Very Preliminary
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Post-1500 Population Flows and the Long Run Determinants of Economic Growth and Inequality

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Abstract

We construct a matrix showing the share of the year 2000 population in every country that is descended from people in different source countries in the year 1500. Using this matrix, we analyze how post-1500 migration has influenced the level of GDP per capita and within-country income inequality in the world today. We show that variables such as state history and the number of years since a country first practiced agriculture have much better predictive power for current GDP when one looks at the ancestors of the people who currently live in a country than when one considers the history on that country's territory, without adjusting for migration. We also show that the within country variance of long-term history of the inhabitants is a strong predictor of the current level of income inequality.

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Economists studying income differences among countries in the world today have been increasingly drawn to examine the influence of long-term historical factors. While the theories underlying these analyses vary, the general finding is that things that were happening 500 or more years ago matter for economic outcomes today. Hibbs and Olsson (2004, 2005), for example, find that a region-level indicator of timing of the Neolithic revolution explains differences among countries in incomes and the quality of institutions in 1997. Comin, Easterly, and Gong (2006) show that the state of technology in a country 500, 1500, or even 3000 years ago has predictive power for the level of output today. Bockstette, Chanda and Putterman (2002) find that an index of the presence of state-level political institutions from year 1 to 1950 has positive correlations, significant at the 1% level, with both 1995 income and 1960-95 income growth. The And Galor and Moav (2007) provide empirical evidence for a link from the timing of the transition to agriculture to current variations in life expectancy.[1]

Examining this sort of historical data immediately raises a problem, however: the further back into the past one looks, the more the economic history of a given *place* tends to diverge from the economic history of the *people* who currently live there. For example, the territory that is now the United States was inhabited in 1500 largely by hunting, fishing, and horticultural communities with pre-iron technology, organized into relatively small, pre-state political units.[2] By contrast, a large fraction current U.S. population is descended from people who in 1500 lived in settled agricultural societies with advanced metallurgy, organized into large states. The example of the United States also makes it clear that, because of migration, the long-historical background of the people living in a given country can be quite heterogeneous. This observation, combined with the finding that long-history of a country's residents affects the average level of income, naturally raises the question of whether heterogeneity in background of a country's residents is a determinant of income inequality within the country.

Previous attempts to deal with the impact of migration in modifying the influence of long-term historical factors have been somewhat *ad-hoc*. Hibbs and Olsson, for example, acknowledge the need to account for the movement of peoples and their technologies, but do so only by treating four non European countries (Australia, Canada, New Zealand and the U.S.) as if they were in Europe. Comin, Easterly, and Gong similarly add dummy variables to their regression model for countries with "major" European migration (the four mentioned above) and "minor" European migration (mostly

[1] Chanda and Putterman (2006, forthcoming) find that even state-level experience up to the year 1500 predicts income and growth of those periods, while state history to 1500 and the Hibbs-Olsson years since transition variable predict population density and estimated income of the same year (1500).
An earlier study by Burkett, Humblet and Putterman, using a similar explanatory framework, found economic growth rates between 1960 and 1990 to be positively correlated with population densities in the 20th century. If population density, transition to agriculture, and development of states are treated as indicators of social development, then Temple and Johnson's finding of a link between recent growth and "social capability" as measured by a "modernization" index can also be viewed as part of this strand.

[2] Anthropologists subscribing to cultural evolutionary models speak of political institutions evolving from the band to the tribe to the chiefdom and finally the state (see, for instance, Johnson & Earle, 1987). There were no pre-Columbian states north of the Rio Grande, according to such schema.

Latin America). In other cases, variables meant to measure other things may in fact be proxying for migration. For example, the measure of the origin of a country's legal systems examined by La Porta *et al*. (1998) may be proxying for the origins of countries' people. This is also true of Hall and Jones's proportion speaking European languages measure. Acemoglu *et al*. focus on institutions, either brought along by European settlers or imposed by non-settling colonial powers, could conceivably be proxying for population shifts themselves.

In this paper we pursue the issue of migration's role in shaping the current economic landscape in a much more systematic fashion than previous literature. We construct a matrix detailing the year-1500 origins of the current population of every country in the world. (Throughout the paper, we use the term "migration" to refer to any movement of population across current nation borders, although we are cognizant that these movements included transport of slaves and forced relocation as well as voluntary migration.)

The rest of this paper is structured as follows. Section 1 describes the construction of our migration matrix, and then uses the matrix to lay out some of the important facts regarding the population movements that have reshaped genetic and cultural landscapes in the world since 1500. We find that a significant minority of the world's countries have populations mainly descended from the people of other continents and that these countries themselves are quite demographically heterogeneous. In Section 2, we apply our migration matrix to analyze the determinants of current income. Using several measures of early development, we show that adjusting current population to reflect where people's ancestors came from improves the ability of measures of early social and technological development to predict current levels of income. In Section 3, we turn to the issue of inequality. We use the migration matrix to construct various measures of the heterogeneity of countries' populations in terms of their early development, and show that these heterogeneity measures predict income inequality. Section 4 concludes.

1. Large-scale population movements since 1500

We use the year 1500 as a rough starting point for the era of European colonization of the other continents. It's well known that most contemporary residents of countries such as Australia and the United States are not descendants of their territory's inhabitants circa 1500, but of people who arrived subsequently from Europe, Africa, and other regions. But exactly what proportions of the ancestors of today's inhabitants of each country derive from what regions and from the territories of which present-day countries has not been systematically studied. Detailed genetic studies are thus far too sparse to provide the required data. Accordingly, we examined a wide array of secondary compilations to form the best available estimates of where the ancestors of the long-term residents of today's countries were living in 1500. Generally, these estimates have to work back from information presented in terms of ethnic groupings. For example, sources roughly agree on the proportion of Mexico's population considered to be

mestizo, that is having both Spanish and indigenous ancestors, on the proportion having exclusively Spanish ancestors, on the proportion exclusively indigenous, and on the proportion descended from migrants from other countries. There is similar agreement about the proportion of Haitians descended from African slaves, the proportion of people of (east) Indian origin in Guyana, the proportion of "mixed" and "Asian" people in South Africa, and so on. Such information plus information helpful to the decomposition of mixed categories—for instance, an archive on the slave trade permitting estimates to be made of the proportion of slaves in a given region who were shipped from a certain part of Africa identifiable with certain present-day countries—makes possible estimates of the proportion of a current population's ancestors likely to have lived in 1500 in the territory of other specific contemporary countries (Ghana, Angola, India, and so on).

Using these methods, a matrix of migration since 1500 was constructed. It has 165 complete rows, each for a present-day country, the same number of complete columns, representing the same countries, and its entries are the proportion of long-term residents' ancestors estimated to have lived in each source country in 1500, summing to one.[3] A main appendix describes our sources and methods, while a set of secondary appendices contain written summaries of the factors behind the estimate for each row.

The main diagonal of the matrix provides a quick indication of differences in the degree to which countries are now populated by the ancestors of their historical populations. The diagonal entries for China and Ethiopia (with shares below half a percent being ignored) are 1.0, while the corresponding entries for Cuba, the Dominican Republic and Haiti are 0.0 and that of Paraguay is close to 0.5. In some cases, the diagonal entry may give a misleading impression without further analysis; for example, only 31% of Botswanans' ancestors are estimated to have lived in present-day Botswana in 1500, but another 67% were Africans who migrated to Botswana from what is now South Africa. (Note that use of 1500 as our starting point means that the ancestors of white South Africans are attributed to Netherlands and other European countries, not South Africa.)

Figures 1a and 1b are histograms of the proportion of countries and people, respectively, falling into decile bands with respect to the proportion of the current people's ancestors residing in the same or an immediate neighboring country in 1500. The figures show bimodal distributions, with 11.5% of countries having 0 to 10% indigenous or near-indigenous ancestry and 67.9% of countries having 90 to 100% such ancestry. Altogether, 80.1% of the world's people (excluding those in the smallest countries, which are not covered) live in countries that are more than 90% indigenous in population, while 10.1% live in countries that are less than 30% indigenous, with the rest (dominated by Central America, the Andes, and Malaysia) falling in between.

[3] Every country with a population of at least one half million in 2000 is included. Seven countries with smaller populations have only partial entries because their inclusion was required to account for the ancestors of the people of other included countries. Source countries are represented as entries only when they are estimated to account for at least half of one percent of a country's people's ancestors, but there are exceptions owing to the fractional decomposition of categories usually lumped together in the sources—e.g. African slaves, gypsies, and Jews.

The compositions of non-indigenous populations are also of interest. The populations of Australia, New Zealand and Canada are overwhelmingly of European origin, while Central American and Andean countries have both large Amerindian and substantial European-descended populations, and Caribbean countries and Brazil have substantial African-descended populations. Guyana, Fiji, Malaysia and Singapore are among those countries with substantial minorities descended from South Asians, while Malaysia and Singapore also have large Chinese-descended populations. We illustrate differences both in the proportions of people of non-local descent and in the composition of those people by means of Map 1. Country shading indicates the proportion of the population not descended from residents of the same or immediate neighboring countries. Pie charts, drawn for thirteen macro-regions, show the average proportions descended from European migrants, from migrants (or slaves) from Africa, and from migrants from other regions, as well as the proportion descended from people of the same region.[4] In terms of territory, about half the world's land mass (excluding Greenland and Antarctica), comprising almost all of Africa, Europe and Asia, is in countries with almost entirely indigenous populations (shown in black), while about a third has less than 20% indigenous inhabitants, and the remainder, dominated by Central America, the Andes and Malaysia, falls somewhere in between. The heterogeneity of regions in the Americas and Australia/New Zealand is highlighted by the pie charts, showing strong European dominance in Australia/New Zealand, the U.S. and Canada, and eastern South America, stronger indigenous presence in the Andes, and strong African representation in the Caribbean. We consider the effects of this heterogeneity in Section 3.

While we are mostly interested in using the migration matrix to better understand the determinants of long-run economic performance in countries as presently populated, the versatility of the data can be illustrated by using it to calculate the number of descendants of populations that lived five centuries ago and to see how they've fared. Given data on country populations in 2000, the matrix will tell total number of people today who are descended from each 1500 source country, and where on the globe they're to be found. For instance, using 2000 population figures from Penn World Tables 6.1 for the matrix's 165 countries, we find that there were 30.8 million descendants of 1500's Irish alive at the turn of the millennium, of whom 12.0% lived in Ireland itself, 75.6% in

[4] Regions were defined with the aim of keeping their number small enough for purposes of display and grouping countries with similar population profiles. The Caribbean includes Cuba, Dominican Republic, Haiti, Jamaica, Puerto Rico, and Trinidad and Tobago. Europe is inclusive of the Russian Republic. North Africa, West and Central Asia includes all African and Asian countries bordering the Mediterranean, including Turkey, the traditional Middle East, Afghanistan, and former Soviet republics in the Caucasus and Central Asia. South Asia includes Pakistan, India, Bangladesh, Sri Lanka, Nepal and Bhutan. East Asia includes Mongolia, China, Hong Kong, North and South Korea, Japan, and Taiwan. Southeast Asia includes the remainder of Asia plus New Guinea and Fiji. Note that for calculation of the pie chart shares, ancestors are assumed to be from "the same region" if they are from countries in the regions as thus indicated, with the exception of the Americas, where a person of Amerindian ancestry is treated as from "the same region" if living anywhere in the Americas (for example, descendants of indigenous South Americans brought to the Caribbean as laborers, or descendents of indigenous Mexians in the United States). This assumption means that Europeans are left out of the "European migrant" category of the pie charts if they live in Europe, even if they've migrated within the continent, and likewise for sub-Saharan Africans in SSA.

the U.S., 1.0% in the U.K. and 5.3% in Australia. According to the matrix and the sources it's based on, there are essentially no descendants of the indigenous population of Hispaniola (today's Haiti and Dominican Republic), since the Arawak people who lived there died out during the early decades of colonial rule due to disease and the effects of enslavement.

If, in addition to population data for 2000, we are also armed with credible estimates of population in 1500, we can go further and calculate the average number of descendants of each 1500 resident of each present-day country—a kind of "genetic success" quotient. Unfortunately, population data for 1500 are subject to considerable controversy, to which we have nothing to add in this paper. Leaving aside individual country values, which may be particularly noisy, we look, in Table 1, at the estimated average number of descendants per 1500 resident of each of the regions used in Map 1. For comparison, we also list the ratio of the number of current residents of each region to its population in 1500. We find that East and South Asia, North Africa and West and Central Asia, and Southeast Asia each have roughly the same number of current descendants as of current residents, with East Asia's population having increased more than twice as much as South Asia's, North Africa and West and Central Asia's still more so, and Southeast Asia's about six times as rapidly as South Asia's. While Europe's current population stands at a little under eight times its population of 1500, placing it between South Asia and East Asia in terms of total rate of increase, the number of European descendants is roughly twice as great, with almost half of them living outside of Europe. Each region of the Americas and Australia and New Zealand display larger population increases than numbers of descendants, the reverse of the situation for Europe. Unlike those of the Caribbean, indigenous people of the other parts of the Americas have numbers of descendants in the same range as South Asians and East Asians, although the estimates in these cases are particularly unreliable.[5]

A slightly more fanciful exercise is to consider the combined "economic-genetic" success of those who lived in each region in 1500 by calculating the sum of the income generated, on average, by an average individual's descendants. This is simply a matter of multiplying country income estimates for 2000 by the share of descendants in each present-day country, then multiplying the result by the descendants per person estimate in the left column of Table 1. The results, shown in the table's right column,

2. Reassessing the Effects of Early Economic Development

[5] Estimates of pre-Columbian population are highly controversial due to considerable uncertainty about the death rates in epidemics that followed European contact. Since McEvedy and Jones's estimates of the Americas' pre-Columbian population fall toward the low end of some revised current estimates, the resulting estimates of descendants per 1500 inhabitant could be overstated.

The new migration matrix puts us in a position to remedy these shortcomings and thereby put the theory that very early development persists in its effects on economic outcomes to a more stringent test.

We use two measures of early development. The first is an index of state history up to the year 1500 which we call *statehist1500*. The index takes into account whether what is now a country had present a supra-tribal government, the geographic scope of that government, and whether that government was indigenous or by an outside power. The version of used by us, as in the cited papers by Chanda and Putterman, discounts the past, reducing the weight on each half century before 1451-1500 by an additional 5%.[6]

Our second measure of early development, *agyears*, is the number of years since a country transitioned from hunting and gathering to agriculture. Unlike a similar measure used by Hibbs and Olsson, which had values for nine macro regions, our data are based on individual country histories. [7]

For each of these explanatory variables, we conduct a series of tests both with the variable in its original form and with a version adjusted to account for migration. Supposing the "early developmental advantages" proxied by *statehist1500* and *agyears* to be something that migrants bring with them to their new country, the adjusted variables measure the average level of such advantages in a present-day country as the weighted average of *statehist1500* or *agyears* in the countries of ancestry, with weights equal to population shares. For instance, adjusted *statehist1500*, or *adjstate*, for Botswana is simply 0.312 times the *statehist1500* value for Botswana plus 0.673 times *statehist1500* for South Africa (referring to the people in South Africa in *that* year, not those there presently) plus weights of 0.005 each times the *statehist1500* values of France, Germany and the Netherlands (the ancestral homes of Botswana's small Afrikaner population). The tests involve the estimation of regressions using either the natural log of year 2000 per capita income or the growth rate of per capita income from 1960 to 2000 as dependent variable.

Tables 2 shows our results. Each regression for growth includes both initial income. Each regression includes either the unadjusted form of our early development measure, the adjusted form, or both. Not surprisingly, given previous work, the tests suggest significant predictive power for the unadjusted variables. However, for both measure of early development, adjusting for migration produces a very large increase in explanatory power. In the case of state history, the R^2 goes from .06 to .22, while in the case of *agyears* it goes from .09 to .24. The coefficients on the measures of early development are also much larger using the adjusted than the unadjusted values. In the third and sixth columns of the table we run "horse race" regressions including both the adjusted and unadjusted measures of early development. We find that the coefficients on the adjusted measures retain their significance and become larger while the coefficients on the unadjusted measures become negative and significant.

[6] Details on the construction of the state index, and the data itself, can be found in Putterman (2004).
[7] The data are described in Putterman (with Trainor, 2006).

The finding that adjusting for migration improves the predictive power of measures of early development is consistent with the hypothesis that early technological and social development conferred human capabilities that continued to affect economic performance into the industrial era. These findings suggest that especially Europeans and to some extent East and South Asians carried their historically-bequeathed human capital with them to the Americas, Australia, Malaysia, and elsewhere. They are also consistent with the possibility that the historically-bequeathed human capital disadvantage of Africans has played out in new homes such as Jamaica and Haiti, although not ruling out the possibility that their arrival in these places as slaves rather than as migrants may also have played a role. By contrast, the findings of Table 2 cast doubt on a more geographically oriented theory of the importance of early development, which would hold that places that developed early did so because they had favorable climates, and that these favorable climates are responsible for their economic advantage today.

The other finding of Table 2 that is worth pointing out is that, once one adjusts for migration, the explanatory power of measures of early development is extremely high. Even in their unadjusted form, regressions like these suggested that long-term factors played a surprisingly large role in current economic outcomes. The results using adjusted early development suggest that this is all the more true.

3. Population Heterogeneity and Income Inequality

As mentioned above, the finding that it is the early development of a country's people, rather than of the place itself, provides evidence against some theories of why early development is important, but leaves many others viable. Early development may matter for income today because of the persistence of institutions (among people, rather than places), because of cultural factors that migrants brought with them, because of long-term persistence in human capital, or because of genetic factors that are related to the amount of time since a population group began its transition to agriculture.

Many of the theories that explain the importance of early development in determining the level of income at the national level would also support the implication that heterogeneity in the early development of a country's population should raise the level of income inequality. For example, if experience living in settled agricultural societies conveys to individuals some cultural characteristics that are economically advantageous in the context of an industrial society, and if these characteristics have a high degree of persistence over generations, then a society in which individuals come from heterogeneous backgrounds in terms their families' economic history should *ceteris paribus* more unequal. (Following this logic, a country's heterogeneity in early development might also affect the country's average level of income. We plan to pursue this question in later drafts).

To explore this issue, we create two measures of the heterogeneity of the early development of a country's population, using the same state history and history of agriculture variables examined above. The first is the weighted variance of the state

history of the countries that contributed to a given country's current population, where the weights are the fractions of that source country's descendents in current population. The second is a similar construction for the years of agricultural history.

In this exercise our dependent variable is the gini coefficient in 1991. We experiment with including as addition controls the level of the adjusted early development measure as well as the log of current income. The results are show in Table 3.

Our finding is that heterogeneity in the early development experience of the ancestors of a country's population is significantly related to current inequality. To give a feel for the size of the coefficients, we look at the case of *agyears*. The standard deviation of *agyears* in Brazil is 1.894 millennia. By contrast, in countries which have essentially no in-migration, such as Japan, the standard deviation is zero. Applying the regression coefficient of .0656 from the fourth column of Table 3, this would say that variation in early development in Brazil would be expected to raise the gini there by .12, which is certainly an economically significant amount.

Although our interest in most of this paper has been in how the migration matrix can be used to map data on place specific early development into a measure of early development appropriate to a country's current population, the matrix can also be used to infer characteristics of the source countries based only on current data. More specifically, if we assume that emigrants from a particular region share some characteristics that affect the income of countries to which they have migrated, then we can back out these characteristics by looking at data on current outcomes and migration patterns. In turn, we can look at variation in these characteristics as a source of within-country inequality.

To pursue this idea we follow a two step procedure. In the first step, we regress log GDP per capita in 2000 on the fraction of the current population that comes from each of 10 regions. We call the coefficients from this regression "source region coefficients." Loosely speaking, they measure how having a country's population composed of people from a particular region can be expected to affect GDP per capita. For example, the source region coefficient for Europe is 9.61, while that for sub Saharan Africa is 7.27. Thus these coefficients say that moving 10% of a country's population from European to African origin would be expected to lower ln(GDP) by .234 points.

Using these source region coefficients, we then create a measure of the weighted standard deviation of the source region coefficients of a country's population, where the weights are the fractions of the population originating in each of the ten regions. This measure ranges in value from zero (for countries which experienced no migration from outside their region) to 1.04 in Brazil, 1.63 in the Dominican Republic, and 2.54 in New Zealand.[8]

[8] The value for New Zealand is clearly problematic. It arises because in the source country regression, one of the ten regions we use is Australia and New Zealand. Since descendents of natives of this region almost all live in very prosperous countries, the coefficient is very large. Since New Zealand, in turn, has a

In Table 4, we present regression of the gini coefficient in 1991 on the standard deviation of the source region coefficients. As expected, the standard deviation of source region significantly positively affects the gini. For example, using the coefficient in the second column of the table (.0839), the variation in source country coefficients among the population of Brazil would raise the gini coefficient .087 points relative to a country with completely homogenous population in terms of source country coefficient.

4. Conclusion

While the institutional impacts of the era of European expansion have received due attention in the emerging literature on long-run economic growth, the fact that the peoples of many countries have quite different ancestries than those who lived in them in 1500 has received little attention, in part due to the absence of suitable data. We introduce a "world migration matrix" to account for the changes since that year, and we note some major features of the patterns it documents, such as the bi-modality of the distribution of indigenous and non-indigenous people by country, and the differences in indigenous shares and shares of European and African origin in countries having substantial proportions of their populations descended from immigrants or slaves.

In the second part of the paper, we demonstrated the utility of the migration data by using it to re-visit the hypothesis that early development of agrarian societies and their sociopolitical correlates—states—has conferred developmental advantages with ongoing effects on economic success. We confirmed that in a global sample, countries on whose territories agriculture and states developed earlier have higher incomes and higher recent growth rates. But we conjectured that people who moved from one region to another carried the human capabilities built up in that area with them. We found that re-calculating state history and agriculture measures for each country as weighted averages by place of origin of their people's ancestors considerably improved the fit of the regressions. We also showed that the heterogeneity of a country's population in terms of the early development of its ancestors as of 1500 was strongly correlated with income inequality.

The challenge of the kind of research into the determinants of long run growth that the migration index makes possible, of course, is to disentangle the numerous interrelated factors that may play causal roles. Origins of country populations are only one such factor, others being climate and other physical characteristics of countries, and institutions. A key question still to be resolved is that of the extent to which countries receiving large influxes of European settlers achieved greater economic growth due to the institutions they put in place, the kinds of human capital they brought with them, or some combination of these factors (perhaps with others). More research is also needed into why populations that enjoyed advantageous passages through the agricultural revolution and the subsequent growth of states and civilizations tend to have retained this advantage

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relatively large native population (xx, as compared to yy in Australia), it ends up with a large variance measure.

to the present day, and what lessons can be drawn from this to help less advantaged populations speed their own development. Our hope is that the availability of a compilation of data on the reconfiguration of country populations since 1500 will make it easier to address such issues in future research.

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Table 1. Current population, descendents, and GDP per person of 1500, by region.

Region	Descendents per person of 1500	2000 pop. per person of 1500	2000 GDP per person of 1500
U.S. and Canada	9.6	306.17	335,789
Mexico and Central America	10.4	13.58	131,767
The Caribbean	0.0	13.45	0
South America	6.5	13.30	32,983
Europe	14.0	7.85	248,799
North Africa/West and Central Asia	13.2	13.55	77,261
South Asia	4.4	4.38	11,762
East Asia	11.4	10.91	75,068
Southeast Asia	26.2	27.55	117,167
Australia and New Zealand	1.9	95.79	52,600
SSA	3.5	2.99	10,433

Table 2: OLS regressions predicting the log of 2000 income

Indep. Var.	Dependent variable: ln(Per Capita Income 2000)					
Statehist1500	.892 (.306)		-1.38 (0.46)			
Adjstate		2.02 (0.33)	3.33 (0.54)			
Agyears/1000				.145 (.039)		-.211 (.066)
Adjagyears/1000					.268 (.040)	.474 (.075)
Constant	8.17 (0.14)	7.60 (0.17)	7.50 (0.16)	7.79 (0.21)	7.05 (0.23)	6.95 (.227)
No. obs.	136	136	136	145	145	145
R-Squared	.060	.221	.271	.090	.237	.289

Table 3

	Dependent Variable: Gini Coefficient in 1991			
SD of *statehist1500*	.527 (.092)	.513 (.094)		
adjstatehist		-.027 (.035)		
SD of *agyears*/ 1000			.0654 (.0109)	.0656 (.0104)
agyears				-.0134 (.0044)
Ln(y2000)	-.033 (.007)	-.030 (.008)	-.036 (.007)	-.025 (.008)
Obs	99	99	100	100
R^2	.339	.343	.350	.407

Table 4

	Dependent Variable: Gini Coefficient in 1991	
SD of source country coefficient	.101 (.018)	.0839 (.0175)
Mean source country coefficient		-.0548 (.0151)
Ln(y2000)	-.0341 (.0071)	.0022 (.0121)
Obs	100	100
R^2	.330	.411

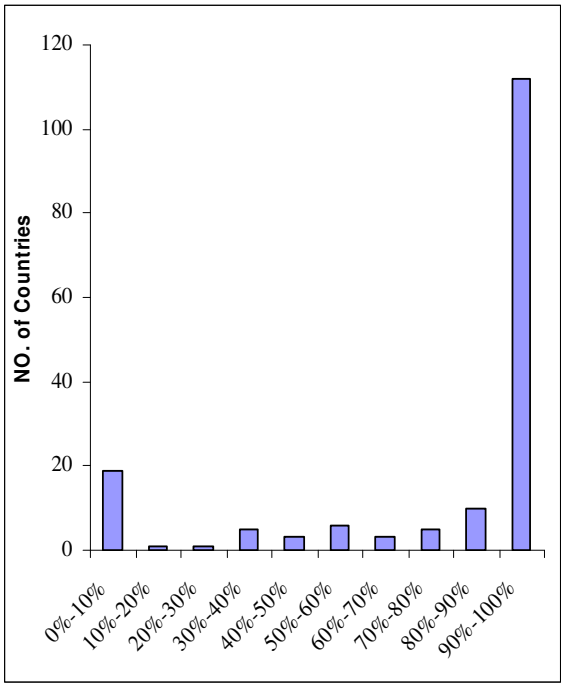

Figure 1a Distribution of countries by proportion of ancestors from own or immediate neighboring country.

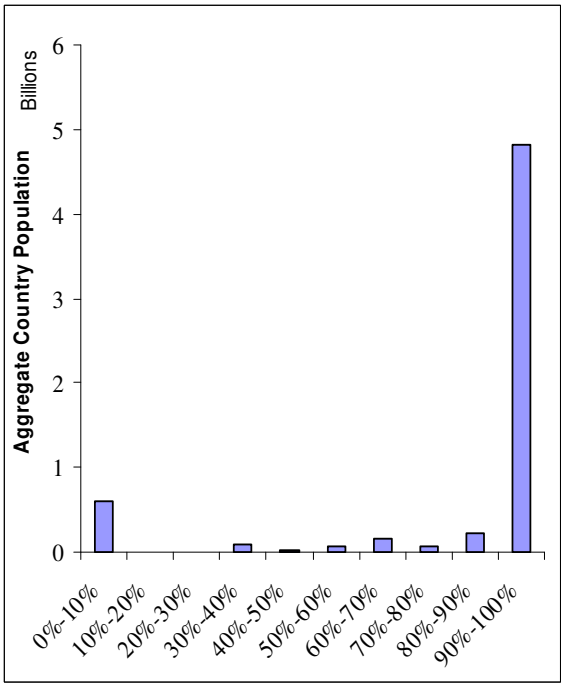

Figure 1b Distribution of world population by proportion of ancestors from own or immediate neighboring country.

Regional Ethnic Origin