Roots of Autocracy*

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Abstract

This research explores the origins of the variation in the prevalence and nature of political institutions across globe. It advances the hypothesis and establishes empirically that variation in the inherent diversity across human societies, as determined in the course of the exodus of Homo sapiens from Africa tens of thousands of years ago, shaped the nature of political institutions across regions and societies. The study establishes that, while human diversity has amplified the beneficial effects of institutions, mitigating the adverse effects of non-cohesiveness, its simultaneous contribution to heterogeneity in cognitive and physical traits has fostered the scope for domination, leading to the formation and persistence of autocratic institutions. A larger degree of human diversity within societies diminished cohesiveness and therefore stimulated the emergence of institutions that have mitigated the adverse effects of non-cohesiveness on productivity. However, the dual impact of human diversity on the emergence of inequality and class stratification have diverted the nature of the emerging institutions towards extractive, autocratic ones. Developing a novel geo-referenced dataset of genetic diversity and ethnographic characteristics among ethnic groups across the globe, the analysis establishes that genetic diversity contributed to the emergence of autocratic pre-colonial institutions. Moreover, the findings suggest that the contribution of diversity to these pre-colonial autocratic institutions has plausibly operated through its dual effect on the formation of institutions and class stratification. Furthermore, reflecting the persistence of institutional, cultural, and genetic characteristics, the spatial distribution of genetic diversity across the globe has contributed to the contemporary variation in the degree of autocracy across countries.

Keywords Autocracy, Economic Growth, Genetic Diversity, Institutions, Out-of-Africa Hypothesis of Comparative Development

JEL Classification Codes O1

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1 Introduction

Political institutions has been widely viewed as major determinants of economic growth and comparative economic development. Variations in the nature of institutions across societies have been regarded as a manifestation of divergence in political, social and economic factors such as inequality, class structure, the prevalence of internal conflicts, and the threat of revolution.[1] In particular, the persistence of extractive institutions in some societies has been seen as a reflection of environments in which the ruling elite is induced to preserve the existing socioeconomic order, while the emergence of inclusive institutions has been attributed to the virtues of these growth-enhancing institutions in more egalitarian societies.[2]

This research explores the origins of variation in the nature of political institutions across the globe, highlighting one of the deepest roots of autocracy molded during the dawn of the dispersion of anatomically modern humans on earth. The study advances the hypothesis and establishes empirically that variation in the inherent diversity across human societies, as determined in the course of the exodus of Homo sapiens from Africa tens of thousands of years ago, shaped the characteristics of political institutions in early stages of development and has persistently affected the attributes of contemporary institutions across regions and societies.

In light of the contribution of human heterogeneity to the non-cohesiveness of society, the emergence of a code of conduct have mitigated these detrimental forces and countered their destructive effects on productivity. While the scope for institutions has therefore been larger in more diverse societies, genetic diversity, and its manifestation in heterogeneity of cognitive and physical traits, has fostered the degree of inherent inequality in society and the scope for domination (e.g., the emergence of an alpha male), and has contributed to the emergence of class structure, permitting the elites to impose its desirable extractive institutions. Thus, the dual contribution of human diversity to the demand for institutions as well as class stratification have diverted the nature of the emerging institutions towards autocratic ones, and societies characterized by larger human diversity has nurtured persistent autocratic regimes.

Developing a novel geo-referenced dataset of human genetic diversity among ethnic groups across the globe, the empirical analysis establishes that genetic diversity contributed to the emergence of autocratic pre-colonial institutions. Moreover, the findings suggest that the contribution of diversity to these pre-colonial autocratic institutions has plausibly operated through its dual effect on the formation of institutions and class stratification. Furthermore, reflecting the persistence

[1] See Acemoglu and Robinson (2012), Alesina and Giuliano (Forthcoming), Engerman and Sokoloff (1997), Galor and Moav (2006), Galor et al. (2009). The association between political institutions and economic development is reflected by Figure A.1 in the appendix.

[2] The emergence of pre-colonial states and institutions have been attributed to the establishment of sedentary communities and the subsequent rise in social complexity in the post Neolithic Revolution era (Mann, 1986; Belfer-Cohen and Bar-Yosef, 2002). Furthermore, state formation have been associated with the rise in population density in the post Neolithic period (Diamond, 1997; Ashraf and Galor, 2011), the rise in food surplus due to climatic shocks, technological advancements, and the gains from trade the provided the necessary resources for the creation of a non-food producing class (Gosden, 1989; Allen, 1997; Arnold, 1993; Fenske, 2014; Litina, 2014), and the existence of storable crops that permitted extraction by the ruling elite (Mayshar et al., 2015).

of institutional, cultural, and genetic characteristics, the spatial distribution of genetic diversity across the globe has contributed to the contemporary variation in the degree of autocracy across countries.

2 Empirical Strategy

The proposed hypothesis about the role of human diversity in the emergence and the persistence of autocratic institutions is explored empirically by examining the effect of observed human genetic diversity on the emergence of autocratic institutions. This relationship is examined on national and subnational, ethnic group, levels. To address concerns of endogeneity, the relationship is also examined using migratory distance from Africa as an instrument for diversity.

The analysis is conducted in several layers. The first layer establishes that groups characterized by higher level of genetic diversity are more likely to form a rule of conduct (i.e., institutions) that would mitigate the adverse effect of the inherent non-cohesiveness associated with diversity. In particular, the empirical analysis establishes that, among the 131 ethnic groups for which data on observed genetic diversity and institutions are available, ethnic groups that are characterized by a higher level of genetic diversity tend to posses more elaborate institutions, as captured by the degree of jurisdictional hierarchy in those societies. Moreover, using migratory distance from Africa as an instrumental variable for observed genetic diversity, the analysis establishes the causal effect of diversity on the the degree of jurisdictional hierarchy. Finally, using migratory distance from Africa to project genetic diversity for 1,267 ethnic groups in the Ethnographic Atlas, the analysis establishes the robustness of the result for this extended sample.

In the second layer, the empirical analysis attempts to establish that ethnic groups that are characterized by higher level of genetic diversity are more likely to be characterized by greater inequality and social stratification. It demonstrates that genetic diversity has a positive impact on social stratification and various measures of inequality.

In the third layer, the empirical analysis establishes that indeed the contribution of genetic diversity to jurisdictional hierarchy on the one hand, and inequality on the other, is associated with autocratic institutions, as captured by (i) degree of absence of checks on leader's power, (ii) difficulty of removal of leaders, (iii) leader's exercise of authority, (iv) degree of lack of community decisions, and (v) perception of leader's power. Moreover, it establishes that genetic diversity has a direct association with each of these measures.

In the fourth layer, the empirical analysis establishes that autocratic institutions that were formed in the pre-colonial era had a persistent effect on the current level of autocracy across countries. Moreover, contemporary diversity has a significant direct effect on the degree of autocracy across countries.

The structure of the empirical analysis is laid out in Figure 1.

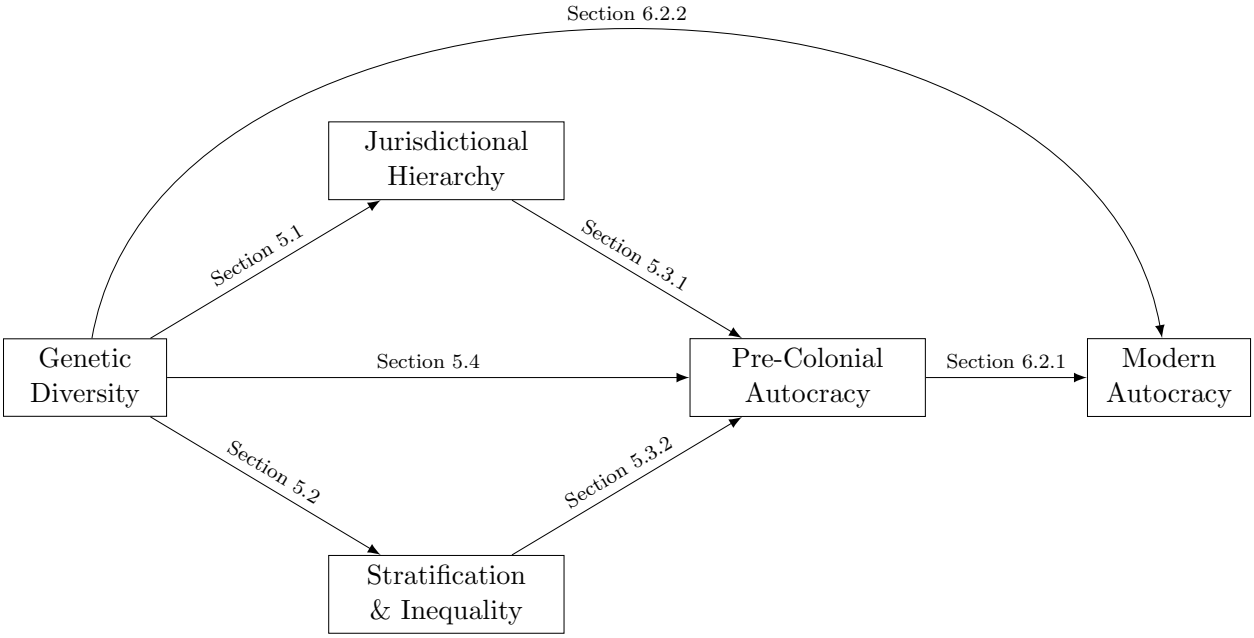

Figure 1: Overview of the empirical analysis with references to the relevant sections of the paper.

2.1 Main Variables

2.1.1 Independent Variables: Observed and Predicted Genetic Diversity

Genetic diversity indicates the extent of variation in genetic material across individuals within a given population, such as an ethnic group. It is captured by expected heterozygosity, a measure which is constructed using sample data on allelic frequencies; i.e., the frequency with which a gene variant or allele occurs in the population sample. Given allelic frequencies for a particular gene or DNA locus, a gene-specific heterozygosity statistic is calculated, which when averaged over multiple genes or DNA loci yields the overall expected heterozygosity for the relevant population. Like most other measures of diversity, this index may be interpreted simply as the probability that two individuals, selected at random from the relevant population, differ genetically from one another with respect to a given spectrum of traits.

The study first restricts attention to political institutions at the ethnic group level in the pre-colonial era when, arguably, regional populations were indigenous to their geographical locations around the era of colonization. The analysis of pre-colonial institutions is initially conducted using observed levels of average heterozygosity in indigenous ethnic groups as measured by population geneticists. In particular, the study makes use of newly assembled data on observed genetic diversity in 232 worldwide (predominantly indigenous) ethnic groups (Pemberton et al. 2013) and investigate the correlation between genetic diversity and political institutions on the ethnic group level in the pre-colonial era for those ethnicities that can be found in the Ethnographic Atlas.

Furthermore, population geneticists studying human genetic diversity have argued that the contemporary distribution of diversity across populations should reflect a "serial founder effect" originating in East Africa, and have established that the majority of the variation in genetic diversity in indigenous populations can be predicted by their migratory distance from East Africa. In light of the serial founder effect, the presence of multiple indigenous ethnicities in a given region would have had a negligible impact on the diversity of the regional population during this period. Thus, in view of the tight negative relationship between migratory distance from East Africa and expected heterozygosity, the study expands the scope of the analysis by making use of predicted levels of genetic diversity for the 1,267 ethnicities found in the Ethnographic Atlas. This enables a subsequent analysis to estimate the effects of genetic diversity, as predicted by migratory distance from East Africa, on pre-colonial institutions in much larger samples of ethnicities. Moreover, the use of migratory distance to project genetic diversity has the added major benefits that projected diversity is resistant to the potential reverse causality that could arise if political institutions, or correlated factors, have affected observed genetic diversity and to the omitted-variable bias that could arise if genetic diversity and political institutions are both affected by unobserved factors.

Likewise, the study account for the potential reverse causality and omitted-variable bias in the sample of ethnicities with observed genetic diversity using the migratory distance from East Africa as an instrumental variable for genetic diversity.

While the data on observed genetic diversity pertain to ethnic groups, data for political institutions in the modern era are typically available at the country level. Therefore, the study also makes use of a constructed measure of genetic diversity for national populations, based on genetic diversity data at the ethnic group level, accounting for diversity not only within each component group, but for diversity due to differences between ethnic groups as well (Ashraf and Galor, 2013b). In particular, the country level analysis accounts for the fact that national populations today are typically composed of multiple ethnicities, some of which may not be indigenous to their current geographical locations by using an index of genetic diversity for contemporary national populations that not only incorporates the expected heterozygosities of the pre-colonial ancestral populations of contemporary subnational groups, as predicted by the migratory distances of the ancestral populations from East Africa, but also incorporates the pairwise genetic distances between these ancestral populations, as predicted by their pairwise migratory distances. Indeed, the serial founder effect studied by population geneticists not only predicts that expected heterozygosity declines with increasing migratory distance from East Africa but also that the genetic distance between any two populations will be larger the greater the migratory distance between them. Thus, in light of the large degree of gene-flow during the era of mass migration, the research makes use of ancestry-adjusted predicted levels of genetic diversity.

The main results from the historical analysis, employing observed as well as predicted levels of genetic diversity in a large sample of ethnicities with known pre-colonial political institutions, indicate that, controlling for the influence of land productivity, climatic conditions, continental fixed effects and additional geographical characteristics, a 1 percentage point increase in expected

heterozygosity is associated with 9.7 percent higher number of levels of jurisdictional hierarchy as well as 0.23 points higher score on an index of class-based societal stratification, 0.11 points higher score on an index of intensity of slavery, and 0.11 points higher score on an index of the intensity of property rights.

In addition, the historical analysis establish that autocratic institutions in the pre-colonial era are correlated with jurisdictional hierarchy, as well as the measures of social stratification and inequality. In particular, the number of levels of jurisdictional hierarchy, the number of social strata, the intensity of slavery, and the intensity of property rights in the pre-colonial era is highly statistically significantly associated with measures of autocratic institutions.

Furthermore, the research establishes that genetic diversity is associated with the intensity of autocratic regime across countries in the contemporary period. Controlling for the influence of land productivity, climatic conditions, continental fixed effects and additional geographical characteristics, a 1 percentage point increase in ancestry-adjusted expected heterozygosity is associated with 6.6 percentage points higher score on an index of present-day autocratic regime.

3 Data

The examination of the proposed hypothesis, that human diversity has led to a higher intensity of autocratic regime in the pre-colonial as well as in the contemporary era, is based on several data sources.

The main data on political institutions come from two sources. For the analysis of pre-colonial institutions, the study makes use of the arguably largest and most comprehensive collection of ethnographic tabulations found in the Ethnographic Atlas (Murdock, 1967). This dataset was originally published in 29 issues of the journal Ethnology between 1962 and 1980 and contains ethnographic information on 1,267 worldwide ethnic groups. The relevant measures of political institutions are reported in the variable denoted "Jurisdictional Hierarchy Beyond Local Community" (variable 33) and the measure of a class-based society in the variable denoted "Class Stratification" (variable 66). Additional information on ethnic-group-level autocracy is reported in the Standard Cross-Cultural Sample of Murdock and White (1969). Furthermore, for the analysis of contemporary political institutions, the study makes use of the gold standard in comparative research in political institutions, the Polity IV Project dataset (Marshall et al., 2014). The main relevant measure of political institutions are reported in the variable "Autocracy", while the study also makes use of the component variable "Constraints on the Executive" and the variable denoted "Democracy".

The data on observed genetic diversity come from two sources. For the pre-colonial analysis, the study makes use of the largest existing dataset of human population-genetic variation presented in Pemberton et al. (2013), containing estimates of expected heterozygosity for 267 populations in the world. This dataset combines eight human genetic diversity datasets at the 645 loci that they

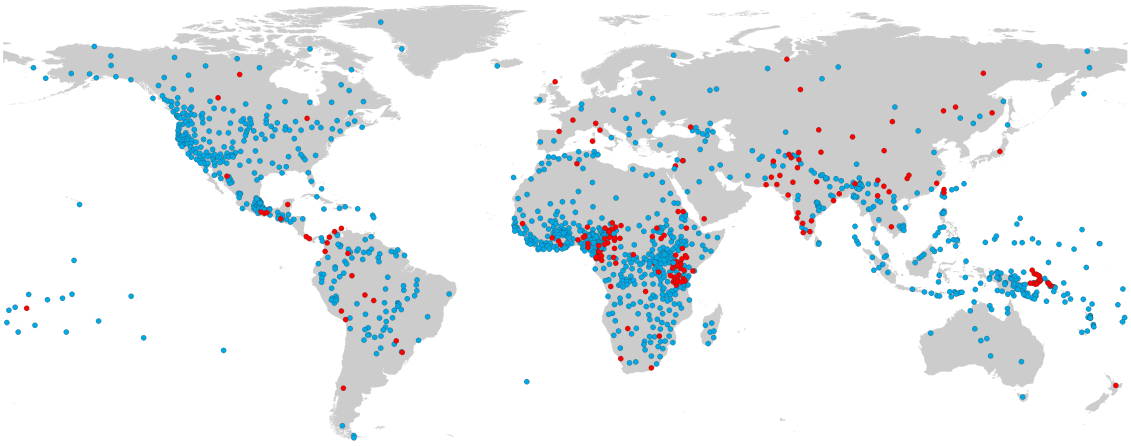

Figure 2: This figure depicts the interior centroids of the historical homelands of ethnic groups in the data. The red points mark observations with known observed and predicted genetic diversity and the blue points mark observations with known predicted genetic diversity.

share, including the HGDP-CEPH Human Genome Diversity Cell Line Panel that was used by Ashraf and Galor (2013b).

The data on predicted genetic diversity predict genetic diversity based on migratory distance from East Africa. In particular, the empirical analysis of Pemberton et al. (2013), using the largest dataset of human population-genetic variation, reconfirmed previous findings by (Ramachandran et al., 2005), using data from the HGDP-CEPH Human Genome Diversity Cell Line Panel, establishing that migratory distance from East Africa is as a strong negative predictor of genetic diversity at the ethnic group level. Using the genetic diversity data from Pemberton et al. (2013) on a sample of 230 geo-referenced ethnic groups (see Ashraf et al., 2015, for an explanation of this data)), migratory distance alone explains more than 84 percent of the cross-group variation in within-group diversity. In addition, the estimated OLS coefficient is highly statistically significant ($p < 6.71 \times 10^{-93}$). It suggests that expected heterozygosity falls by 6.7 percentage points for every 10,000 km increase in migratory distance from East Africa (from 0.767 in Addis Abba to 0.561 in South America). Using this tight association, the analysis calculates predicted genetic diversity for each ethnic group in the Ethnographic Atlas.[3] Figure 2 depicts the spatial distribution of the 1,506 ethnicities in the data.

[3]In estimating the migratory distance from Addis Ababa (East Africa) for each of the ethnic groups in the data, the shortest traversable paths from Addis Ababa to the interior centroid of each ethnic group was computed. Given the limited ability of human to travel across large bodies of water, the traversable area included bodies of water at a distance of 100km from land mass (excluding migration from Africa into Europe via Italy or Spain). Furthermore, for ethnicities that reside in a distance that exceed 100km from the traversable area connected to Addis Ababa, the distance was computed in the following way. A point set was created by clipping the extended traversable area to world boundaries and aggregating it to a resolution of 2,096,707 pixels which was then converted into points. For each ethnicity centroid, the nearest four distance points were identified and the great circle distance from the ethnicity centroid to those points were calculated. These distances was then added to the migratory distance from Addis Ababa at the distance point to obtain the total migratory distance from the ethnicity centroid from Addis Ababa to each of these four points. The point with the shortest total migratory distance from Addis Ababa was selected to represent the total migratory distance for the ethnicity.

Furthermore, for the analysis of contemporary political institutions, the study makes use of the predicted levels of national ancestry-adjusted and genetic diversity given by Ashraf and Galor (2013b). This index of genetic diversity for contemporary national populations accounts for their ethnic compositions resulting from population flows among countries in the post-1500 era, the genetic diversity of the pre-colonial ancestral population of each component ethnic group, and the genetic distances between these ancestral populations. Specifically, given the genetic diversity of the ancestral populations of the source countries, data on post-1500 population flows is used to construct a weighted average expected heterozygosity measure for the national population of each country in the contemporary period. This measure alone, however, would not capture the full extent of genetic diversity in contemporary national populations as it would fail to account for the diversity arising from differences between subnational ethnic groups. To additionally incorporate the between-group component of diversity in contemporary national populations, Ashraf and Galor (2013b) makes use of estimates of the F_{st} genetic distance between ethnicities to account for the genetic distance between ancestral populations of modern nations. Thus, the analysis of contemporary political institutions tests the proposed genetic hypothesis using genetic diversity predicted by migratory distance from East Africa from Ashraf and Galor (2013b) in a sample of 145 countries. In this sample, the distance calculation methodology of Pemberton et al. (2013) and Ramachandran et al. (2005) is adopted to first construct migratory distance from East Africa for each country, using Addis Ababa as the origin and the country's modern capital city as the destination. This constructed distance variable is then applied to obtain a predicted value of genetic diversity for each country based on the slope coefficient from the regression of expected heterozygosity on migratory distance across the ethnic groups in the HGDP-CEPH Human Genome Diversity Cell Line Panel used by Ashraf and Galor (2013b). Hence, it is this predicted genetic diversity at the country level that is employed as the explanatory variable of interest in the extended sample of countries.

The control variables come from a range of sources. For the analysis of the pre-colonial era, the developed geo-referenced dataset on within-ethnic-group genetic diversity and ethnographic information contains a wide range of variables (see Ashraf et al., 2015, for more information on the data). Since the data is partly based on Fenske (2013), it includes a range of geographic variables derived by him, in addition to geographic variables derived by the authors. These geographic variables include elevation, ruggedness, length and density of rivers in the area, share of desert on the area, as well as the average climatic suitability for agriculture (as constructed by Ramankutty et al. (2002) and also used by Michalopoulos (2012)), average temperature, and average diurnal temperature range over the period 1901–2012 as constructed by the Climate Research Unit (see Harris et al., 2014).

4 Analysis of the Pre-Colonial Era

The analysis of the pre-colonial era consists of investigations of (i) the effect of genetic diversity on pre-colonial jurisdictional hierarchy, (ii) the effect of genetic diversity on pre-colonial social

stratification and inequality, (iii) the associations between pre-colonial jurisdictional hierarchy, social stratification, inequality, on the one hand, and pre-colonial autocracy on the other hand, and (iv) the effect of genetic diversity and pre-colonial autocracy. The analysis is conducted on the ethnic-group level.

4.1 Baseline Regression Specifications

This section discusses the econometric specifications for the pre-colonial analysis.

4.1.1 Analysis of Genetic Diversity and Ethnographic Characteristics

In light of the possible confounding effects of geographical characteristics such as soil quality, terrain characteristics, or climatic conditions, the following specification is adopted to examine the association between genetic diversity and pre-colonial jurisdictional hierarchy, stratification, inequality, and autocracy:

$$Y_i = \beta_0 + \beta_1 G_i + \beta_2 X_i + \beta_3 C_i + \varepsilon_i, \tag{1}$$

where Y_i is a measure of either jurisdictional hierarchy, social stratification, inequality, or autocracy, for ethnicity i; G_i is observed or predicted genetic diversity for ethnicity i, X_i is a vector of geographical control variables for ethnicity i, C_i is a vector of continental dummies for ethnicity i, and ε_i is an error term clustered at the country level for ethnicity i. The analysis is performed with either observed genetic diversity, or with predicted genetic diversity in a larger sample. Moreover, considering the remarkably strong predictive power of migratory distance from East Africa for genetic diversity, the baseline regression specification employed to test the proposed genetic channel in the extended sample is given by

$$Y_i = \beta_0 + \beta_1 \hat{G}_i + \beta_2 X_i + \beta_3 C_i + \varepsilon_i, \tag{2}$$

where $\hat{G}_i$ is the genetic diversity predicted by migratory distance from East Africa for ethnicity i.

Furthermore, the causal effect of genetic diversity on pre-colonial jurisdictional hierarchy, stratification, and inequality is estimated via a 2SLS procedure, instrumenting observed genetic diversity with the migratory distance from East Africa in the sample of observed genetic diversity. In particular, the first stage of the 2SLS regression is estimated by the models on the form

$$G_i = \alpha_0 + a_1 Z_i + \alpha_2 X_i + \alpha_3 C_i + \varepsilon_i, \tag{3}$$

where Z_i is the migratory distance from East Africa to the centroid of the homeland of ethnicity i. The second stage of the 2SLS regression is on the same form as equation (1) above.

4.1.2 Analysis of Genetic Diversity and Ethnographic Characteristics

Analogous to the analysis of genetic diversity and ethnographic characteristics, the following specification is adopted to examine the associations between pre-colonial jurisdictional hierarchy, social stratification, inequality, and autocracy:

$$Si = \beta_0 + \beta_1 e_i + \beta_2 X_i + \beta_3 C_i + \varepsilon_i, \tag{4}$$

where S_i is a measure of jurisdictional hierarchy and ε_i is a measure of either social stratification, or inequality.

5 Results

This section presents the results for the analysis of the impact of genetic diversity on the intensity of pre-colonial jurisdictional hierarchy, social stratification, and inequality in the pre-colonial era on the pre-colonial ethnic group level.

5.1 Genetic Diversity and Jurisdictional Hierarchy

The first part of the pre-colonial analysis investigates the effect of genetic diversity on jurisdictional hierarchy.

5.1.1 Observed Genetic Diversity and Jurisdictional Hierarchy

Table 1 presents the results from OLS regression analyses of the number of levels of jurisdictional hierarchy in the pre-colonial era using observed genetic diversity to explain variation in jurisdictional hierarchy across ethnic groups (within as well as between continents).

Consistent with the prediction of the proposed hypothesis, column 1 establishes a highly statistically and economically significant correlation between the measure of jurisdictional hierarchy and observed genetic diversity, based on the 131 ethnic groups for which we have information on both genetic diversity and jurisdictional hierarchy. In particular, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is associated with a 2.7 percent higher number of levels of jurisdictional hierarchy. Furthermore, column 2 to 4 establish that this association is robust to the gradual inclusion of control variables capturing a range of geographical factors. In particular, the association remains highly significant while controlling for the natural log of the absolute latitude of the centroid of the homeland of the ethnicity (column 2), soil quality decile fixed effects (column 3), and continental fixed effects (column 4). The estimates in column 4 establish that the results are robust to the focus on intra-continental variation in genetic diversity. In addition, column 5 establish that the association remain highly significant given the additional inclusion of control variables capturing the elevation of the homelands, terrain ruggedness, length and density of rivers, and the share of desert. Likewise, column 6 establish that the association remain highly significant given the additional inclusion of the average temperature as well as the

Table 1: Observed Genetic Diversity and Jurisdictional Hierarchy

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Genetic Diversity	2.685***	4.197***	4.350***	7.894***	9.503***	9.645***
	(0.004)	(0.000)	(0.000)	(0.001)	(0.002)	(0.001)
Log Absolute Latitude		0.151***	0.153***	0.091**	0.079*	0.096**
		(0.000)	(0.000)	(0.011)	(0.062)	(0.027)
Elevation					-0.000	0.000
					(0.780)	(0.471)
Terrain Ruggedness					0.000	0.000
					(0.689)	(0.602)
River Length					0.001***	0.003***
					(0.001)	(0.000)
River Density					0.017	0.027
					(0.560)	(0.242)
Share Desert					-0.167	-0.504**
					(0.584)	(0.049)
Average Temperature						0.028**
						(0.015)
Temperature Range						0.016
						(0.501)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	131	131	131	131	131	131
Adjusted R^2	0.038	0.143	0.171	0.288	0.275	0.317

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, conditional on a range of control variables, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

temperature range. In particular, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is associated with a 9.7 percent higher number of levels of jurisdictional hierarchy. The partial association between genetic diversity and jurisdictional hierarchy corresponding to column 6 is plotted in Figure A.2 in the appendix.

Overall, Table 1 establish that the estimated association between observed genetic diversity and pre-colonial jurisdictional hierarchy remains highly statistically and economically significant while accounting for a wide range of control variables.

Furthermore, Table A.1–A.6 in the appendix establish that the findings in Table 1 are robust to accounting for ecological diversity (Table A.1), variability of soil suitability (Table A.2), major crop type (Table A.3), scale effects (Table A.4), the year of description as recorded in the Ethnographic Atlas (Table A.5), as well as to excluding observations from Africa (Table A.6).

5.1.2 Observed Genetic Diversity and Jurisdictional Hierarchy: Instrumental Variable Analysis

The data permits an instrumental variables regression analysis of the proposed hypothesis with migratory distance employed as an instrument for genetic diversity. This constitutes a direct test of the genetic diversity channel given concerns regarding the possible omitted variable bias or endogeneity of genetic diversity.

Table 2 presents the results from 2SLS regression analyses of levels of jurisdictional hierarchy in the pre-colonial era using the limited sample with observed genetic diversity and employing the migratory distance from East Africa as an instrument for observed genetic diversity to explain variation in the intensity of jurisdictional hierarchy across ethnic groups (within as well as between continents). Interestingly, in comparison to their OLS counterparts in Table 1, the estimated 2SLS coefficients associated with the effect of diversity remain relatively stable in magnitude, suggesting that omitted variable bias or endogeneity of genetic diversity need not be a source of concern. In particular, column 1 establishes that the migratory distance from East Africa is a very strong instrument for genetic diversity (the Kleibergen-Paap F-statistic is above 237) and that there is a highly statistically and economically significant effect of observed genetic diversity on the number of levels of jurisdictional hierarchy. In particular, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is associated with a 2.9 percent higher number of levels of jurisdictional hierarchy. Furthermore, column 2 to 5 establish that this effect is robust to the gradual inclusion of control variables capturing a range of geographical factors. In particular, migratory distance from East Africa remains a strong instrument for genetic diversity, and the effect of genetic diversity on jurisdictional hierarchy remains highly significant while controlling for the natural log of the absolute latitude of the centroid of the homeland of the ethnicity (column 2), soil quality decile fixed effects (column 3), elevation of the homelands, terrain ruggedness, length and density of rivers, and the share of desert (column 4), average temperature, as well as the temperature range (column 5). In column 5, a 1 percentage point higher level of observed genetic

Table 2: Observed Genetic Diversity and Jurisdictional Hierarchy — Instrumental Variable Analysis

	Log Number of Levels of Jurisdictional Hierarchy				
	(1)	(2)	(3)	(4)	(5)
Genetic Diversity	2.911**	4.570***	4.750***	5.407***	5.203***
	(0.012)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.156***	0.157***	0.144***	0.193***
		(0.000)	(0.000)	(0.000)	(0.000)
Elevation				0.000	0.000
				(0.939)	(0.219)
Terrain Ruggedness				0.000	0.000
				(0.489)	(0.714)
River Length				0.002***	0.003***
				(0.000)	(0.000)
River Density				0.029	0.031*
				(0.168)	(0.056)
Share Desert				0.107	-0.088
				(0.657)	(0.707)
Average Temperature					0.023***
					(0.005)
Temperature Range					-0.012
					(0.621)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes
N	131	131	131	131	131
1st Stage F-statistic (K-P)	237.138	194.590	177.812	188.822	173.749

This table presents the results of a series of 2SLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, instrumented by the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

diversity, as measured by expected heterozygosity, is associated with a 5.2 percent higher number of levels of jurisdictional hierarchy.

Overall, the results presented here provide support for the inferences made with genetic diversity in Table 1.

5.1.3 Predicted Genetic Diversity and Jurisdictional Hierarchy

Table 3 presents the results from OLS regressions of the number of levels of jurisdictional hierarchy in the pre-colonial era (within as well as between continents) using the extended sample with predicted genetic diversity.

Reassuringly, in comparison to the estimates in Table 1 and Table 2, the estimated coefficients on predicted genetic diversity in Table 3 are of the same order of magnitude and remain highly statistically significant. Furthermore, the estimates are very stable across specifications.

Column 1 establishes that genetic diversity, as predicted based on migratory distance from East Africa, has a highly statistically and economically significant effect on the number of levels of jurisdictional hierarchy. In particular, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is associated with a 5.1 percent higher number of levels of jurisdictional hierarchy. Furthermore, column 2 to 6 establish that this effect is robust to the gradual inclusion of control variables capturing a range of geographical factors. In particular, the estimated effect of predicted genetic diversity on jurisdictional hierarchy remains highly significant while controlling for the natural log of the absolute latitude of the centroid of the homeland of the ethnicity (column 2), soil quality decile fixed effects (column 3), continental FE (column 4), elevation of the homelands, terrain ruggedness, length and density of rivers, and the share of desert (column 5), average temperature, as well as the temperature range (column 6). In column 6, the conditional effect of a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is a 6.0 percent higher number of levels of jurisdictional hierarchy. The partial association between predicted genetic diversity and jurisdictional hierarchy corresponding to column 6 is plotted in Figure A.3 in the appendix.

Overall, the results presented here provide support for the inferences made with observed genetic diversity in Table 1 and observed genetic diversity instrumented by the migratory distance from East Africa in Table 2, that ethnic-group genetic diversity is both associated with, and has an effect on, jurisdictional hierarchy in the pre-colonial era.

Furthermore, Table A.7–A.12 in the appendix establish that the findings in Table 3 are robust to accounting for ecological diversity (Table A.7), variability of soil suitability (Table A.8), major crop type (Table A.9), scale effects (Table A.10), the year of description as recorded in the Ethnographic Atlas (Table A.11), as well as to excluding observations from Africa (Table A.12).

5.2 Genetic Diversity and Social Stratification and Inequality

The next part of pre-colonial analysis investigates the effect of genetic diversity on social stratification and inequality.

Table 3: Predicted Genetic Diversity and Jurisdictional Hierarchy

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Predicted Genetic Diversity	5.121***	5.771***	5.838***	5.496***	5.732***	5.949***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.068***	0.080***	0.110***	0.109***	0.130***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Elevation					0.000	0.000**
					(0.577)	(0.034)
Terrain Ruggedness					-0.000*	-0.000***
					(0.084)	(0.009)
River Length					0.003**	0.003***
					(0.010)	(0.007)
River Density					-0.003	-0.002
					(0.188)	(0.241)
Share Desert					0.011	0.019
					(0.860)	(0.790)
Average Temperature						0.007*
						(0.085)
Temperature Range						-0.020**
						(0.017)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	1,076	1,076	1,076	1,076	1,076	1,076
Adjusted R^2	0.199	0.217	0.225	0.290	0.297	0.300

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

5.2.1 Observed Genetic Diversity and Social Stratification and Inequality

Table 4 presents the results from OLS regression analyses of social stratification and inequality in the pre-colonial era using observed genetic diversity to explain variation in social stratification and inequality across ethnic groups (within as well as between continents).

Consistent with the prediction of the proposed hypothesis, column 1–3 establish a highly statistically and economically significant correlation between the measure of social stratification and observed genetic diversity, based on the 121 ethnic groups for which we have information on both genetic diversity and social stratification. In particular, according to column 1, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is associated with 0.06 points higher score on the social stratification scale. Furthermore, column 2 establish that the association remains highly statistically significant while accounting for all the control variables as well as soil quality decile fixed effects. In addition, column 3 establish that the association remains highly statistically significant when also accounting for continental fixed effects. The point estimate increases to 22.7, implying that a 1 percent increase in genetic diversity is associated with a 0.23 higher score on the social stratification scale, which mean that the effect is larger within continents compared to between continents.

Likewise, column 4–6 establish that there is a highly statistically and economically significant correlation between the intensity of genetic diversity and slavery, based on the 120 ethnic groups for which we have information on both measures. In particular, according to column 4, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is associated with 0.06 points higher score on the intensity of slavery scale. Furthermore, column 5 establish that the association remains highly statistically significant while accounting for all the control variables as well as soil quality decile fixed effects. In addition, column 6 establish that the association remains highly statistically significant when also accounting for continental fixed effects. The point estimate increases to 11.4, implying that a 1 percent increase in genetic diversity is associated with a 0.11 higher score on the social stratification scale, which mean that the effect is larger within continents compared to between continents. Finally, column 7–9 establish that there is a highly statistically and economically significant correlation between the intensity of genetic diversity and the intensity of property rights, based on the 98 ethnic groups for which we have information on both measures. In particular, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is associated with 0.04 points higher score on the intensity of property rights scale. Furthermore, column 8 establish that the association remains highly statistically significant while accounting for all the control variables as well as soil quality decile fixed effects. In addition, column 9 establish that the association remains highly statistically significant when also accounting for continental fixed effects. The point estimate increases to 10.6, implying that a 1 percent increase in genetic diversity is associated with a 0.11 higher score on the intensity of property rights scale, which mean that the effect is larger within continents compared to between continents.

Table 4: Observed Genetic Diversity and Stratification & Inequality

	Social Stratification			Intensity of Slavery			Intensity of Property Rights		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Genetic Diversity	5.663***	6.549***	22.740***	7.239***	9.191***	11.406*	3.455***	4.771**	10.617**
	(0.000)	(0.002)	(0.000)	(0.000)	(0.000)	(0.067)	(0.001)	(0.011)	(0.012)
Log Absolute Latitude	0.263***	0.388***	0.277***	0.188***	0.278***	0.338***	0.077**	0.023	-0.039
	(0.000)	(0.000)	(0.003)	(0.001)	(0.001)	(0.002)	(0.016)	(0.573)	(0.401)
Elevation		0.000**	0.000		0.000	0.000		-0.000**	-0.000*
		(0.038)	(0.112)		(0.492)	(0.597)		(0.039)	(0.053)
Terrain Ruggedness		0.000	0.000		0.000	0.000		0.000*	0.000**
		(0.945)	(0.342)		(0.350)	(0.530)		(0.091)	(0.021)
River Length		0.003***	0.002***		-0.001	-0.001		-0.001	0.001
		(0.000)	(0.009)		(0.120)	(0.121)		(0.746)	(0.836)
River Density		0.004	0.045		0.079**	0.086**		0.015	0.024
		(0.914)	(0.301)		(0.022)	(0.033)		(0.552)	(0.392)
Share desert		-0.804**	-1.874***		-0.066	0.293		0.034	-0.343
		(0.030)	(0.000)		(0.888)	(0.614)		(0.907)	(0.298)
Average Temperature		0.052***	0.055***		0.039***	0.025		-0.013	-0.004
		(0.000)	(0.000)		(0.001)	(0.116)		(0.294)	(0.763)
Temperature Range		-0.077*	-0.022		-0.013	-0.031		-0.003	0.003
		(0.092)	(0.600)		(0.730)	(0.466)		(0.928)	(0.917)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continental FE	No	No	Yes	No	No	Yes	No	No	Yes
N	121	121	121	120	120	120	98	98	98
Adjusted R^2	0.155	0.218	0.322	0.182	0.277	0.285	0.174	0.162	0.233

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of measures of pre-colonial stratification and inequality on observed genetic diversity, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

5.2.2 Observed Genetic Diversity and Social Stratification and Inequality: Instrumental Variable Analysis

The data permits an instrumental variables regression analysis with migratory distance employed as an instrument for genetic diversity. This addresses concerns regarding the possible omitted variable bias or endogeneity of genetic diversity.

Table 5 presents the results from a series of 2SLS regressions. The table reveal that the effect of genetic diversity on social stratification and inequality remains statistically significant. In particular, column 1 establishes that the migratory distance from East Africa is a very strong instrument for genetic diversity (the Kleibergen-Paap F-statistic is above 156) and that there is a highly statistically and economically significant effect of observed genetic diversity on social stratification, controlling for the log of the absolute latitude. Furthermore, column 2 establish that the order of magnitude and the significance of the estimate is robust to the inclusion of all the baseline control variables as well as soil quality decile dummy variables. Column 3 establishes that there is a highly statistically and economically significant effect of observed genetic diversity on the intensity of slavery, controlling for the log of the absolute latitude. Likewise, column 4 establish that the order of magnitude and the significance of the estimate is robust to the inclusion of all the baseline control variables as well as soil quality decile dummy variables. Column 5 establishes that there is a highly statistically and economically significant effect of observed genetic diversity on the intensity of property rights, controlling for the log of the absolute latitude. Similarly, column 6 establish that the order of magnitude and the significance of the estimate is robust to the inclusion of all the baseline control variables as well as soil quality decile dummy variables.

Overall, the results presented in Table 5 establish that there is a statistically significant effect of genetic diversity on social stratification and inequality in pre-colonial ethnic groups.

5.2.3 Predicted Genetic Diversity and Stratification and Inequality

Table 6 presents the results from OLS regressions of social stratification and inequality in the pre-colonial era (within as well as between continents) using the extended sample with predicted genetic diversity.

Reassuringly, in comparison to the estimates in Table 4 and Table 5, the estimated coefficients on predicted genetic diversity in Table 6 are generally of the same order of magnitude and remain highly statistically significant. Furthermore, the estimates are very stable across specifications. Column 1 to 3 establish that predicted genetic diversity has a highly statistically and economically significant effect on the measure of social stratification. In particular, as established in column 1, controlling for absolute latitude, a 1 percentage point higher level of observed genetic diversity, as measured by expected heterozygosity, is highly statistically significantly associated with a 0.07 point higher score on the social stratification index. Column 2 establishes that the point estimate is very similar and remains highly significant in the presence of all the baseline control variables and soil quality decile fixed effects. Furthermore, column 3 establishes that the point estimate is of the same order of magnitude and remain highly significant while also accounting for continental

Table 5: Observed Genetic Diversity and Stratification & Inequality — Instrumental Variable Analysis

	Social Stratification		Intensity of Slavery		Intensity of Property Rights	
	(1)	(2)	(3)	(4)	(5)	(6)
Genetic Diversity	4.418**	4.856**	6.874***	7.816***	3.670***	4.717***
	(0.012)	(0.026)	(0.000)	(0.002)	(0.001)	(0.010)
Log Absolute Latitude	0.251***	0.380***	0.185***	0.272***	0.079***	0.023
	(0.000)	(0.000)	(0.000)	(0.000)	(0.008)	(0.537)
Elevation		0.000**		0.000		-0.000**
		(0.015)		(0.416)		(0.017)
Terrain Ruggedness		-0.000		0.000		0.000*
		(0.848)		(0.519)		(0.061)
River Length		0.003***		-0.001*		-0.001
		(0.000)		(0.092)		(0.717)
River Density		-0.013		0.065*		0.014
		(0.681)		(0.066)		(0.549)
Share desert		-0.771**		-0.042		0.036
		(0.022)		(0.920)		(0.892)
Average Temperature		0.052***		0.040***		-0.013
		(0.000)		(0.000)		(0.239)
Temperature Range		-0.075*		-0.012		-0.003
		(0.075)		(0.728)		(0.917)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes
N	121	121	120	120	98	98
1st Stage F-statistic (K-P)	156.101	151.207	168.137	155.249	102.628	73.613

This table presents the results of a series of 2SLS regression analyses, on the ethnic-group level, of measures of pre-colonial stratification and inequality on observed genetic diversity, instrumented by the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 6: Predicted Genetic Diversity and Stratification & Inequality

	Social Stratification			Intensity of Slavery			Intensity of Property Rights		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Predicted Genetic Diversity	6.845***	6.529***	9.520***	8.066***	7.618***	7.534***	9.573***	8.537***	3.330**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)	(0.000)	(0.046)
Log Absolute Latitude	0.182***	0.257***	0.251***	0.027	0.152***	0.198***	-0.054***	0.075***	0.049**
	(0.000)	(0.000)	(0.000)	(0.253)	(0.000)	(0.000)	(0.004)	(0.001)	(0.017)
Elevation		0.000	0.000		0.000	0.000		0.000***	0.000***
		(0.143)	(0.226)		(0.297)	(0.760)		(0.000)	(0.001)
Terrain Ruggedness		0.000***	0.000**		0.000*	0.000***		-0.000	-0.000
		(0.001)	(0.013)		(0.057)	(0.009)		(0.386)	(0.536)
River Length		0.003**	0.003**		-0.001	-0.000		0.005**	0.003
		(0.011)	(0.019)		(0.690)	(0.802)		(0.033)	(0.290)
River Density		-0.003	-0.005**		-0.000	0.001		0.002	0.000
		(0.131)	(0.032)		(0.944)	(0.673)		(0.289)	(0.891)
Share desert		-0.064	-0.212*		-0.116	0.047		-0.245**	-0.359**
		(0.555)	(0.088)		(0.303)	(0.701)		(0.036)	(0.011)
Average Temperature		0.018***	0.019***		0.026***	0.019***		0.032***	0.019***
		(0.000)	(0.002)		(0.000)	(0.002)		(0.000)	(0.001)
Temperature Range		-0.090***	-0.068***		-0.052***	-0.077***		-0.074***	-0.037***
		(0.000)	(0.000)		(0.000)	(0.000)		(0.000)	(0.001)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Continental FE	No	No	Yes	No	No	Yes	No	No	Yes
N	982	982	982	979	979	979	685	685	685
Adjusted R^2	0.127	0.215	0.229	0.208	0.266	0.330	0.389	0.476	0.513

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of measures of pre-colonial stratification and inequality on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

fixed effects. Column 4 to 6 establish that predicted genetic diversity has a highly statistically and economically significant effect on the intensity of slavery. In particular, as established in column 4, controlling for absolute latitude, a 1 percentage point higher level of observed genetic diversity is highly statistically significantly associated with a 0.08 point higher score on the intensity of slavery index. Column 5 establishes that the point estimate is very similar and remains highly significant in the presence of all the baseline control variables and soil quality decile fixed effects. Furthermore, column 6 establishes that the point estimate is almost unchanged and remains highly significant while also accounting for continental fixed effects. Column 7 to 9 establish that predicted genetic diversity has a highly statistically and economically significant effect on the intensity of property rights. In particular, as established in column 7, controlling for absolute latitude, a 1 percentage point higher level of observed genetic diversity is highly statistically significantly associated with a 0.10 point higher score on the intensity of property rights index. Column 8 establishes that the point estimate is very similar and remains highly significant in the presence of all the baseline control variables and soil quality decile fixed effects. Furthermore, column 9 establishes that the point estimate remains highly significant while also accounting for continental fixed effects.

Overall, the results presented here provide support for the inferences made using observed genetic diversity in Table 4 and observed genetic diversity instrumented by the migratory distance from East Africa in Table 5, that ethnic-group genetic diversity is both associated with, and has an effect on, social stratification and inequality in the pre-colonial era.

5.3 Jurisdictional Hierarchy, Stratification, Inequality, and Pre-Colonial Autocracy

The next part of pre-colonial analysis investigates the association between, on the one hand, jurisdictional hierarchy, social stratification and inequality, and, on the other hand, the degree of autocracy characterizing ethnic groups.

5.3.1 Jurisdictional Hierarchy and Autocratic Institutions

Table 7 presents the results from OLS regression analyses of autocratic institutions in the pre-colonial era using jurisdictional hierarchy, as reflected by the number of levels of jurisdictional hierarchy, to explain variation in autocratic institutions across ethnic groups (within as well as between continents). The measures of autocracy includes the degree of absence of checks on the leader's power, the difficulty of removal of leaders, the leader's exercise of authority, the degree of lack of community decisions, and the perception of the leader's power.

The first two columns establish that pre-colonial jurisdictional hierarchy is highly significantly associated with the degree of absence of checks on the leader's power. In particular, according to column 1, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 2 establishes that the association remains present while also accounting for all the baseline control variables. Columns 3 and 4 establish that pre-colonial jurisdictional hierarchy is highly significantly associated with the difficulty of removal

Table 7: Jurisdictional Hierarchy and Autocratic Institutions

	Degree of Absence of Checks on Leader's Power		Difficulty of Removal of Leaders		Leader's Exercise of Authority		Degree of Lack of Community Decisions		Perception of Leader's Power	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log Levels of Jurisdictional Hiearchy	0.853***	0.738***	0.941***	0.802***	0.947***	0.904***	0.907***	0.896***	0.842***	0.841***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude	-0.030	-0.119	0.061	0.069	-0.116	-0.071	-0.162**	-0.100	-0.026	0.039
	(0.718)	(0.429)	(0.491)	(0.628)	(0.105)	(0.565)	(0.012)	(0.309)	(0.727)	(0.735)
Elevation		-0.000		-0.000		-0.000		0.000		0.000
		(0.566)		(0.680)		(0.610)		(0.555)		(0.278)
Terrain Ruggedness		0.000		0.000*		0.000		0.000		-0.000
		(0.116)		(0.090)		(0.170)		(0.808)		(0.257)
River Length		0.007		-0.008		-0.000		-0.007		0.006
		(0.365)		(0.443)		(0.955)		(0.286)		(0.334)
River Density		-0.022		-0.001		0.003		0.032		0.002
		(0.663)		(0.965)		(0.938)		(0.331)		(0.957)
Share Desert		0.293		0.271		-0.509		0.100		0.149
		(0.528)		(0.641)		(0.265)		(0.799)		(0.728)
Average Temperature		-0.004		0.012		0.018		0.012		0.008
		(0.804)		(0.483)		(0.222)		(0.320)		(0.590)
Temperature Range		0.079		0.058		0.048		-0.016		-0.051
		(0.189)		(0.391)		(0.405)		(0.747)		(0.255)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	78	78	71	71	79	79	82	82	82	82
Adjusted R^2	0.223	0.243	0.207	0.271	0.360	0.338	0.391	0.360	0.341	0.286

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of measures of pre-colonial autocracy on a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy), conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

of leaders. In particular, according to column 3, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 4 establishes that the association remains present while also accounting for all the baseline control variables. Likewise, columns 5 and 6 establish that pre-colonial jurisdictional hierarchy is highly significantly associated with the leader's exercise of authority. In particular, according to column 5, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 6 establishes that the association remains present while also accounting for all the baseline control variables. The next two columns establish that pre-colonial jurisdictional hierarchy is highly significantly associated with the degree of lack of community decisions. In particular, according to column 7, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 8 establishes that the association remains present while also accounting for all the baseline control variables. Finally, columns 9 and 10 establish that pre-colonial jurisdictional hierarchy is highly significantly associated with the perception of the leader's power. In particular, according to column 9, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 10 establishes that the association remains present while also accounting for all the baseline control variables.

Overall, Table 7 establish that jurisdictional hierarchy, as reflected by the number of levels of jurisdictional hierarchy, is highly statistically significantly associated with measures of autocratic institutions.

Table 8 to 10 presents the results from OLS regressions analyses of pre-colonial autocratic institutions. The analyses investigate the associations between pre-colonial autocratic institutions and social stratification and inequality on the ethnic group level (within as well as between continents). Autocracy is measured using the same variables as in the previous section, i.e., by the degree of absence of checks on the leader's power, the difficulty of removal of leaders, the leader's exercise of authority, the degree of lack of community decisions, and the perception of the leader's power.

5.3.2 Social Stratification and Autocratic Institutions

Table 8 focus on the association between the number of social strata and the measures of pre-colonial autocratic institutions. Columns 1 and 2 establish that the number of social strata is highly significantly associated with the degree of absence of checks on the leader's power. In particular, according to column 1, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 2 establishes that the association remains present while also accounting for all the baseline control variable. Furthermore, columns 3 and 4 establish that the number of social strata is highly significantly associated with the difficulty of removal of leaders. In particular, according to column 3, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 4 establishes that the association remains present while also accounting for all the baseline

Table 8: Social Strata and Autocratic Institutions

	Degree of Absence of Checks on Leader's Power		Difficulty of Removal of Leaders		Leader's Exercise of Authority		Degree of Lack of Community Decisions		Perception of Leader's Power	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Number of Social Strata	0.321***	0.288***	0.290***	0.218**	0.297***	0.272***	0.293***	0.299***	0.258***	0.289***
	(0.000)	(0.000)	(0.000)	(0.014)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude	-0.059	-0.100	0.054	0.075	-0.138*	-0.063	-0.189***	-0.093	-0.050	0.045
	(0.506)	(0.504)	(0.553)	(0.606)	(0.085)	(0.645)	(0.005)	(0.339)	(0.505)	(0.695)
Elevation		0.000		-0.000		0.000		0.000		0.000*
		(0.885)		(0.915)		(0.872)		(0.147)		(0.057)
Terrain Ruggedness		0.000		0.000		0.000		-0.000		-0.000**
		(0.587)		(0.198)		(0.592)		(0.515)		(0.040)
River Length		0.011		-0.002		0.006		-0.001		0.011
		(0.159)		(0.835)		(0.329)		(0.878)		(0.116)
River Density		-0.011		0.003		0.006		0.036		0.007
		(0.804)		(0.934)		(0.849)		(0.360)		(0.854)
Share Desert		0.547		0.371		-0.337		0.310		0.351
		(0.231)		(0.562)		(0.528)		(0.481)		(0.442)
Average Temperature		-0.002		0.014		0.019		0.014		0.010
		(0.906)		(0.468)		(0.239)		(0.261)		(0.558)
Temperature Range		0.026		0.041		0.009		-0.066		-0.099**
		(0.643)		(0.566)		(0.872)		(0.181)		(0.042)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	78	78	71	71	79	79	82	82	82	82
Adjusted R^2	0.279	0.291	0.141	0.181	0.292	0.240	0.343	0.313	0.278	0.266

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of measures of pre-colonial autocracy on a measure of pre-colonial social stratification, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

control variables. Likewise, columns 5 and 6 establish that the number of social strata is highly significantly associated with the leader's exercise of authority. In particular, according to column 5, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 6 establishes that the association remains present while also accounting for all the baseline control variables. The next two columns establish that the number of social strata is highly significantly associated with the degree of lack of community decisions. In particular, according to column 7, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 8 establishes that the association remains present while also accounting for all the baseline control variables. Finally, columns 9 and 10 establish that the number of social strata is highly significantly associated with the perception of the leader's power. In particular, according to column 9, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 10 establishes that the association remains present while also accounting for all the baseline control variables.

Overall, Table 8 establish that the number of social strata is highly statistically significantly associated with measures of autocratic institutions.

5.3.3 Intensity of Slavery and Autocratic Institutions

Table 9 focus on the association between the intensity of slavery and the measures of pre-colonial autocratic institutions. Columns 1 and 2 establish that the intensity of slavery is highly significantly associated with the degree of absence of checks on the leader's power. In particular, according to column 1, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 2 establishes that the association remains present, although significant only at the 10% significance level, while also accounting for all the baseline control variables. In addition, columns 3 and 4 establish that the intensity of slavery is highly significantly associated with the difficulty of removal of leaders. In particular, according to column 3, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 4 establishes that the association remains present while also accounting for all the baseline control variables. Likewise, columns 5 and 6 establish that the intensity of slavery is highly significantly associated with the leader's exercise of authority. In particular, according to column 5, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 6 establishes that the association remains present while also accounting for all the baseline control variables. The next two columns establish that the intensity of slavery is highly significantly associated with the degree of lack of community decisions. In particular, according to column 7, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 8 establishes that the association remains present while also accounting for all the baseline control variables. Finally, columns 9 and 10 establish that the intensity of slavery is highly significantly associated with the perception of the leader's power. In particular, according

Table 9: Slavery and Autocratic Institutions

	Degree of Absence of Checks on Leader's Power		Difficulty of Removal of Leaders		Leader's Exercise of Authority		Degree of Lack of Community Decisions		Perception of Leader's Power	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intensity of Slavery	0.332***	0.251*	0.588***	0.525***	0.360***	0.297**	0.413***	0.402***	0.322***	0.326***
	(0.006)	(0.058)	(0.000)	(0.001)	(0.001)	(0.019)	(0.000)	(0.001)	(0.003)	(0.007)
Log Absolute Latitude	-0.010	-0.139	0.107	0.041	-0.085	-0.098	-0.140*	-0.107	-0.008	0.033
	(0.919)	(0.469)	(0.161)	(0.724)	(0.328)	(0.562)	(0.069)	(0.335)	(0.922)	(0.797)
Elevation		-0.000		-0.000		-0.000		0.000		0.000
		(0.320)		(0.303)		(0.338)		(0.847)		(0.556)
Terrain Ruggedness		0.000		0.000*		0.000		0.000		-0.000
		(0.186)		(0.073)		(0.183)		(0.795)		(0.411)
River Length		0.013		-0.008		0.006		-0.002		0.011
		(0.202)		(0.521)		(0.462)		(0.703)		(0.224)
River Density		-0.045		-0.004		-0.023		0.012		-0.018
		(0.401)		(0.900)		(0.508)		(0.776)		(0.646)
Share Desert		0.307		0.268		-0.578		0.218		0.253
		(0.518)		(0.671)		(0.265)		(0.601)		(0.583)
Average Temperature		-0.007		0.000		0.013		0.008		0.005
		(0.742)		(0.979)		(0.477)		(0.570)		(0.777)
Temperature Range		0.094		0.082		0.074		-0.026		-0.058
		(0.206)		(0.230)		(0.301)		(0.593)		(0.346)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	77	77	70	70	78	78	81	81	81	81
Adjusted R^2	0.082	0.076	0.254	0.254	0.139	0.100	0.229	0.159	0.167	0.105

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of measures of pre-colonial autocracy on a measure of pre-colonial social stratification, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

to column 9, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Likewise, column 10 establishes that the association remains present while also accounting for all the baseline control variables.

Overall, Table 9 establish that the intensity of slavery is highly statistically significantly associated with measures of autocratic institutions.

5.3.4 Intensity of Property Rights and Autocratic Institutions

Table 10 focus on the association between the intensity of property rights and the measures of pre-colonial autocratic institutions. Columns 1 and 2 establish that the intensity of property rights is highly significantly associated with the degree of absence of checks on the leader's power. In particular, according to column 1, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 2 establishes that the association remains present while also accounting for all the baseline control variables. The next two columns establish that the intensity of property rights is highly significantly associated with the difficulty of removal of leaders. In particular, according to column 3, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. In addition, column 4 establishes that the association remains present while also accounting for all the baseline control variables. Furthermore, columns 5 and 6 establish that the intensity of property rights is highly significantly associated with the leader's exercise of authority. In particular, according to column 5, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Moreover, column 6 establishes that the association remains present while also accounting for all the baseline control variables. Column 7 and 8 establish that the intensity of property rights is highly significantly associated with the degree of lack of community decisions. In particular, according to column 7, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 8 establishes that the association remains present while also accounting for all the baseline control variables. Finally, columns 9 and 10 establish that the intensity of property rights is highly significantly associated with the perception of the leader's power. In particular, according to column 9, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 10 establishes that the association remains present while also accounting for all the baseline control variables.

Overall, Table 10 establish that the intensity of property rights is highly statistically significantly associated with measures of autocratic institutions.

5.4 Predicted Genetic Diversity and Pre-Colonial Autocracy

The next set of estimations investigate the effect of predicted genetic diversity on pre-colonial autocratic institutions (within as well as between continents). The analysis use predicted, rather

Table 10: Property Rights and Autocratic Institutions

	Degree of Absence of Checks on Leader's Power		Difficulty of Removal of Leaders		Leader's Exercise of Authority		Degree of Lack of Community Decisions		Perception of Leader's Power	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Intensity of Property Rights	0.406***	0.422***	0.505***	0.426***	0.500***	0.520***	0.653***	0.657***	0.409***	0.442***
	(0.000)	(0.000)	(0.001)	(0.003)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.001)
Log Absolute Latitude	0.069	0.006	0.083	0.017	0.024	0.154	-0.029	0.137	0.013	0.159
	(0.503)	(0.975)	(0.490)	(0.921)	(0.800)	(0.347)	(0.712)	(0.301)	(0.908)	(0.418)
Elevation		-0.001		-0.001		-0.000		0.000		0.000
		(0.155)		(0.183)		(0.643)		(0.365)		(0.458)
Terrain Ruggedness		0.000		0.000*		0.000		-0.000		-0.000
		(0.353)		(0.097)		(0.572)		(0.530)		(0.284)
River Length		0.014**		0.005		0.013*		0.008		0.019***
		(0.023)		(0.606)		(0.072)		(0.251)		(0.007)
River Density		-0.049		-0.033		-0.041		-0.014		-0.036
		(0.227)		(0.269)		(0.281)		(0.831)		(0.281)
Share Desert		-0.077		-0.040		-1.053		-0.396		-0.297
		(0.891)		(0.967)		(0.117)		(0.449)		(0.658)
Average Temperature		0.005		0.017		0.037		0.032		0.026
		(0.839)		(0.544)		(0.118)		(0.125)		(0.250)
Temperature Range		0.121*		0.134		0.077		-0.014		-0.044
		(0.091)		(0.232)		(0.337)		(0.848)		(0.593)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	62	62	55	55	61	61	63	63	63	63
Adjusted R^2	0.192	0.248	0.180	0.234	0.223	0.265	0.422	0.385	0.191	0.146

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of measures of pre-colonial autocracy on a measure of pre-colonial inequality, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

than observed, diversity due to the small number of observations with both autocracy measures and observed genetic diversity.[4]

Table 11, columns 1 and 2, establish that predicted genetic diversity is highly significantly associated with the degree of absence of checks on the leader's power. In particular, according to column 1, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 2 establishes that the association remains present and significant at the 5% level while also accounting for all the baseline control variables. Furthermore, columns 3 and 4 establish that predicted genetic diversity is highly significantly associated with the difficulty of removal of leaders. In particular, according to column 3, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 4 establishes that the association remains present while also accounting for all the baseline control variables. Likewise, columns 5 and 6 establish that predicted genetic diversity is highly significantly associated with the leader's exercise of authority. In particular, according to column 5, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Furthermore, column 6 establishes that the association remains present while also accounting for all the baseline control variables. The next two columns establish that predicted genetic diversity is highly significantly associated with the degree of lack of community decisions. In particular, according to column 7, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Additionally, column 8 establishes that the association remains present while also accounting for all the baseline control variables. Finally, columns 9 and 10 establish that predicted genetic diversity is highly significantly associated with the perception of the leader's power. In particular, according to column 9, there is a highly significant association while controlling for absolute latitude and soil quality decile fixed effects. Moreover, column 10 establishes that the association remains present while also accounting for all the baseline control variables.

Overall, Table 11 establish that predicted genetic diversity is highly statistically significantly associated with measures of autocratic institutions.

6 The Roots of Autocracy in the Modern Era

The analysis of the modern era consists of investigations of (i) the association between pre-colonial autocracy and modern autocracy, and (ii) the effect of genetic diversity on modern autocracy.

[4]Using an alternative measure of indigenous autocracy on a larger sample, Table A.13 in the appendix establish that observed genetic diversity is associated with pre-colonial autocracy.

Table 11: Predicted Genetic Diversity and Autocratic Institutions

	Degree of Absence of Checks on Leader's Power		Difficulty of Removal of Leaders		Leader's Exercise of Authority		Degree of Lack of Community Decisions		Perception of Leader's Power	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Predicted Genetic Diversity	6.317***	5.042**	7.374***	5.858**	6.048***	5.489***	6.589***	6.023***	5.529***	5.504**
	(0.004)	(0.033)	(0.002)	(0.012)	(0.002)	(0.008)	(0.000)	(0.001)	(0.002)	(0.011)
Log Absolute Latitude	0.035	-0.080	0.143	0.111	-0.053	-0.030	-0.100	-0.044	0.026	0.090
	(0.725)	(0.673)	(0.124)	(0.458)	(0.563)	(0.863)	(0.154)	(0.717)	(0.764)	(0.532)
Elevation		-0.000		-0.000		-0.000		0.000		0.000
		(0.458)		(0.390)		(0.462)		(0.881)		(0.524)
Terrain Ruggedness		0.000*		0.000**		0.000		0.000		-0.000
		(0.073)		(0.025)		(0.103)		(0.548)		(0.544)
River Length		0.013		-0.000		0.008		0.001		0.014*
		(0.125)		(0.963)		(0.233)		(0.884)		(0.057)
River Density		-0.061		-0.031		-0.044		-0.016		-0.043
		(0.221)		(0.453)		(0.192)		(0.687)		(0.193)
Share Desert		0.235		0.157		-0.561		0.072		0.125
		(0.661)		(0.799)		(0.305)		(0.881)		(0.793)
Average Temperature		-0.003		0.014		0.020		0.015		0.011
		(0.900)		(0.503)		(0.297)		(0.326)		(0.526)
Temperature Range		0.091		0.087		0.061		-0.013		-0.047
		(0.191)		(0.198)		(0.338)		(0.795)		(0.381)
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
N	78	78	71	71	79	79	82	82	82	82
Adjusted R^2	0.067	0.111	0.079	0.168	0.121	0.109	0.198	0.146	0.164	0.108

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of measures of pre-colonial autocracy on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

6.1 Baseline Regression Specifications

6.1.1 Analysis of Persistence of Autocracy

The following specification is adopted to examine the association between pre-colonial and modern autocracy:

$$A_{m,i} = \beta_0 + \beta_1 A_{p,i} + \beta_2 X_{m,i} + \beta_3 C_{m,i} + \varepsilon_i, \tag{5}$$

where $A_{m,i}$ is a measure of modern autocracy for country i; $A_{p,i}$ is a measure of pre-colonial autocracy for country i, $X_{m,i}$ is a vector of geographical control variables for country i, $C_{m,i}$ is a vector of continental dummies for ethnicity i, and ε_i is an error term.

6.1.2 Analysis of Genetic Diversity and Modern Autocracy

Analogous to the pre-colonial analysis, the following specification is adopted to examine the effect of genetic diversity on modern autocracy:

$$A_{m,i} = \beta_0 + \beta_1 G_{m,i} + \beta_2 X_{m,i} + \beta_3 C_{m,i} + \varepsilon_i, \tag{6}$$

where $G_{m,i}$ is the predicted level of ancestry-adjusted genetic diversity for country i.

6.2 Results

This section presents the results for the analysis of the persistence of autocracy as well as the impact of genetic diversity on the intensity of modern autocracy on the modern country level level.

6.2.1 Persistence of Autocracy

The next set of estimations investigate the persistence of autocratic institutions from the pre-colonial period to the post-colonial period (within as well as between continents). The analysis averages the main measures of autocracy across ethnic-group homelands within modern country borders.

Table 12 presents the estimates of persistence without continental fixed effects. Column 1 reveals that the pre-colonial degree of absence of checks on leader's power is highly significantly negatively correlated with the modern score on the executive constraints index from the Polity IV dataset, indicating that autocracy is persistent. Furthermore, column 2 establish that this association in robust to ancestry-adjustment of the measure of the degree of absence of checks on leader's power. Likewise, column 3 establish that the degree of absence of checks on leader's power is highly statistically significantly associated with the Polity IV index of autocracy in the modern period, while column 4 establish that this association is robust to ancestry-adjustment of the pre-colonial measure. Focusing on the Old World alone, column 5 and 6 establish that the finding of persistence exist also within the Old World. In particular, column 5 find that the degree of absence

Table 12: Persistence of Autocracy

	Full Sample				Old World	
	Executive Constraints		Autocracy		Executive Constraints	Autocracy
	(1)	(2)	(3)	(4)	(5)	(6)
Degree of Absence of Checks on Leader's Power	-0.183***		0.521***		-0.189***	0.525***
	(0.001)		(0.000)		(0.001)	(0.000)
Degree of Absence of Checks on Leader's Power (Ancestry Adjusted)		-0.191***		0.556***		
		(0.001)		(0.000)		
N	48	48	48	48	36	36
Adjusted R^2	0.149	0.124	0.239	0.210	0.167	0.264

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of measures of contemporary autocracy on measures of pre-colonial autocracy. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

of checks on leader's power is highly significantly negatively correlated with executive constraints in the modern period. Finally, column 6 establish that there is a highly significant positive association between the degree of absence of checks on leader's power and autocracy in the modern era.

Moreover, Table A.14 in the appendix establish that these findings are robust to using indigenous autocracy, rather than the degree of absence of checks on leader's power, as a measure of autocracy across ethnic-group homelands within modern country borders. Likewise, as shown in Table A.15 in the appendix, using a measure of indigenous democracy derived from an alternative aggregation procedure from the ethnic group level to the country level that is based on Giuliano and Nunn (2013), produce similar results on a larger set of countries (see Alesina et al. (2013) for an explanation of the methodology used in the construction of the data).

Table 13 presents the estimates of persistence with continental fixed effects. Column 1 reveals that the pre-colonial degree of absence of checks on leader's power is highly significantly negatively correlated with the modern score on the executive constraints index from the Polity IV dataset, indicating that pre-colonial autocracy has persisted until the modern period within continents of the world. Furthermore, column 2 establish that this association remains significant at the 5% level when the measure of the degree of absence of checks on leader's power is ancestry-adjusted. Likewise, column 3 establish that the degree of absence of checks on leader's power is highly statistically significantly associated with the index of autocracy in the modern period within continents, while column 4 establish that this association is robust to ancestry-adjustment of the pre-colonial measure. Focusing on the Old World alone, column 5 and 6 establish that the finding of persistence exist also within the Old World while accounting for continental fixed effects. In particular, column 5 find that the degree of absence of checks on leader's power is highly significantly negatively correlated with executive constraints in the modern period within continents. Finally, column 6 establish that there is a highly significant positive association between the degree of absence of checks on leader's power and autocracy in the modern era within continents.

Overall, Table 12 and Table 13 establish that the degree of absence of checks on leader's power is highly statistically significantly associated with measures of autocratic institutions in the modern era, both across and within continents of the world.

6.2.2 Contemporary Genetic Diversity and Modern Autocracy

The final set of estimations investigate the reduced-form effect of genetic diversity on the degree of autocracy in the present era, i.e., in 1994 to 2013 (within as well as between continents). The analysis makes use of the predicted genetic diversity of representing modern populations within current country borders from Ashraf and Galor (2013a).

Predicted Genetic Diversity and Constraint on the Executive

To examine the correlation between predicted genetic diversity and the constraint on the executive, unconditionally as well as conditional on a range of control variables, Table 14 presents the results from estimating a number of specifications. Column 1 establish based on data from 145

Table 13: Persistence of Autocracy — Continental FE

	Full Sample				Old World	
	Executive Constraints		Autocracy		Executive Con-straints	Autocracy
	(1)	(2)	(3)	(4)	(5)	(6)
Degree of Absence of Checks on Leader's Power	-0.129**		0.378***		-0.151**	0.410***
	(0.012)		(0.001)		(0.014)	(0.002)
Degree of Absence of Checks on Leader's Power (Ancestry Adjusted)		-0.132**		0.396***		
		(0.023)		(0.002)		
Continental FE	Yes	Yes	Yes	Yes	Yes	Yes
N	48	48	48	48	36	36
Adjusted R^2	0.250	0.236	0.414	0.398	0.125	0.314

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of measures of contemporary autocracy on measures of pre-colonial autocracy, conditional on continental fixed effects. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

countries that the level of predicted genetic diversity within a country in the current period is highly significantly correlated with the constraint on the chief executive as reported in the Polity IV dataset. The estimate indicate that a 1 percentage point increase in predicted genetic diversity is associated with a 4.1 percent decrease in the constraint on the chief executive in 1994–2013. Furthermore, column 2 establish that the estimate is stable and remain highly significant while controlling for absolute latitude. Column 3 establish that the association remains highly significant while including additional controls for soil fertility, roughness, elevation, the average distance to the nearest waterway, and percentage of arable land. Furthermore, column 4 show that the estimate remains highly significant while also controlling for temperature. In addition, column 5 reports that predicted genetic diversity remains partially negatively correlated with constrains on the chief executive in the modern period, when also including continental dummies, meaning that the association is present also within continents. Reassuringly, as reported in column 6, the association remains significant while accounting also for legal origins fixed effects, and as reported in column 7 the association remains significant while including a dummy indicating if a country was colonized during the era of colonization. Overall, Table 14 establish that there is a statistically significant correlation between predicted genetic diversity and the constraint on the executive on the country level in the modern period.

Furthermore, Table A.16 in the appendix establish that the findings in Table 14 are robust to focusing on constraint on the executive in 2013. In addition, Table A.17 in the appendix establish that the findings in Table 14 are robust to accounting for income per capita.

Predicted Genetic Diversity and Constraint in the Executive: Instrumental Variable Analysis

The causal effect of predicted genetic diversity on the constraint on the executive is examined in Table 15, which presents the estimation results from 2SLS regression analyses instrumenting predicted genetic diversity by the migratory distance from East Africa. Column 1 establish that the level of predicted genetic diversity has a highly significant effect on the constraint on the chief executive in 1994–2013. Furthermore, column 2 to 4 establish that the estimate is stable and remain highly significant while gradually including control variables for the absolute latitude, soil fertility, roughness, elevation, average distance to the nearest waterway, percentage of arable land, and temperature. Furthermore, column 5 show that the estimate remains highly significant while also controlling for continental dummies, meaning that the effect is present also within continents. As reported in column 6 and 7, the effect remains stable and significant while accounting also for legal origins fixed effects, and in addition while including a dummy indicating if a country was colonized during the era of colonization. Overall, Table 15 establish that there is a statistically significant correlation between predicted genetic diversity, instrumented by the migratory distance from East Africa, and the constraint on the executive on the country level in the modern period.

Furthermore, Table A.18 in the appendix establish that the findings in Table 16 are robust to focusing on constraint on the executive in 2013. In addition, Table A.19 in the appendix establish that the findings in Table 16 are robust to accounting for income per capita.

Table 14: Predicted Genetic Diversity and Constraint on the Executive (1994–2013)

	Log Constraint on Chief Executive						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	-4.050***	-4.094***	-2.814***	-2.804***	-3.280**	-3.356**	-3.808***
	(0.000)	(0.000)	(0.002)	(0.002)	(0.024)	(0.014)	(0.006)
Log Absolute Latitude		0.094***	0.055*	-0.059	0.022	0.018	0.020
		(0.001)	(0.074)	(0.166)	(0.604)	(0.634)	(0.628)
Soil Fertility			0.500**	0.415*	0.166	0.310	0.365
			(0.040)	(0.073)	(0.426)	(0.128)	(0.118)
Roughness			0.135	0.038	0.341	0.383	0.185
			(0.669)	(0.907)	(0.295)	(0.200)	(0.522)
Elevation			-0.065	-0.103	-0.008	-0.062	-0.077
			(0.493)	(0.282)	(0.940)	(0.551)	(0.396)
Average Distance to Nearest Waterway			-0.170*	-0.248***	-0.161*	-0.070	-0.130
			(0.073)	(0.007)	(0.062)	(0.443)	(0.111)
Percentage of Arable Land			0.002	0.001	0.002	0.002	0.002
			(0.468)	(0.823)	(0.487)	(0.457)	(0.600)
Temperature				-0.020***	-0.007	-0.009	-0.017**
				(0.000)	(0.481)	(0.341)	(0.032)
Colony							0.228**
							(0.023)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	145	145	145	145	145	145	130
Adjusted R^2	0.068	0.108	0.221	0.292	0.405	0.456	0.508

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 15: Predicted Genetic Diversity and Constraint on the Executive (1994–2013) — Instrumental Variable Analysis

	Log Constraint on Chief Executive						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	-6.305***	-6.586***	-5.376***	-5.401***	-7.169***	-6.964***	-7.203***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.002)	(0.002)
Log Absolute Latitude		0.095***	0.057*	-0.057	0.042	0.036	0.029
		(0.001)	(0.061)	(0.163)	(0.326)	(0.326)	(0.456)
Soil Fertility			0.419*	0.333	0.066	0.216	0.331
			(0.092)	(0.161)	(0.772)	(0.324)	(0.153)
Roughness			0.005	-0.093	0.480	0.519*	0.192
			(0.986)	(0.769)	(0.149)	(0.089)	(0.517)
Elevation			-0.036	-0.073	-0.026	-0.086	-0.090
			(0.705)	(0.447)	(0.805)	(0.395)	(0.298)
Average Distance to Nearest Waterway			-0.150	-0.228**	-0.137*	-0.050	-0.115
			(0.107)	(0.012)	(0.097)	(0.565)	(0.130)
Percentage of Arable Land			0.003	0.002	0.003	0.003	0.002
			(0.236)	(0.462)	(0.257)	(0.246)	(0.446)
Temperature				-0.020***	-0.007	-0.011	-0.018***
				(0.000)	(0.465)	(0.271)	(0.010)
Colony							0.201**
							(0.026)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	145	145	145	145	145	145	130
1st Stage F-statistic (K-P)	64.417	63.948	53.813	53.402	62.574	57.369	40.198

This table presents the results of a series of 2SLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, instrumented by the migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Furthermore, it should be noted that Table A.20 in the appendix establish that the findings in Table 14 and 16 are robust to focusing on democracy, rather than autocracy, as the outcome variable.

Predicted Genetic Diversity and Autocracy

To examine the correlation between predicted genetic diversity and autocracy, unconditionally as well as conditional on a range of control variables, Table 16 presents the results from estimating a number of specifications. Column 1 establish that the level of predicted genetic diversity within a country in the current period is highly significantly correlated with the natural logarithm of the autocracy index reported in the Polity IV dataset. The estimate indicate that a 1 percentage point increase in predicted genetic diversity is associated with a 8.8 percent increase in autocracy in 1994–2013. Furthermore, column 2 establish that the estimate is stable and remain highly significant while controlling for absolute latitude. Column 3 establish that the association remains highly significant while including additional controls for soil fertility, roughness, elevation, the average distance to the nearest waterway, and percentage of arable land. Likewise, column 4 show that the estimate remains highly significant while also controlling for temperature. In addition, column 5 reports that predicted genetic diversity remains partially negatively correlated with autocracy in the modern period, when also including continental dummies, meaning that the association is present also within continents. As reported in column 6, the association remains significant while also accounting for legal origins fixed effects, and as reported in column 7 the association remains significant while including a dummy indicating if a country was colonized during the era of colonization. Overall, Table 14 establish that there is a statistically significant correlation between predicted genetic diversity and autocracy on the country level in the modern period.

Predicted Genetic Diversity and Autocracy: Instrumental Variable Analysis

The causal effect of predicted genetic diversity on autocracy is examined in Table 17, which presents the estimation results from 2SLS regression analyses instrumenting predicted genetic diversity by the migratory distance from East Africa. Column 1 establish that the level of predicted genetic diversity has a highly significant effect on autocracy in 1994–2013. Furthermore, column 2 to 4 establish that the estimate is stable and remain highly significant while gradually including control variables for the absolute latitude, soil fertility, roughness, elevation, average distance to the nearest waterway, percentage of arable land, and temperature. Furthermore, column 5 show that the estimate remains highly significant while also controlling for continental dummies, meaning that the effect is present also within continents. As reported in column 6 and 7, the effect remains stable and significant while accounting also for legal origins fixed effects, and in addition while including a dummy indicating if a country was colonized during the era of colonization. Overall, Table 17 establish that there is a statistically significant correlation between predicted genetic diversity and the constraint on the autocracy, instrumented by the migratory distance from East Africa in the modern period.

Table 16: Predicted Genetic Diversity and Autocracy (1994–2013)

	Log Autocracy						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	8.745***	8.814***	6.173***	6.153***	6.844**	6.979**	6.591**
	(0.000)	(0.000)	(0.003)	(0.003)	(0.026)	(0.011)	(0.026)
Log Absolute Latitude		-0.149***	-0.061	0.160**	-0.048	-0.036	-0.045
		(0.004)	(0.270)	(0.042)	(0.555)	(0.624)	(0.565)
Soil Fertility			-1.281***	-1.117**	-0.422	-0.761**	-0.708
			(0.009)	(0.017)	(0.272)	(0.047)	(0.130)
Roughness			-0.244	-0.056	-0.844	-0.875	-0.729
			(0.730)	(0.938)	(0.217)	(0.149)	(0.211)
Elevation			0.306	0.380*	0.188	0.303*	0.310*
			(0.119)	(0.057)	(0.350)	(0.099)	(0.059)
Average Distance to Nearest Waterway			0.203	0.355**	0.154	-0.051	-0.026
			(0.273)	(0.047)	(0.302)	(0.752)	(0.864)
Percentage of Arable Land			-0.001	0.001	-0.003	-0.003	-0.006
			(0.827)	(0.782)	(0.541)	(0.480)	(0.347)
Temperature				0.039***	0.013	0.021	0.029*
				(0.000)	(0.445)	(0.234)	(0.059)
Colony							-0.445**
							(0.023)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	145	145	145	145	145	145	130
Adjusted R^2	0.074	0.095	0.208	0.269	0.440	0.507	0.534

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table 17: Predicted Genetic Diversity and Autocracy (1994–2013) — Instrumental Variable Analysis

	Log Autocracy						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	14.510***	14.958***	12.215***	12.262***	11.767**	11.258**	10.953**
	(0.000)	(0.000)	(0.000)	(0.000)	(0.021)	(0.010)	(0.024)
Log Absolute Latitude		-0.151***	-0.066	0.154**	-0.074	-0.057	-0.057
		(0.004)	(0.216)	(0.029)	(0.337)	(0.391)	(0.414)
Soil Fertility			-1.090**	-0.924*	-0.294	-0.649*	-0.664
			(0.027)	(0.052)	(0.457)	(0.095)	(0.133)
Roughness			0.063	0.254	-1.021	-1.037*	-0.738
			(0.929)	(0.725)	(0.119)	(0.073)	(0.201)
Elevation			0.237	0.310	0.211	0.332*	0.326**
			(0.230)	(0.124)	(0.270)	(0.057)	(0.034)
Average Distance to Nearest Waterway			0.156	0.307*	0.124	-0.074	-0.045
			(0.395)	(0.085)	(0.392)	(0.633)	(0.754)
Percentage of Arable Land			-0.004	-0.002	-0.005	-0.005	-0.006
			(0.423)	(0.714)	(0.349)	(0.316)	(0.249)
Temperature				0.039***	0.013	0.022	0.031**
				(0.000)	(0.422)	(0.178)	(0.024)
Colony							-0.410**
							(0.023)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	145	145	145	145	145	145	130
1st Stage F-statistic (K-P)	64.417	63.948	53.813	53.402	62.574	57.369	40.198

This table presents the results of a series of 2SLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, instrumented by the migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

7 Conclusion

This research explores the origins of the variation in the prevalence and nature of political institutions across globe. It advances the hypothesis and establishes empirically that variation in the inherent diversity across human societies, as determined in the course of the exodus of Homo sapiens from Africa tens of thousands of years ago, shaped the nature of political institutions across regions and societies. The study establishes that, while human diversity has amplified the beneficial effects of institutions, mitigating the adverse effects of non-cohesiveness, its simultaneous contribution to heterogeneity in cognitive and physical traits has fostered the scope for domination, leading to the formation and persistence of autocratic institutions. A larger degree of human diversity within societies diminished cohesiveness and therefore stimulated the emergence of institutions that have mitigated the adverse effects of non-cohesiveness on productivity. However, the dual impact of human diversity on the emergence of inequality and class stratification have diverted the nature of the emerging institutions towards extractive, autocratic ones.

Developing a novel geo-referenced dataset of human genetic diversity among ethnic groups across the globe, the analysis establishes that genetic diversity contributed to the emergence of autocratic pre-colonial institutions. Moreover, the findings suggest that the contribution of diversity to these pre-colonial autocratic institutions has plausibly operated through its dual effect on the formation of institutions and class stratification. Furthermore, reflecting the persistence of institutional, cultural, and genetic characteristics, the spatial distribution of genetic diversity across the globe has contributed to the contemporary variation in the degree of autocracy across countries.

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A Definitions of main variables

This section describes construction of the main variables.

Number of Levels of Jurisdictional Hierarchy

This variable is based on variable 33 in the Ethnographic Atlas, denoted "Jurisdictional Hierarchy Beyond Local Community". The Number of Levels of Jurisdictional Hierarchy variable takes on the value 1 when the original variable indicates "No levels (no political authority beyond community)", 2 when it indicates "No levels (no political authority beyond community)", 3 when it indicates "One levels (e.g., petty chiefdoms)", 4 when it indicates "Two levels (e.g., larger chiefdoms)", 5 when it indicates "Three levels (e.g., states)", and 5 when it indicates "Four levels (e.g., large states)".

Genetic Diversity

The data on observed genetic diversity on the ethnic group level comes from the newly assembled data on observed genetic diversity in 232 worldwide (predominantly indigenous) ethnic groups from Pemberton et al. (2013).

The data on predicted genetic diversity on the modern country level comes from (Ashraf and Galor, 2013b).

Social Stratification

This variable is based on variable 66 in the Ethnographic Atlas, denoted "Class Stratification". The Social Stratification variable takes on the value 0 when the original variable indicates "Absence among freemen)", 1 when it indicates "Wealth distinctions" or "Elite (based on control of land or other resources", and 2 when it indicates "Dual (hereditary aristocracy)" or "Complex (social classes)".

Intensity of Slavery

This variable is based on variable 66 in the Ethnographic Atlas, denoted "Type of Slavery". The Intensity of Slavery variable takes on the value 0 when the original variable indicates "Absence or near absence", 1 when it indicates "Incipient or nonhereditary" or "Reported but type not identified", and 2 when it indicates "Hereditary and socially significant".

Intensity of Property Rights

This variable is based on variable 74, denoted "Inheritance Rule for Real Property (Land)" and variable 76 in the Ethnographic Atlas, denoted "Inheritance Rule for Movable Property". The Intensity of Property Rights variable takes on the value 0 when both of the original variables indicate "Absence of individual property rights or rules", 1 when one of the two variables indicates existence of inheritance, and 2 when both of the two variables indicates existence of inheritance.

Executive Constraints

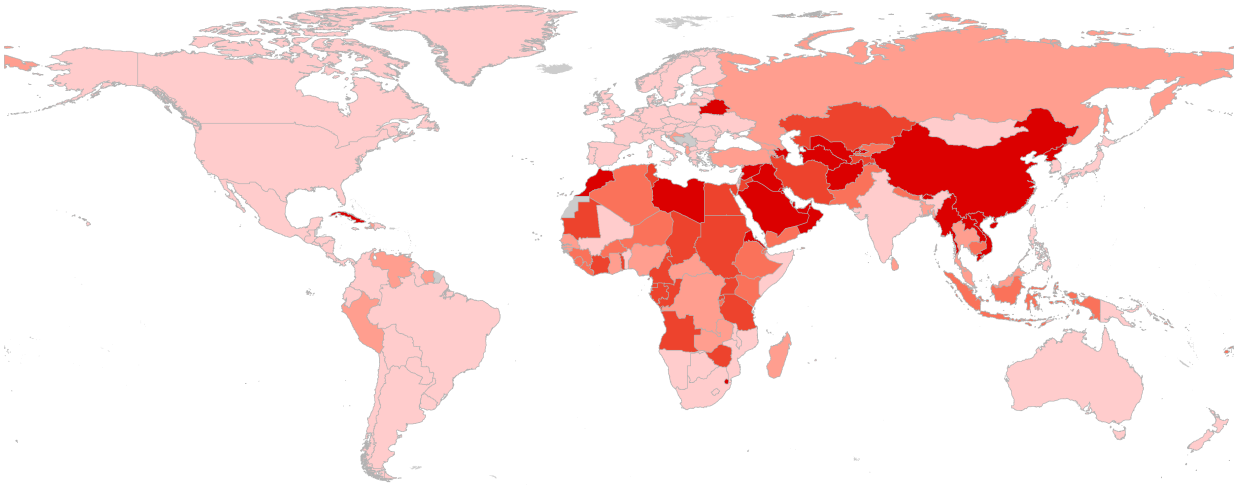
This variable come from the Polity IV Project dataset (Marshall et al., 2014). The variable takes on an integer values from 1 to 7, indicating increasing extends of "institutionalized constraints on the decision- making powers of chief executives, whether individuals or collectivities" (Marshall et al., 2014).

Autocracy

This variable come from the Polity IV Project dataset (Marshall et al., 2014). The variable takes on the value 0 or an integer value from 1 to 10, indicating increasing extends of "the presence of a distinctive set of political characteristics" characterizing autocracy. According to the definition, in their mature form, "autocracies sharply restrict or suppress competitive political participation" (Marshall et al., 2014).

B Additional Figures

Panel A: Intensity of Autocracy



Panel B: Income per Capita

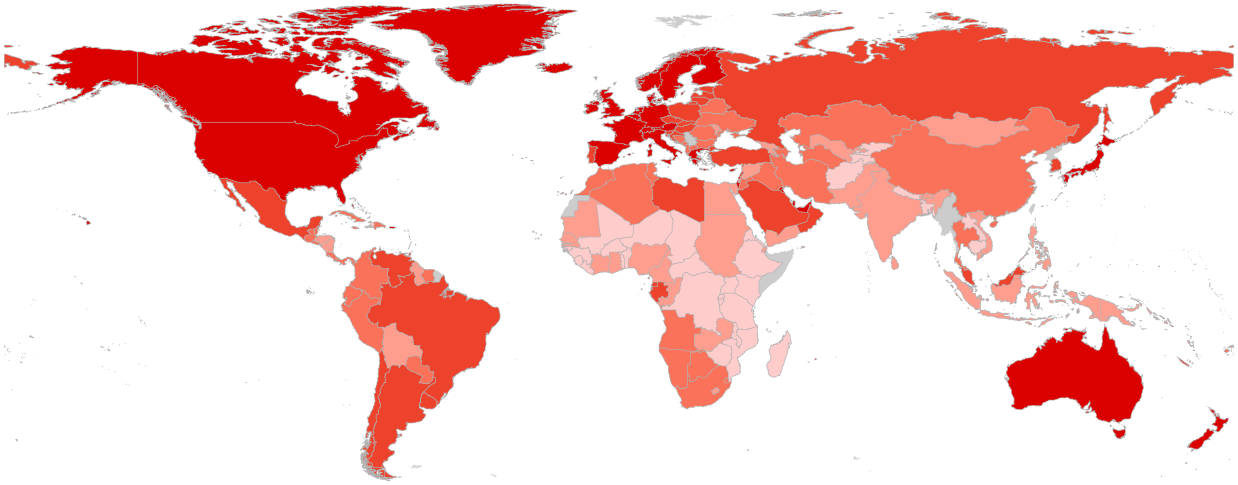


Figure A.1: The association between political institutions and economic development. Panel A: Intensity of autocracy across the globe (1994–2013). Panel B: Income per capita across the globe (1994-2011).

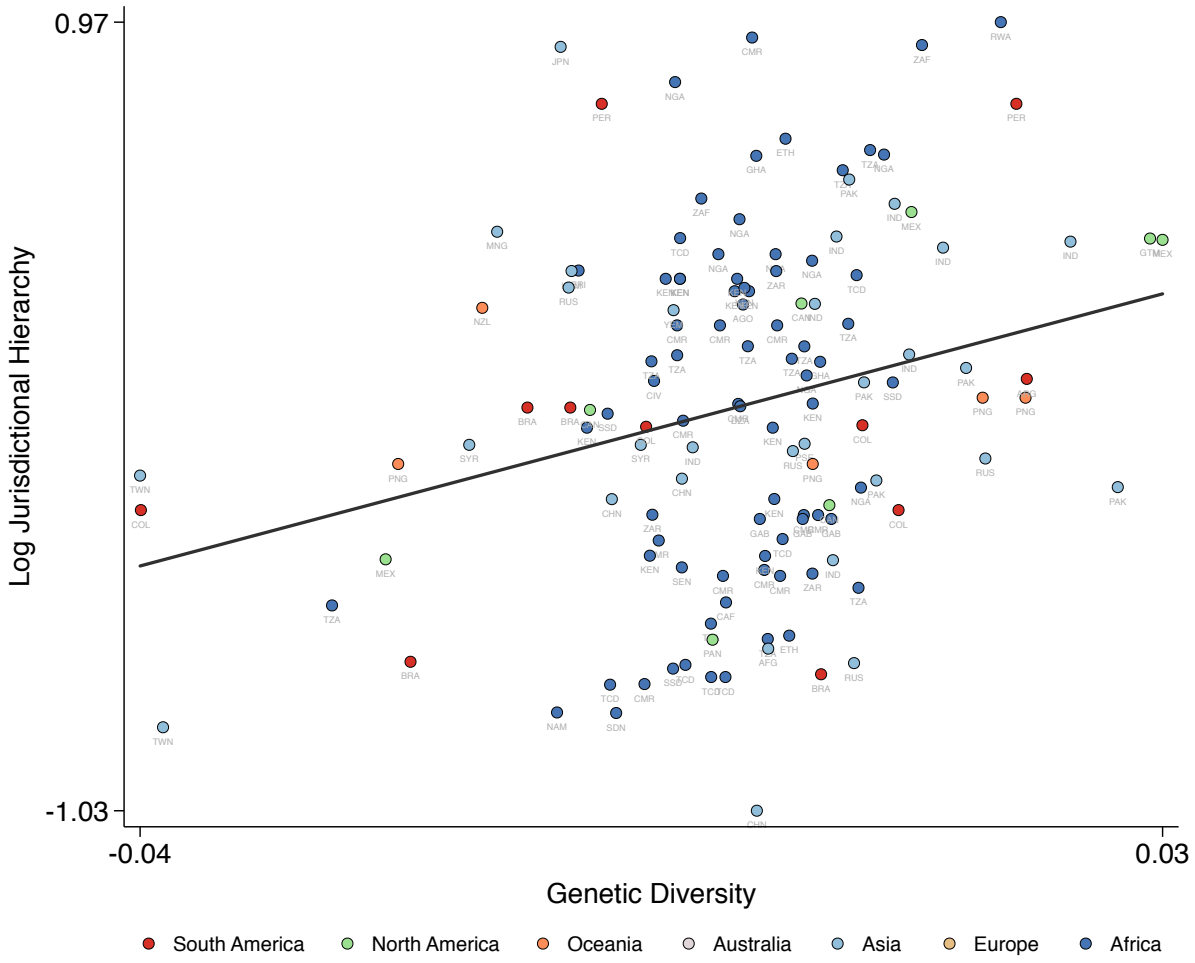


Figure A.2: The conditional association between genetic diversity and jurisdictional hierarchy, corresponding to column 6 of Table 1.

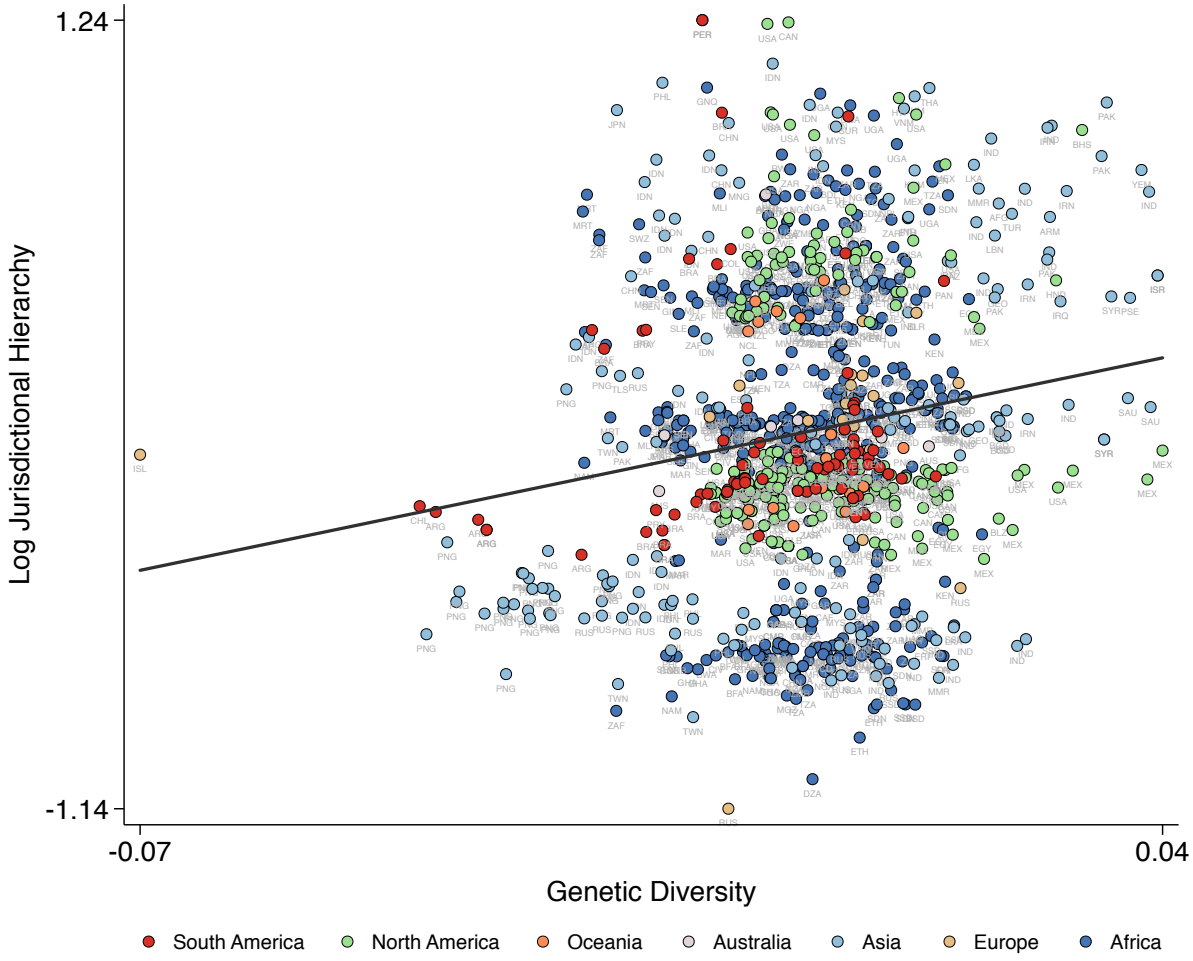


Figure A.3: The conditional association between predicted genetic diversity and jurisdictional hierarchy, corresponding to column 6 of Table 3.

C Additional Tables

Table A.1: Diversity and Jurisdictional Hierarchy — Accounting for Ecological Diversity

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Genetic Diversity	2.482***	3.993***	4.113***	7.766***	9.327***	9.370***
	(0.010)	(0.000)	(0.000)	(0.001)	(0.004)	(0.002)
Any Diversity (FAO)	0.506***	0.635***	0.636**	0.215	0.128	0.208
	(0.000)	(0.002)	(0.010)	(0.230)	(0.628)	(0.466)
Log Absolute Latitude		0.156***	0.155***	0.093**	0.081*	0.097**
		(0.000)	(0.000)	(0.011)	(0.066)	(0.027)
Elevation					-0.000	0.000
					(0.833)	(0.465)
Terrain Ruggedness					0.000	0.000
					(0.733)	(0.614)
River Length					0.001***	0.003***
					(0.001)	(0.000)
River Density					0.016	0.025
					(0.596)	(0.287)
Share Desert					-0.164	-0.508**
					(0.594)	(0.048)
Average Temperature						0.027**
						(0.016)
Temperature Range						0.019
						(0.460)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	131	131	131	131	131	131
Adjusted R^2	0.043	0.156	0.184	0.283	0.268	0.312

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, conditional on a range of control variables including a measure of ecological diversity, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.2: Observed Diversity and Jurisdictional Hierarchy — Accounting for SD of Soil Suitability

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Genetic Diversity	2.623***	4.282***	4.181***	6.313**	7.673**	7.655***
	(0.006)	(0.000)	(0.000)	(0.010)	(0.011)	(0.010)
Log Absolute Latitude		0.158***	0.143***	0.084**	0.053	0.082*
		(0.000)	(0.000)	(0.031)	(0.237)	(0.097)
Elevation					-0.000	0.000
					(0.403)	(0.608)
Terrain Ruggedness					0.000	0.000
					(0.621)	(0.609)
River Length					0.001	0.002***
					(0.250)	(0.005)
River Density					-0.006	0.005
					(0.862)	(0.872)
Share Desert					-0.396	-0.751***
					(0.177)	(0.002)
Average Temperature						0.030***
						(0.009)
Temperature Range						-0.001
						(0.985)
Soil Quality (Climatic) (Standard Deviation)	Yes	Yes	Yes	Yes	Yes	Yes
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	131	131	131	131	131	131
Adjusted R^2	0.095	0.205	0.230	0.321	0.311	0.359

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, conditional on a range of control variables including decile of standard deviation of soil suitability fixed effects, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.3: Observed Genetic Diversity and Jurisdictional Hierarchy — Accounting for Major Crop Type

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Genetic Diversity	2.190**	3.631***	3.734***	7.543***	8.834***	9.723***
	(0.026)	(0.001)	(0.000)	(0.003)	(0.008)	(0.002)
Tree Fruits	-0.117	-0.171	0.004	0.265	0.253	0.166
	(0.721)	(0.624)	(0.991)	(0.440)	(0.483)	(0.645)
Roots or Tubers	-0.016	-0.028	0.128	0.115	0.092	-0.041
	(0.924)	(0.873)	(0.455)	(0.586)	(0.727)	(0.866)
Cereal Grains	0.301**	0.181	0.316**	0.139	0.133	-0.026
	(0.043)	(0.300)	(0.047)	(0.459)	(0.528)	(0.893)
Log Absolute Latitude		0.125***	0.116***	0.079*	0.069	0.103**
		(0.000)	(0.003)	(0.084)	(0.153)	(0.044)
Elevation					-0.000	0.000
					(0.879)	(0.458)
Terrain Ruggedness					0.000	0.000
					(0.827)	(0.617)
River Length					0.001***	0.003***
					(0.002)	(0.000)
River Density					0.015	0.029
					(0.635)	(0.237)
Share Desert					-0.167	-0.509*
					(0.599)	(0.063)
Average Temperature						0.028**
						(0.016)
Temperature Range						0.015
						(0.559)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	131	131	131	131	131	131
Adjusted R^2	0.092	0.154	0.190	0.274	0.260	0.300

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, conditional on a range of control variables including major crop type fixed effects, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.4: Observed Genetic Diversity and Jurisdictional Hierarchy — Accounting for Scale

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Genetic Diversity	2.899***	3.845***	3.819***	3.778*	5.399*	5.689**
	(0.000)	(0.000)	(0.000)	(0.087)	(0.063)	(0.049)
Area	0.000	0.000	0.000**	0.000**	0.005**	0.004**
	(0.114)	(0.168)	(0.025)	(0.011)	(0.011)	(0.017)
Local Community: Fewer than 50	0.020	0.094	-0.002	-0.013	0.051	0.082
	(0.899)	(0.567)	(0.989)	(0.929)	(0.714)	(0.558)
Local Community: 50-99	-0.121	-0.114	0.001	0.039	0.039	0.077
	(0.396)	(0.390)	(0.993)	(0.779)	(0.812)	(0.628)
Local Community: 100-199	0.087	0.141	0.133	0.122	0.050	0.042
	(0.467)	(0.237)	(0.304)	(0.418)	(0.731)	(0.784)
Local Community: 200-399	-0.143	-0.133	-0.108	-0.114	-0.230	-0.237
	(0.419)	(0.392)	(0.508)	(0.560)	(0.251)	(0.203)
Local Community: 400-1,000	0.218*	0.163	0.233*	0.195	0.223	0.233
	(0.070)	(0.170)	(0.079)	(0.153)	(0.156)	(0.130)
Local Community: 1,000 w/o towns over 5,000	-0.559***	-0.557***	-0.576***	-0.572***	-0.645***	-0.695***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Local Community: Towns of 5,000-50,000	0.682***	0.661**	0.628**	0.857***	0.897***	0.922***
	(0.005)	(0.011)	(0.015)	(0.000)	(0.000)	(0.000)
Local Community: Cities of 50,000 or more	0.887***	0.825***	0.826***	0.760***	0.814***	0.779***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.082**	0.054	0.061	0.082*	0.071
		(0.017)	(0.152)	(0.159)	(0.056)	(0.125)
Elevation					0.000	-0.000
					(0.733)	(0.942)
Terrain Ruggedness					0.000	0.000*
					(0.206)	(0.085)
River Length					-0.012**	-0.010**
					(0.017)	(0.031)
River Density					0.065***	0.067***
					(0.008)	(0.007)
Share Desert					-0.076	-0.254
					(0.746)	(0.303)
Average Temperature						0.006
						(0.563)
Temperature Range						0.033
						(0.141)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	131	131	131	131	131	131
Adjusted R^2	0.387	0.411	0.427	0.503	0.522	0.526

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, conditional on a range of control variables including ethnicity-homeland area and mean size of local communities fixed effects, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.5: Genetic Diversity and Jurisdictional Hierarchy — Accounting for Year in Ethnographic Atlas

	Log Levels of Jurisdictional Hierarchy			
	(1)	(2)	(3)	(4)
Genetic Diversity	1.940*	7.620***	7.222**	7.328**
	(0.078)	(0.004)	(0.024)	(0.020)
Year in Ethnographic Atlas	-0.001	-0.000	-0.001	-0.002
	(0.339)	(0.893)	(0.560)	(0.191)
Log Absolute Latitude		-0.009	0.054	0.095***
		(0.746)	(0.103)	(0.001)
Elevation			0.000***	0.000***
			(0.007)	(0.000)
Terrain Ruggedness			-0.000	-0.000
			(0.388)	(0.112)
River Length			0.000	0.002***
			(0.289)	(0.005)
River Density			-0.057	-0.065
			(0.494)	(0.386)
Share desert			0.295*	0.337
			(0.090)	(0.141)
Average Temperature				0.023**
				(0.042)
Temperature Range				-0.040
				(0.147)
Soil Quality (Climatic)	No	Yes	Yes	Yes
Continental FE	No	Yes	Yes	Yes
N	94	94	94	94
Adjusted R^2	0.029	0.085	0.150	0.202

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, conditional on a range of control variables including the approximate year of description as reported in the Ethnographic Atlas, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.6: Genetic Diversity and Jurisdictional Hierarchy — Omitting Africa

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Genetic Diversity	8.694***	8.581***	10.082***	10.082***	8.511***	9.199***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.002)	(0.000)
Log Absolute Latitude		0.013	-0.173	-0.173	-0.227	0.088
		(0.905)	(0.182)	(0.182)	(0.101)	(0.753)
Elevation					0.000*	0.000
					(0.089)	(0.196)
Terrain Ruggedness					-0.000**	-0.000
					(0.040)	(0.326)
River Length					0.002**	0.003***
					(0.013)	(0.000)
River Density					-0.008	0.017
					(0.752)	(0.528)
Share desert					0.247	-0.424
					(0.622)	(0.439)
Average Temperature						0.033
						(0.131)
Temperature Range						0.020
						(0.668)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
N	54	54	54	54	54	54
Adjusted R^2	0.356	0.343	0.330	0.330	0.385	0.432

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on observed genetic diversity, conditional on a range of control variables and omitting observations from Africa, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Given the low number of observations when omitting Africa and focusing on the sample of observed genetic diversity, this robustness table is generated without inclusion of continental dummies. Table A.12 establish that the results are robust to accounting for continental fixed effects when omitting Africa in the larger sample of predicted genetic diversity.

Table A.7: Predicted Diversity and Jurisdictional Hierarchy — Accounting for Ecological Diversity

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Predicted Genetic Diversity	5.068***	5.705***	5.773***	5.043***	5.344***	5.601***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Any Diversity (FAO)	0.147***	0.135***	0.119***	0.186***	0.172***	0.178***
	(0.001)	(0.002)	(0.009)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.066***	0.078***	0.105***	0.104***	0.127***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Elevation					0.000	0.000**
					(0.813)	(0.042)
Terrain Ruggedness					-0.000	-0.000**
					(0.158)	(0.018)
River Length					0.002**	0.003***
					(0.010)	(0.006)
River Density					-0.002	-0.002
					(0.275)	(0.345)
Share Desert					0.017	0.014
					(0.783)	(0.849)
Average Temperature						0.008**
						(0.043)
Temperature Range						-0.020**
						(0.016)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	1,076	1,076	1,076	1,076	1,076	1,076
Adjusted R^2	0.204	0.222	0.228	0.299	0.305	0.308

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables including a measure of ecological diversity, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.8: Observed Diversity and Jurisdictional Hierarchy — Accounting for SD of Soil Suitability

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Predicted Genetic Diversity	5.062***	5.720***	5.719***	4.093***	4.694***	4.840***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.070***	0.069***	0.097***	0.097***	0.123***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Elevation					-0.000	0.000**
					(0.851)	(0.032)
Terrain Ruggedness					-0.000	-0.000**
					(0.185)	(0.012)
River Length					0.002**	0.003***
					(0.014)	(0.008)
River Density					-0.001	-0.001
					(0.528)	(0.644)
Share Desert					-0.005	-0.003
					(0.941)	(0.966)
Average Temperature						0.009**
						(0.026)
Temperature Range						-0.026***
						(0.002)
Soil Quality (Climatic) (Standard Deviation)	Yes	Yes	Yes	Yes	Yes	Yes
Soil Quality (Climatic)	Yes	Yes	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	1,076	1,076	1,076	1,076	1,076	1,076
Adjusted R^2	0.214	0.232	0.237	0.309	0.313	0.319

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables including decile of standard deviation of soil suitability fixed effects, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.9: Predicted Genetic Diversity and Jurisdictional Hierarchy — Accounting for Major Crop Type

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Predicted Genetic Diversity	3.846***	4.833***	4.910***	5.923***	6.125***	5.903***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Non Food Crops only	0.694***	0.743***	0.705***	0.650***	0.647***	0.638***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Vegetables	0.302**	0.359***	0.385***	0.220*	0.237*	0.269**
	(0.048)	(0.001)	(0.001)	(0.071)	(0.080)	(0.042)
Tree Fruits	0.198***	0.390***	0.394***	0.264***	0.262***	0.252***
	(0.004)	(0.000)	(0.000)	(0.001)	(0.001)	(0.002)
Roots or Tubers	0.186***	0.361***	0.361***	0.249***	0.249***	0.245***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Cereal Grains	0.345***	0.405***	0.396***	0.301***	0.300***	0.315***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.112***	0.117***	0.108***	0.105***	0.111***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Elevation					0.000	0.000
					(0.804)	(0.249)
Terrain Ruggedness					-0.000	-0.000*
					(0.315)	(0.082)
River Length					0.003**	0.003**
					(0.014)	(0.017)
River Density					-0.003	-0.003
					(0.181)	(0.234)
Share Desert					-0.040	0.044
					(0.500)	(0.536)
Average Temperature						-0.000
						(0.946)
Temperature Range						-0.021**
						(0.012)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	1,076	1,076	1,076	1,076	1,076	1,076
Adjusted R^2	0.254	0.291	0.292	0.317	0.323	0.326

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables including major crop type fixed effects, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.10: Predicted Genetic Diversity and Jurisdictional Hierarchy — Accounting for Scale

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Predicted Genetic Diversity	4.215***	4.493***	4.566***	3.531***	3.061***	3.071***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.003)	(0.003)
Area	0.001	0.001	0.001	0.001	0.003***	0.003***
	(0.131)	(0.141)	(0.143)	(0.137)	(0.006)	(0.007)
Local Community: Fewer than 50	-0.180***	-0.183***	-0.171***	-0.145***	-0.161***	-0.162***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Local Community: 50-99	-0.127***	-0.132***	-0.131***	-0.125***	-0.128***	-0.130***
	(0.002)	(0.001)	(0.002)	(0.002)	(0.001)	(0.001)
Local Community: 100-199	-0.007	-0.004	0.000	0.011	0.003	-0.002
	(0.866)	(0.927)	(1.000)	(0.808)	(0.949)	(0.958)
Local Community: 200-399	-0.052	-0.054	-0.054	-0.040	-0.055	-0.054
	(0.328)	(0.305)	(0.302)	(0.436)	(0.290)	(0.304)
Local Community: 400-1,000	0.069	0.064	0.052	0.047	0.043	0.041
	(0.228)	(0.253)	(0.361)	(0.420)	(0.473)	(0.499)
Local Community: 1,000 w/o towns over 5,000	-0.110	-0.117	-0.107	-0.113	-0.125	-0.122
	(0.395)	(0.371)	(0.404)	(0.389)	(0.345)	(0.352)
Local Community: Towns of 5,000-50,000	0.597***	0.589***	0.591***	0.522***	0.519***	0.517***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Local Community: Cities of 50,000 or more	0.837***	0.813***	0.805***	0.769***	0.772***	0.770***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.029**	0.033**	0.071***	0.074***	0.085***
		(0.020)	(0.012)	(0.000)	(0.000)	(0.000)
Elevation					0.000*	0.000**
					(0.052)	(0.011)
Terrain Ruggedness					-0.000	-0.000**
					(0.189)	(0.047)
River Length					-0.005**	-0.005**
					(0.030)	(0.038)
River Density					0.002	0.002
					(0.253)	(0.216)
Share Desert					0.019	0.064
					(0.732)	(0.346)
Average Temperature						0.002
						(0.552)
Temperature Range						-0.016**
						(0.031)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	1,076	1,076	1,076	1,076	1,076	1,076
Adjusted R^2	0.403	0.405	0.406	0.425	0.429	0.430

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables including ethnicity-homeland area and mean size of local communities fixed effects, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.11: Predicted Genetic Diversity and Jurisdictional Hierarchy — Accounting for Year in Ethnographic Atlas

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Predicted Genetic Diversity	5.223***	5.810***	5.879***	5.300***	5.422***	5.644***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Year in Ethnographic Atlas	-0.000***	-0.000**	-0.000**	-0.000**	-0.000**	-0.000**
	(0.008)	(0.024)	(0.027)	(0.030)	(0.028)	(0.019)
Log Absolute Latitude		0.064***	0.075***	0.107***	0.105***	0.127***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Elevation					0.000	0.000**
					(0.455)	(0.020)
Terrain Ruggedness					-0.000*	-0.000***
					(0.097)	(0.010)
River Length					0.003***	0.003***
					(0.009)	(0.006)
River Density					-0.003	-0.002
					(0.210)	(0.269)
Share desert					0.005	0.009
					(0.941)	(0.896)
Average Temperature						0.007*
						(0.069)
Temperature Range						-0.020**
						(0.015)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	1075	1075	1075	1075	1075	1075
Adjusted R^2	0.204	0.220	0.228	0.295	0.302	0.305

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables including the approximate year of description as reported in the Ethnographic Atlas, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.12: Predicted Genetic Diversity and Jurisdictional Hierarchy — Omitting Africa

	Log Number of Levels of Jurisdictional Hierarchy					
	(1)	(2)	(3)	(4)	(5)	(6)
Predicted Genetic Diversity	6.525***	6.520***	6.538***	6.524***	7.791***	7.791***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Log Absolute Latitude		0.001	0.024	0.104***	0.099***	0.156***
		(0.958)	(0.277)	(0.002)	(0.003)	(0.001)
Elevation					0.000	0.000*
					(0.864)	(0.064)
Terrain Ruggedness					-0.000***	-0.000***
					(0.007)	(0.000)
River Length					0.002**	0.003***
					(0.014)	(0.007)
River Density					-0.003	-0.003
					(0.116)	(0.137)
Share desert					-0.037	-0.065
					(0.616)	(0.439)
Average Temperature						0.012**
						(0.018)
Temperature Range						-0.022**
						(0.045)
Soil Quality (Climatic)	No	No	Yes	Yes	Yes	Yes
Continental FE	No	No	No	Yes	Yes	Yes
N	590	590	590	590	590	590
Adjusted R^2	0.219	0.217	0.256	0.331	0.353	0.361

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial jurisdictional hierarchy (the natural logarithm of the number of levels of jurisdictional hierarchy) on predicted genetic diversity, based on the migratory distance from East Africa to the interior centroid of the homeland of the ethnicity, conditional on a range of control variables and omitting observations from Africa, at the ethnic-group level. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.13: Observed Genetic Diversity and Indigenous Autocracy

	Log Indigenous Autocracy			
	(1)	(2)	(3)	(4)
Genetic Diversity	1.866*	7.627***	7.338**	7.591**
	(0.084)	(0.003)	(0.021)	(0.016)
Log Absolute Latitude		-0.012	0.055*	0.093***
		(0.760)	(0.098)	(0.001)
Elevation			0.000***	0.000***
			(0.008)	(0.001)
Terrain Ruggedness			-0.000	-0.000
			(0.400)	(0.147)
River Length			0.000	0.001**
			(0.324)	(0.015)
River Density			-0.059	-0.067
			(0.470)	(0.364)
Share Desert			0.273	0.298
			(0.110)	(0.188)
Average Temperature				0.019*
				(0.083)
Temperature Range				-0.038
				(0.169)
Soil Quality (Climatic)	No	Yes	Yes	Yes
Continental FE	No	Yes	Yes	Yes
N	94	94	94	94
Adjusted R^2	0.032	0.097	0.159	0.197

This table presents the results of a series of OLS regression analyses, on the ethnic-group level, of a measure of pre-colonial autocracy on observed genetic diversity, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.14: Persistence of Institutions — Indigenous Autocracy

	Full Sample				Old World	
	Executive Constraints		Autocracy		Executive Constraints	Autocracy
	(1)	(2)	(3)	(4)	(5)	(6)
Log Indigenous Autocracy	-0.237***		0.466***		-0.295***	0.575***
	(0.001)		(0.004)		(0.000)	(0.001)
Log Indigenous Autocracy (Ancestry Adjusted)		-0.377***		0.764***		
		(0.000)		(0.000)		
N	95	95	95	95	78	78
Adjusted R^2	0.054	0.128	0.038	0.101	0.088	0.066

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of measures of contemporary autocracy on a measure of pre-colonial democracy. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.15: Persistence of Institutions — Alternative Aggregation Method

	Executive Constraints		Autocracy		Executive Constraints	Autocracy
	(1)	(2)	(3)	(4)	(5)	(6)
Indigenous Democracy	0.248***		-0.466***		0.302***	-0.548***
	(0.002)		(0.006)		(0.001)	(0.003)
Indigenous Democracy (Ancestry Adjusted)		0.313***		-0.565***		
		(0.001)		(0.004)		
Constant	1.594***	1.577***	0.938***	0.962***	1.544***	1.050***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
N	144	144	144	144	124	124
Adjusted R^2	0.056	0.069	0.045	0.050	0.082	0.063

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of measures of contemporary autocracy on a measure of pre-colonial democracy, conditional on continental fixed effects. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

This table shows the robustness of the findings in Table 12 and A.14 to using a measure of indigenous democracy (rather than indigenous autocracy) that is derived from an alternative aggregation procedure from the ethnic group level to the country level, based on Giuliano and Nunn (2013) (see Alesina et al. (2013) for an explanation of the methodology used in the construction of the data). This procedure generates a larger sample of countries with aggregated institutional information.

Table A.16: Predicted Diversity and Constraint on the Executive (2013)

	Log Constraint on Chief Executive						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	-3.397***	-3.449***	-2.423**	-2.495***	-3.081**	-3.159**	-3.486**
	(0.000)	(0.000)	(0.012)	(0.009)	(0.049)	(0.034)	(0.017)
Log Absolute Latitude		0.082**	0.051	-0.044	0.018	0.016	0.013
		(0.011)	(0.128)	(0.373)	(0.729)	(0.740)	(0.793)
Soil Fertility			0.319	0.244	0.067	0.205	0.308
			(0.162)	(0.262)	(0.730)	(0.286)	(0.221)
Roughness			0.167	0.059	0.355	0.441	0.183
			(0.589)	(0.856)	(0.296)	(0.163)	(0.555)
Elevation			0.039	0.013	0.109	0.048	0.013
			(0.641)	(0.874)	(0.304)	(0.617)	(0.877)
Average Distance to Nearest Waterway			-0.197**	-0.265***	-0.171*	-0.080	-0.166**
			(0.042)	(0.005)	(0.052)	(0.384)	(0.041)
Percentage of Arable Land			0.003	0.002	0.003	0.003	0.001
			(0.206)	(0.419)	(0.241)	(0.220)	(0.641)
Temperature				-0.017***	-0.003	-0.005	-0.012
				(0.003)	(0.742)	(0.607)	(0.160)
Colony							0.181
							(0.123)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	140	140	140	140	140	140	126
Adjusted R^2	0.050	0.082	0.175	0.228	0.330	0.390	0.423

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.17: Predicted Diversity and Constraint on the Executive — Accounting for GDP

	Log Constraint on Chief Executive						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	-3.348***	-3.460***	-2.467***	-2.629***	-3.677***	-3.440***	-3.779***
	(0.000)	(0.000)	(0.007)	(0.007)	(0.008)	(0.009)	(0.007)
Log Income per Capita	0.112***	0.099***	0.103***	0.060	0.060	0.013	-0.010
	(0.000)	(0.006)	(0.005)	(0.265)	(0.209)	(0.808)	(0.848)
Log Absolute Latitude		0.034	-0.012	-0.066	0.022	0.018	0.021
		(0.361)	(0.751)	(0.131)	(0.615)	(0.635)	(0.603)
Soil Fertility			0.560**	0.471**	0.196	0.312	0.367
			(0.017)	(0.037)	(0.346)	(0.129)	(0.111)
Roughness			-0.067	-0.049	0.355	0.388	0.191
			(0.828)	(0.879)	(0.273)	(0.197)	(0.509)
Elevation			0.032	-0.036	0.024	-0.054	-0.083
			(0.734)	(0.741)	(0.825)	(0.608)	(0.360)
Average Distance to Nearest Waterway			-0.139	-0.209**	-0.129	-0.067	-0.135*
			(0.133)	(0.038)	(0.148)	(0.474)	(0.096)
Percentage of Arable Land			0.003	0.001	0.003	0.002	0.001
			(0.261)	(0.575)	(0.276)	(0.411)	(0.648)
Temperature				-0.014*	-0.004	-0.009	-0.017**
				(0.084)	(0.715)	(0.432)	(0.048)
Colony							0.235**
							(0.023)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	144	144	144	144	144	144	129
Adjusted R^2	0.171	0.170	0.278	0.303	0.411	0.448	0.500

This table presents the results of a series of 2SLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, instrumented by the migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

This table establish that the findings in Table 14 are robust to accounting for mid-period income per capita (i.e., income per capita in year 2000).

Table A.18: Predicted Genetic Diversity and Autocracy (2013)

	Log Autocracy						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	7.878***	7.938***	5.845***	5.983***	6.795*	6.992**	6.963**
	(0.000)	(0.000)	(0.009)	(0.008)	(0.059)	(0.029)	(0.034)
Log Absolute Latitude		-0.094	-0.023	0.158*	0.013	0.023	0.031
		(0.121)	(0.730)	(0.094)	(0.900)	(0.804)	(0.751)
Soil Fertility			-0.823*	-0.681	-0.254	-0.619	-0.507
			(0.098)	(0.157)	(0.533)	(0.123)	(0.336)
Roughness			-0.433	-0.226	-0.834	-0.931	-0.496
			(0.521)	(0.750)	(0.246)	(0.146)	(0.456)
Elevation			0.098	0.147	-0.064	0.072	0.094
			(0.613)	(0.457)	(0.775)	(0.716)	(0.614)
Average Distance to Nearest Waterway			0.249	0.378**	0.166	-0.054	0.050
			(0.178)	(0.035)	(0.301)	(0.759)	(0.751)
Percentage of Arable Land			-0.005	-0.003	-0.005	-0.005	-0.006
			(0.339)	(0.576)	(0.361)	(0.324)	(0.369)
Temperature				0.032***	0.002	0.010	0.020
				(0.005)	(0.923)	(0.585)	(0.246)
Colony							-0.421*
							(0.085)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	140	140	140	140	140	140	126
Adjusted R^2	0.062	0.067	0.133	0.175	0.284	0.367	0.378

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.19: Predicted Genetic Diversity and Autocracy — Accounting for GDP

	Log Autocracy						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	7.605***	7.725***	5.671***	5.996***	7.595**	6.897**	6.300**
	(0.000)	(0.000)	(0.006)	(0.006)	(0.012)	(0.012)	(0.039)
Log Income Per Capita	-0.201***	-0.187***	-0.183**	-0.097	-0.092	0.027	0.078
	(0.001)	(0.009)	(0.011)	(0.347)	(0.316)	(0.784)	(0.435)
Log Absolute Latitude		-0.037	0.057	0.166**	-0.050	-0.038	-0.050
		(0.581)	(0.398)	(0.037)	(0.541)	(0.606)	(0.521)
Soil Fertility			-1.375***	-1.196***	-0.472	-0.753*	-0.726
			(0.004)	(0.010)	(0.225)	(0.052)	(0.110)
Terrain Roughness			0.099	0.063	-0.873	-0.875	-0.736
			(0.887)	(0.931)	(0.198)	(0.152)	(0.198)
Mean Elevation			0.134	0.271	0.137	0.315	0.364**
			(0.514)	(0.246)	(0.503)	(0.108)	(0.039)
Average Distance to Nearest Waterway			0.147	0.288	0.104	-0.042	0.006
			(0.426)	(0.143)	(0.503)	(0.802)	(0.969)
Percentage of Arable Land			-0.003	-0.000	-0.005	-0.003	-0.004
			(0.578)	(0.971)	(0.362)	(0.558)	(0.504)
Temperature				0.029*	0.007	0.021	0.032**
				(0.068)	(0.676)	(0.271)	(0.048)
Colony							-0.460**
							(0.022)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	144	144	144	144	144	144	129
Adjusted R^2	0.154	0.150	0.252	0.276	0.441	0.496	0.528

This table presents the results of a series of 2SLS regression analyses, on the contemporary country level, of a measure of contemporary autocracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, instrumented by the migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.

Table A.20: Predicted Genetic Diversity and Democracy (1994–2013)

	Log Democracy						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
Predicted Genetic Diversity	-8.566***	-8.658***	-6.003***	-5.980***	-6.553*	-6.866**	-6.863**
	(0.000)	(0.000)	(0.007)	(0.005)	(0.051)	(0.019)	(0.029)
Log Absolute Latitude		0.196***	0.112*	-0.137	0.059	0.043	0.048
		(0.002)	(0.092)	(0.165)	(0.586)	(0.670)	(0.648)
Soil Fertility			1.132**	0.946*	0.309	0.704*	0.593
			(0.026)	(0.052)	(0.490)	(0.100)	(0.245)
Roughness			0.337	0.123	0.819	0.843	0.550
			(0.638)	(0.868)	(0.266)	(0.191)	(0.391)
Elevation			-0.243	-0.327	-0.138	-0.284	-0.269
			(0.230)	(0.113)	(0.519)	(0.143)	(0.144)
Average Distance to Nearest Waterway			-0.263	-0.435**	-0.248	-0.012	-0.058
			(0.170)	(0.018)	(0.124)	(0.944)	(0.734)
Percentage of Arable Land			0.002	-0.000	0.003	0.003	0.006
			(0.644)	(0.962)	(0.605)	(0.553)	(0.354)
Temperature				-0.044***	-0.017	-0.029	-0.038**
				(0.000)	(0.347)	(0.120)	(0.030)
Colony							0.365
							(0.114)
Continental FE	No	No	No	No	Yes	Yes	Yes
Legal Origin FE	No	No	No	No	No	Yes	Yes
N	145	145	145	145	145	145	130
Adjusted R^2	0.063	0.100	0.195	0.267	0.397	0.484	0.511

This table presents the results of a series of OLS regression analyses, on the contemporary country level, of a measure of contemporary democracy on predicted genetic diversity, based on the ancestry-adjusted migratory distance from East Africa to the country, conditional on a range of control variables. Heteroscedasticity-consistent standard errors are reported in parentheses. *** Significant at the 1 percent level. ** Significant at the 5 percent level. * Significant at the 10 percent level.