, 2011). Historians consider the link between the slave trade and African politics, but with the exception of a few radical historians like Walter Rodney (1972) and Basil

Davidson (1992) they are not particularly interested in the long-term impact on development.

Causal history is. It is an empirical project expressly designed to statistically identify and estimate causal relationships between past events and subsequent outcomes (see Nunn (2009) and Fenske (2010) for recent reviews). This line of research often produces the first salvo in the search for historical legacies, and institutions often take center stage as carriers of legacies.[4] Like a pulling guard on the gridiron, causal history suggests that some paths forward are more likely than others. The actual play, however, unfolds on the ground. As Paul David (1975) put it in his classic article on the economics of QWERTY, "... it is sometimes not possible to uncover the logic (or illogic) of the world around us except by understanding *how* it got that way (page 332)." Avner Grief (2006) has theorized on the concept "path of play" in historical settings and has focused attention on how self-enforcing institutions of social cooperation (the shared playbook in our football analogy) can order how the play unfolds.

In the remainder of this essay I follow the leads of this causal history of Africa and trace the impact of societal participation in the trans-Atlantic slave trade on the evolution of political authority. I present econometric evidence showing how the trans-Atlantic slave trade caused absolutism to spread in sub-Saharan West Africa. I argue that slavery-induced absolutism also influenced the way politics were played in the colonial era and beyond. I present aggregate evidence that British colonies that exported more slaves were ruled more indirectly by colonial administrations. I argue that the implementation of indirect colonial rule institutionalized African absolutisms and transformed them into a kind of rule of law at the local level. The post-colonial nation-state, like the colonial state before it, lacks the administrative apparatus or the political clout to integrate these local authorities, even when they want to. From this perspective, the political structure of many post-colonial nation-states in Africa is rooted in a political history that is unique to Africa in many respects, a history that stretches at least as far back as the era of the transatlantic slave trade.

The Trans-Atlantic Slave Trade and Political Authority in Africa

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[4] On path-dependence as legacy in competitive equilibrium, see Arrow (2004).

Slave trading in Africa has a long and nuanced history. How are we to think of it as a shock to Africa? It is best to begin with the position of Africa in medieval Mediterranean civilization. Italian city-states, Arab caliphates and European kingdoms all used conquest and trade to obtain treasure, land and slaves. Muslim and Christian armies fought "just" wars that justified the enslavement of non-believers. Roman and Islamic law contained well-developed civil codes regulating the legal status of slaves (Patterson, 1982).

The southern frontier of this system was Africa, down its east coast by sea and across the Sahara desert by camel. By the middle of the 15th century lateen sails enabled Portuguese caravels to sail down the west coast of Africa as well. Then the discovery of the Americas, the decimation of American populations and the transplantation of slave codes across the Atlantic. In the hands of the emerging capitalist nations of Europe, the proximity of cheap African labor was an opportunity to profit from and defend their American colonies. By the beginning of the 18th century, an old and sporadic long-distance African trade in slaves had become *the* export engine of growth (Eltis, 1994; Eltis and Jennings, 1994; Bean, 1974; Gemery and Hogendorn, 1990). The real price of slave exports rose 500% in the 18th century (Richardson, 1991; Eltis and Richardson, 2004). Slave exports increased by 1000% (Eltis, 2009).

Asking about the effects of these slave trades on the evolution of political authority in Africa might seem far-fetch, but we can focus the question and break it down into stages. Nunn (2008) asks if there is a correlation between the numbers of slaves coming out of different regions of Africa and the economic performance of those regions today. His is an ambitious attempt to locate and count up all of the slaves taken by the trans-Saharan, Indian Ocean, Red Sea and trans-Atlantic trades. He then looks to see if slave exports in the past correlate with GDP levels today. After controlling for a variety of other factors that might explain the correlation, including reverse-causality, he concludes that slaving and slave trading depressed long-term economic growth. His estimates of slave exports have been used by Nunn and Wantchekon (2011), Whatley and Gillezeau (2011b) and others, with similar results.

Here I adopt a slightly different empirical approach, one designed to better isolate the slave trade as a shock to Africa. First, I limit the analysis to the trans-Atlantic slave trade because these data

are much more reliable than data on the trans-Saharan, Red Sea or Indian Ocean trades. The trans-Atlantic slave trade evolved as a core component of European mercantile systems operating in the Atlantic. Records of ship manifests, government agencies, insurance companies and newspapers have been digitized into the widely-used Trans-Atlantic Slave Trade Database. Estimates of the Muslim-based trades are much less reliable in terms of volume, dates and places (Austen, 1979, 1987).

Second, I confine the analysis to the trans-Atlantic slave trade on the west coast of Africa. After 1807 the trans-Atlantic slave trade expanded on the east coast of Africa to avoid British efforts to suppress the trade on the west coast. I exclude the east coast extension because East African societies had previously been influenced by the Indian Ocean and Red Sea trades, for which slave export data are much less precise.

Third, there is little evidence of much slave trading along the west coast of Africa prior to the trans-Atlantic slave trade. Evidence on West African slave trading in the 15th and early 16th centuries is very thin (Fage, 1980). Most of the slave-trading along the Upper Guinea Coast and in the Western Sudan were southern extensions of the Muslim-based Mediterranean system, and were centered on Lake Chad and the interior delta of the Niger River (Lovejoy, 2004; Fisher, 2001). Rodney (1966) surveys evidence for the Upper Guinea Coast and finds slaves as servants in the households of elites, as elsewhere in the Mediterranean world, but little evidence of the kind of systematic slave raiding and slave marketing that would become the norm centuries later.

True, by the time the Portuguese arrived on the Lower Guinea Coast in the late-15th century the Muslim-based network had extended as far south as the Gold Coast of present-day Ghana. Wilks (1993) documents how Muslim traders from the north supplied the gold-mining Akan of Ghana with the slave workforce they needed to clear their rainforests for agriculture. Not to be outdone, Portuguese traders stimulated a second slave trade into the Akan gold fields. They sailed yachts back and forth along the Lower Guinea Coast, purchasing war captives from Benin's political expansion further down the coast and selling them to the Akan for their gold. (Graham, 1965; Wilks 1982; Ryder, 1969). These are certainly slave trades and they certainly predate the 18th century explosion in the trans-Atlantic trade, but they are long-distance slave trades and precisely

because societies along the west coast of Africa were much less predatory than they would become by the 18th century (Law, 1991; Thornton, 1999; Daaku, 1970).

Finally, not only is the magnitude of the shock and its timing better-measured on the west coast of Africa, so too is its location. Most of the 34,000 voyages found in the Trans-Atlantic Slave Trade Database have some information on the location of slave purchases. Sometimes location is by port. I use GIS software to merge the locations of slave ports with the locations of African societies found in Murdock's Ethnographic Atlas. Murdock's goal was to code the ethnographic features of societies prior to substantial European influence. I look to see if slaving influenced the authority structures of these societies, so in a sense I am testing Murdock as well.

Figure 1 depicts how I merged the two data sets. The mapping of sub-national societies comes from the digitized version of the map found in Murdock's Ethnographic Atlas (1967). I overlay on top of this the locations of the slave ports found in the Transatlantic Slave Trade Database. These are denoted by the stars along the coast. I then construct 200 observations from the merged spatial data. I divide the west coast of Africa into 200 evenly-spaced points, each 50 km apart, running from Tunis, Tunisia to Cape Town, South Africa. The dependent and independent variables are constructed from spatial data that fall within predefined buffers around these points. These are depicted by the circles in Figure 1.

The treatment variable is the numbers of slaves exported from the ports in these buffers (SLAVES). Environmental controls are the average values of environmental features inside these buffers (X): forest and desert coverage, elevation, local agricultural suitability as measured by climate and terrain slope, and population density in 1960 (UNESCO, 2010; USGS, 2010; IIASA, 2010). The dependent variables are three authority types derived from variable V72 in the Ethnographic Atlas called "Succession to the Office of Local Headman." This variable is dichotomized three different ways. ABSOLUTIST = 1 for Murdock's code 1 = "patrilineal heir," and code 2 = "matrilineal heir;" ABSOLUTIST = 0 otherwise. LIBERAL = 1 for Murdock's code 5 = "influence, wealth or social status, nonhereditary;" LIBERAL = 0 otherwise. DEMOCRATIC = 1 for Murdock's code 6 = "election or other formal consensus, nonhereditary;" DEMOCRATIC = 0 otherwise.

Table 1 reports un-weighted means. The first three columns report means for the Western sample -- the entire 200 buffer sample covering the western half of the continent of Africa from Tunis, Tunisia to Cape Town, South Africa. The top panel is for buffers with a 250km radius. The bottom panel is for buffers with a 500 km radius. On average, 316,050 slaves were exported from each of the 200 buffers with a 250km radius.[5] 117 of the 200 buffers have at least one ethnic group with information on authority type. The un-weighted averages show 62 percent of these societies being governed by absolutist authority, 16 percent being governed by democratic authority and only 3 percent having liberal or wealth-based rules of ascension to headship. 180 of the 500km buffers have information on authority type. The number of hits is larger because the larger buffers cover more territory and have a higher probability of containing at least one ethnic group with information on authority type.

The next three columns report means for the Atlantic sample, a sample of observations that begins at approximately Gibraltar and run to Cape Town. This sample covers the African coastline that faces the Atlantic Ocean and the Americas. It excludes the African coastline that faces the Mediterranean. The number of observations falls to 169. The average number of slave per observation increases to 374,020. Absolutism increases to 84 percent.

The third sample is the Sub-Saharan sample, and begins near Cape Blanc on the southern edge of the Sahara desert. The number of observations declines to 131, slave exports increase to 482,520 and absolutism increases to 88 percent. All of the slaves in all of the samples were captured and exported from sub-Saharan Africa. The sample on authority type gets small (48 observations), but it serves as a check on the others by making sure an estimated impact of exports on authority-type is not being identified off of unobserved regional heterogeneity.

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[5] This implies over 100 million slave exports, but the Transatlantic Slave Trade Database contains information on approximately 13 million slave exports. The discrepancy is due to the overlap of buffers causing each port's slave exports to be recorded more than once. The center of each buffer is 50kms away from the next center. With a radius of 250 km (or a diameter of 500km) the coast is canvased once if we take the average exports of every 10th buffer. 200/10=20, which yields 20x316,050=6,321,000 slave exports. The Transatlantic Slave Trade Database has specific port information for approximately 6,494,200 West African slave exports, so our ports pick up almost all of the slave exports that have information on port.

The null hypothesis is loosely derived from Whatley and Gillezeau (2011a), where slaving is modeled as a violent production process -- what Patterson (1982) calls "social death." The increased violence increases individuals' demands for protection -- a public good best provided by political authorities who have the power to authorize and co-ordinate a defense (or offense). Like all individuals in times of war, individuals subject to slave capture will pay more for protection, including relinquishing freedoms and rights that might otherwise be cherished in times of peace. It is not inconceivable that centuries of slaving created an environment where peace had become a distant memory -- where a state of war seemed like a natural state of affairs. A rough calculation reported in Whatley and Gillezeau (2011a) estimates that between 1700 and 1850 a West African person faced a one-in-five chance of being swept up in the trans-Atlantic slave trade sometime in their life. Under these conditions it is not inconceivable that individuals will relinquish political rights and accept absolute rule (Bates, Grief and Singh, 2002). It is not inconceivable for political authority to become more absolutist in nature where previously there had been some semblance of democratic or liberal influence on authority.

I look for evidence of this by performing the following OLS regressions:

$$\text{AUTHORITY TYPE}_{ji} = \alpha + \beta \ \text{SLAVES}_i + \Omega \ X_i + v_i$$

Observations are buffers. $\text{AUTHORITY TYPE}_{ji}$ is the average value of AUTHORITY TYPE_j (ABSOLUTE, LIBERAL or DEMOCRATIC) for ethnic groups whose centroids fall in buffer i. SLAVES_i is the total number of slaves exported from the slave ports in buffer i. Environmental variables are mean values for territories in the buffers. X_i is the vector of environmental control variables. v_i is the error term. The larger circular buffers reach farther inland, but they overlap more along the coast. I calculate Conley standard errors to account for spatial correlation in errors across observations.

OLS results are reported in the columns labeled OLS in Table 2. In the 250 km samples, slave exports are positively and statistically significantly correlated with absolutist authority. All of the estimated coefficients are positive and significant at the 99 percent confidence level. The correlation is also large. Mean slave exports explain between 16 and 40 percent of the absolutism

recorded in the Ethnographic Atlas. In the sub-Saharan sample the correlation is also significant and large.

I interpret these correlations as if the direction of causality ran from slaving to absolutism, but there could be some reverse causation. Absolutist authority, for example, could have been a more-efficient way to organize slave raids, giving rise to a reverse correlation running from absolutism to slave exports. Also, Whatley and Gillezeau (2011a) discuss conditions under which absolutist rulers might authorize half-hearted defenses of their people. Coalition-building across ethnic groups required some degree of power-sharing among elites, but if elites could insulate themselves from capture, and if they cared little about the welfare of their people, then they might prefer to leave their people exposed to capture so long as they themselves were safe. This outcome may be more-likely where authority is inherited and absolute, and less likely in democratic systems where leaders are held accountable.

In an effort to identify a causal relationship that runs from slaving to absolutism I perform a two-stage instrumental variables estimation of the relationship between slaving and absolutism. In the first stage I seek a set of exogenous predictors of slave exports that are uncorrelated with the error terms v_i. Here I make use of the instruments developed by Nunn (2008), which in this case are the distances between the center of each buffer and the nearest destination in the Americas and North Africa.[6] These distances, plus the environmental controls, capture variations in slave exports that are not likely to be correlated with authority type. In the second stage I look for correlations between these estimated slave exports and absolutism. In the second stage I also control for the impact of environment on the adoption of absolutist authority. I rely on Hansen-Sargan tests of over-identification restrictions to test for the absence of correlations between first-stage estimates of slave exports and the error terms v_i.

In Table 3 I report first-stage regressions of slave exports on distance and environmental controls. These are reduced form equations so it is difficult to interpret coefficients, but the

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[6] The American destinations are Virginia, Havana, Haiti, Kingston, Dominica, Guyana, Salvador, Rio de Janeiro, and the North African destinations are Algiers, Tunis, Tripoli, Bengahzi, Cairo.

F-statistics and the R-squares show that the exogenous regressors capture a significant amount of the variation in slave exports. In general, distance to the Americas offered some protection against capture. Also, fewer slaves were exported from desert regions and from higher elevations. This could be due to fewer people living in these regions, but some of the population effect is already captured by the variables measuring agricultural suitability and 1960 population, so desert and elevated regions may have also provided some refuge from slavers (Nunn and Puga, 2012).

The second-stage results are reported in the columns labeled IV in Table 2. In the Western sample of 250 km buffers, the coefficient on slave exports loses statistical significance, but as we move towards sub-Saharan Africa the estimated coefficients get larger and tighter. In the sub-Saharan sample, 16.9-34.8 percent of average observed absolutism is explained by average slave exports. The relationship between slave exports and absolutism is less apparent in the 500 km samples. All of the coefficients are still positive but they fail to achieve significance, except in the Western sample. It is not clear why this is the case. One possibility is that the impact of slaving is less direct farther inland. Most of the slaves pulled into the orbit of the trans-Atlantic slave trade originated within 250-300 kilometers of the coast, although after the late 18th century higher slave prices covered longer treks to the coast. There are 48 observations in the sub-Saharan sample that have both 250 km and 500 km buffers. Absolutism is 88 percent in the smaller buffer but declines to 72 percent in the larger buffers that reach farther inland. The student-t statistic on difference in means is 3.46.

Not finding significant effects farther inland does not necessarily mean the impact of the slave trade was limited to the coast, although it does mean the issue deserves further investigation. The relationship could have becomes less direct and more complex as the process moved inland. Also, the inland areas were subject to slave raiding for shorter periods of time, so inland peasants might have been more successful at resisting extreme revolutions in authority. The empirical strategy in this essay captures only revolutionary changes across categories of authority, from non-absolutist to absolutist. It does not capture increases in the degree of absolutism within authority types, something that was undoubtedly occurring as well.

This interpretation finds some support in the regression for democracy and liberalism. These are reported in Tables 4 and 5. First note that all of the estimated coefficients have negative signs. Slaving tended to reduce liberalism and democracy. There are no liberal societies in the 250 km sub-Saharan sample, but there are some in the sample that reaches 500 km inland. Slaving reduced liberalism, even in the interior of sub-Saharan Africa. The results for democracy are also negative but they never achieve statistical significance in the sub-Saharan sample. Perhaps the designation "democratic" is flexible enough to absorb elements of absolutism while retaining some degree of accountability, like in the case of the Asante kingdom situated inland from the Gold Coast (Wilks, 1975; Rattray, 1929)

Patriarchy is another form of authority, and George Murdock (1949, 1967) claims to have theoretically proven that much of the patriliny in pre-colonial West Africa was of recent historical origin. His proof is based on the observation that many pre-colonial West African societies with patrilineal rules of descent retained legacy kinship terms more appropriate for other lineage systems. Not being a historian, and having never set foot in Africa, Murdock never claimed that the slave trade transformed lineage rules, but his list of possible causes could have easily included it. Basil Davidson (1992), the preeminent historian of Africa who chronicled Africa's history from slavery to the present, does highlight slaving. He states, "As the slaving state became increasingly a predator, kinship systems were strengthened and elaborated as a means of providing protection against the dangers of the violence created by the slave trade (p. 266)." Predation not only shifted more power onto already-powerful men but it may have also, as Ekeh argues, increased the "entrenchment of kinship corporation (1990, p. 660)."

From Predation to Rule of Law

What about colonialism? How did colonialism interact with these new slavery-induced predatory political customs? Over the past decade a series of influential articles has laid the empirical foundation for approaching this type of question. One strand of this literature searches for the long-term impact of the legal customs transplanted around the world by European colonizing authorities, contrasting primarily the experiences of common law countries and civil law countries (La Porta, 2008; Glaeser and Shleifer, 2002). Another series of articles by Acemoglu,

Johnson and Robinson (2001, 2002) emphasizes the long-run impact of colonial property rights laws laid down by European colonial authorities. In colonies where the colonizer's strategy (or capability) was to settle and produce, one tends to find property rights systems that constrain states' rights to expropriate surplus from producers. Where incentives to settle and produce were not so great, the colonial authority tended to establish institutions that facilitated resource extraction, and often by force. Over the long-term, settler institutions encouraged economic development while extractive institutions did not.

These are useful perspectives, but one needs to be careful when applying them to Africa. Incorporating the trans-Atlantic slave trade can help. First, David Albouy (forthcoming) argues that thus far the settler data are not good enough to test for the long-term effects of extraction vs. settlement in Africa. The slave trade was definitely an extractive institution, and the numbers on export volumes are good measure of how extractive it was across time and place.

Second, it is important to note that prior to the Berlin Conference of 1885 the official colonization of Africa was confined to a few coastal protectorates. Most of Africa was officially colonized for less than 75 years, contrasting sharply with other areas of the world like the Americas, the Caribbean, India and many parts of Asia. Acemoglu, Johnson and Robinson (2001, footnote 1) interpret the slave trade as an extractive colonial institution, but others do not. Olsson (2009), for example, presents evidence that the length of colonial rule encouraged the development of democratic institutions over the long-term, but he defines colonialism in Africa as formal colonial occupation. Given the impact of the slave trade on political customs in Africa, incorporating the slave trade as a phase of colonialism might help explain why African democracy differs from democracy in other former-colonies around the world.

Finally, Acemoglu and Johnson (2005) argue that property rights institutions have had a greater impact on structure and performance than have legal origins because inefficient legal rules can be circumvented by the private ordering of contracts (Grief, 1989). There are a number of studies, however, documenting the lasting impact of legal origin in Africa, although the channels are not always clear. Colonies under British rule, and therefore administered by common law traditions, tend to exhibit higher post-colonial incomes per capita, more investments in education

and higher rates of school enrollment than do colonies administered by French civil codes (Grier, 1999; Bertocchi and Canova, 2002; and Price, 2003).

One possible explanation has to do with the way the legal customs of colonizer and colonized interacted to shape the institutions of colonial rule. Sir Frederick Lugard, 1st Governor-General of the Colony and Protectorate of Nigeria, is generally considered to be the architect of the British policy of indirect rule, but Mamdani and Herbst argue that the policy evolved on the ground, as a solution to the problem of controlling colonial subjects. Mamdani (1996) argues that indirect colonial rule grew out of a recognition that direct rule, a single legal system encompassing colonizer and colonized but peppered with racial distinctions, was untenable in the long-term because it encouraged class-based and race-based protests against injustices. Gradually colonial authorities moved toward a sharing of power with real or imagined local chiefs who controlled real or imagined "customary" lands. Herbst (2000), in contrast, argues that indirect rule evolved out of a colonial recognition that broadcasting centralized authority over African territory was too costly to be effective.

Here the legal customs of colonizers can matter in reshaping the political landscape. Firmin-Sellers (2000), for example, compares the institutions of French and English indirect colonial rule among the ethnically-similar Akan peoples who straddled the colonial border between the Ivory Coast and Ghana. Consistent with civil law tradition, the French colonial system was designed to achieve a clear directive from above: maximize tax collection. They undermined the authority of paramount chiefs, chose lower-order divisional chiefs as their agents, took periodic censuses of the population to estimate potential tax revenue, paid chiefs a share of the taxes they collected, and monitored chiefs' performance by comparing collected taxes against expected taxes.

The British, on the other hand, careful not to undermine local custom (read common law), chose the higher-order paramount chiefs as their agents and allowed them to rule over the divisional chiefs and lineages below them. They paid chiefs a fixed salary and deposited tax collections in a public treasury for the development of public works. The British did not monitor chiefs' tax collection like the French did but instead monitored chiefs' performance as public servants and

administrators of justice. Based on this case study one would conclude that the French system was a more efficient system of resource extraction but perhaps less developmental than the British system.

One would also conclude that the colonial authorities, both French and British, empowered slavery-induced absolutist power structures. Figure 2 presents aggregate evidence which suggests that indirect colonial rule relied on the kind of absolutism I estimated in the previous section. The figure graphs the relationship between slave exports and the degree of indirect rule among British colonies in Africa. The unit of analysis is the post-colonial nation-state. The measure of indirect rule is taken from Lange (2004, 2009) and is the percentage of legal cases adjudicated in customary African courts. Slave exports per acre are taken from Nunn (2008). The Figure shows that indirect rule is positively and significantly correlated with past slave exports.

This is understandable. The colonial goal is to control population and extract surplus. The political objective of indirect colonial rule is to take the overlapping authorities that kin, clans, patriarchs and elders previously used to adjudicate local conflict and invests them in a chief who now has the authority to rule over his people on behalf of the colonizer. Enlisting a powerful local authority was probably easier where the slave trade had already entrenched absolutist authority structures.

Bates (2010) contains a concise discussion of how the integration of kinship systems like these into formal state structures transforms local customs into rule of law. In pre-state systems the heads of kin and clan met out justice (also see Murdock, 1960). Crimes are crimes against persons, and crimes by a member of one group against a member of another get settled by inter-group exchange of some kind. This is what elders and lineage heads do. A reasonable indicator of the incorporation of these types of authority structures into formal states is the appearance of crimes, not against persons, but against the state, signaling a public monopoly on violence -- or rule of law. Indirect colonial rule legitimized slavery-induced predatory political

customs and institutionalized them as part of the colonial state.[7]

Customary Authority and the Post-Colonial Nation-State

What about the post-colonial era? In this section I argue that predatory political customs passed through colonialism into the post-colonial era and continue to influence the structure and performance of African political economies today. At the federal level is the disjointed post-colonial nation-state facing difficulty broadcasting power. At the local level is absolutist customary authority. The poor governance, ethnic conflict and corruption observed in many post-colonial African states are unstable equilibrium outcomes on the path of play among these parties (Herbst, 2000; Chabal and Daloz, 1999; Bates 2008; Lange, 2009; van de Walle, 2001).

At the federal level, the path begins with the Berlin Conference of 1885 where European powers agreed to cooperate in carving Africa into the territories that would become post-colonial nation-states. The process was swift, surgical and haphazard, with colonial powers often drawing straight-line borders inland from the coast, and taking possession of real estate as quickly and as easily as they would eventually relinquish it. Davidson (1992) recounts the random and haphazard nature of colonial occupation on the Gold Coast. Noting that in the 1880s the King of Asante offered the British authorities monopoly control of all Asante trade, Davidson writes, "Now one might think that the British government, eager to acquire a monopoly of commercial control over West African lands, but far less eager to meet the almost certain high cost of conquest, would have jumped at this offer. But the British ministers in charge at home now wanted more than monopolistic commercial control; they wanted territorial ownership. Partly in order to keep out the French..., but even more, as most evidence seems to show, because a demand for territorial ownership had become an imperial obsession and even a popular cause... (p. 70-71)." But "no more than 60 years or so after preferring to invade … British imperial government found that it had little to gain, after all, from territorial possession and reverted to the policy of withdrawal... (p. 72)."

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[7] Contrast these legal origins with the legal origins of common law in England, where custom came to rely on a judiciary independent of the king and lords, and based on trial by juries of peers. See Glaeser and Shleifer (2002) for an insightful discussion.

Lange (2004, 2009) tracks among the former British colonies the evolution of federal authority from colonialism to the present. He focuses on the disjointed post-colonial nation-state that emerged out of the dual legal systems of indirect rule. Lange shows how country-level measures of indirect rule (measured by the percent of legal cases adjudicated in customary courts) are highly correlated with poor governance structures today. Indirect colonial rule produced a post-colonial nation-state crippled by ineffective bureaucracy, restrictions on private contracting, weak rule of law and widespread corruption.

Of course, indirect colonial rule could be correlated with poor post-colonial outcomes for other reasons. Iyer (2010), for example, shows how in British India colonial authorities indirectly ruled the poorer regions and directly ruled the richer ones. This kind of occupation strategy could produce the same correlation between indirect colonial rule and poor post-colonial governance that Lange finds in British Africa. As a preliminary check on this, I take country-level population density in 1900 (from Nunn, 2008) as a proxy for country income in 1900. A simple regression of indirect rule on population density has an insignificant and positive coefficient, not the significantly negative coefficient one would expected if indirect rule chased poor lands in Africa too.[8]

Given weak federal authority in post-colonial Africa, one should expect pre-colonial authorities to continue to assert themselves. Michalopoulos and Papailoannou (2010) use satellite light density at night to proxy for local economic development and find that the borders of pre-colonial authorities explain more cross-sectional variations in economic activity than do the borders of post-colonial nation-states. Gennailoa and Rainer (2007) show that regions in Africa that had concentrated authority structures in the pre-colonial era are better-able to secure public goods for their constituents today.

Patron-clientism is the glue that holds this system of authority together. It need not be deadly, but the cost in terms of political stability can be extremely high. Greif (1994) attributes the civil wars

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[8] Indirect Rule = 0.9092 * ln(POP DENSITY 1900) + 47.024, SE = .802, R² = 0.1429.

of medieval Genoa to this kind of political gamesmanship. Van de Walle (2001) argues that the fiscal crises of the post-colonial nation-state in Africa is not due to excessive government spending, but to states' inability to collect revenues from local authorities. Michalopoulos and Papailoannou (2011) find that much of the post-colonial political violence and civil war in Africa is located near pre-colonial ethnic homelands that were divided by the haphazard drawing of colonial borders. Divided ethnicities need not lead to conflict, but a history of slaving and the mistrust it engenders might be a fuel that feeds the flame (Nunn and Wantchekon, 2011).

Conclusion

I have argued in this essay that the lens of the trans-Atlantic slave trade provides a useful perspective on contemporary politics in Africa. My main point is that the pre-colonial authority structures of West Africa that are recorded in the Ethnographic Atlas are not traditional in the sense of being old, but are more-recent in origins and closely tied to the ways African societies responded to the shock of the trans-Atlantic slave trade. The image of a decentralized, absolutist, isolated village exploiting women is not an image of ancient African. It is a modern one.

Second, I have nothing invested in the term "patrimonial" but I do want to suggest that the post-colonial nation-state in Africa is rooted in African history -- a history that has been fundamentally altered by the slave trades and by colonialism. This path dependence is seen in all of the empirical studies linking pre-colonial authority structures to post-colonial political and economic outcomes. My contribution to this literature is a re-interpretation of what it means to be "pre-colonial" in the African context.

Finally, I do not mean to suggest that history determined post-colonial political outcomes in Africa, or that the political problem to be solved was as simple as I suggest. I do, however, want to suggest that viewing customary authority as something of recent origin can encourage change. "You sometimes cannot understand the logic (or illogic) of the world without knowing how it got that way." Radelet (2010) identifies 17 emerging countries in Africa. Four of the five reasons he cites for their success have to do with improvements in policy and governance. What Ekeh (1975) calls the "two publics" in Africa, and what van de Walle (2001) calls "permanent crisis,"

and what Chabal and Daloz (1999) call "disorder as political instrument" need not be permanent nor disorderly. The first order of business, however, is to understand how it got that way. Sankofa!

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Table 1. Sample Means

	Western sample			Atlantic sample			Sub-Saharan sample		
	N	Mean	SD	N	Mean	SD	N	Mean	SD
	250 km radius buffers								
Slave exports (000)	200	316.05	225.62	169	374.02	238.34	131	482.52	255.32
Absolute Authority	117	0.62	0.41	86	0.84	0.20	48	0.88	0.18
Democratic Authority	117	0.16	0.30	86	0.07	0.17	48	0.04	0.13
Liberal Authority	117	0.03	0.13	86	0.03	0.10	48	0.00	0.00
Agricultural Suitability	200	2.89	1.10	169	2.99	1.11	131	2.83	0.99
Population in 1960	200	10.73	15.36	169	9.36	15.81	131	9.91	16.74
Elevation	200	12.56	6.58	169	11.95	6.31	131	12.12	6.18
Forest	200	0.15	0.24	169	0.16	0.26	131	0.19	0.28
Desert	200	0.54	0.65	169	0.53	0.69	131	0.34	0.59
	500 km radius buffers								
Slave exports (000)	200	632.1	392.70	169	748.05	407.97	131	965.04	424.58
Absolute Authority	180	0.59	0.39	149	0.71	0.31	111	0.80	0.21
Democratic Authority	180	0.17	0.26	149	0.13	0.24	111	0.06	0.09
Liberal Authority	180	0.03	0.11	149	0.04	0.12	111	0.02	0.03
Agricultural Suitability	200	2.89	1.30	169	2.90	1.29	131	2.71	1.17
Population in 1960	200	7.00	8.66	169	6.20	8.56	131	6.56	9.04
Elevation	200	13.09	7.64	169	12.80	7.37	131	12.87	7.54
Forest	200	0.27	0.47	169	0.30	0.50	131	0.36	0.55
Desert	200	1.10	1.45	169	1.02	1.51	131	0.60	1.34

Sources: I divide the west coast of Africa into 200 evenly spaced points starting at the northernmost point of Tunisia and ending at the middle of South Africa. Variables are constructed from spatial data falling within a radius of 250 km or 500 km around these points. The Western sample contains all 200 buffers, from Tunis, Tunisia to Cape Town, South Africa. The Atlantic sample runs from Gibraltar to Cape Town. The Sub-Saharan sample runs from Cape Blanc to Cape Town. SLAVES are in thousands (0,000) of slaves exported from ports that fall within a buffer (Eltis, 2009). Environmental controls are forest and desert coverage, elevation, local agricultural suitability as measured by climate and terrain slope, and population density in 1960 (UNESCO, 2010; USGS, 2010; IIASA, 2010). Authority codes variable V72 in the Ethnographic Atlas (Murdock, 1967) called "Succession to the Office of Local Headman." V72 is dichotomized three different ways. ABSOLUTIST = 1 for Murdock's code 1 = "patrilineal heir," and category 2 = "matrilineal heir;" ABSOLUTIST = 0 otherwise. LIBERAL = 1 for Murdock's code 5 = "influence, wealth or social status, nonhereditary;" LIBERAL = 0 otherwise. DEMOCRATIC = 1 for Murdock's category 6 = "election or other formal consensus, nonhereditary;" DEMOCRATIC = 0 otherwise.

Notes: N is the number of observations or buffers with non-missing data. Means are the un-weighted averages of observations in the sample. SD is sample standard deviation.

Table 2. The impact of the transatlantic slave trade on absolutist authority in West Africa

(Dependent variable = Pct. of societies with ABSOLUTIST authority)

	Western sample		Atlantic sample		Sub-Saharan sample	
	OLS	**IV**	**OLS**	**IV**	**OLS**	**IV**
	250 km radius for buffer					
$(\hat{\beta})$ Est. coefficient on slave exports (000,000)	0.0779***	0.0590	0.0380***	0.0755***	0.0412***	0.0636***
Conley standard errors	0.0230	0.1367	0.0116	0.0197	0.0133	0.0156
Environmental controls	YES	YES	YES	YES	YES	YES
Number of observations	117	117	86	86	48	48
Adjusted R-squared	0.4393		0.1833		0.4236	
Hansen-Sargan test of overid. restrictions		4.07		0.01		4.76
$(\bar{X})$ Mean slave exports (000,000)	3.260	3.260	3.740	3.740	4.825	4.825
$(\bar{Y})$ Mean pct. with Absolute Authority	62.19	62.19	84.02	84.02	88.1	88.1
$\hat{\beta}*\bar{X}*100$	25.40	19.23	14.20	28.24	19.87	30.67
Pct. of Absolutism $(\bar{Y})$ explained by $(\bar{X})$	40.84	30.92	16.90	**33.61**	22.56	**34.81**
	500 km radius for buffer					
$(\hat{\beta})$ Est. coefficient on slave exports (000,000)	0.0225*	0.177***	0.0040	0.0342	0.0080	0.0134
Conley standard errors	0.0157	0.0079	0.0105	0.0431	0.0082	0.0129
Environmental controls	YES	YES	YES	YES	YES	YES
Number of observations	180	180	149	149	111	111
Adjusted R-squared	0.2234		0.0535		0.3781	
Hansen-Sargan test of overid. restrictions		10.03		6.16		1.91
$(\bar{X})$ Mean slave exports (000,000)	6.321	6.321	7.480	7.480	9.650	9.650
$(\bar{Y})$ Mean pct. with Absolute Authority	58.72	58.72	70.94	70.94	79.78	79.78
$\hat{\beta}*\bar{X}*100$	14.21	11.2	3.00	25.56	7.68	12.91
Pct. of Absolutism $(\bar{Y})$ explained by $(\bar{X})$	24.19	190.82	4.23	36.03	9.62	16.19

Sources: See Table 1.

Notes: The coefficients in the columns labeled "OLS" are estimated OLS. The 2-stage estimates in the column labeled "IV" were estimated GMM. *** denotes 99% confidence level. ** denotes 95% confidence level. * denotes 90% confidence level. All 2-tail tests. The Hansen-Sargan test statistic of over-identification restrictions is distributed Chi-Square with 2 degrees of freedom. The critical value for the 90% confidence level is 4.61 (that the IV regressors are not excluded from the equation). Conley standard errors allowed for spatial correlation over five contiguous buffers for the 250 km buffers and over 10 contiguous buffers for the 500 km buffers.

Table 3. First-stage IV regressions

(Dependent variable = slave exports in thousands)

	250 km radius buffer			500 km radius buffer		
	Western sample	Atlantic sample	Sub-Saharan sample	Western sample	Atlantic sample	Sub-Saharan sample
Distance to American destinations	-4.38***	-3.04*	-5.74	-7.46***	-5.84**	10.81
	(1.23)	(2.10)	(8.76)	(2.26)	(3.06)	(17.39)
Distance to N. African destinations	-2.23	3.80	0.74	-5.20	3.93	30.93
	(2.95)	(8.39)	(16.79)	(4.50)	(14.68)	(35.26)
Agricultural suitability	32.57***	50.19**	18.97	152.76***	181.57***	142.95*
	(1.23)	(30.71)	(37.96)	(51.63)	(60.40)	(82.21)
Population in 1960	4.24***	3.92	4.74*	10.17**	11.45**	6.94
	(1.60)	(4.88)	(2.47)	(5.65)	(6.91)	(5.97)
Elevation	-10.01***	-14.19***	-13.23***	-24.45***	-31.75***	-21.75
	(3.73)	(4.88)	(6.44)	(7.50)	(9.97)	(16.00)
Forest	165.77	140.03	164.67	297.00*	275.11*	283.91*
	(169.24)	(177.82)	(182.24)	(157.91)	(160.36)	(159.08)
Desert	-88.67**	-114.67**	-132.72**	-105.47***	-113.82**	-113.60**
	(35.56)	(51.61)	(56.86)	(39.76)	(53.62)	(53.75)
Constant	540.60**	154.63	538.73	884.87***	316.41	-2061.30
	(223.24)	(536.71)	(1378.22)	(324.80)	(881.03)	(2792.58)
Number of observations	200	169	131	200	169	131
Adjusted R-Squared	0.3515	0.3367	0.2865	0.6037	0.5941	0.5286
F-statistic	16.41	13.18	8.46	44.31	36.13	21.82

Sources: See Table 1.

Notes: Coefficients estimated OLS. Conley standard errors in parentheses. *** denotes 99% confidence level. ** denotes 95% confidence level. * denotes 90% confidence level. All 2-tail tests. Conley standard errors allow for spatial correlation over five contiguous buffers for the 250 km buffers and over 10 contiguous buffers for the 500 km buffers.

Table 4. The impact of the transatlantic slave trade on LIBERAL authority in West Africa

(Dependent variable = Pct. of polities with LIBERAL authority)

	Western sample		Atlantic sample		Sub-Saharan sample	
	OLS	IV	OLS	IV	OLS	IV
	250 km radius for buffer					
($\widehat{\beta}$) Est. coefficient on slave exports (000,000)	-0.0084	-0.0247	-0.0068*	-0.0044	NA	NA
Conley standard errors	0.0063	0.0269	0.0041	0.0063		
Environmental controls	YES	YES	YES	YES		
Number of observations	117	117	86	86		
Adjusted R-squared	0.0313		0.11			
Hansen-Sargan test of overid. restrictions		0.83		3.363		
	500 km radius for buffer					
($\widehat{\beta}$) Est. coefficient on slave exports (000,000)	-0.0037*	-0.0084	-0.0057**	-0.0125**	-0.0031**	-0.0070**
Conley standard errors	0.0022	0.0087	0.0024	0.0056	0.0016	0.0031
Environmental controls	YES	YES	YES	YES	YES	YES
Number of observations	180	180	149	149	111	111
Adjusted R-squared	0.1671		0.1759		0.2823	
Hansen-Sargan test of overid. restrictions		1.66		0.0010		2.37

Sources: See Table 1.

Notes: The coefficients in the columns labeled "OLS" are estimated OLS. The 2-stage estimates in the columns labeled "IV" were estimated GMM. *** denotes 99% confidence level. ** denotes 95% confidence level. * denotes 90% confidence level. All 2-tail tests. The Hansen-Sargan test statistic of over-identification restrictions is distributed Chi-Square with 2 degrees of freedom. The critical value for the 90% confidence level is 4.61 (that the IV regressors are not excluded from the equation). Conley standard errors allowed for spatial correlation over five contiguous buffers for the 250 km buffers and over 10 contiguous buffers for the 500 km buffers.

Table 5. The impact of the transatlantic slave trade on democratic authority in West Africa

(Dependent variable = Pct. of polities with DEMOCRATIC authority)

	Western sample		Atlantic sample		Sub-Saharan sample	
	OLS	IV	OLS	IV	OLS	IV
	250 km radius for buffer					
($\widehat{\beta}$) Est. coefficient on slave exports (000,000)	-0.0456**	-0.0357	-0.0081	-0.0210*	-0.0067	-0.0044
Conley standard errors	0.0196	0.1211	0.0057	0.0126	0.0053	0.0071
Environmental controls	YES	YES	YES	YES	YES	YES
Number of observations	117	117	86	86	48	48
Adjusted R-squared	0.1129		0.2174		0.6961	
Hansen-Sargan test of overid. restrictions		3.04		0.1483		1.52
	500 km radius for buffer					
($\widehat{\beta}$) Est. coefficient on slave exports (000,000)	-0.0185**	-0.0935***	-0.0072	-0.0193	-0.0020	-0.0095
Conley standard errors	0.0083	0.0341	0.0064	0.0259	0.0041	0.0066
Environmental controls	YES	YES	YES	YES	YES	YES
Number of observations	180	180	149	149	111	111
Adjusted R-squared	0.1618		0.1188		0.2238	
Hansen-Sargan test of overid. restrictions		3.17		7.83		0.0820

Sources: See Table 1.

Notes: The coefficients in the columns labeled "OLS" are estimated OLS. The 2-stage estimates in the column labeled "IV" were estimated GMM. *** denotes 99% confidence level. ** denotes 95% confidence level. * denotes 90% confidence level. All 2-tail tests. The Hansen-Sargan test statistic of over-identification restrictions is distributed Chi-Square with 2 degrees of freedom. The critical value for the 90% confidence level is 4.61 (that the IV regressors are not excluded from the equation). Conley standard errors allowed for spatial correlation over five contiguous buffers for the 250 km buffers and over 10 contiguous buffers for the 500 km buffers.

Figure 2. The slave trade and indirect rule

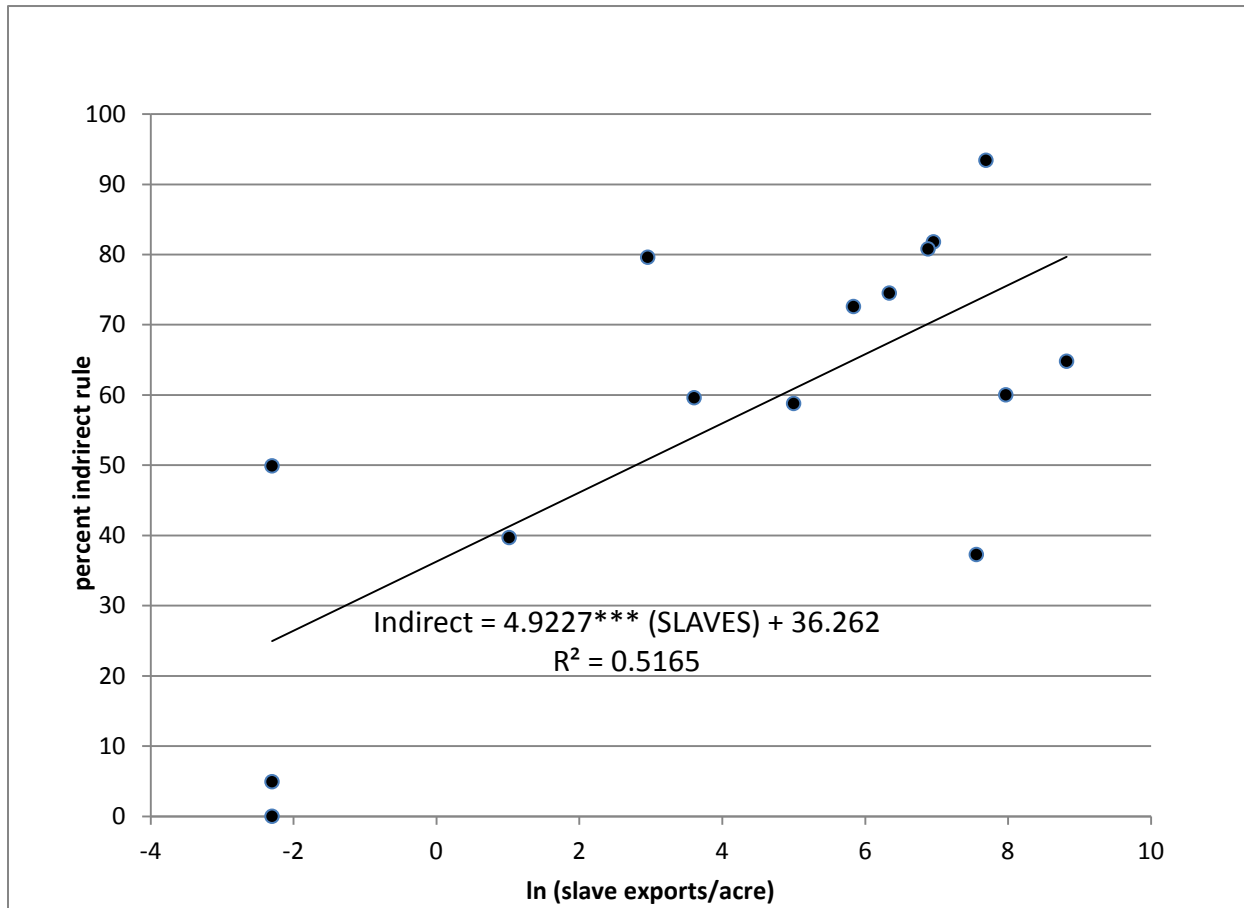Indirect = 4.9227*** (SLAVES) + 36.262
R² = 0.5165

Figure 1. Merging the Transatlantic Slave Trade Database and the Ethnographic Atlas