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ABSTRACT

The diversity of people has economic costs and benefits. Using recent immigration data from 195 countries, we propose an index of diversity based on people's birthplaces. This new index is decomposed in a "size" (share of foreign born) and a variety (diversity of immigrants) component and is available for 1990 and 2000 and for the overall as well as for the high (workers with college education) and low-skill fractions of the workforce. We show that birthplace diversity is largely uncorrelated with ethnic and linguistic fractionalization and that—unlike fractionalization—it is positively related to economic development even after controlling for education, institutions, ethnic and linguistic fractionalization, trade openness, geography, market size and origin-effects. This positive association appears particularly strong for the diversity of skilled immigrants in richer countries. We make progress towards addressing endogeneity by specifying a gravity model to predict the diversity of immigration based on exogenous bilateral variables. The results are robust across various OLS and 2SLS specifications.

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1 Introduction

Foreign-born individuals now represent on average ten percent of the workforce of the OECD, a threefold increase since 1960 and a twofold increase over the past twenty years.[1] This growing diversity in terms of country of birth may have far reaching economic implications. Economic theory suggests that higher diversity could lead to beneficial skill complementarities in certain production processes, but also to inefficiencies via higher transaction costs due to mistrust and lack of social cohesion.[2]The empirical literature has so far focused on ethnic and linguistic fractionalization, which were shown to exert negative effects on economic growth in cross-country comparisons (Easterly and Levine, 1997, Collier 2001, Alesina et al., 2003, 2012), and on genetic diversity.[3]

In this paper we look at the relationship between diversity and development using a new perspective that focuses on the diversity arising from people's birthplaces. Albeit loosely linked through immigration, ethnic and birthplace diversity are empirically (perhaps surprisingly) almost completely uncorrelated. Conceptually, ethnic and birthplace diversity also differ as people born in different countries are likely to have been educated in different school systems, learned different skills, and speak different languages; once gathered in a single country, first-generation immigrants arguably form a more diverse group than second and third-generation immigrants (or than people of different ethnicities) that grew up speaking the same language and, more often than not, learned from each other inside or outside of school: the melting pot does indeed melt!

This paper makes three contributions. First, we construct and discuss the properties of a new index of birthplace diversity. We build indicators of diversity for the workforce of 195 countries in 1990 and 2000, disaggregated by skill/education level, and computed both for the workforce as a whole and for its foreign-born component. In so doing, we add a new dimension to the diversity literature, which already includes measures of ethnic, linguistic, cultural, and genetic diversity. Second, we investigate the relationship between birthplace diversity and economic development empirically. Using OLS for a large sample of countries, we find that in contrast to ethno-linguistic fractionalization, birthplace diversity is positively related to productivity in a rich model where we control for a large range of potential confounding factors such as education, institutions, trade openness and trade diversity, ethnic and linguistic fraction-

[1]See Ozden et al. (2011) for a picture of the global evolution of international migration over the last fifty years. The figures for high-skill migration are even more impressive, with a twofold increase during the 1990s only (see Docquier and Rapoport, 2012).

[2]As discussed in Alesina and La Ferrara (2005).

[3]Spolaore and Wacziarg (2009) find genetic distance to be a strong predictor of income differences between pairs of countries and conclude that genetic distance works as a barrier to knowledge diffusion and technology adoption. Most recently, Ashraf and Galor (2012) find an inverted u-shaped relationship between genetic diversity within a population and productivity, indicating the trade-off between beneficial forces of diversity expanding the technology frontier and detrimental ones leading to higher inefficiency due to communication and coordination problems. In another paper, Ashraf and Galor (2011) find that cultural diversity (based on World Values Survey data) is positively correlated with contemporary development and suggest that cultural diversity facilitated the transition from agricultural to industrial societies.

alization, geography, and what we term origin-effects taking into account the level of productivity in the migrants' home countries. This positive effect is stronger for skilled migrants (workers with college education) in richer, more productive countries, suggesting the presence of production function effects of diversity in innovative tasks in countries closer to the technology frontier. In terms of magnitudes, increasing the diversity of immigrants by one standard deviation is correlated with a rise in long-run real income by a factor of 1.2 to 1.5. Third, we make progress towards addressing endogeneity issues arising from the fact that rich countries may attract a diverse group of immigrants because they are rich rather than becoming rich thanks to a diverse workforce. We specify a gravity model of migration to predict the diversity of a country's immigration using exogeneous geographic and cultural bilateral variables and confirm our initial findings in a range of 2SLS models.

The empirical evidence on birthplace diversity and income levels is scant and, to the best of our knowledge, limited to the context of the United States. Ottaviano and Peri (2006) construct a measure of cultural diversity from 1970-1990 using migration data on US metropolitan areas and find positive effects on the productivity of native workers as measured by their wages. More recently, Peri (2012) found positive effects of the diversity coming from immigration on the productivity of US states, a result he attributes to unskilled migrants promoting efficient task-specialization and adoption of unskilled-efficient technologies, and more so when immigration is diverse.[4] Ager and Brückner (2011) study the link between immigration, diversity and economic growth in the context of the United States about a century ago, at a time now commonly referred to as "the age of mass migration" (Hatton and Williamson, 1998).[5] They find that fractionalization increases output while polarization decreases it in US counties during the period 1870-1920. Finally, a paper by Ortega and Peri (2012) developed independently from this paper also analyzes the connection between income per capita and openness to (and diversity of) trade and immigration, respectively, in a cross-section of countries. They show that in the horse race between immigration and trade to explain cross-country differences in economic performance, immigration is a clear winner.

The rest of this paper proceeds as follows. Section 2 briefly discusses the channels through which birthplace diversity can affect productivity and the way it relates to other dimensions of diversity (e.g., ethnic, linguistic). Section 3 explains the construction and analytical decomposition of our birthplace diversity index; we also run initial regressions comparing ethnic fractionalization and birthplace diversity's association with economic development. In section 4

[4]Ottaviano and Peri (2006) and Peri (2012) employ instrumental variables techniques to account for endogeneity. They construct a measure of predicted immigration based on geographic proximity to immigration "gateways" into the U.S., such as New York or Los Angeles, and rely on Card's (2001) shift share methodology to predict changes in immigration by extrapolating the local levels of immigrant communities using national level immigration rates, thus making immigration exogenous to state-level economic shocks.

[5]See also Bandiera, Rasul and Viarengo (2012) and Abramitzky, Boustan and Eriksson (2012) respectively on the measurement of entry and return flows and on migrants' self-selection during that period.

we investigate the relationship between birthplace diversity and income more deeply, questioning its strength and robustness to a range of alternative specifications, and confront endogeneity issues using a gravity framework in Section 5. Section 6 concludes.

2 Skill complementarities and diversity

2.1 The costs and benefits of diversity

The reason why birthplace diversity could be beneficial for productivity is due to skill complementarity. People born in different places are likely to have different productive skills because they have been exposed to different experiences, different school systems, different "cultures" and thus have developed different perspectives that allow them to interpret and solve problems differently. These differences can be complementary and lead to higher productivity.[6] Lazear (1999a,b) proposes a model of teams of workers where diversity brings benefits via production complementarities from relevant disjoint information sets and also costs via barriers to communication; with decreasing marginal benefits and increasing marginal costs, this suggests that there is an optimal degree of diversity.[7] Hong and Page (2001) see two sources for the heterogeneity of people's minds: cognitive differences between people's internal perspectives (their interpretation of a complex problem) as well as their heuristics (their algorithms to solve these problems). They show theoretically that, under certain conditions, a group of cognitively diverse but skill-limited workers can outperform a homogenous group of highly skilled workers.

Empirical studies of diverse teams in the management and organization literature also find diversity to be a double-edged sword, with diversity (in terms of gender, education, tenure, nationality) being often beneficial for performance but also decreasing team cohesion and increasing coordination costs (see Milliken and Martins, 1996, and O'Reilly et al., 1989). Specifically, in a study of the oligopolistic airline industry with observable actions and reactions, Hambrick et al. (1996) find that heterogeneous management teams react more slowly to a competitor's actions, but also yield higher market shares and profits than their homogeneous competitors. In a recent experimental study, Hoogendoorn and van Praag (2012) set up a randomized experiment in which business school students were assigned to manage a fictitious business and increase outcome metrics like market share, sales and profits of their business. The authors find that more ethnically diverse teams (defined by parents' countries of birth) outperform more homogeneous ones, but only if the majority of team members

[6] Alesina et al. (2000) formalize this idea using a Dixit-Stiglitz type production function where outputs increase in the variety of inputs and inputs can be interpreted as different workers. Their model thus allows for diversity to increase output without any counterbalancing costs.

[7] A related argument, also brought forward by Lazear (1999b), is that diverse groups of immigrants tend to assimilate more quickly (in terms of learning the language of the majority) since they have stronger incentives to do so.

is foreign. However, the exact causal mechanism between ethnic diversity and higher performance remains unobserved in this study.

Finally, a few recent studies have used firm-level data to explore the links between workers' diversity and firms' productivity. Brunow et al. (2012) analyze the impact of birthplace diversity on firm level productivity in Germany. Addressing endogeneity through a system GMM approach, they find that the share of foreigners has no effect on firm productivity while the diversity of foreign workers has a strong positive effect on firm performance (as does workers' diversity at the regional level). These effects appear to be stronger for manufacturing and high tech industries, suggesting the presence of skill complementarities at the firm level as well as regional spill-overs from workforce diversity. Parrotta et al. (2012) use a firm level dataset of matched employee-employer records to analyze the effects of diversity in terms of skills, age and ethnicity on firm productivity. They find that while diversity in skills increases productivity, diversity in ethnicity and age has negative effects on productivity. They interpret this as showing that the costs of ethnic diversity outweigh its benefits. However and quite interestingly, they also find suggestive evidence that ethnic diversity is more valuable in problem-solving oriented tasks and in innovative industries as the effect of ethnic diversity turns less negative for white-collar workers and also turns less negative in more innovative research and development-intensive industries. Last, Boeheim, Horvath and Mayr (2012) find micro level evidence for the presence of production function complementarities using a linked dataset of Austrian firms and their workers during the period 1994-2005. They partly address endogeneity through an IV approach and find that workers' wages increase in the birthplace diversity of co-workers but decrease in the own group share. The wage effects appear stronger in subsamples for white-collar workers and workers with young tenure, again suggesting complementarities in the production of non-routine tasks and learning externalities at the firm level.

At a macro level, the costs of diversity have been established theoretically and empirically, in particular for ethno-linguistic differences. These studies mostly began with Easterly and Levine (1997), who show that ethnic fragmentation is associated with lower economic growth, specifically in Africa. Collier (1999, 2001) adds that ethnic fractionalization is less detrimental in the presence of democratic institutions, which enable different groups to mediate conflicts on the provision of public goods and create social cohesion, although it is unclear whether it is just the level of per capita income or democracy that matters since the two are highly correlated. Alesina and La Ferrara (2000, 2002) stress the role of trust, showing that individuals in racially diverse cities in the US participate less frequently in social activities and trust their neighbors to a lesser degree, while overall trust in political institutions remains unchanged. The authors also find evidence that preferences for redistribution are lower in racially diverse communities. This also extends to the provision of productive public goods (Alesina, Baqir and Easterly, 1999). Alesina, Michalopoulos and Papaioannou (2012) stress the inequality dimension of ethnic diversity (i.e., it is the interplay between ethnic fractionalization and ethnic inequality that leads to conflict) while Esteban, Mayoral and Ray (2012) distinguish conflicts over

public and private goods and find polarization to correlate positively with conflict on the former, and fractionalization to correlate positively with the latter (see also Esteban and Ray, 2011).

2.2 Which diversity?

A population's diversity is commonly measured by fractionalization (Easterly and Levine 1997, Alesina et al., 2003, Fearon, 2003) and polarization indices (Esteban and Ray, 1994, Reynal-Querol 2002). Ethnic fractionalization measures are unable to distinguish, for example, between a first- and second generation Italians in the US, neither can they distinguish between these two and two German first- and second-generation immigrants. All these people would be labeled ethnically as "White/Caucasian" or "European Descent". A linguistic fractionalization measure would be more accurate in separating language groups but would equally fail to distinguish between first and second-generation immigrants. Still, these measures capture very fundamental (and often intergenerationally transmitted) differences between people.

A dimension of diversity among people that remains largely understudied is the diversity caused by differences in people's country of birth. If early preworking age years are formative for one's own values, perspectives and skills (note that the emphasis is on skills, not on level or quality of education), these differences last a lifetime and may serve as variation to be explored for economic analysis. Shaped by different education systems and social values, this type of diversity is more likely to result in production function complementarities than differences in skin color or language spoken at home. To explore this dimension of diversity, this paper introduces a new diversity index which is more likely to be closer to the correct one when we try to explain skill complementarity: diversity in people's birthplaces.

3 An index of birthplace diversity

3.1 Data

Our computation of birthplace diversity indices relies on the World Bank sponsored Docquier, Ozden, Parsons and Artuc (2012) (henceforth DOPA) data set, the last update of the Docquier and Marfouk (2006) data set which has been extended to include bilateral data on immigration by country of birth, skill category (skilled v. unskilled, the former having college education) and gender, for 195 sending/receiving countries in 1990 and 2000. The main addition to the previous versions is that the data set now captures South-South migration based mainly on observations and, occasionally, on estimated data points (for the skill structure). Immigrants are defined as foreign-born individuals aged 25 or more at census or survey date. The DOPA data set, therefore, allows for characterizing the size, origin-mix, and skill structure of the foreign-born *labor*

force.[8]

Before we turn to birthplace diversity indices, we briefly discuss a few caveats regarding illegal immigration, the definition of an immigrant, and the skill structure. First, the fact that illegal immigration is not accounted for in most censuses is a clear limitation. In our case, this limitation is mitigated by the fact that some countries such as the United States try to account for illegal immigration in their census and, more importantly, by the fact that we use data on immigration stocks, not flows. Indeed, most illegal migrants eventually become legalized or return, meaning that even if illegal migrants represent a large fraction of total flows, they generally remain a small fraction of the immigrant stock. A second caveat concerns the very definition of an immigrant as a foreign-born individual. According to this definition, a 2-year old child immigrating with her parents will be classified as an immigrant; however, that person will grow up, socialize and go to school in the home country, thus limiting the extent of foreign skills that he or she can contribute.[9] Finally and on a related note, an individual is considered "skilled" independently of whether college education was obtained in the home, host, or a third country, meaning that the category "skilled workers" may be very heterogeneous in terms of human capital quality; we partly address this issue by controlling for what we call "origin-effects" (see below).

3.2 Measuring birthplace diversity: a decomposition

We base our birthplace diversity measure on the Herfindahl diversity index. Let s_i refer to the share in the total population of individuals born in country i with $i = 1, \ldots, I$. In particular, $i = 1$ refers to those individuals who were not born abroad and are thus natives.

The fractionalization index Div_{pop} may be expressed as

$$Div_{pop} = \sum_{i=1}^{I} s_i * (1 - s_i) \tag{1}$$

This index measures the probability that two individuals drawn randomly from the entire population have two different countries of birth. Since $\sum_{i=1}^{I} s_j = 1$, equation (1) may also be written as the commonly known Herfindahl index

$$Div_{pop} = 1 - \sum_{i=1}^{I} (s_i)^2 \tag{2}$$

[8] A small number of (usually small) countries is reported as having zero immigrant stocks and, on few occasions, the authors do not provide a split by skill level. Due to these missing information, we are unable to compute diversity indices for some countries: for 1990, 13 (overall), 33 (skilled) and 14 (unskilled) countries are missing and, for 2000, 8 (overall), 27 (skilled) and 11 (unskilled) countries are missing (see Table A3 in the Appendix for the details).

[9] Beine, Docquier and Rapoport (2007) use age at migration as a proxy for where education was acquired. They propose migration figures corrected for age of entry for 1990 and 2000 for high-skill immigrants only.

A certain level of say "moderate" Div_{pop} may come from a relatively small but very diverse pool of immigrants, or by a relatively homogenous but large fraction of immigrants in the population. It is useful then to develop indices which can highlight these differences.

We therefore decompose our diversity index into a $Div_{between}$ and a Div_{within} component. We define $Div_{between}$ as the diversity from immigration, irrespective of further country of origin-differences. Div_{within} then captures all residual diversity from differences between immigrants only. If we assume that all immigrants are born in one country $i = 2$ so that $s_1 + s_2 = 1$, then using (1) we can define:

$$Div_{between} = s_1 * (1 - s_1) + (1 - s_1) * s_1 \tag{3}$$

This essentially calculates the Div_{pop} index assuming that all migrants can be grouped into one category $(1 - s_1)$ - thus excluding all diversity contributed by the fact that migrants tend to come from more than one origin country.

We rewrite (4) to include $Div_{between}$ as follows:

$$Div_{pop} = s_1 * (1 - s_1) + (1 - s_1) * s_1 + \sum_{i=2}^{I} [s_i * (1 - s_i)] - (1 - s_1) * s_1 \tag{4}$$

Since $\sum_{i=2}^{I} s_i = (1 - s_1)$, (4) simplifies to

$$Div_{pop} = 2 * s_1 * (1 - s_1) + \sum_{i=2}^{I} [s_i * ((1 - s_i) - s_1)] \tag{5}$$

We can now define

$$Div_{within} = \sum_{i=2}^{I} [s_i * ((1 - s_i) - s_1)] \tag{6}$$

so that Div_{pop} is composed of two parts, $Div_{between}$ and Div_{within} :

$$Div_{pop} = Div_{between} + Div_{within} \tag{7}$$

However, this separation is not yet fully satisfying, since it does not separate clearly between size and variety effects: Div_{within} still depends on s_1 - the share of natives since $\sum_{i=2}^{I} s_i = (1 - s_1)$. We thus rewrite the Div_{within} component so that it does not depend on s_1. We achieve this by defining s_j as the share of immigrants from country j in the total population of immigrants. It follows that $s_j = \frac{s_i}{(1-s_1)}$ where s_1 is the share of natives $(i = 1)$.

We thus re-scale Div_{within} using (6):

$$Div_{within} = \sum_{i=2}^{I} \left[\frac{s_i}{(1 - s_1)} * \frac{((1 - s_i) - s_1)}{(1 - s_1} \right] * (1 - s_1)^2 \tag{8}$$

and simplify to:

$$Div_{within} = \sum_{i=2}^{I} \left[\frac{s_i}{(1-s_1)} * \left[1 - \frac{s_i}{(1-s_1} \right] \right] * (1-s_1)^2 \tag{9}$$

Since $s_j = \frac{s_i}{(1-s_1)}$, then:

$$Div_{within} = \sum_{j=1}^{J} \Big[s_j * (1-s_j) \Big] * (1-s_1)^2 \tag{10}$$

Our result has a very intuitive interpretation: since $\sum_{j=1}^{J} \Big[s_j * (1-s_j) \Big]$ is basically (1) but applied to the population of immigrants, it is essentially a diversity index of immigrants only, irrespective of the natives. We thus define:

$$Div_{Mig} = \sum_{j=1}^{J} \Big[s_j * (1-s_j) \Big] \tag{11}$$

And rewrite (7)

$$Div_{pop} = Div_{between} + (1-s_1)^2 * Div_{Mig} \tag{12}$$

where $(1-s_1)^2$ has an intuitive interpretation as scale parameter for Div_{Mig}.

We can then rewrite (12) in terms of s_F, the share of immigrants (defined as foreign-born) and define $s_F = (1-s_1)$:

$$Div_{pop} = 2 * s_F * (1-s_F) + (s_F)^2 * Div_{Mig} \tag{13}$$

We have thus an expression of Div_{pop} purely as a function of the size and diversity of immigration.

3.3 Descriptive statistics

We now compare the properties of these size and variety measures with each other and with an index of ethnic fractionalization (taken from Alesina et al., 2003). A first visual overview (see Figure 1) shows that ethnic fractionalization and Div_{pop} differ considerably: where ethnic differences are high, diversity of origins is quite low (e.g., in all African countries – with few exceptions – and in Central and South-East Asia). In turn, Div_{pop} is high in North-America, Europe, Australia and some Arab countries, while ethnic differences are much more modest. This is also reflected in the low bilateral correlation between them, as can seen from Table 1 and Figure 2. Birthplace diversity (Div_{pop}) is highly correlated (+0.98) with the share of immigration (s_F). This explains the very low overall diversity in large countries such as China, India and Brazil with few foreigners relative to overall population. To complement the picture, Figure

1 also displays a third map showing the diversity of migrants, Div_{Mig}. Interestingly, it is quite unrelated to the overall diversity of a country's population. North-America, Europe and even some Eastern European countries exhibit a very high diversity of immigrants. (see Table 2 for regional comparisons). Latin American countries, some African countries, China and Russia have intermediate diversity, and Pakistan, India, Indonesia, Iran and many (but not all) African countries are not very diverse in terms of their immigrants. Table 3 presents fractionalization and diversity scores for a selection of countries.

The pure variety of birthplaces is highest in many rich countries: Canada, Italy, Israel, Germany, Australia and the UK all have diversity of immigrants at about .9. The United States rank only 20 in a list of the most diverse immigrant countries (at .92) due to its relatively low diversity of unskilled workers (0.84). In terms of skilled diversity, the USA is the second most diverse country together with Italy (with both countries at .97). However, the foreign-born represent only 1.8 percent of the skilled labor force in Italy versus 11 percent in the US. The diversity of skilled immigrants is also high in Germany, UK, France, Spain, and Canada as well as in countries such as Argentina, Brazil and Qatar. Countries with lowest overall diversity are Pakistan, Bangladesh, Nepal, Iran (all lower than .1). We can observe some clear neighborhood effects: Ireland's diversity (.55 overall, .44 for the unskilled and .67 for the skilled) is still quite low due to dominant immigration from the UK. Similar effects can be observed for, e.g., Switzerland, Austria, and also Australia where UK immigration is very large compared to other immigrant groups. Nepal and Sri Lanka experience immigration from a very large neighboring country, India. Neighboring effects are strongest for immigration of unskilled workers, while diversity of skilled workers is in general higher than the diversity of unskilled workers. This is consistent with migrants' self-selection being driven by net-of-migration-costs wage differentials, where low migration costs (due to short distances and high networks) mostly affect low-skill migration.[10]

The correlation between ethnic fractionalization and birthplace diversity of immigrants is very low (-.01 overall) and even negative at - .2 (in 2000) for skilled immigrants (see Table 1). This confirms that immigrants' diversity and ethnic fractionalization are indeed quite different measures. Besides, the correlation between s_F and Div_{Mig} is surprisingly low (see Table 1), especially for skilled immigrations: the diversity of immigrants is basically uncorrelated with the size of immigration (+.06) for skilled and overall immigration, and is only slightly positively correlated for unskilled immigrants (+.09 in 2000). This suggests that the size of immigration (size) and its diversity are largely independent. This observation holds irrespective of country size.

However, there is a positive correlation between immigration's size and diversity when we look at first differences: this suggests that, at least for the 1990s, the variety of immigrants rises when a country experiences an inflow of immigrants. This holds true in particular for skilled workers (bilateral correla-

[10]See Munshi (2003), McKenzie and Rapoport (2010) and Bertoli (2010) for micro evidence, and Grogger and Hanson (2011) and Beine, Docquier and Ozden (2011) for macro evidence.

tion +.22) but, interestingly, does not hold for unskilled immigrants (bilateral correlation +.06). This is most likely due to the role of diaspora/immigrant networks, which tends to reduce migration costs mainly for unskilled workers. The experience of the United States symbolizes this effect: the great Mexican migration explains that the share of unskilled immigrants has increased and at the same time diversity has decreased as it became more polarized. This pattern, however, hides considerable heterogeneity: for example, Malaysia has reduced its share of skilled immigrants (primarily a technical effect due to higher domestic educational attainment and thus a broader base) and also increased its diversity of skilled immigrants, whereas Uganda or the Czech Republic saw higher skilled immigration, but lower diversity.

Skilled and unskilled diversity are highly correlated overall, with correlation coefficient of +0.78 for the year 2000 (see the last panel of Figure 2).[11] However, there are some interesting deviations from this relationship: as already stated, the United States have a higher diversity of skilled immigrants than of unskilled immigrants, primarily due to the large inflow of Mexican immigrants that dominates the group of unskilled immigrants. The same holds true for many other countries, such as Ireland, Malaysia, and, to a lower extent, Singapore. All these countries have a large neighboring country that tends to draw a high share of unskilled immigrants, thus lowering the diversity of unskilled immigrants relatively to skilled ones.

3.4 Ethnic fractionalization and birthplace diversity

The data analysis of the previous section highlights that, broadly speaking, birthplace diversity and the diversity among immigrants is high in rich countries while ethnic diversity is larger in poor countries. In this section we formalize these correlations. We run the following simple model:

$$\ln y_{kt} = \alpha + \beta_1 * birthplace\ diversity + \beta_2 * fractionalization + e \qquad (14)$$

We expect the two coefficients β_1 and β_2 to have different signs and to be statistically different from each other. For birthplace diversity, we use Div_{pop} in some specifications and replace it later by our size and variety components s_F and Div_{mig}. For fractionalization, we use Alesina et al.'s (2003) ethnic and linguistic fractionalization measures. Table A1 in the Appendix details the definitions and sources for all our variables. Our aim is to show a simple bilateral correlation, irrespective of other confounding effects. We use the broadest sample of 135 countries with data for GDP, TFP, both fractionalization measures (ethnic and linguistic) and all diversity variables on a cross section for the year 2000 using heteroskedasticity-robust standard errors.

[11] Skilled and unskilled migrations are typically highly correlated, with skilled immigration Granger causing unskilled immigration (Gibson and McKenzie, 2011) through chain migration and network effects. On the latter and their differential effects at different skill levels, see McKenzie and Rapoport (2010).

We present results separately for GDP/capita and TFP/capita in Table 4. The results confirm our main hypothesis, namely, that measures of ethnic and linguistic fractionalization enter negatively whereas birthplace diversity (Div_{pop}) enters positively in all models. We also find that fractionalization turns more negative (increases in magnitude) once birthplace diversity is controlled for – this change in magnitude is not significant, however. Nevertheless, this implies that fractionalization may tend to capture (some) positive effects of birthplace diversity if used in isolation. Most importantly, we establish that our size and variety components both relate positively to economic development and remain highly significant (mostly at the 1% level) when entered jointly.

4 Empirical analysis

4.1 Model and data

In this section we empirically investigate the relationship between birthplace diversity and economic development. We specify the following model where our dependent variable y is a country's income or productivity per capita:[12]

$$\begin{aligned}\ln y_{kt} = \alpha &+ \beta_1 * diversity\ migrants_{skt} \\ &+ \beta_2 * share\ immigration_{skt} \\ &+ \beta_3 * origin\ effects_{skt} \\ &+ \beta_4 * years\ of\ schooling \\ &+ \beta_5 * market\ size\ controls \\ &+ \beta_6 * \Gamma_{kt} + \beta_7 * \Delta_k + \beta_8 * \Phi_{kt} + \beta_9 * \Psi_{kt} + \eta_t + e \end{aligned} \quad (15)$$

As we detail below, Γ_{kt} is a vector of geographic characteristics, Δ_k is a vector of fractionalization measures, Φ_{kt} is a control for institutional development, Ψ_{kt} is a vector of controls for trade openness and trade diversity, and η_t is a time fixed-effect. We use indices s for skill groups (s=overall, skilled, unskilled), t for time (1990, 2000) and k for countries.

The results from our decomposition as well as our previous analysis point to the need to separate the share of foreigners, s_F, and the diversity of immigrants, Div_{Mig}, to isolate size and variety effects. Our empirical specification thus includes the share and the diversity of immigrants.[13] An alternative specification which interacts size and variety shows consistently high positive estimates for

[12] See Table A1 in the Appendix for details on the definitions and sources for all variables.

[13] Note that as a robustness check we also ran a model that directly implements equation (13) using a log-linear specification, with qualitatively similar results for our main variable of interest, Div_{mig}. As can be seen, s_F enters four times in equation (13): as a linear term, a quadratic term, an inverse term $(1 - s_F)$ and an interaction term (with Div_{mig}). All these terms are obviously collinear. A log-linear specification collapses these terms to just two: a linear term and an inverse term, which are actually the same variable interpreted differently (s_F being the share of foreign-born and $1-s_F$ the share of native-born), and so the regression should be collapsed to just two variables, s_F and Div_{mig}, which is what we are doing.

the interaction, but suffers from very high multicollinearity (correlation +.84 for size and the interaction term). We thus proceed to evaluate the marginal effects of size and variety at the means of the respective variables. We also run various robustness checks (see Table 10) to ensure that our results are robust to the exclusion of small countries and of countries with very low immigration.

We control for a very wide range of potential confounding factors. Our model follows the literature in that it includes standard controls (such as education via years of schooling, market potential via population and area sizes, and a landlocked dummy) to which we add a series of controls entered in groups for trade structure, fractionalization, geography, institutions, and what we term origin-effects.

As income differences can be related to trade (Frankel and Romer, 1999) and to the quality of institutions (Rodrik et al., 2004, Glaeser et al., 2004), we control for the volume and structure of trade as well as for the level of democracy. For institutional quality we use the Polity 2 score from the Polity IV database. As trade controls we use real trade openness from PWT 7.0[14] and also control for the structure of trade by constructing a measure of trade diversity (Herfindahl index of exports based on Feenstra et al., 2005). This diversity index is basically the goods market equivalent of birthplace diversity and allows us to test which of the two relates more robustly to income.[15] The need to control for the volume and structure of trade stems from the fact that migration and trade share common determinants, resulting in birthplace diversity possibly capturing some of the productivity effects of trade.

For the fractionalization vector, we include both ethnic and linguistic fractionalization (from Alesina et al., 2003) since both tend to capture birthplace diversity related effects to some degree (see our discussions above).

For the geography vector, we follow the literature and use absolute latitude (Hall and Jones, 1999, Gallup et al., 1998, Rodriguez and Rodrik, 2001, Sachs 2003, Rodrik et al., 2004), malaria intensity (Gallup et al., 1998, Sachs 2003, Rodrik et al., 2004) and the share of population living within 100km of an ice-free coast (Gallup et al., 1998). We also check the robustness of our results to the use of alternative geography variables (see Section 4.3 and Table 10).

Finally, we control for what we term "origin-effects" of diversity via a simple weighted average of the GDP and TFP per capita of the origin countries of immigrants. This is important because it is likely that immigrants coming from richer countries can more easily afford the costs of migration, resulting in countries attracting migrants from richer countries being also more diverse. If this is the case and to the extent that migrants from high-productivity countries have a stronger effect on productivity at destination than migrants from low-

[14]There is substantial ambiguity when choosing a measure for trade liberalization. Measures generally fall in two camps: trade volume or trade policy measures. We use the standard and most basic measure of trade volume: real trade openness as total export and import volume over GDP in real PPP prices. Yanikkaya (2003) compares a range of openness indicators and finds trade openness to correlate most robustly with GDP growth.

[15]Our definition of trade diversity follows the trade literature as (1 - trade concentration), see e.g. Kali et al. (2007) for the effect of trade concentration on income or Frankel et al. (1995) on the link between trade concentration and transportation cost reductions.

productivity countries, then the correlation between birthplace diversity and productivity may be spurious. Controlling for such origin-effects allows for focusing on the pure diversity effect of immigration.

We thus end up with a highly structured model (with our key variables and 14 covariates) and a panel of 93 countries in 1990 and 2000. We interpret the coefficient on β_1 as capturing the pure variety effects of diversity, orthogonal to a wide range of potential alternative effects or channels of influence, and β_2 to capture all size effects of immigration. The mean GDP/capita in PPP is at 4,391 USD, the diversity of immigration ranges from 0.01 to 0.96, with a mean of 0.73. This is somewhat higher than the mean in the overall dataset for which we have this measure (0.65), due to many small island countries with low birthplace diversity dropping from our sample. The correlation between size and variety of immigration in our dataset is +0.07 for unskilled migration and +0.06 for skilled migration (see the Appendix for more descriptive statistics).

4.2 OLS results

We run our model using an OLS estimator with standard errors clustered at the country level to account for serial correlation of standard errors and year fixed effects to account for year-specific shocks to all countries. We use a sample of 92 countries for which there are data for all variables, which amounts to 183 observations for the years 1990 and 2000 combined.[16] The results are presented separately for GDP and TFP per capita and also for overall, skilled and unskilled diversity in Tables 5 to 11.

Table 5 presents initial results for our benchmark model and for the full sample. We introduce our controls sequentially in groups and find that only the diversity of skilled migrants relates positively and significantly at the 5% level to economic income, both for GDP and TFP/capita. For GDP, this estimate turns significant once we control for geography and institutions, whereas the relationship for TFP is positive and significant throughout the specifications. We establish that skilled diversity seems to exhibit more robust positive effects than diversity of unskilled workers. The share of immigrants, the other key determinant of overall diversity, relates positively and significantly to income for unskilled immigrants only (which drives the positive relationship for overall immigrants).

If there were production function effects of diversity and given our theoretical discussions in Section 2, we should find that they are stronger in a subset of economies with more advanced production processes, which are closer to the technological frontier. We thus separate our sample into countries above and below the median GDP and TFP/capita in 1970, allowing for heterogeneity in the coefficients on birthplace diversity.[17] In Table 6, we report our results for

[16] We have only one observation for Central African Republic, Liberia and Trinidad & Tobago, hence our dataset contains 183, not 186 observations. The results are robust to dropping these observations.

[17] We also test the same hypothesis by splitting our sample into countries with higher and lower patent intensity and find very similar results, see Table 8.

rich countries only. We essentially find the same results as in our overall sample, but the magnitudes of our estimates on skilled diversity are much higher and significance is also higher at the 1% level (for the full model). On the contrary, for the poor countries sample in Table 7, we find no significant relationship between variety of immigrants and economic development. This heterogeneity across countries indicates that skilled diversity is particularly relevant in richer countries. For robustness, we extend our split sample approach using patent data. We define average patent intensity as average number of patents granted by national patent offices to residents 1995-2005 as a share of population. We can replicate our rich country results for a limited group of countries that is – measured in terms of relative patents – close to the technological frontier (in the highest quartile). Table 8 shows our results: diversity of skilled immigrants remains stable in terms of magnitude and significant at the 5% level.

4.3 Robustness

We check the robustness of our results to a range of alternative specifications and subsamples. Since the geography controls are critical in any income regression, we replace our standard controls by two alternative specifications suggested by Rodriguez and Rodrik (2001). Table 9 reports the results for share of tropics (in % of land mass area) as alternative control as well as a set of three regional dummies. We find that the correlation regarding skilled diversity of immigrants is robust: it holds at 10% in the GDP model and at 5% significance in the TFP model. The magnitudes remain stable. Interestingly, in both specifications, unskilled diversity becomes more significant. This is particularly true for the specification with regional dummies.

Table 10 shows the robustness of our results (for skilled diversity only) to alternative specifications and samples. Column 1 shows our baseline result as benchmark. Columns (2) and (3) show our results remain valid when weighting observations by the size of immigration (Column 2) or when we drop the 10% of countries with lowest overall immigration (in % of population) (Column 3). We can replicate our baseline results at 5 percent significance level and very similar magnitudes. Column 4 shows our results when dropping smaller countries (excluding countries below the 10th percentile of the size distribution, i.e. below 3.1 million population). Again, our results for skilled diversity remain highly significant, suggesting that it is not small countries that are driving our overall result.

Column 5 limits our sample to the 23 OECD countries in our overall sample. Running our full model on this small sample, we nevertheless find our results for skilled diversity to be significant (at 5% level) for the GDP model. In the TFP model we lose significance but replicate earlier results qualitatively. Lastly, in column 6, we show results when dropping the smallest 25% of observations for skilled diversity to verify that our results are not driven by the skewed distribution of diversity and the corresponding outliers with very low diversity. Again, we can replicate our results and find them to hold in that subsample as well.

Finally, in another robustness check (see Table 11), we control for migration networks in 1960 via a diversity index of migrants in 1960 (based on data from Ozden et al., 2011). We find that our results for diversity of skilled migrants in 1990 and 2000 lose significance but remain positive (largely due to the correlation between diversity in 1960 and 1990/2000, at about +.46). However, we can replicate our rich country subsample results at 1 percent significance levels. This indicates that lagged diversity effects do not drive our main results.[18] How to interpret this result? A descriptive analysis reveals that while in our sample both Div_{mig} and s_F have increased between 1960 and 2000, these changes do not correlate significantly with changes in GDP per capita nor do they correlate significantly one with the other. In other words, countries have become more diverse on both the size and variety dimensions of diversity but these two dimensions do not interact very much. In addition, countries that had a diverse workforce in 1960 are the ones which have a large and diverse second and third generation of immigrants today. This type of diversity somehow combines the presumably favorable effects of birthplace diversity with the more negative effects of ethnic diversity; it is therefore not so surprising that birthplace diversity in 1960 does not seem to affect the level of productivity today nor that it does not wash out the positive productivity effects of current birthplace diversity.

5 Identification

In this section we discuss and go part of the way towards addressing endogeneity concerns. A first major concern is that richer countries could (and actually do) attract a larger flow of immigrants coming from a wider range of origin countries. A descriptive analysis of our data shows however that the diversity of immigration did not increase with economic growth during the period 1990-2000: the bivariate correlation between changes in income (in real GDP/capita) and changes in skilled diversity is extremely low at +0.02. This coefficient is larger by a factor of 5 for the correlation between changes in the share of immigrants and growth over the same period, suggesting that reverse causality is a priori more a concern for the size than for the diversity of immigration. Omitted variables present another potential source of endogeneity. We addressed this second concern by controlling for a large range of factors. In particular, we accounted for the trade openness of a country and for the diversity of its trade partners since it is plausible that more outward-oriented countries would be more open to both trade and immigration.[19] Still, there are certainly remaining

[18] Interestingly, when excluding small countries (with population lower than 3.1 million, i.e., countries below the 10th percentile of the population size distribution) and also the countries with very low foreign-born populations (with immigration shares lower than 1.25%, i.e., countries below the 25th percentile on the immigration share distribution), the results for the rich countries subsample remain stable while the full sample results become significant and positive as well. These results are available upon request.

[19] Interestingly, this correlation between the two is very low in our dataset at +0.11 for diversity of skilled immigrants and real trade openness and +0.01 for diversity of immigration and trade diversity.

factors that govern the joint pattern of migration and productivity (e.g., technological progress affecting transport and communication costs). We therefore rely on an instrumentation procedure to further address these concerns.

5.1 A gravity model of migration and diversity

Bilateral migration – the basis for our diversity measure – is determined by various economic, political, cultural and geographic factors. The trade (e.g., Tinbergen, 1962, Frankel and Romer, 1999) and migration literatures (e.g., Grogger and Hanson, 2011, Beine et al., 2011) have developed approaches to predict trade/migration aggregate flows as a function of these bilateral determinants based on the well-known gravity model. However, since we focus on income levels and productivity, we cannot use the full set of standard bilateral variables in our first-stage estimation. In particular, we cannot use the standard economic (such as absolute or relative income differences, levels of economic inequality) and political factors (such as visa policies, or differences in the quality of institutions) that usually enter in a gravity equation as this would create an endogeneity problem. Hence, we have to rely exclusively on cultural and geographic bilateral determinants that are not directly related to economic development. Our objective is to generate predicted bilateral migration stocks that will then serve as input for equation (11) and allow us to calculate an index of predicted Div_{mig}.

We thus specify the following gravity model for migration, where y_{ikst} is the migration stock from origin country i to destination country k for immigrants of skill level s in year t:[20]

$$y_{ikst} = \alpha + \beta_1 * POPULATION_{kt} + \beta_2 * DISTANCE_{ikt} + \beta_3 * BORDER_{ikt} + \beta_4 * LANGUAGE_{ikt} + \beta_5 * COLONY_{ikt} + \chi_{it} + e$$

The choice of our model determinants follows the standard in the literature (e.g., Lewer and van den Berg 2008, Spilimbergo 2009, Felbermayr et al. 2010, Mayda 2010, Grogger and Hanson 2011, Beine, Docquier and Schiff, 2012, Ortega and Peri, 2009 and 2012) but differs in objective. Again, our goal is not to accurately estimate elasticities of migration to different gravity forces but, rather, to predict migration with sufficient precision solely on the basis of a limited set of exogenous bilateral variables: bilateral (geodesic) distance, common border, common official language, and common colonial history, to which we add the destination country's population size.[21] Multilateral resistance effects (Anderson and Van Wincoop, 2003) are a concern for us if they introduce a bias to our estimates on these determinants. We thus include a set of origin-year

[20] Again, see Table A1 in the Appendix for all variables definitions and sources.

[21] We use the size of the destination country population to proxy for country size; origin-country population size is captured in the origin-year fixed effect. Given that the population size of the receiving country is partly determined by immigration, we also ran our model with population size in 1960 instead and found our results to be robust to this alternative specification.

fixed effects to account for any time variying common origin shock to migration which influences migrants' locations decisions (Bertoli and Fernández-Huertas, 2013, Ortega and Peri, 2012).[22]

5.2 Gravity estimators

With these objectives in mind, we choose to estimate our gravity model using OLS, employing the canonical log-linear transformation of the multiplicative gravity equation (Frankel 1997, Frankel and Romer 1999). Following Santos Silva and Tenreyro (2006), it is well known that any log-linearized model results in an error term that is correlated with its regressors, resulting in biased and inconsistent estimates due to Jensen's inequality. This bias is particularly salient with data that is heteroskedastic, which is typical for trade or migration datasets with a large share of zero-flow bilateral observations. Overall, the degree of OLS bias depends on the underlying features of the data. Our dataset has two very prominent, and troublesome features. First, it has a particularly large share of zero-observations: out of the 73,344 cells, only 15,750 observations have y > 0. This corresponds to a very high share of 78.5% zero-values for bilateral migration stocks. Second, our data is also highly over-dispersed: the variance of emigration stocks to its mean is far from being 1, but much higher: this ratio is about 152,000 (!) for unskilled migration and even four times higher for skilled migration.[23]

These features of the data make it difficult to estimate migration stocks including the zero-observations, since these observations tend to be over-fitted by the non-linear models and correspondingly yield very weak instruments. However, the cost of neglecting the zero-observations is minimal given the way we compute our diversity index. Indeed, what matters from our perspective is to correctly predict the main meaningful bilateral migration stocks, not to correctly predict whether a given cell will be empty or slightly positive (as this will not affect aggregate diversity when this is computed using a Herfindahl index). In other words and given that the larger migration corridors are the ones that drive the diversity index (since the Herfindahl diversity index underweights smaller group shares), a model with high predictive power in explaining strictly positive bilateral migration stocks is very well in line with our objectives. We therefore proceed with a log-linearized gravity model instead of using PPML or other possible estimators.[24]

[22] While the use of origin fixed effects largely suffices to fully account for multilateral resistance in trade, Bertoli and Fernández-Huertas (2013) show that for migration this only holds under more restrictive distributional assumptions. Ortega and Peri (2012), on the other hand, instrument for the openness to trade and also for the size of immigration using a gravity model of migration (with some correction for multilateral resistance) and show that the two react quite differently to different gravity forces.

[23] While Santos Silva and Tenreyro (2006) point out that the data do not need to follow a Poisson distribution (and be equi-dispersed) for PPML to be a valid estimator, this extreme dispersion and the high share of zeros in our underlying data is a cause for concern.

[24] See Santos Silva, Tenreyo and Windmeijer (2011) for a discussion and comparison of a large class of models.

5.3 First-stage results

Table 12 shows the results for our log-linear gravity model. Generally, the models have sufficiently high explanatory power (R2 > .5). All estimates on the migration determinants have the expected sign: population size enters positively, distance negatively. Skilled migration is less constrained by migratory distance, as theory would predict, and it is also less affected by border-effects (the absolute magnitude of estimates on distance and border contiguity is significantly lower for skilled than for unskilled migrants). Common colonial relationship and common official language both enter positively, as expected, with insignificant differences for skilled and unskilled migrants. Overall, we conclude that our gravity models for migration seem well specified to generate credibly exogenous instruments for birthplace diversity.

We turn to comparing our instrument with Div_{mig}. We start by visually assessing the fit of the predicted values with actual diversity. The first panel of Figure 3 shows actual vs. predicted diversity of skilled immigrants based on the gravity model. Overall, the correlation between actual and predicted diversity is very high (+.6 for skilled and unskilled diversity), suggesting that our gravity model generates relatively strong instruments. Our instrument should plausibly be lower (higher) than actual diversity in richer (poorer) countries if prosperity and diversity are positively correlated. In line with our expectations, many rich countries have higher actual than predicted diversity: Canada, Sweden, Belgium, Ireland, and also the USA. The second panel of Figure 3 plots this "prediction error" as a function of GDP per capita. The difference between predicted and actual diversity should become negative as GDP/capita increases. A bivariate regression confirms this result (slope -0.05, significant at 1%) and thus serves as illustrative evidence that our gravity model produces an instrument that plausibly takes out some diversity-increasing effects in richer countries.

We see two potential concerns regarding the exogeneity of our instruments. First, bilateral omitted variables could be correlated with bilateral migration and also overall GDP/TFP, thus violating the exclusion restriction. An example is bilateral trade with a rapidly growing trade partner (such as China), which could affect the overall TFP of China's neighboring trade partners. Hsieh and Ossa (2011) analyze this effect (precisely for the case of China) and find that China's productivity growth has only very small positive effects on the TFP of its trading partners. This implies that any effect on TFP through the bilateral trade channel, while present, is bound to be very low. We are also not concerned about this issue, since all time varying common origin effects (such as rapid productivity growth in one country) would be captured in the origin-time fixed effect. All other global time-specific shocks will be captured in the time fixed effect. We also believe that our trade controls (for trade openness and trade diversity) in the second stage of our 2SLS model adequately capture these effects in the aggregate.

A second concern regarding the exclusion restriction is that relative (bilateral) geography variables in our gravity model (such as distance, common language or border) could be correlated with absolute (unilateral) geography

variables, a point first raised in the context of trade gravity models by Rodriguez and Rodrik (2001). We account for that by including three main geography and disease variables into our 2nd stage baseline model and also by performing the same robustness checks as Rodriguez and Rodrik (2001). In the next section, we also test the validity of our exclusion restriction empirically. We find that all our 2SLS models pass overidentification tests (at p-values significantly above .05).

5.4 2SLS results

Table 13 shows our baseline model with Div_{mig} instrumented by our gravity-model based measure. We largely confirm our prior OLS findings: skilled diversity continues to be significant at the 5% level for GDP/capita and TFP/capita. We also fully confirm the split-sample results for rich countries at 5% statistical significance for both GDP and TFP per capita. We also find some evidence for positive effects of unskilled diversity, but these results are based on weak instruments (F<10). Overall, these 2SLS results confirm our prior OLS results at slightly higher magnitudes, suggesting the presence of measurement error in our Div_{mig} variable (due possibly to poorer countries reporting information on immigrants less systematically).[25]

We also pursue an alternative IV approach using the diversity of immigrants in 1960 (based on Ozden et al., 2011) as an instrument for diversity today. This approach is valid to the extent that diversity in 1960 is not correlated with unobserved factors that also determine diversity and income today. This assumption is admittedly questionable, since a range of economic or political factors that made, say, the USA attractive for immigrants in the 1950s still determine immigration flows today. However, we will be able to implicitly test this assumption via an over-identification test using the gravity model based instruments. Table 14 shows our results: in the full samples, we replicate our earlier OLS results using sufficiently strong instruments (F> 10) at the 5% significance level. This also holds for the split samples. We interpret these results as additional evidence for our prior OLS and IV model findings.

Table 14 shows 2SLS results using as instruments both the lagged diversity in 1960 and our prior predicted diversity.

6 Conclusion

We propose a new index of "birthplace diversity" that captures the variety of countries of birth represented in a country's workforce. This new index, which we decompose into a "size" (share of foreign born) and a "variety" (diversity of immigrants) component, is available for 195 countries in 1990 and 2000 and for the overall as well as for the high (workers with college education) and low-skill fractions of the labor force. We show that birthplace diversity is, maybe surprisingly, largely uncorrelated with ethnic and linguistic fractionalization and

[25] Correspondingly, this attenuation bias largely disappears in our rich country sub-samples.

that – unlike fractionalization – it is positively related to economic development. We empirically investigate the relationship between the birthplace diversity of immigrants and measures of host-country productivity (GDP or TFP per capita), controlling for a large range of factors such as the share of immigration, origin-effects, education, institutions, trade openness and trade diversity, and geography. We employ OLS and specify a gravity-based 2SLS model to address endogeneity.

We find a positive and robust correlation between birthplace diversity and productivity. This association is particularly strong for the diversity of immigrants, especially for skilled immigrants in richer countries.[26] Expanding the diversity of skilled immigration by one standard deviation (e.g., from Iran to Ireland, or Ireland to US) increases long-run real income by a factor of 1.2 to 1.5. These results hold for OLS and 2SLS estimators in a dataset of 93 countries and are robust to a wide range of alternative specifications. We interpret these findings as suggestive of production function effects of diversity. These effects can theoretically arise though complementarities in skills, cognitive abilities or problem solving capabilities that emerge from the combination of workers with diverse origins in a joint production task. Such positive production function effects have been uncovered in a number of recent empirical and experimental studies at the team and firm levels, but evidence at an aggregate level had so far been limited to US cities and states. These results have potentially strong implications for the design of immigration policies. Indeed, immigration policies around the world can be broadly characterized along two dimensions: restrictiveness (quantitative restrictions) and selectivity (qualitative restrictions). However, with the notable exception of the US diversity lottery visa, they have so far neglected the diversity dimension, therefore missing an important channel through which immigration contributes to economic prosperity in the receiving countries.

7 References

Abramitzky, R., Boustan L. and K. Eriksson (2012), "Europe's tired, poor, huddled masses: self-selection and economic outcomes in the age of mass migration", American Economic Review, 102(5): 1832-1856

Ager, P. and M. Brückner (2011), "Cultural Diversity and Economic Growth: Evidence from the US during the Age of Mass Migration." University of Adelaide School of Economics, Research Paper No. 2011-02.

Alesina, A. and E. La Ferrara (2000), "Participation in Heterogeneous Communities." *The Quarterly Journal of Economics,* 115(3): 847-904.

Alesina, A. and E. La Ferrara (2002), "Who trusts others?" *Journal of Public Economics,* 85(2): 207-234.

[26] We also find some limited evidence of positive diversity effects for unskilled immigrants, which we interpret as representing stronger assimilation incentives and/or lower substitutability with native workers where low-skill immigration is more diverse.

Alesina A. and A. Devleeschauwer (2003), "Fractionalization.", *Journal of Economic Growth,* 8(2): 155-194.

Alesina A. S. Michalopoulos and E. Papaioannou (2012) 'Ethnic Inequality" unpublished manuscript

Alesina, A., E. Spolaore, and R. Wacziarg (2000), "Economic Integration and Political Disintegration." *American Economic Review,* 90(5): 1276-1296.

Alesina, A., R. Baqir and W. Easterly (1999), "Public Goods and Ethnic Divisions." *Quarterly Journal of Economics,* 114(4): 1243-84.

Alesina A., S. Michalopoulos , and E. Papaioannou (2012) , "Ethnic Inequality." Mimeo.

Anderson, J. and E. Van Wincoop (2003), "Gravity And Gravitas: A Solution To The Border Puzzle." *American Economic Review*, 93(1): 170-192.

Ashraf, Q. and O. Galor (2011), "Cultural Diversity, Geographical Isolation, and the Origin of the Wealth of Nations.", *NBER* Working Paper No. 17640.

Ashraf, Q. and O. Galor (2012), "The Out of Africa Hypothesis, Human Genetic Diversity and Comparative Economic Development." *American Economic Review,* forthcoming.

Barro, R. and J.W. Lee (2010), "A New Data Set of Educational Attainment in the World, 1950-2010." *NBER*, Working Paper No. 15902.

Bandiera, O., I. Rasul and M. Viarengo (2012): "The making of modern America: migratory flows in the age of mass migration.", Journal of Development Economics, forthcoming.

Beine M., F. Docquier and M. Schiff (2012), "Migration, Transfer of Norms and Home Country Fertility." Canadian Journal of Economics, forthcoming.

Beine M., F. Docquier and C. Özden (2011), "Diasporas." *Journal of Development Economics,* 95(1): 30-41.

Beine, M., F. Docquier and H. Rapoport (2007), "Measuring international skilled migration: a new database controlling for age of entry," *World Bank Economic Review*, 21, 2: 249-54.

Bertoli, S. (2010), "Networks, sorting and self-selection of Ecuadorian Migrants." *Annales d'Economie et de Statistique*, 97-98: 261-88.

Bertoli, S. and J. Fernández-Huertas Moraga (2013), "Multilateral Resistance to Migration." *Journal of Development Economics*, forthcoming.

Boeheim, R., G. Horvath and K. Mayr (2012), "Birthplace Diversity of the Workforce and Productivity Spill-overs in Firms." WIFO Working Papers No. 438.

Brunow, S., M. Trax and J. Suedekum (2012), "Cultural diversity and plant-level productivity." IZA Working Paper No. 6845/2012.

Card, D. (2001), "Immigrant Inflows, Native Outflows and the Local Labor Market Impacts of Higher Immigration." *Journal of Labor Economics,* 19(1): 22-64.

Collier, P. (1999), "On the Economic Consequences of Civil War." *Oxford Economic Papers,* 51: 168-183.

Collier, P. (2001), "Ethnic diversity: An economic analysis of its implications." *Economic Policy,* 32: 129-166.

Davidson, R. and J. G. MacKinnon (1981), "Several tests for model specification in the presence of alternative hypotheses." *Econometrica*, 49: 781-793.

Desmet, K., I. Ortuño-Ortín and R. Wacziarg (2012), "The Political Economy of Ethnolinguistic Cleavages." *Journal of Development Economics,*, 97(2): 322-338.

Docquier, F. and A. Marfouk (2006), "International migration by educational attainment (1990-2000)", in C. Ozden and M. Schiff (eds). International Migration, Remittances and Development, Palgrave Macmillan: New York.

Docquier, F., C. Özden, C. Parsons and E. Artuc (2012), "A global assessment of human capital mobility: the role of non-OECD destinations." Mimeo, Université Catholique de Louvain, September.

Docquier, F. and H. Rapoport (2012), "Globalization, brain drain and development." *Journal of Economic Literature*, 50(3): 681-730.

Easterly, W. and R. Levine (1997), "Africa's Growth Tragedy: Policies and Ethnic Divisions." *Quarterly Journal of Economics,*, 112(4): 1203-1250.

Esteban, J. and E. Ray (1994), "On the Measurement of Polarization." *Econometrica*, 62(4): 819-51.

Esteban, J. and E. Ray (2011), "Linking Conflict to Inequality and Polarization." *American Economic Review,* 101 (4): 1345-74.

Esteban, J., L. Mayoral and E. Ray (2012), "Ethnicity and Conflict: An Empirical Study." *American Economic Review,* 102(4): 1310-1342.

Fearon, J. and D. Laitin (2003), "Ethnicity, Insurgency, and Civil War." *American Political Science Review,* 97(1): 75-90.

Feenstra, R. C., R. E. Lipsey, H. Deng, A. C. Ma and H. Mo (2005), "World Trade Flows: 1962-2000." *NBER* Working Paper No. 11040.

Felbermayr, G., S. Hiller and D. Sala (2010), "Does immigration boost per capita income?" *Economics Letters,* 107(2): 177-179.

Frankel, J. and D. Romer (1999), "Does Trade Cause Growth?" *The American Economic Review,* 89(3): 379-399.

Frankel, J., E. Stein and S. J. Wei (1995), "Trading blocs and the Americas: the natural, the unnatural, and the super-natural." *Journal of Development Economics,* 47(1): 61-95.

Frankel, J. (1997), "Regional Trading Blocks in the World Economic System." Washington DC: Institute for International Economics, 1997.

Froelich, M. (2008), "Parametric and Nonparametric Regression in the Presence of Endogenous Control Variables." *International Statistical Review,* 76(2): 214-227.

Gallup, J. L., J. D. Sachs and A. Mellinger (1998), "Geography and Economic Development," in Pleskovic, B. and J.E. Stiglitz (eds.), *Annual World Bank Conference on Development Economics*, The World Bank: Washington, DC.

Gibson, J. and D. McKenzie (2011), "Eight questions about brain drain." *Journal of Economic Perspectives,* 25(3): 107-28.

Giuliano, P., A. Spilimbergo and G. Tonon (2006), "Genetic, Cultural and Geographical Distances." *CEPR* Discussion Papers 5807.

Glaeser, E.L., R.F. La Porta and A. Shleifer (2004), " Do institutions cause growth?" Journal of Economic Growth, 9(4): 271-303.

Greenberg, J. H. (1956), "The Measurement of Linguistic Diversity," *Language*, 32: 109-115.

Grogger, J. and G. H. Hanson (2011), "Income maximization and the selection and sorting of international migrants." *Journal of Development Economics,* 95: 42-57.

Hall, R. and C. J. Jones (1999), "Why do Some Countries Produce So Much More Output Per Worker than Others?" *The Quarterly Journal of Economics,* 114(1): 83-116.

Hambrick, D. C., T. Seung Cho and M. J. Chen (1996), "The Influence of Top Management Team Heterogeneity on Firms' Competitive Moves." *Administrative Science Quarterly,* 41(4): 659-684.

Hatton, T. and J. Williamson (1998): The Age of Mass Migration: Causes and Economic Impact, Oxford: Oxford University Press.

Head, K., T. Mayer and J. Ries (2010), "The erosion of colonial trade linkages after independence." *Journal of International Economics,* 81(1): 1-14.

Heston, A., R. Summers and B. Aten (2011), "Penn World Tables Version 7.0." Center for International Comparisons of Production, Income and Prices, University of Pennsylvania.

Hong, L. and S. E. Page (2001), "Problem Solving by Heterogeneous Agents." *Journal of Economic Theory,* 97(1): 123-163.

Hoogendoorn, S. and M. van Praag (2012), "Ethnic Diversity and Team Performance: A Field Experiment." *IZA* Working Paper No. 6731.

Hsieh, C. T. and R. Ossa (2011), "A Global View of Productivity Growth in China." *NBER* Working Paper 16778, September 2011.

Kali, R., F. Méndez and J. Reyes (2007), "Trade Structure and Economic Growth." *Journal of International Trade & Economic Development*, 16(2): 245 – 269.

Lazear, E. P. (1999a), "Globalisation and the Market for Teammates." *Economic Journal,* 109(454): 15-40.

Lazear, E. P. (1999b), "Culture and Language." *Journal of Political Economy* 107(6): 95-126.

Lewer, J. J. and H. Van den Berg (2008), "A Gravity Model of Immigration." *Economics Letters* 99(1): 164 -167.

Marshall, M. and K. Jaggers (2009), "Polity IV Project: Political regime characteristics and transitions, 1800-2007." Center for International Development and Conflict Management, University of Maryland.

Martinez-Zarzoso, I. (2013), "The log of gravity revisited." *Applied Economics,* 45(3): 311-327.

Mayda, A. M. (2006), "Who is against immigration? A cross-country investigation of individual-level attitudes toward immigrants." *Review of Economics and Statistics,* 88(3): 510-530.

Mayda, A. M. (2010), "International migration: a panel data analysis of the determinants of bilateral flows." *Journal of Population Economics,* 23(4): 1249-1274.

McKenzie, D. and H. Rapoport (2010), "Self-selection patterns in Mexico-US migration: the role of migration networks." *Review of Economics and Statistics,* 92(4): 811-821.

Michalopoulos, S. (2012), "The Origins of Ethnolinguistic Diversity." *American Economic Review,* 102(4): 1508-1539.

Milliken, F.J. and L.L. Martins (1996), "Searching for common threads: Understanding the multiple effects of diversity in organizational groups." *Academy of Management Review*, 21(2): 402-433.

Montalvo, J. G. and M. Reynal-Querol (2005a), "Ethnic Diversity and Economic Development," *Journal of Development Economics,* 76(1): 293-323.

Montalvo, J. G. and M. Reynal-Querol (2005b), "Ethnic Polarization, Potential Conflict, and Civil Wars," *American Economic Review,* 95(3): 796-816.

Munshi, K. (2003), "Networks in the modern economy: Mexican migrants in the US labor market," *Quarterly Journal of Economics*, 118(2): 549-99.

O'Reilly, J. G. and M. Reynal-Querol (2005b), "Ethnic Polarization, Potential Conflict, and Civil Wars," *American Economic Review,* 95(3): 796-816.

Montalvo, C. A., D.F. Caldwell and W.P. Barnett (1989), "Work group demography, social integration, and turnover." *Administrative Science Quarterly,* 34(1): 21-37.

Ortega, F. and G. Peri (2009), "The causes and effects of international migrations: Evidence from OECD countries 1980-2005." *NBER* Working Paper 14833.

Ortega, F. and G. Peri (2012), "The Effect of Trade and Migration on Income." NBER Working Paper No. 18193.

Ottaviano, G. and G. Peri (2006), "The Economic Value of Cultural Diversity: Evidence from U.S. Cities." *Journal of Economic Geography,* 6(1): 9-44.

Parrotta, P., D. Pozzoli, and M. Pytlikova (2012), "Does Labor Diversity Affect Firm Productivity?" IZA Working Paper No. 6973/2012.

Peri, G. (2012), "The effect of immigration on productivity: evidence from US States." *Review of Economics and Statistics,* 94(1): 348-358.

Ramsey, J. B. (1969), "Tests for specification errors in classical linear least squares regression analysis." *Journal of the Royal Statistical Society* B 31: 350-371.

Reynal-Querol, M. (2002), "Ethnicity, Political Systems, and Civil Wars." *Journal of Conflict Resolution,* 46: 29-54.

Rodriguez, F. and D. Rodrik (2001), "Trade Policy and Economic Growth: A Skeptic's Guide to the Cross-National Evidence." *NBER Macroeconomics Annual*, 15: 261-338.

Rodrik, D., A. Subramanian and F. Trebbi (2004), "Institutions Rule: The Primacy of Institutions Over Geography and Integration in Economic Development." *Journal of Economic Growth,* 9(2): 131-165.

Sachs, J. (2003), "Institutions don't rule: direct effects of geography on per capita income." NBER Working Paper No 9490.

Santos Silva, J. and S. Tenreyro (2006), "The Log of Gravity." *The Review of Economics and Statistics,* 88(4): 641-658.

Santos Silva, J. and S. Tenreyro (2011), "Further simulation evidence on the performance of the Poisson pseudo-maximum likelihood estimator." *Economics Letters,* 112(2): 220-22.

Santos Silva, J., S. Tenreyro and F. Windmeijer (2011), "Is it Different for Zeros? Discriminating Between Models for Nonnegative Data with Many Zeros." Mimeo.

Spilimbergo, A. (2009), "Democracy and Foreign Education." *American Economic Review* 99(1): 528-43.

Spolaore, E. and R. Wacziarg (2009), "The Diffusion of Development." *Quarterly Journal of Economics,* 124(2): 469-529.

Stock, J. H. and M. Yogo (2002), "Testing for Weak Instruments in Linear IV Regression." In Donald Andrews and James H. Stock, eds. Identification and Inference for Econometric Models: Essays in Honor of Thomas Rothenberg, New York, NY: Cambridge University Press.

Tinbergen, J. (1962), "An Analysis of World Trade Flows" in Shaping the World Economy, edited by Jan Tinbergen. New York, NY: Twentieth Century Fund.

Yanikkaya, H. (2003), "Trade openness and economic growth: a cross-country empirical investigation." *Journal of Development Economics,* 72(1): 57-89.

Table 1: Bilateral correlations between different diversity measures, 2000

Bilateral correlations Year: 2000; n=163	Ethnic Fractio-nalization	Birthplace Diversity (Pop)	Share of foreigners	Birthplace Diversity (Migrants)	Birthplace Diversity (Skilled Migrants)
Ethnic Fractionalization	1				
Birthplace Diversity (Population)	0.1586	1			
Share of Foreigners	0.1833	0.9842	1		
Birthplace Diversity (Migrants)	-0.0151	0.1515	0.1281	1	
Birthplace Diversity (Skilled Migrants)	-0.2042	0.0824	0.0647	0.7491	1

Table 2: Birthplace Diversity vs. Fractionalization, by regions (means)

Average 1990-2000	**Alesina et al 2003**		**Birthplace Diversity, work force**			**Birthplace Diversity, migrants only**		
Region	Ethnic	Linguistic	all	skilled	unskilled	all	skilled	unskilled
Australia and Oceania	**0.24**	**0.34**	**0.15**	**0.50**	**0.12**	**0.43**	**0.47**	**0.42**
	12	12	12	10	11	12	10	11
Eastern Europe and Central Asia	**0.40**	**0.37**	**0.05**	**0.08**	**0.05**	**0.69**	**0.66**	**0.69**
	17	16	17	17	17	17	17	17
Latin America & Caribbean	**0.40**	**0.18**	**0.05**	**0.06**	**0.05**	**0.65**	**0.71**	**0.65**
	33	34	26	22	25	26	22	25
Middle East and North Africa	**0.39**	**0.26**	**0.29**	**0.39**	**0.28**	**0.78**	**0.77**	**0.78**
	21	23	24	24	24	24	24	24
North America	**0.60**	**0.41**	**0.30**	**0.31**	**0.28**	**0.94**	**0.96**	**0.91**
	2	2	2	2	2	2	2	2
South & South East Asia	**0.39**	**0.46**	**0.10**	**0.19**	**0.10**	**0.46**	**0.48**	**0.45**
	27	34	28	27	28	28	27	28
Sub-Saharan Africa	**0.66**	**0.63**	**0.15**	**0.13**	**0.16**	**0.68**	**0.52**	**0.68**
	46	47	47	34	47	47	34	47
Western Europe	**0.29**	**0.28**	**0.24**	**0.23**	**0.25**	**0.78**	**0.76**	**0.77**
	30	30	30	30	30	30	30	30

Note: Table 2 shows un-weighted average of countries' diversity scores (full sample of countries for which the Alesina et al. (2003) fractionalization index is available)

Table 3: Fractionalization and diversity indices, selected countries (in 2000)

Destination	Ethnic Fractionalization	Birthplace Diversity, Population	Share of immigration	Birthplace Diversity, Migrants	Birthplace Diversity, Skilled Immigrants
Argentina	0.26	0.07	0.03	0.89	0.95
Australia	0.09	0.47	0.28	0.90	0.92
Bangladesh	0.05	0.01	0.00	0.06	0.06
Brazil	0.54	0.01	0.00	0.89	0.93
Cambodia	0.21	0.08	0.04	0.49	0.53
Canada	0.71	0.40	0.22	0.96	0.96
China	0.15	0.00	0.00	0.87	0.87
France	0.10	0.17	0.09	0.92	0.96
Germany	0.17	0.15	0.08	0.90	0.97
India	0.42	0.01	0.00	0.61	0.70
Iran	0.67	0.02	0.01	0.33	0.36
Israel	0.34	0.69	0.45	0.94	0.91
Italy	0.11	0.04	0.02	0.96	0.97
Qatar	0.75	0.86	0.67	0.94	0.94
Saudi Arabia	0.18	0.55	0.34	0.89	0.89
Singapore	0.39	0.34	0.19	0.61	0.70
South Africa	0.75	0.07	0.04	0.89	0.89
Spain	0.42	0.11	0.05	0.94	0.95
United Kindom	0.12	0.17	0.09	0.96	0.96
United States	0.49	0.25	0.13	0.92	0.97

Table 4: Birthplace Diversity and Fractionalization

Dependent variable (log)	(1) GDP/capita	(2) GDP/capita	(3) GDP/capita	(4) GDP/capita	(5) TFP/capita	(6) TFP/capita	(7) TFP/capita	(8) TFP/capita
Ethnic Fractionalization	-3.015***			-3.112***	-2.028***			-2.089***
	(0.358)			(0.303)	(0.249)			(0.216)
Birthplace Diversity, population		2.550***				1.612***		
		(0.790)				(0.517)		
Birthplace Diversity, immigrants			1.731***	1.593***			1.146***	1.054***
			(0.416)	(0.384)			(0.286)	(0.273)
Share of Immigration			2.397*	3.080***			1.503*	1.962***
			(1.213)	(0.869)			(0.774)	(0.547)
Constant	9.804***	8.108***	7.047***	8.496***	7.090***	5.962***	5.256***	6.228***
	(0.197)	(0.142)	(0.280)	(0.343)	(0.135)	(0.0969)	(0.194)	(0.246)
Observations	135	135	135	135	135	135	135	135
R-squared	0.323	0.094	0.141	0.481	0.317	0.081	0.129	0.461

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Dependent variable (log)	(9) GDP/capita	(10) GDP/capita	(11) GDP/capita	(12) GDP/capita	(13) TFP/capita	(14) TFP/capita	(15) TFP/capita	(16) TFP/capita
Linguistic Fractionalization	-2.511***			-2.726***	-1.659***			-1.795***
	(0.327)			(0.296)	(0.229)			(0.213)
Birthplace Diversity, population		2.550***				1.612***		
		(0.790)				(0.517)		
Birthplace Diversity, immigrants			1.731***	1.485***			1.146***	0.985***
			(0.416)	(0.379)			(0.286)	(0.278)
Share of Immigration			2.397*	3.631***			1.503*	2.316***
			(1.213)	(0.997)			(0.774)	(0.633)
Constant	9.445***	8.108***	7.047***	8.210***	6.836***	5.962***	5.256***	6.021***
	(0.173)	(0.142)	(0.280)	(0.302)	(0.121)	(0.0969)	(0.194)	(0.225)
Observations	135	135	135	135	135	135	135	135
R-squared	0.270	0.094	0.141	0.447	0.255	0.081	0.129	0.416

Robust standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 5: Diversity of immigrants and economic development, OLS

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita
Birthplace Diversity, Immigrants, all	**0.0380**			**0.0234**			**0.188**			**0.470***			**0.414**		
	(0.335)			**(0.334)**			**(0.360)**			**(0.279)**			**(0.258)**		
Share Immigration, Work Force, all	1.803***			1.819***			2.035***			1.681**			1.654**		
	(0.450)			(0.469)			(0.502)			(0.641)			(0.678)		
Average GDP of immigrants at origin, all	0.510***			0.541***			0.400***			0.0940			0.0357		
	(0.0946)			(0.0924)			(0.105)			(0.101)			(0.0950)		
Birthplace Diversity, Immigrants, skilled		**0.240**			**0.237**			**0.383**			**0.693****			**0.656****	
		(0.310)			**(0.391)**			**(0.388)**			**(0.310)**			**(0.295)**	
Share Immigration, Work Force, skilled		1.195**			1.177*			1.387*			0.636			0.499	
		(0.578)			(0.625)			(0.738)			(0.471)			(0.449)	
Average GDP of immigrants at origin, skilled		0.265**			0.290**			0.172			-0.0146			-0.0556	
		(0.102)			(0.111)			(0.118)			(0.102)			(0.0947)	
Birthplace Diversity, Immigrants, unskilled			**0.0329**			**0.0250**			**0.199**			**0.436**			**0.375**
			(0.329)			**(0.328)**			**(0.351)**			**(0.267)**			**(0.246)**
Share Immigration, Work Force, unskilled			1.672***			1.690***			1.910***			1.662***			1.644**
			(0.424)			(0.439)			(0.463)			(0.606)			(0.643)
Average GDP of immigrants at origin, unskilled			0.506***			0.536***			0.394***			0.0985			0.0435
			(0.0939)			(0.0919)			(0.103)			(0.0968)			(0.0918)
Controls															
Trade	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Ethnicity	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
Geography and disease	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
Observations	186	186	186	183	183	183	183	183	183	183	183	183	183	183	183
R-squared	0.723	0.688	0.721	0.737	0.701	0.735	0.750	0.720	0.749	0.832	0.817	0.833	0.847	0.832	0.848

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Dependent variable (log)	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, all	**0.588****			**0.637****			**0.524***			**0.345**			**0.255**		
	(0.277)			**(0.276)**			**(0.292)**			**(0.210)**			**(0.209)**		
Share Immigration, Work Force, all	0.619**			0.593*			1.160***			1.102***			1.119***		
	(0.304)			(0.307)			(0.334)			(0.400)			(0.419)		
Average TFP of immigrants at origin, all	0.0910			0.0802			0.0588			0.0429			0.0349		
	(0.0556)			(0.0564)			(0.0503)			(0.0561)			(0.0582)		
Birthplace Diversity, Immigrants, skilled		**0.515****			**0.624*****			**0.517****			**0.444****			**0.378****	
		(0.198)			**(0.223)**			**(0.231)**			**(0.186)**			**(0.189)**	
Share Immigration, Work Force, skilled		0.943**			0.992**			1.167**			0.531			0.444	
		(0.382)			(0.404)			(0.507)			(0.334)			(0.326)		
Average TFP of immigrants at origin, skilled		0.0586			0.0479			0.0254			0.0285			0.0207		
		(0.0514)			(0.0553)			(0.0554)			(0.0594)			(0.0617)		
Birthplace Diversity, Immigrants, unskilled			**0.545****			**0.597****			**0.510***			**0.321**			**0.233**
			(0.273)			**(0.273)**			**(0.284)**			**(0.206)**			**(0.204)**
Share Immigration, Work Force, unskilled			0.553*			0.531*			1.085***			1.083***			1.102***
			(0.288)			(0.291)			(0.311)			(0.377)			(0.396)
Average TFP of immigrants at origin, unskilled			0.0932			0.0818			0.0624			0.0427			0.0342
			(0.0569)			(0.0581)			(0.0520)			(0.0578)			(0.0598)
Controls															
Trade	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Ethnicity	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
Geography and disease	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
Observations	186	186	186	183	183	183	183	183	183	183	183	183	183	183	183
R-squared	0.603	0.606	0.601	0.612	0.617	0.609	0.666	0.658	0.665	0.788	0.776	0.788	0.801	0.787	0.802

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Table 6: Diversity of immigrants and economic development, OLS, rich countries only

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Sample (cutoff: median GDP/capita, 1970)	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita
Birthplace Diversity, Immigrants, all	**0.392**			**0.373**			**0.454**			**0.718****			**0.543***		
	(0.453)			**(0.467)**			**(0.409)**			**(0.325)**			**(0.311)**		
Share Immigration, Work Force, all	1.795**			1.724**			1.734**			2.642***			2.808***		
	(0.717)			(0.764)			(0.720)			(0.612)			(0.628)		
Average GDP of immigrants at origin, all	0.186			0.173			0.144			-0.107			-0.113		
	(0.161)			(0.160)			(0.160)			(0.116)			(0.107)		
Birthplace Diversity, Immigrants, skilled		**0.914****			**1.033****			**0.975****			**1.485*****			**1.434*****	
		(0.398)			**(0.462)**			**(0.457)**			**(0.410)**			**(0.421)**	
Share Immigration, Work Force, skilled		1.264			1.295			0.997			0.598			0.592	
		(0.869)			(0.880)			(0.891)			(0.634)			(0.639)	
Average GDP of immigrants at origin, skilled		-0.0714			-0.0701			-0.0478			-0.292**			-0.293**	
		(0.151)			(0.159)			(0.174)			(0.143)			(0.143)	
Birthplace Diversity, Immigrants, unskilled			**0.342**			**0.334**			**0.410**			**0.562***			**0.406**
			(0.421)			**(0.434)**			**(0.380)**			**(0.298)**			**(0.284)**
Share Immigration, Work Force, unskilled			1.631**			1.551**			1.569**			2.565***			2.722***
			(0.649)			(0.687)			(0.641)			(0.591)			(0.601)
Average GDP of immigrants at origin, unskilled			0.198			0.180			0.165			-0.0413			-0.0555
			(0.151)			(0.152)			(0.150)			(0.112)			(0.102)
Controls															
Trade	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Ethnicity	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
Geography and disease	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
Observations	95	95	95	93	93	93	93	93	93	93	93	93	93	93	93
R-squared	0.642	0.622	0.639	0.631	0.611	0.628	0.704	0.678	0.703	0.839	0.777	0.838	0.850	0.778	0.851

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Sample (cutoff: median TFP/capita, 1970)	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH	RICH
Dependent variable (log)	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, all	**0.372**			**0.374**			**0.385**			**0.429****			**0.214**		
	(0.249)			**(0.246)**			**(0.231)**			**(0.202)**			**(0.184)**		
Share Immigration, Work Force, all	0.747**			0.704**			0.834**			1.605***			1.859***		
	(0.332)			(0.345)			(0.344)			(0.329)			(0.324)		
Average TFP of immigrants at origin, all	-0.00809			-0.00575			0.0453			0.0391			0.0407		
	(0.0669)			(0.0655)			(0.0502)			(0.0338)			(0.0343)		
Birthplace Diversity, Immigrants, skilled		**0.479****			**0.622****			**0.571****			**0.668*****			**0.607*****	
		(0.212)			**(0.263)**			**(0.243)**			**(0.200)**			**(0.177)**	
Share Immigration, Work Force, skilled		0.552			0.555			0.577			0.462			0.499	
		(0.490)			(0.500)			(0.466)			(0.369)			(0.408)	
Average TFP of immigrants at origin, skilled		-0.00899			-0.00742			0.0247			0.0137			0.0142	
		(0.0574)			(0.0561)			(0.0464)			(0.0402)			(0.0412)	
Birthplace Diversity, Immigrants, unskilled			**0.333**			**0.340**			**0.366***			**0.377***			**0.178**
			(0.236)			**(0.234)**			**(0.216)**			**(0.190)**			**(0.169)**
Share Immigration, Work Force, unskilled			0.660**			0.618**			0.725**			1.539***			1.770***
			(0.292)			(0.300)			(0.297)			(0.306)			(0.303)
Average TFP of immigrants at origin, unskilled			-0.00830			-0.00677			0.0474			0.0417			0.0409
			(0.0677)			(0.0667)			(0.0501)			(0.0323)			(0.0327)
Controls															
Trade	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Ethnicity	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
Geography and disease	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
Observations	95	95	95	93	93	93	93	93	93	93	93	93	93	93	93
R-squared	0.595	0.586	0.591	0.588	0.584	0.585	0.704	0.696	0.702	0.825	0.770	0.826	0.845	0.772	0.846

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Table 7: Diversity of immigrants and economic development, OLS, poor countries only

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Sample (cutoff: median GDP/capita, 1970)	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita
Birthplace Diversity, Immigrants, all	**-0.738****			**-0.738****			**-0.631****			**-0.217**			**-0.164**		
	(0.309)			**(0.296)**			**(0.301)**			**(0.385)**			**(0.380)**		
Share Immigration, Work Force, all	0.150			0.217			0.320			-0.0156			-0.0170		
	(0.684)			(0.673)			(0.657)			(0.708)			(0.655)		
Average GDP of immigrants at origin, all	0.252***			0.280***			0.215**			-0.0269			-0.0443		
	(0.0900)			(0.103)			(0.0995)			(0.127)			(0.121)		
Birthplace Diversity, Immigrants, skilled		**-0.378**			**-0.301**			**-0.193**			**0.151**			**0.169**	
		(0.266)			**(0.320)**			**(0.325)**			**(0.354)**			**(0.356)**	
Share Immigration, Work Force, skilled		0.704			0.819			0.879			1.044*			0.804	
		(0.625)			(0.709)			(0.752)			(0.618)			(0.625)	
Average GDP of immigrants at origin, skilled		0.142			0.149			0.0884			-0.0748			-0.0825	
		(0.0956)			(0.119)			(0.111)			(0.112)			(0.108)	
Birthplace Diversity, Immigrants, unskilled			**-0.735****			**-0.736****			**-0.621***			**-0.216**			**-0.168**
			(0.321)			**(0.308)**			**(0.314)**			**(0.388)**			**(0.379)**
Share Immigration, Work Force, unskilled			0.0961			0.151			0.260			-0.0705			-0.0647
			(0.690)			(0.683)			(0.661)			(0.700)			(0.646)
Average GDP of immigrants at origin, unskilled			0.237**			0.260**			0.189*			-0.0531			-0.0665
			(0.0950)			(0.107)			(0.105)			(0.130)			(0.122)
Controls															
Trade	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Ethnicity	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
Geography and disease	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
Observations	91	91	91	90	90	90	90	90	90	90	90	90	90	90	90
R-squared	0.493	0.467	0.490	0.505	0.476	0.500	0.524	0.512	0.520	0.641	0.651	0.643	0.664	0.670	0.666

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown).
Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
Sample (cutoff: median TFP/capita, 1970)	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR	POOR
Dependent variable (log)	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, all	**-0.271**			**-0.229**			**-0.243**			**-0.180**			**-0.157**		
	(0.288)			**(0.273)**			**(0.293)**			**(0.291)**			**(0.285)**		
Share Immigration, Work Force, all	-0.103			-0.0657			0.208			0.123			0.174		
	(0.639)			(0.628)			(0.587)			(0.632)			(0.579)		
Average TFP of immigrants at origin, all	0.127			0.129			0.0904			0.0609			0.0566		
	(0.0821)			(0.0889)			(0.0860)			(0.0856)			(0.0860)		
Birthplace Diversity, Immigrants, skilled		**-0.0688**			**0.0346**			**0.0279**			**0.0492**			**0.0399**	
		(0.209)			**(0.208)**			**(0.218)**			**(0.223)**			**(0.224)**	
Share Immigration, Work Force, skilled		0.660			0.790			0.859			0.827			0.667	
		(0.462)			(0.497)			(0.610)			(0.519)			(0.539)	
Average TFP of immigrants at origin, skilled		0.0615			0.0534			0.0226			-0.00891			-0.00843	
		(0.0940)			(0.108)			(0.105)			(0.0984)			(0.0980)	
Birthplace Diversity, Immigrants, unskilled			**-0.293**			**-0.254**			**-0.262**			**-0.200**			**-0.174**
			(0.293)			**(0.275)**			**(0.296)**			**(0.295)**			**(0.288)**
Share Immigration, Work Force, unskilled			-0.127			-0.0943			0.174			0.0964			0.148
			(0.633)			(0.623)			(0.585)			(0.625)			(0.573)
Average TFP of immigrants at origin, unskilled			0.124			0.125			0.0868			0.0567			0.0523
			(0.0784)			(0.0850)			(0.0838)			(0.0872)			(0.0880)
Controls															
Trade	-	-	-	X	X	X	X	X	X	X	X	X	X	X	X
Ethnicity	-	-	-	-	-	-	X	X	X	X	X	X	X	X	X
Geography and disease	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X
Institutions	-	-	-	-	-	-	-	-	-	-	-	-	X	X	X
Observations	91	91	91	90	90	90	90	90	90	90	90	90	90	90	90
R-squared	0.350	0.335	0.350	0.370	0.362	0.371	0.412	0.411	0.412	0.535	0.542	0.535	0.559	0.562	0.559

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown).
Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Diversity of immigrants and economic development, OLS, by patent intensity

	(1)	(2)	(3)	(4)	(5)	(6)
	Subsample of countries with patent intensity > 75th percentile					
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, all	**0.451**			**0.322**		
	(0.385)			**(0.201)**		
Share Immigration, Work Force, all	0.830			0.774**		
	(1.012)			(0.318)		
Average GDP of immigrants at origin, all	0.0880			0.0491*		
	(0.226)			(0.0269)		
Birthplace Diversity, Immigrants, skilled		**1.299****			**0.595****	
		(0.561)			**(0.280)**	
Share Immigration, Work Force, skilled		0.356			0.183	
		(0.578)			(0.195)	
Average GDP of immigrants at origin, skilled		0.457			0.0474	
		(0.289)			(0.0293)	
Birthplace Diversity, Immigrants, unskilled			**0.230**			**0.261**
			(0.387)			**(0.157)**
Share Immigration, Work Force, unskilled			0.778			0.834***
			(0.820)			(0.269)
Average GDP of immigrants at origin, unskilled			0.0210			0.0522*
			(0.209)			(0.0266)
Controls						
Trade	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X
Geography and disease	X	X	X	X	X	X
Institutions	X	X	X	X	X	X
Observations	44	44	44	44	44	44
R-squared	0.634	0.704	0.625	0.764	0.754	0.777

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept (not shown). Country-clustered standard errors in parentheses.

*** p<0.01, ** p<0.05, * p<0.1

Table 9: Robustness to alternative geography controls

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita
Birthplace Diversity, Immigrants, all	**0.414**			**0.482***			**0.911****		
	(0.258)			**(0.289)**			**(0.378)**		
Share Immigration, Work Force, all	1.654**			1.587***			1.640***		
	(0.678)			(0.549)			(0.497)		
Birthplace Diversity, Immigrants, skilled		**0.656****			**0.586***			**0.682***	
		(0.295)			**(0.323)**			**(0.383)**	
Share Immigration, Work Force, skilled		0.499			0.215			-0.302	
		(0.449)			(0.559)			(0.565)	
Birthplace Diversity, Immigrants, unskilled			**0.375**			**0.437**			**0.838****
			(0.246)			**(0.278)**			**(0.362)**
Share Immigration, Work Force, unskilled			1.644**			1.551***			1.626***
			(0.643)			(0.513)			(0.464)
Land area in geographical tropics (%)				-0.839***	-0.918***	-0.834***			
				(0.199)	(0.192)	(0.198)			
Dummy: South-Saharan Africa							-0.686***	-0.794***	-0.677***
							(0.237)	(0.236)	(0.238)
Dummy: Latin America							-1.302***	-1.171***	-1.283***
							(0.374)	(0.339)	(0.369)
Dummy: East Asia							-0.737***	-0.905***	-0.736***
							(0.141)	(0.154)	(0.140)
Controls									
Trade	X	X	X	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X	X	X	X
Geography and disease	X	X	X	-	-	-	-	-	-
Institutions	X	X	X	X	X	X	X	X	X
Observations	183	183	183	183	183	183	183	183	183
R-squared	0.847	0.832	0.848	0.823	0.805	0.823	0.841	0.818	0.841

All models include basic controls for education and market size (origin effects, years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown).
Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Dependent variable (log)	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, all	**0.255**			**0.417****			**0.735*****		
	(0.209)			**(0.208)**			**(0.245)**		
Share Immigration, Work Force, all	1.119***			1.002***			1.098***		
	(0.419)			(0.333)			(0.315)		
Birthplace Diversity, Immigrants, skilled		**0.378****			**0.437****			**0.573****	
		(0.189)			**(0.190)**			**(0.239)**	
Share Immigration, Work Force, skilled		0.444			0.187			-0.125	
		(0.326)			(0.402)			(0.403)	
Birthplace Diversity, Immigrants, unskilled			**0.233**			**0.385***			**0.679*****
			(0.204)			**(0.204)**			**(0.241)**
Share Immigration, Work Force, unskilled			1.102***			0.975***			1.084***
			(0.396)			(0.310)			(0.292)
Land area in geographical tropics (%)									
Dummy: South-Saharan Africa							-0.642***	-0.709***	-0.637***
							(0.167)	(0.166)	(0.167)
Dummy: Latin America							-1.105***	-0.983***	-1.093***
							(0.247)	(0.240)	(0.246)
Dummy: East Asia							-0.514***	-0.629***	-0.515***
							(0.107)	(0.109)	(0.107)
Controls									
Trade	X	X	X	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X	X	X	X
Geography and disease	X	X	X	-	-	-	-	-	-
Institutions	X	X	X	X	X	X	X	X	X
Observations	183	183	183	183	183	183	183	183	183
R-squared	0.801	0.787	0.802	0.777	0.764	0.777	0.803	0.782	0.803

All models include basic controls for education and market size (origin effects, years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown).
Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Other robustness checks

	(1)	(2)	(3)	(4)	(5)	(6)
Sample	Full sample	Share of immigration weighted	excl. bottom 10% share immigration	excl bottom 10% popula-tion size	OECD countries only	excl. bottom 25% diversity immigrants
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita
Birthplace Diversity, Immigrants, skilled	**0.656****	**1.143*****	**0.695****	**0.732****	**0.624****	**1.646****
	(0.295)	**(0.399)**	**(0.307)**	**(0.302)**	**(0.298)**	**(0.656)**
Share Immigration, Work Force, skilled	0.499	-0.363	0.365	0.697	-0.0652	0.805
	(0.449)	(0.583)	(0.438)	(0.489)	(0.349)	(0.732)
Average GDP of immigrants at origin, skilled	-0.0556	0.00463	-0.0595	-0.0439	0.115	-0.0773
	(0.0947)	(0.138)	(0.0988)	(0.100)	(0.117)	(0.137)
Controls						
Trade	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X
Geography and disease	X	X	X	X	X	X
Institutions	X	X	X	X	X	X
Observations	183	183	164	167	46	132
R-squared	0.832	0.849	0.842	0.868	0.933	0.818

(1) equivalent to baseline model. (2) Weighted least square model with share of immigrants as weight. (3) excludes observations with immigration shares < 0.4% (bottom 10% of dataset). (4) excludes observations with populations < 3.1 Mio. (bottom 10% of dataset) (5) reduces sample to OECD countries in year 2000. (6) excludes lowest 25% of observations on diversity of skilled immigrants (< .61 diversity).

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown).
Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

	(7)	(8)	(9)	(10)	(11)	(12)
Sample	Full sample	Share of immigration weighted	excl. bottom 10% share immigration	excl bottom 10% popula-tion size	OECD countries only	excl. bottom 25% diversity immigrants
Dependent variable (log)	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, skilled	**0.378****	**0.860*****	**0.383***	**0.429****	**0.246**	**1.117****
	(0.189)	**(0.237)**	**(0.197)**	**(0.197)**	**(0.203)**	**(0.474)**
Share Immigration, Work Force, skilled	0.444	-0.0917	0.357	0.548	0.0852	0.540
	(0.326)	(0.467)	(0.319)	(0.356)	(0.201)	(0.501)
Average TFP of immigrants at origin, skilled	0.0207	-0.00203	0.0289	-0.0227	0.0126	-0.0318
	(0.0617)	(0.0514)	(0.0654)	(0.0543)	(0.0411)	(0.0603)
Controls						
Trade	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X
Geography and disease	X	X	X	X	X	X
Institutions	X	X	X	X	X	X
Observations	183	183	164	167	46	132
R-squared	0.787	0.823	0.804	0.827	0.853	0.781

(7) equivalent to baseline model. (8) Weighted least square model with share of immigrants as weight. (9) excludes observations with immigration shares < 0.4% (bottom 10% of dataset). (10) excludes observations with populations < 3.1 Mio. (bottom 10% of dataset) (11) reduces sample to OECD countries in year 2000. (12) excludes lowest 25% of observations on diversity of skilled immigrants (< .61 diversity)

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown).
Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Table 11: Robustness to migration networks in 1960

	(1)	(2)	(3)	(4)
Sample	Full sample	Full sample	Rich countries only	Rich countries only
Dependent variable (log)	GDP/capita	TFP/capita	GDP/capita	TFP/capita
Birthplace Diversity, Immigrants, skilled	**0.561**	**0.199**	**1.593*** **	**0.506*** **
	(0.412)	**(0.252)**	**(0.307)**	**(0.195)**
Share Immigration, Work Force, skilled	0.558	0.567*	0.365	0.697
	(0.437)	(0.314)	(0.438)	(0.489)
Birthplace Diversity, Immigrants, 1960	**0.152**	**0.310**	**-0.226**	**0.152**
	(0.390)	**(0.294)**	**(0.307)**	**(0.192)**
Controls				
Trade	X	X	X	X
Ethnicity	X	X	X	X
Geography and disease	X	X	X	X
Institutions	X	X	X	X
Observations	**183**	**183**	**93**	**93**
R-squared	0.832	0.790	0.780	0.773

All models include basic controls for education and market size (years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Standard errors clustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Table 12: Gravity Model Results

	(1)	(2)	(3)
Estimation method	OLS	OLS	OLS
Sample	ALL	SKILLED	UNSKILLED
Dependent variable	log migration	log migration	log migration
Destination country population (log)	0.779***	0.800***	0.738***
	(0.0178)	(0.0176)	(0.0187)
Distance (log)	-0.971***	-0.602***	-1.019***
	(0.0481)	(0.0369)	(0.0513)
Colonial relationship	1.500***	1.358***	1.576***
	(0.157)	(0.144)	(0.159)
Common official language	1.664***	1.731***	1.527***
	(0.0950)	(0.0998)	(0.100)
Border contiguity	1.175***	0.672***	1.311***
	(0.121)	(0.115)	(0.122)
Origin-year fixed effects	X	X	X
Observations	15,750	13,055	15,133
R-squared	0.537	0.530	0.526

Origin country clustered standard errors in parentheses. All models include an intercept (not reported).
*** p<0.01, ** p<0.05, * p<0.1

Table 13: 2SLS Results with predicted div(mig) as instrument

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Estimation method	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Sample	ALL	ALL	ALL	RICH	POOR	RICH	POOR	RICH	POOR
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita
Birthplace Diversity, Immigrants, all	**1.202***			**0.840***	**0.0518**				
	(0.725)			**(0.482)**	**(0.772)**				
Share Immigration, Work Force, all	1.446**			2.689***	-0.0649				
	(0.668)			(0.644)	(0.584)				
Birthplace Diversity, Immigrants, skilled		**1.452****				**1.014****	**0.702**		
		(0.592)				**(0.423)**	**(0.675)**		
Share Immigration, Work Force, skilled		0.562				0.650	0.937*		
		(0.409)				(0.581)	(0.488)		
Birthplace Diversity, Immigrants, unskilled			**1.286***					**0.960***	**0.107**
			(0.742)					**(0.503)**	**(0.805)**
Share Immigration, Work Force, unskilled			1.414**					2.520***	-0.125
			(0.645)					(0.631)	(0.580)
Controls									
Trade	X	X	X	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X	X	X	X
Geography and disease	X	X	X	X	X	X	X	X	X
Institutions	X	X	X	X	X	X	X	X	X
Observations	183	183	183	93	90	93	90	93	90
R-squared	0.838	0.822	0.836	0.848	0.662	0.775	0.653	0.842	0.662
F-Test on instrument, first stage	19.80	55.05	17.99	6.700	21.07	41.08	22.51	6.514	19.57

All models indude basic controls for education and market size (average GDP/TFP of immigrants at origin, years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Stock-Yogo critical values: 16.38 (10%), 8.96 (15%), 6.66 (20%). Standard errors dustered by country.
*** p<0.01, ** p<0.05, * p<0.1

	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Estimation method	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Sample	ALL	ALL	ALL	RICH	POOR	RICH	POOR	RICH	POOR
Dependent variable (log)	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, all	**0.731**			**0.753***	**-0.180**				
	(0.526)			(0.385)	(0.515)				
Share Immigration, Work Force, all	1.052***			1.710***	0.174				
	(0.407)			(0.385)	(0.516)				
Birthplace Diversity, Immigrants, skilled		**0.842****				**0.727****	**0.278**		
		(0.401)				**(0.345)**	**(0.394)**		
Share Immigration, Work Force, skilled		0.470				0.471	0.698		
		(0.299)				(0.362)	(0.468)		
Birthplace Diversity, Immigrants, unskilled			**0.783**					**0.778****	**-0.151**
			(0.539)					**(0.390)**	**(0.533)**
Share Immigration, Work Force, unskilled			1.022***					1.620***	0.147
			(0.392)					(0.375)	(0.513)
Controls									
Trade	X	X	X	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X	X	X	X
Geography and disease	X	X	X	X	X	X	X	X	X
Institutions	X	X	X	X	X	X	X	X	X
Observations	183	183	183	93	90	93	90	93	90
R-squared	0.791	0.776	0.789	0.823	0.559	0.771	0.552	0.815	0.559
F-Test on instrument, first stage	18.51	46.93	17.93	7.281	16.90	34.17	33.00	7.271	16.37

All models indude basic controls for education and market size (average GDP/TFP of immigrants at origin, years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Stock-Yogo critical values: 16.38 (10%), 8.96 (15%), 6.66 (20%). Standard errors dustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Table 14: 2SLS Results with predicted div(mig) and diversity in 1960 as instruments

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Estimation method	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Sample	ALL	ALL	ALL	RICH	POOR	RICH	POOR	RICH	POOR
Dependent variable (log)	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita	GDP/capita
Birthplace Diversity, Immigrants, all	**0.583**			**0.271**	**-0.574**				
	(0.372)			**(0.398)**	**(0.395)**				
Share Immigration, Work Force, all	1.610**			2.916***	0.0742				
	(0.645)			(0.566)	(0.557)				
Birthplace Diversity, Immigrants, skilled		**1.123*** **				**1.009****	**-0.129**		
		(0.408)				**(0.409)**	**(0.368)**		
Share Immigration, Work Force, skilled		0.536				0.651	0.729		
		(0.409)				(0.584)	(0.588)		
Birthplace Diversity, Immigrants, unskilled			**0.553**					**0.229**	**-0.567**
			(0.365)					**(0.369)**	**(0.397)**
Share Immigration, Work Force, unskilled			1.599***					2.787***	0.0225
			(0.615)					(0.546)	(0.548)
Controls									
Trade	X	X	X	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X	X	X	X
Geography and disease	X	X	X	X	X	X	X	X	X
Institutions	X	X	X	X	X	X	X	X	X
Observations	183	183	183	93	90	93	90	93	90
R-squared	0.847	0.829	0.848	0.849	0.656	0.775	0.665	0.850	0.658
F-Test on instrument, first stage	46.94	58.49	44.73	15.22	40.76	48.33	36.58	14.14	38.31
Hansen J-Test	0.245	0.315	0.178	0.0777	0.288	0.977	0.0518	0.0133	0.293

All models indude basic controls for education and market size (average GDP/TFP of immigrants at origin, years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Stock-Yogo critical values: 16.38 (10%), 8.96 (15%), 6.66 (20%). Standard errors dustered by country.
*** p<0.01, ** p<0.05, * p<0.1

	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
Estimation method	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS	2SLS
Sample	ALL	ALL	ALL	RICH	POOR	RICH	POOR	RICH	POOR
Dependent variable (log)	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita	TFP/capita
Birthplace Diversity, Immigrants, all	**0.494***			**0.407**	**-0.366**				
	(0.285)			(0.250)	(0.325)				
Share Immigration, Work Force, all	1.085***			1.805***	0.179				
	(0.400)			(0.305)	(0.509)				
Birthplace Diversity, Immigrants, skilled		**0.720****				**0.764*****	**-0.0700**		
		(0.292)				**(0.294)**	**(0.270)**		
Share Immigration, Work Force, skilled		0.463				0.463	0.652		
		(0.297)				(0.370)	(0.488)		
Birthplace Diversity, Immigrants, unskilled			**0.478***					**0.364**	**-0.370**
			(0.282)					**(0.227)**	**(0.328)**
Share Immigration, Work Force, unskilled			1.067***					1.724***	0.152
			(0.380)					(0.290)	(0.503)
Controls									
Trade	X	X	X	X	X	X	X	X	X
Ethnicity	X	X	X	X	X	X	X	X	X
Geography and disease	X	X	X	X	X	X	X	X	X
Institutions	X	X	X	X	X	X	X	X	X
Observations	183	183	183	93	90	93	90	93	90
R-squared	0.798	0.781	0.799	0.842	0.554	0.770	0.560	0.843	0.555
F-Test on instrument, first stage	49.46	43.69	50.39	15.57	39.65	28.16	56.49	15.67	39.34
Hansen J-Test	0.509	0.519	0.409	0.184	0.602	0.810	0.0874	0.0768	0.570

All models indude basic controls for education and market size (average GDP/TFP of immigrants at origin, years of schooling, population, area size [all in logs] and landlocked dummy. Trade controls: Trade openness in % of GDP at PPP, Trade Diversity (Herfindahl index of exports). Ethnicity: Ethnic and linguistic fractionalization. Geography: Absolute latitude, Malaria incidence area in % (1994) and population within 100km of icefree coast (%). Institutions: Polity2 institutional quality index. All models contain an intercept and year fixed effects (not shown). Stock-Yogo critical values: 16.38 (10%), 8.96 (15%), 6.66 (20%). Standard errors dustered by country.
*** p<0.01, ** p<0.05, * p<0.1

Figure 1: Ethnic Fractionalization, birthplace diversity and diversity of immigration in 2000

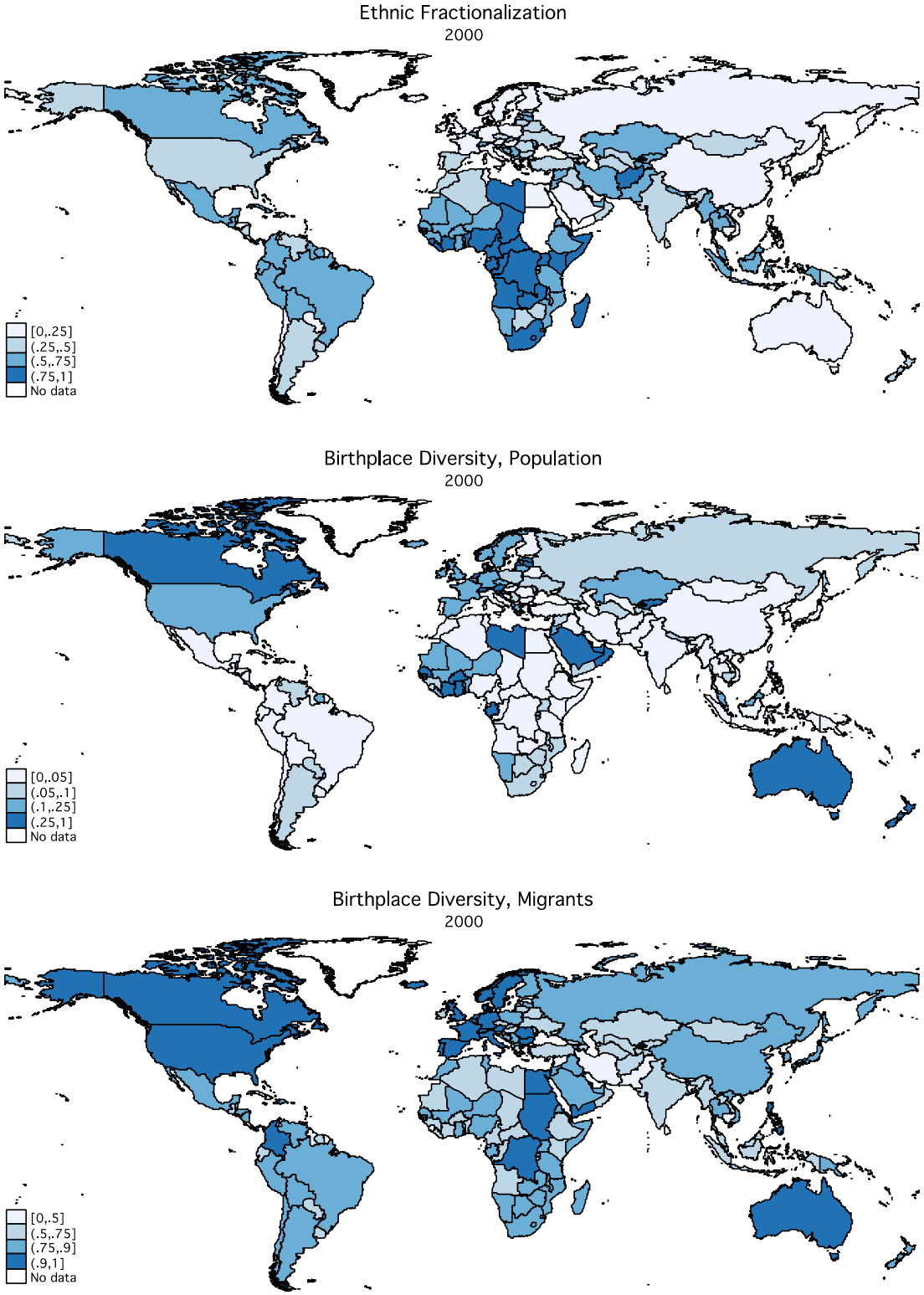
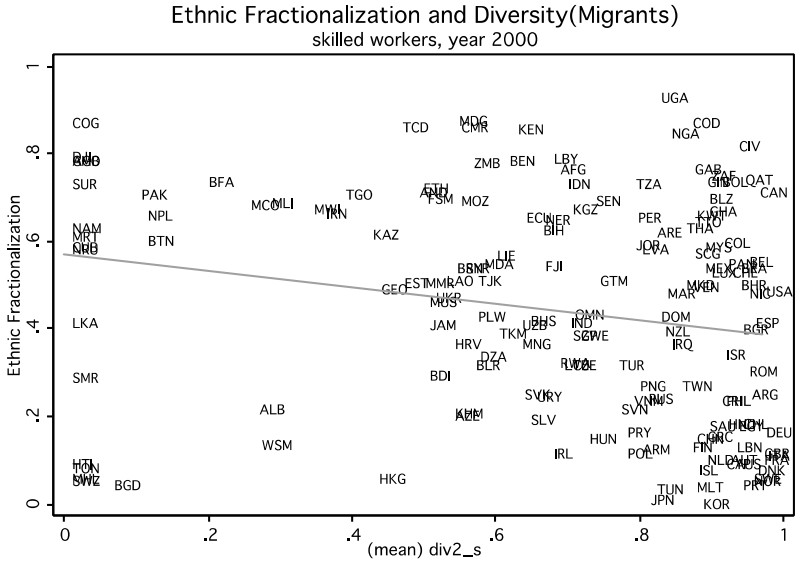
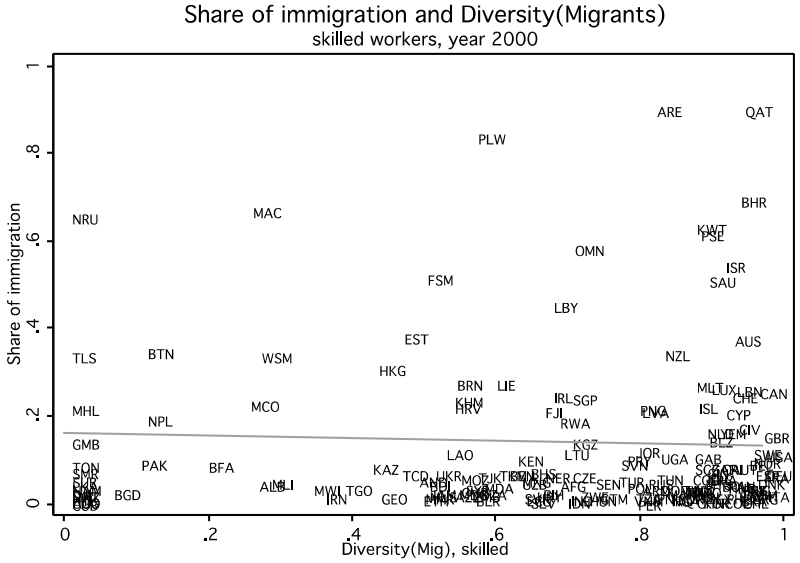
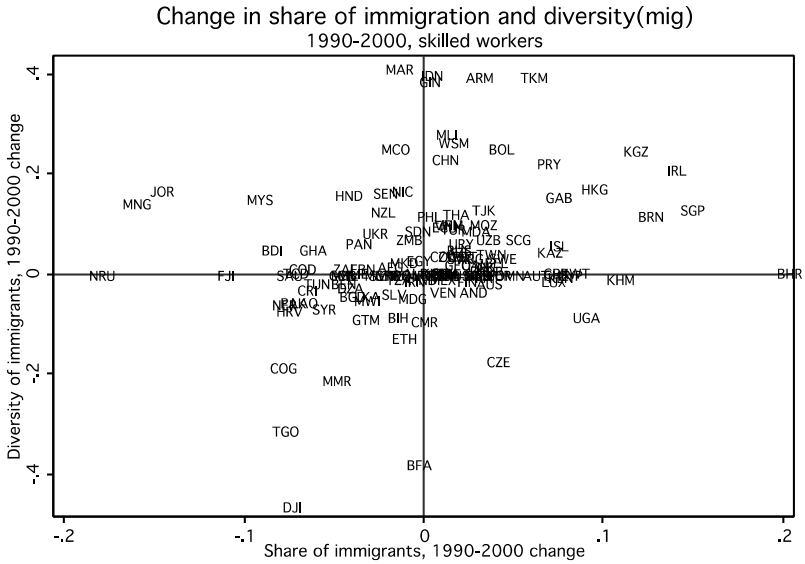


Figure 2: Bilateral relationships between different fractionalization/diversity measures, 2000






Change in share of immigration and diversity(mig)
1990-2000, skilled workers
Diversity of immigrants, 1990-2000 change
Share of immigrants, 1990-2000 change
-.4
-.2
0
.2
.4
-.2
-.1
0
.1
.2
MAR
ARM
TKM
MLI
WSM
MCO
BOL
KGZ
CHN
PRY
IRL
JOR
MNG
MYS
HND
NIC
GAB
HKG
NZL
THA
TJK
BRN
SGP
UKR
ZMB
SCG
BDI
GHA
PAN
KAZ
NRU
FJI
KHM
BHR
VEN
AND
SYR
GTM
BIH
CMR
UGA
ETH
CZE
COG
MMR
TGO
BFA
DJI

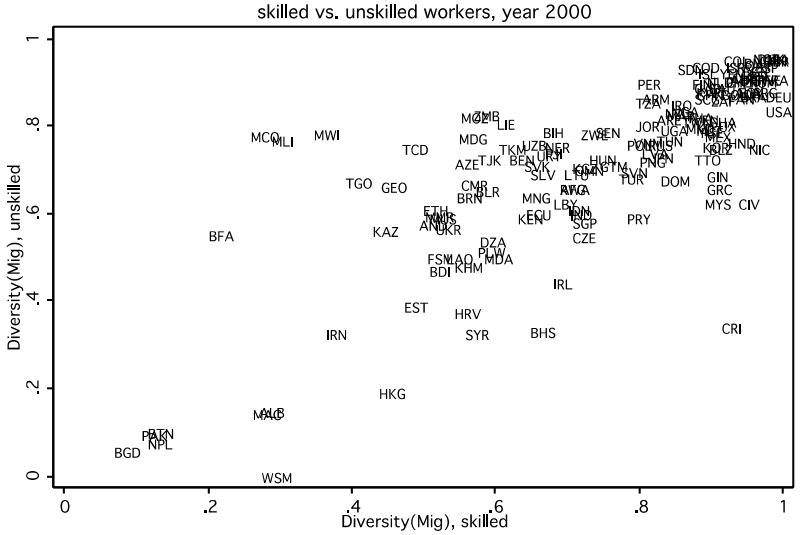
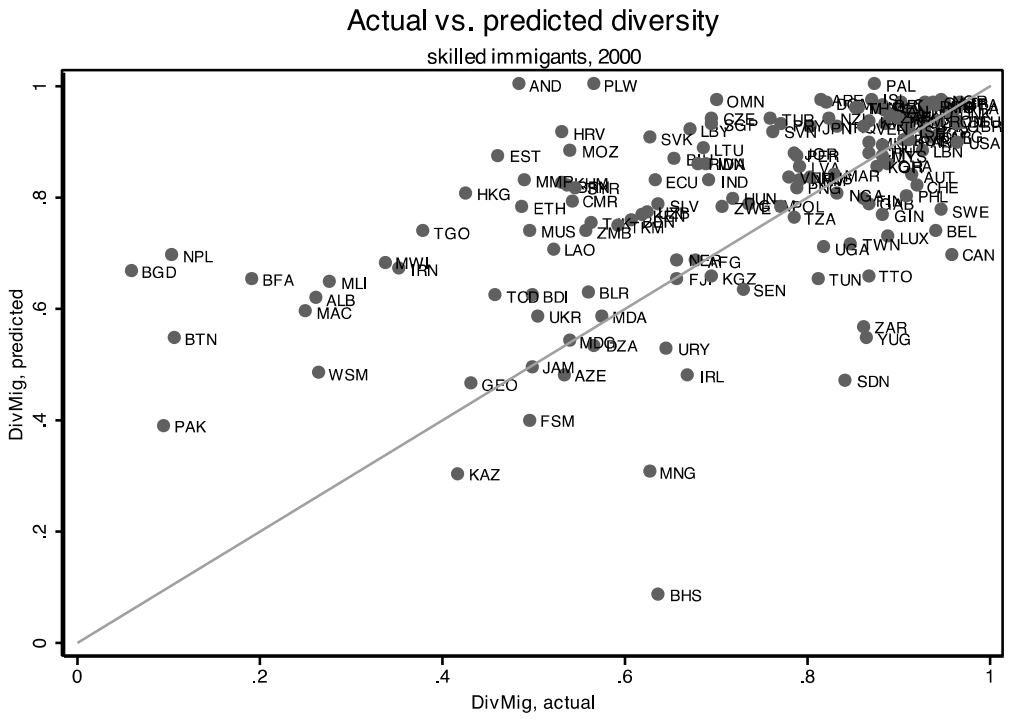
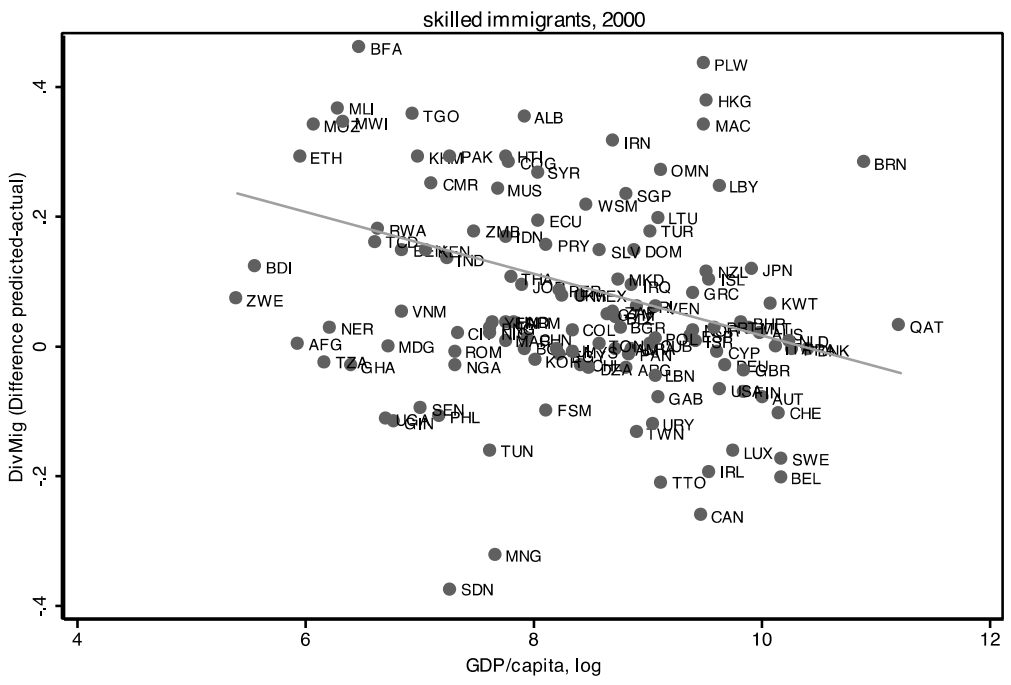

Diversity(Migrants) by skill level
skilled vs. unskilled workers, year 2000
Diversity(Mig), unskilled
Diversity(Mig), skilled
0
.2
.4
.6
.8
1
0
.2
.4
.6
.8
1
PER
USA
MCO
MLI
MWI
TCD
MDG
TGO
GEO
AZE
TJK
BRN
MNG
KEN
SGP
PRY
CZE
BFA
KAZ
DZA
KHM
IRL
EST
HRV
IRN
SYR
BHS
CRI
HKG
BGD
NPL
WSM

Figure 3: Predicted v. actual diversity, 2000





APPENDIX

Table A1: Data definitions and sources

Variable Name	Definion	Source
Income (Y)		
GDP/capita	log of GDP/capita in int. USD, PPP)	Penn World Tables 7.0, Heston Summers Aten (2011)
TFP/capita	log of total factor productivity (TFP) / capita. TFP calculated using capital share (alpha) = 0.3, depreciation rate (delta) = 0.06. Capital stock calculated using perpetual inventory method based on 10 year average investment using starting values of series in 1960 and 1970.	Hall and Jones (1999), Penn World Tables, 7.0
Migration & Diversity		
Birthplace Diversity(Population)	Herfindahl index of overall population (above age 21) group shares based on country of origin (including native born population). Calculated by skill level: Overall, college-educated and non-college-educated workers	Own calculations, Docquier et al (2010)
Birthplace Diversity(Migrants)	Herfindahl index of immigrant population (above age 21) group shares based on country of origin (excluding native born population). Calculated by skill level: Overall, college-educated and non-college-educated workers	Own calculations, Docquier et al (2010)
Share of foreigners	Sum of all immigrants / total population (above age 21), by skill level	Docquier et al (2010)
Market size controls		
Population size	Population size, log	Penn World Tables 7.0, Heston Summers Aten (2011)
Area size	Country area size in square kilometers, log	CEPII (2010), Head et al. (2010)
Landlockedness	Dummy =1 if country is landlocked	CEPII (2010), Head et al. (2010)
Education		
Years of schooling	Years of schooling, population > 25 years, log	Barro and Lee (2010)
Origin effects		
GDP/capita of immigrants	Weighted average of immigrants GDP/ capita at origin	Own calculations, PWT 7.0
TFP/capita of immigrants	Weighted average of immigrants TFP/ capita at origin	Own calculations, PWT 7.0
Trade openness		
Trade openness	Sum of exports and imports over GDP, in PPP	Penn World Tables 7.0, Heston Summers Aten (2011)
Diversity of trade	Herfindahl index of export shares with all trade partners, in nominal USD	Own calculations, Feenstra (2005)
Fractionalization		
Ethnic fractionalization	Herfindahl index of ethnic group shares	Alesina et al. (2003)
Linguistic fractionalization	Herfindahl index of linguistic group shares	Alesina et al. (2003)
Geography		
Absolute latitude	Absolute latitude of capital/90	Gallup, Sachs, Mellinger (1998)
Malaria area	% Malaria area in 1994	Gallup, Sachs, Mellinger (1998)
Coastal population	% Population within 100km from ice-free coast, 1995	Gallup, Sachs, Mellinger (1998)
Institutions		
Quality of institutions	Polity2- score -10: Most repressive, +10: Most democratic	PolityIV database, Marshall Jaggers (2009)
Other variables used for robustness		
Tropical area	% land area in geographical tropics	Gallup, Sachs, Mellinger (1998)
Geography fixed effects	Latin America, South-Saharan Africa and South-East Asia	Rodriguez and Rodrik (2001)
Patent intensity	Average of patents granted 1995-2005) per capita, log	WIPO (2010)
Gravity model parameters		
Population size	Population size, log	CEPII (2010), Head et al. (2010)
Distance	Geodesic distance, log	CEPII (2010), Head et al. (2010)
Common official language	Dummy =1 for pair with same official language	CEPII (2010), Head et al. (2010)
Common border	Dummy =1 for pair with common land border	CEPII (2010), Head et al. (2010)
Colony	Dummy =1 for pair ever in colonial relationship	CEPII (2010), Head et al. (2010)

Table A2: Descriptive statistics

Birthplace Diversity Index Descriptive Features (full sample)

Variable	Obs	Mean	St.Dev	Min	Max
GDP/Capita, PPP, log	183	8.39	1.38	4.77	10.71
TFP/Capita, PPP, log	183	6.16	0.93	3.41	7.64
Diversity(Pop), all	183	0.12	0.17	0.00	0.84
Diversity(Pop), skilled	183	0.14	0.14	0.00	0.76
Diversity(Pop), unskilled	183	0.12	0.17	0.00	0.87
Share of immigration, all	183	0.08	0.13	0.00	0.84
Share of immigration, skilled	183	0.08	0.10	0.00	0.61
Share of immigration, unskilled	183	0.08	0.14	0.00	0.91
Diversity(Mig), all	183	0.73	0.21	0.01	0.96
Diversity(Mig), skilled	183	0.71	0.26	0.00	0.97
Diversity(Mig), unskilled	183	0.72	0.22	0.01	0.96
Weighted GDP/capita (PPP, log) of immigrants, all	183	8.71	1.01	6.41	10.19
Weighted GDP/capita (PPP, log) of immigrants, unskilled	183	8.67	1.00	6.42	10.20
Weighted GDP/capita (PPP, log) of immigrants, skilled	183	8.87	1.13	4.77	10.18
Weighted TFP/capita (PPP, log) of immigrants, all	183	5.69	0.94	1.53	7.32
Weighted TFP/capita (PPP, log) of immigrants, skilled	183	5.83	0.99	1.18	7.30
Weighted TFP/capita (PPP, log) of immigrants, skilled	183	5.67	0.93	1.58	7.34
Population, log	183	9.69	1.36	6.84	14.05
Area in squared km, log	183	12.75	1.46	8.54	16.12
Landlocked dummy	183	0.18	0.39	0.00	1.00
Years of Schooling (log)	183	1.75	0.54	-0.10	2.54
Ethnic Fractionalization	183	0.45	0.26	0.00	0.93
Linguistic Fractionalization	183	0.40	0.31	0.00	0.92
Trade openness (exp+imp/gdp at PPP)	183	64.76	40.93	11.99	364.18
Diversity of trade (exports, Herfindahl index)	183	0.83	0.15	0.20	0.95
Abs. distance equator, in degrees	183	0.29	0.19	0.00	0.71
Malaria area, 1994	183	0.41	0.43	0.00	1.00
Population within 100km of icefree coast	183	0.44	0.35	0.00	1.00
Polity2, institutional quality	183	3.48	6.81	-9.00	10.00

Note: Table shows Alesina et al 2003 data only for countries in our sample.

Table A3: List of countries with missing information

The following table shows the countries with missing information in the Docquier dataset:

Country	Total Immigration = 0		BP Diversity, overall, all		BP Diversity, migrants all	
	1990	2000	1990	2000	1990	2000
Antigua and Barbuda	x		.		.	
Barbados	x		.		.	
Belize	x		.		.	
Dominica	x	x	.	.	.	.
Grenada	x	x	.	.	.	.
Guinea-Bissau	x		.		.	
Guyana	x		.		.	
Holy See (Vatican City)	x	x	.	.	.	.
Jamaica	x		.		.	
Saint Kitts and Nevis	x	x	.	.	.	.
Saint Lucia	x	x	.	.	.	.
Saint Vincent and the Grenadines	x	x	.	.	.	.
Tuvalu	x	x	.	.	.	.
Vanuatu		x		.		.
Total	**13**	**8**	**13**	**8**	**13**	**8**

Country	Skilled Immigration = 0		BP Diversity, overall, skilled		BP Diversity, migrants, skilled	
	1990	2000	1990	2000	1990	2000
Antigua and Barbuda	x	x	.	.	.	.
Bahamas, The	x		.		.	
Barbados	x	x	.	.	.	.
Belize	x		.		.	
Botswana	x	x	.	.	.	.
Cape Verde	x	x	.	.	.	.
Central African Republic		x		.		.
Comoros	x	x	.	.	.	.
Cuba	x		.		.	
Dominica	x	x	.	.	.	.
Equatorial Guinea	x	x	.	.	.	.
Eritrea	x	x	.	.	.	.
Grenada	x	x	.	.	.	.
Guinea-Bissau	x	x	.	.	.	.
Guyana	x	x	.	.	.	.
Haiti	x		.		.	
Holy See (Vatican City)	x	x	.	.	.	.
Jamaica	x		.		.	
Kiribati	x	x	.	.	.	.
Lesotho	x	x	.	.	.	.
Liberia		x		.		.
Maldives	x	x	.	.	.	.
Mauritius	x		.		.	
Saint Kitts and Nevis	x	x	.	.	.	.
Saint Lucia	x	x	.	.	.	.
Saint Vincent and the Grenadines	x	x	.	.	.	.
San Marino	x		.		.	
Sao Tome and Principe	x	x	.	.	.	.
Seychelles	x	x	.	.	.	.
Sierra Leone	x	x	.	.	.	.
Solomon Islands	x	x	.	.	.	.
Somalia	x	x	.	.	.	.
Swaziland	x		.		.	
Trinidad and Tobago	x		.		.	
Tuvalu	x	x	.	.	.	.
Vanuatu		x		.		.
Total	**33**	**27**	**33**	**27**	**33**	**27**

Country	Unskilled Immigration = 0		BP Diversity, overall, unskilled		BP Diversity, migrants, unskilled	
	1990	2000	1990	2000	1990	2000
Antigua and Barbuda	x		.		.	
Barbados	x		.		.	
Belize	x		.		.	
Cuba		x		.		.
Dominica	x	x	.	.	.	.
Grenada	x	x	.	.	.	.
Guinea-Bissau	x		.		.	
Guyana	x		.		.	
Holy See (Vatican City)	x	x	.	.	.	.
Jamaica	x	x	.	.	.	.
Marshall Islands	x		.		.	
Saint Kitts and Nevis	x	x	.	.	.	.
Saint Lucia	x	x	.	.	.	.
Saint Vincent and the Grenadines	x	x	.	.	.	.
Tonga		x		.		.
Tuvalu	x	x	.	.	.	.
Vanuatu		x		.		.
Total	**14**	**11**	**14**	**11**	**14**	**11**

Table A4: Ethnic, linguistic and birthplace diversity indices by country

		Alesina et al 2003		Overall population			Migrant population only		
Country	Year	Ethnic	Linguistic	Birthplace, all	Birthplace, skilled	Birthplace, unskilled	Birthplace, all	Birthplace, skilled	Birthplace, unskilled
Afghanistan	1990	0.769	0.614	0.021	0.135	0.018	0.648	0.663	0.644
Albania	1990	0.220	0.040	0.095	0.107	0.093	0.165	0.258	0.153
Algeria	1990	0.339	0.443	0.026	0.140	0.022	0.617	0.595	0.599
American Samoa	1990	.	0.173	.	.	.	.	.	.
Andorra	1990	0.714	0.685	0.452	0.067	0.541	0.578	0.519	0.578
Angola	1990	0.787	0.787	0.022	0.004	0.023	0.685	0.000	0.682
Anguilla	1990	.	.	.	.	.	.	.	.
Antigua & Barbuda	1990	0.164	0.106	0.000	0.000	0.000	.	.	.
Argentina	1990	0.255	0.062	0.006	0.001	0.007	0.833	0.912	0.830
Armenia	1990	0.127	0.129	0.009	0.024	0.008	0.667	0.400	0.715
Aruba	1990	.	0.389	.	.	.	.	.	.
Australia	1990	0.093	0.335	0.492	0.566	0.456	0.877	0.938	0.827
Austria	1990	0.107	0.152	0.117	0.055	0.131	0.884	0.919	0.873
Azerbaijan	1990	0.205	0.205	0.006	0.022	0.005	0.563	0.488	0.585
Bahamas	1990	0.423	0.186	0.015	0.000	0.017	0.000	.	0.000
Bahrain	1990	0.502	0.434	0.571	0.731	0.547	0.914	0.930	0.904
Bangladesh	1990	0.045	0.093	0.020	0.139	0.017	0.066	0.102	0.059
Barbados	1990	0.142	0.093	0.000	0.000	0.000	.	.	.
Belarus	1990	0.322	0.467	0.015	0.020	0.015	0.635	0.562	0.651
Belgium	1990	0.555	0.541	0.205	0.117	0.230	0.905	0.920	0.896
Belize	1990	0.702	0.630	0.000	0.000	0.000	.	.	.
Benin	1990	0.787	0.791	0.204	0.222	0.204	0.742	0.626	0.741
Bermuda	1990	.	.	.	.	.	.	.	.
Bhutan	1990	0.605	0.606	0.097	0.365	0.074	0.093	0.100	0.090
Bolivia	1990	0.740	0.224	0.011	0.019	0.010	0.766	0.656	0.776
Bosnia and Herzegovina	1990	0.630	0.675	0.023	0.091	0.016	0.765	0.741	0.771
Botswana	1990	0.410	0.411	0.079	0.000	0.082	0.835	.	0.835
Brazil	1990	0.541	0.047	0.010	0.028	0.009	0.887	0.932	0.869
Brunei Darussalam	1990	0.542	0.344	0.543	0.274	0.571	0.598	0.419	0.607
Bulgaria	1990	0.402	0.303	0.006	0.011	0.005	0.933	0.934	0.929
Burkina Faso	1990	0.738	0.723	0.180	0.183	0.180	0.819	0.570	0.821
Burundi	1990	0.295	0.298	0.113	0.241	0.111	0.588	0.449	0.582
Cambodia	1990	0.211	0.210	0.017	0.244	0.011	0.516	0.542	0.502
Cameroon	1990	0.864	0.890	0.082	0.077	0.082	0.712	0.638	0.712
Canada	1990	0.712	0.577	0.368	0.418	0.328	0.942	0.941	0.934
Cape Verde	1990	0.417	.	0.211	0.000	0.221	0.717	.	0.717
Cayman Islands	1990	.	.	.	.	.	.	.	.
Central African Republic	1990	0.830	0.833	0.073	0.127	0.072	0.678	0.423	0.683
Chad	1990	0.862	0.864	0.046	0.263	0.045	0.777	0.459	0.781
Chile	1990	0.186	0.187	0.005	0.005	0.005	0.912	0.934	0.907
China	1990	0.154	0.133	0.000	0.002	0.000	0.592	0.640	0.544
Colombia	1990	0.601	0.019	0.005	0.007	0.005	0.945	0.872	0.946
Comoros	1990	0.000	0.010	0.045	0.000	0.046	0.326	.	0.326
Congo	1990	0.875	0.687	0.316	0.174	0.321	0.437	0.184	0.441
Congo, the Democratic Republic of the	1990	0.875	0.871	0.054	0.254	0.053	0.931	0.851	0.932
Cook Islands	1990	.	.	.	.	.	.	.	.
Costa Rica	1990	0.237	0.049	0.296	0.286	0.295	0.484	0.933	0.345
Cote d'Ivoire	1990	0.820	0.784	0.730	0.394	0.727	0.630	0.928	0.625
Croatia	1990	0.369	0.076	0.241	0.479	0.222	0.479	0.606	0.451
Cuba	1990	0.591	.	0.000	0.000	0.000	0.000	.	0.000
Cyprus	1990	0.094	0.396	0.111	0.249	0.084	0.912	0.910	0.902
Czech Republic	1990	0.322	0.323	0.111	0.058	0.115	0.566	0.872	0.545
Denmark	1990	0.082	0.105	0.077	0.055	0.083	0.944	0.940	0.943
Djibouti	1990	0.796	0.656	0.622	0.190	0.635	0.636	0.462	0.637
Dominica	1990	0.200	.	0.000	0.000	0.000	.	.	.
Dominican Republic	1990	0.429	0.040	0.012	0.016	0.012	0.126	0.000	0.140
Ecuador	1990	0.655	0.131	0.012	0.013	0.012	0.494	0.540	0.482
Egypt	1990	0.184	0.024	0.012	0.062	0.008	0.870	0.901	0.841
El Salvador	1990	0.198	.	0.046	0.065	0.045	0.764	0.677	0.760
Equatorial Guinea	1990	0.347	0.322	0.026	0.000	0.027	0.607	.	0.607
Eritrea	1990	0.652	0.653	0.018	0.000	0.018	0.890	.	0.890
Estonia	1990	0.506	0.494	0.546	0.653	0.494	0.426	0.478	0.405
Ethiopia	1990	0.724	0.807	0.024	0.058	0.023	0.658	0.616	0.660
Falkland Islands (Malvinas)	1990	.	.	.	.	.	.	.	.
Faroe Islands	1990	.	.	.	.	.	.	.	.
Fiji	1990	0.548	0.548	0.077	0.514	0.053	0.692	0.659	0.704
Finland	1990	0.132	0.141	0.016	0.013	0.017	0.905	0.879	0.906
France	1990	0.103	0.122	0.176	0.082	0.202	0.911	0.968	0.899
French Guiana	1990	.	0.115	.	.	.	.	.	.
French Polynesia	1990	.	0.608	.	.	.	.	.	.
Gabon	1990	0.769	0.782	0.761	0.081	0.740	0.697	0.713	0.697
Gambia	1990	0.786	0.808	0.523	0.312	0.526	0.588	0.000	0.591
Georgia	1990	0.492	0.475	0.006	0.013	0.005	0.483	0.411	0.501
Germany	1990	0.168	0.164	0.112	0.087	0.118	0.894	0.960	0.869
Ghana	1990	0.673	0.673	0.359	0.237	0.361	0.777	0.839	0.775

Country	Year	Alesina et al 2003		Overall population			Migrant population only		
		Ethnic	Linguistic	Birthplace, all	Birthplace, skilled	Birthplace, unskilled	Birthplace, all	Birthplace, skilled	Birthplace, unskilled
Gibraltar	1990	.	.	.	.	.	.	.	.
Greece	1990	0.158	0.030	0.120	0.164	0.114	0.700	0.884	0.655
Greenland	1990	.	0.219	.	.	.	.	.	.
Grenada	1990	0.266	.	0.000	0.000	0.000	.	.	.
Guadeloupe	1990	.	0.093	.	.	.	.	.	.
Guam	1990	.	0.732	.	.	.	.	.	.
Guatemala	1990	0.512	0.459	0.054	0.115	0.052	0.775	0.825	0.761
Guinea	1990	0.739	0.773	0.146	0.145	0.146	0.517	0.500	0.515
Guinea-Bissau	1990	0.808	0.814	0.000	0.000	0.000	.	.	.
Guyana	1990	0.620	0.069	0.000	0.000	0.000	.	.	.
Haiti	1990	0.095	.	0.001	0.000	0.001	0.327	.	0.327
Honduras	1990	0.187	0.055	0.089	0.170	0.085	0.709	0.753	0.700
Hong Kong	1990	0.062	0.213	0.507	0.358	0.517	0.110	0.258	0.096
Hungary	1990	0.152	0.030	0.016	0.015	0.017	0.726	0.715	0.726
Iceland	1990	0.080	0.082	0.169	0.277	0.151	0.883	0.815	0.898
India	1990	0.418	0.807	0.012	0.030	0.011	0.620	0.706	0.608
Indonesia	1990	0.735	0.768	0.005	0.016	0.004	0.173	0.293	0.158
Iran, Islamic Republic of	1990	0.668	0.746	0.040	0.056	0.040	0.263	0.368	0.257
Iraq	1990	0.369	0.369	0.021	0.066	0.017	0.844	0.836	0.842
Ireland	1990	0.121	0.031	0.121	0.204	0.106	0.309	0.463	0.250
Israel	1990	0.344	0.553	0.738	0.465	0.801	0.913	0.903	0.911
Italy	1990	0.115	0.115	0.027	0.029	0.027	0.958	0.970	0.953
Jamaica	1990	0.413	0.110	0.000	0.000	0.000	.	.	.
Japan	1990	0.012	0.018	0.014	0.015	0.013	0.563	0.708	0.509
Jordan	1990	0.593	0.040	0.326	0.443	0.312	0.735	0.620	0.744
Kazakhstan	1990	0.617	0.662	0.027	0.044	0.025	0.458	0.374	0.479
Kenya	1990	0.859	0.886	0.011	0.070	0.010	0.614	0.626	0.610
Kiribati	1990	0.051	0.024	0.064	0.000	0.065	0.000	.	0.000
Korea, Democratic People's Republic of	1990	0.039	0.003	.	.	.	.	.	.
Korea, Republic of	1990	0.002	0.002	0.009	0.020	0.008	0.833	0.876	0.762
Kuwait	1990	0.660	0.344	0.715	0.761	0.707	0.875	0.867	0.876
Kyrgyzstan	1990	0.675	0.595	0.025	0.059	0.020	0.598	0.448	0.645
Lao People's Democratic Republic	1990	0.514	0.638	0.041	0.333	0.033	0.588	0.578	0.588
Latvia	1990	0.587	0.580	0.565	0.615	0.555	0.624	0.560	0.633
Lebanon	1990	0.131	0.131	0.262	0.506	0.242	0.918	0.915	0.916
Lesotho	1990	0.255	0.254	0.005	0.000	0.005	0.279	.	0.279
Liberia	1990	0.908	0.904	0.183	0.104	0.184	0.592	0.500	0.587
Libyan Arab Jamahiriya	1990	0.792	0.076	0.455	0.741	0.406	0.626	0.650	0.618
Liechtenstein	1990	0.573	0.225	0.755	0.491	0.789	0.797	0.588	0.805
Lithuania	1990	0.322	0.322	0.217	0.258	0.211	0.690	0.688	0.690
Luxembourg	1990	0.530	0.644	0.435	0.357	0.454	0.844	0.904	0.803
Macau	1990	.	0.252	0.407	0.514	0.312	0.157	0.271	0.147
Macedonia, the former Yugoslav Republic of	1990	0.502	0.502	0.077	0.109	0.074	0.760	0.834	0.745
Madagascar	1990	0.879	0.020	0.020	0.076	0.018	0.779	0.589	0.789
Malawi	1990	0.674	0.602	0.096	0.140	0.096	0.601	0.388	0.597
Malaysia	1990	0.588	0.597	0.202	0.271	0.199	0.551	0.731	0.538
Maldives	1990	.	.	0.090	0.000	0.097	0.519	.	0.519
Mali	1990	0.691	0.839	0.106	0.084	0.106	0.816	0.000	0.816
Malta	1990	0.041	0.091	0.108	0.505	0.069	0.831	0.872	0.793
Marshall Islands	1990	0.060	0.060	0.023	0.396	0.000	0.000	0.000	.
Martinique	1990	.	0.065	.	.	.	.	.	.
Mauritania	1990	0.615	0.326	0.146	0.057	0.147	0.546	0.000	0.548
Mauritius	1990	0.463	0.455	0.032	0.000	0.034	0.771	.	0.771
Mayotte	1990	.	0.721	.	.	.	.	.	.
Mexico	1990	0.542	0.151	0.009	0.032	0.006	0.835	0.890	0.791
Micronesia, Federated States of	1990	0.701	0.748	0.299	0.660	0.209	0.650	0.654	0.608
Moldova, Republic of	1990	0.554	0.553	0.016	0.036	0.013	0.484	0.488	0.446
Monaco	1990	0.684	0.731	0.779	0.374	0.809	0.731	0.000	0.765
Mongolia	1990	0.368	0.373	0.020	0.372	0.015	0.482	0.484	0.482
Montserrat	1990	.	.	.	.	.	.	.	.
Morocco	1990	0.484	0.468	0.011	0.091	0.008	0.663	0.417	0.704
Mozambique	1990	0.693	0.813	0.031	0.070	0.031	0.780	0.444	0.781
Myanmar	1990	0.506	0.507	0.008	0.138	0.006	0.620	0.701	0.583
Namibia	1990	0.633	0.701	0.228	0.032	0.236	0.793	0.000	0.794
Nauru	1990	0.583	0.616	0.203	0.263	0.177	0.572	0.000	0.608
Nepal	1990	0.663	0.717	0.090	0.477	0.079	0.007	0.000	0.008
Netherlands	1990	0.105	0.514	0.287	0.261	0.294	0.884	0.884	0.884
Netherlands Antilles	1990	.	0.251	.	.	.	.	.	.
New Caledonia	1990	.	0.663	.	.	.	.	.	.
New Zealand	1990	0.397	0.166	0.342	0.568	0.256	0.708	0.702	0.710
Nicaragua	1990	0.484	0.047	0.078	0.101	0.076	0.765	0.773	0.756
Niger	1990	0.652	0.652	0.135	0.268	0.135	0.802	0.719	0.801
Nigeria	1990	0.851	0.850	0.024	0.014	0.025	0.857	0.831	0.857
Niue	1990	.	.	.	.	.	.	.	.
Norfolk Island	1990	.	.	.	.	.	.	.	.

		Alesina et al 2003		Overall population			Migrant population only		
Country	Year	Ethnic	Linguistic	Birthplace, all	Birthplace, skilled	Birthplace, unskilled	Birthplace, all	Birthplace, skilled	Birthplace, unskilled
Northern Mariana Islands	1990	.	0.775	.	.	.	.	.	.
Norway	1990	0.059	0.067	0.096	0.135	0.087	0.945	0.940	0.945
Oman	1990	0.437	0.357	0.582	0.703	0.564	0.702	0.702	0.702
Pakistan	1990	0.710	0.719	0.080	0.290	0.074	0.099	0.152	0.092
Palau	1990	0.431	0.316	0.227	0.495	0.181	0.000	0.000	0.000
Palestinian Territory, Occupied	1990	.	0.144	0.846	0.882	0.841	0.824	0.874	0.817
Panama	1990	0.553	0.387	0.203	0.168	0.210	0.866	0.853	0.866
Papua New Guinea	1990	0.272	0.353	0.047	0.750	0.027	0.814	0.810	0.814
Paraguay	1990	0.169	0.598	0.052	0.080	0.050	0.611	0.553	0.615
Peru	1990	0.657	0.336	0.003	0.003	0.003	0.908	0.791	0.905
Philippines	1990	0.239	0.836	0.015	0.039	0.011	0.722	0.792	0.649
Poland	1990	0.118	0.047	0.083	0.110	0.080	0.759	0.774	0.756
Portugal	1990	0.047	0.020	0.016	0.034	0.014	0.897	0.900	0.876
Puerto Rico	1990	.	0.035	.	.	.	.	.	.
Qatar	1990	0.746	0.480	0.786	0.833	0.779	0.870	0.891	0.866
Reunion	1990	.	0.158	.	.	.	.	.	.
Romania	1990	0.307	0.172	0.012	0.051	0.009	0.924	0.945	0.907
Russian Federation	1990	0.245	0.249	0.101	0.072	0.107	0.617	0.757	0.595
Rwanda	1990	0.324	.	0.085	0.704	0.078	0.660	0.657	0.659
Saint Helena	1990	.	.	.	.	.	.	.	.
Saint Kitts and Nevis	1990	0.184	.	0.000	0.000	0.000	.	.	.
Saint Lucia	1990	0.177	0.317	0.000	0.000	0.000	.	.	.
Saint Pierre and Miquelon	1990	.	.	.	.	.	.	.	.
Saint Vincent and the Grenadines	1990	0.307	0.018	0.000	0.000	0.000	.	.	.
Samoa	1990	0.138	0.011	0.067	0.443	0.042	0.000	0.000	0.000
San Marino	1990	0.293	.	0.457	0.000	0.542	0.818	.	0.818
Sao Tome and Principe	1990	.	0.232	0.326	0.000	0.332	0.488	.	0.488
Saudi Arabia	1990	0.180	0.095	0.660	0.795	0.641	0.887	0.887	0.887
Senegal	1990	0.694	0.696	0.255	0.151	0.256	0.808	0.569	0.808
Serbia and Montenegro	1990	0.574	.	0.018	0.071	0.014	0.828	0.794	0.837
Seychelles	1990	0.203	0.161	0.163	0.000	0.180	0.693	.	0.693
Sierra Leone	1990	0.819	0.763	0.106	0.000	0.106	0.432	.	0.432
Singapore	1990	0.386	0.384	0.374	0.189	0.405	0.636	0.569	0.635
Slovakia	1990	0.254	0.255	0.004	0.007	0.003	0.689	0.600	0.704
Slovenia	1990	0.222	0.220	0.229	0.231	0.229	0.756	0.764	0.735
Solomon Islands	1990	0.111	0.525	0.040	0.000	0.040	0.493	.	0.493
Somalia	1990	0.812	0.033	0.009	0.000	0.009	0.886	.	0.886
South Africa	1990	0.752	0.865	0.082	0.249	0.073	0.887	0.879	0.870
Spain	1990	0.417	0.413	0.058	0.082	0.054	0.942	0.953	0.937
Sri Lanka	1990	0.415	0.465	0.029	0.157	0.026	0.047	0.041	0.048
Sudan	1990	.	.	0.043	0.051	0.043	0.910	0.758	0.911
Suriname	1990	0.733	0.331	0.062	0.041	0.064	0.763	0.000	0.770
Swaziland	1990	0.058	0.172	0.288	0.000	0.297	0.552	.	0.552
Sweden	1990	0.060	0.197	0.192	0.152	0.203	0.872	0.917	0.859
Switzerland	1990	0.531	0.544	0.415	0.331	0.435	0.898	0.923	0.884
Syrian Arab Republic	1990	0.540	0.182	0.093	0.181	0.083	0.434	0.617	0.382
Taiwan	1990	0.274	0.503	0.005	0.012	0.004	0.827	0.809	0.831
Tajikistan	1990	0.511	0.547	0.017	0.074	0.012	0.543	0.434	0.591
Tanzania, United Republic of	1990	0.735	0.898	0.041	0.071	0.041	0.825	0.794	0.822
Thailand	1990	0.634	0.634	0.013	0.041	0.010	0.693	0.736	0.675
Timor Leste	1990	.	0.526	0.149	0.460	0.122	0.000	0.000	0.000
Togo	1990	0.710	0.898	0.255	0.219	0.255	0.724	0.690	0.723
Tokelau	1990	.	.	.	.	.	.	.	.
Tonga	1990	0.087	0.378	0.074	0.410	0.053	0.000	0.000	0.000
Trinidad and Tobago	1990	0.648	0.125	0.005	0.000	0.005	0.493	.	0.493
Tunisia	1990	0.039	0.012	0.032	0.239	0.023	0.819	0.833	0.778
Turkey	1990	0.320	0.222	0.040	0.089	0.037	0.647	0.668	0.641
Turkmenistan	1990	0.392	0.398	0.019	0.029	0.018	0.563	0.200	0.619
Turks and Caicos	1990	.	.	.	.	.	.	.	.
Tuvalu	1990	0.163	0.137	0.000	0.000	0.000	.	.	.
Uganda	1990	0.930	0.923	0.094	0.049	0.095	0.743	0.906	0.742
Ukraine	1990	0.474	0.474	0.122	0.189	0.114	0.401	0.425	0.396
United Arab Emirates	1990	0.625	0.487	0.680	0.791	0.662	0.816	0.816	0.816
United Kingdom	1990	0.121	0.053	0.138	0.175	0.131	0.937	0.961	0.927
United States of America	1990	0.490	0.251	0.175	0.185	0.169	0.948	0.967	0.914
Uruguay	1990	0.250	0.082	0.025	0.015	0.026	0.744	0.587	0.744
Uzbekistan	1990	0.413	0.412	0.013	0.042	0.011	0.655	0.556	0.678
Vanuatu	1990	0.041	0.579	0.040	0.561	0.009	0.621	0.665	0.000
Venezuela	1990	0.497	0.069	0.114	0.037	0.124	0.821	0.899	0.816
Viet Nam	1990	0.238	0.238	0.001	0.011	0.001	0.632	0.683	0.598
Virgin Islands, British	1990	.	.	.	.	.	.	.	.
Virgin Islands, U.S.	1990	.	0.314	.	.	.	.	.	.
Wallis and Futuna	1990	.	.	.	.	.	.	.	.
Yemen	1990	.	0.008	0.102	0.919	0.084	0.926	0.912	0.927
Zambia	1990	0.781	0.873	0.063	0.072	0.063	0.827	0.488	0.828
Zimbabwe	1990	0.387	0.447	0.156	0.031	0.162	0.768	0.672	0.766

		Alesina et al 2003		Overall population			Migrant population only		
Country	Year	Ethnic	Linguistic	Birthplace, all	Birthplace, skilled	Birthplace, unskilled	Birthplace, all	Birthplace, skilled	Birthplace, unskilled
Afghanistan	2000	0.769	0.614	0.010	0.079	0.009	0.661	0.681	0.657
Albania	2000	0.220	0.040	0.116	0.079	0.120	0.158	0.263	0.149
Algeria	2000	0.339	0.443	0.017	0.043	0.015	0.557	0.569	0.536
American Samoa	2000	.	0.173	.	.	.	.	.	.
Andorra	2000	0.714	0.685	0.379	0.097	0.473	0.570	0.485	0.573
Angola	2000	0.787	0.787	0.027	0.006	0.028	0.541	0.000	0.546
Anguilla	2000	.	.	.	.	.	.	.	.
Antigua & Barbuda	2000	0.164	0.106	0.018	0.000	0.020	0.000	.	0.000
Argentina	2000	0.255	0.062	0.067	0.030	0.076	0.889	0.946	0.880
Armenia	2000	0.127	0.129	0.046	0.062	0.044	0.862	0.795	0.865
Aruba	2000	.	0.389	.	.	.	.	.	.
Australia	2000	0.093	0.335	0.474	0.596	0.404	0.903	0.922	0.879
Austria	2000	0.107	0.152	0.256	0.151	0.284	0.914	0.917	0.908
Azerbaijan	2000	0.205	0.205	0.024	0.039	0.022	0.700	0.535	0.715
Bahamas	2000	0.423	0.186	0.035	0.132	0.021	0.534	0.639	0.331
Bahrain	2000	0.502	0.434	0.643	0.872	0.597	0.916	0.932	0.906
Bangladesh	2000	0.045	0.093	0.010	0.046	0.008	0.059	0.060	0.058
Barbados	2000	0.142	0.093	0.012	0.000	0.014	0.657	.	0.657
Belarus	2000	0.322	0.467	0.015	0.016	0.015	0.635	0.562	0.651
Belgium	2000	0.555	0.541	0.235	0.173	0.258	0.925	0.942	0.915
Belize	2000	0.702	0.630	0.393	0.262	0.404	0.770	0.887	0.748
Benin	2000	0.787	0.791	0.238	0.125	0.239	0.727	0.609	0.726
Bermuda	2000	.	.	.	.	.	.	.	.
Bhutan	2000	0.605	0.606	0.082	0.463	0.071	0.103	0.108	0.102
Bolivia	2000	0.740	0.224	0.027	0.081	0.020	0.896	0.907	0.871
Bosnia and Herzegovina	2000	0.630	0.675	0.022	0.046	0.020	0.768	0.657	0.786
Botswana	2000	0.410	0.411	0.078	0.000	0.081	0.882	.	0.882
Brazil	2000	0.541	0.047	0.007	0.018	0.006	0.887	0.932	0.866
Brunei Darussalam	2000	0.542	0.344	0.423	0.436	0.421	0.622	0.538	0.637
Bulgaria	2000	0.402	0.303	0.027	0.049	0.022	0.933	0.934	0.928
Burkina Faso	2000	0.738	0.723	0.309	0.158	0.312	0.548	0.193	0.551
Burundi	2000	0.295	0.298	0.056	0.078	0.055	0.478	0.500	0.472
Cambodia	2000	0.211	0.210	0.078	0.386	0.068	0.486	0.534	0.477
Cameroon	2000	0.864	0.890	0.028	0.056	0.028	0.663	0.543	0.666
Canada	2000	0.712	0.577	0.396	0.443	0.342	0.959	0.960	0.950
Cape Verde	2000	0.417	.	0.193	0.000	0.205	0.694	.	0.694
Cayman Islands	2000	.	.	.	.	.	.	.	.
Central African Republic	2000	0.830	0.833	0.013	0.000	0.013	0.717	.	0.717
Chad	2000	0.862	0.864	0.047	0.126	0.047	0.744	0.460	0.746
Chile	2000	0.186	0.187	0.006	0.006	0.006	0.889	0.936	0.873
China	2000	0.154	0.133	0.000	0.003	0.000	0.875	0.870	0.875
Colombia	2000	0.601	0.019	0.005	0.006	0.005	0.946	0.910	0.947
Comoros	2000	0.000	0.010	0.047	0.000	0.048	0.096	.	0.096
Congo	2000	0.875	0.687	0.023	0.011	0.023	0.719	0.000	0.727
Congo, the Democratic Republic of the	2000	0.875	0.871	0.029	0.113	0.028	0.934	0.864	0.937
Cook Islands	2000	.	.	.	.	.	.	.	.
Costa Rica	2000	0.237	0.049	0.169	0.156	0.172	0.484	0.905	0.338
Cote d'Ivoire	2000	0.820	0.784	0.723	0.313	0.724	0.630	0.928	0.625
Croatia	2000	0.369	0.076	0.279	0.367	0.268	0.398	0.533	0.373
Cuba	2000	0.591	.	0.000	0.001	0.000	0.000	0.000	.
Cyprus	2000	0.094	0.396	0.165	0.365	0.121	0.912	0.911	0.901
Czech Republic	2000	0.322	0.323	0.111	0.118	0.110	0.566	0.698	0.546
Denmark	2000	0.082	0.105	0.118	0.095	0.124	0.956	0.957	0.953
Djibouti	2000	0.796	0.656	0.389	0.042	0.404	0.626	0.000	0.628
Dominica	2000	0.200	.	0.000	0.000	0.000	.	.	.
Dominican Republic	2000	0.429	0.040	0.020	0.065	0.013	0.750	0.821	0.674
Ecuador	2000	0.655	0.131	0.016	0.014	0.016	0.608	0.634	0.601
Egypt	2000	0.184	0.024	0.009	0.036	0.006	0.904	0.930	0.876
El Salvador	2000	0.198	.	0.017	0.010	0.018	0.699	0.639	0.690
Equatorial Guinea	2000	0.347	0.322	0.043	0.000	0.046	0.469	.	0.469
Eritrea	2000	0.652	0.653	0.010	0.000	0.010	0.791	.	0.791
Estonia	2000	0.506	0.494	0.404	0.537	0.362	0.412	0.464	0.388
Ethiopia	2000	0.724	0.807	0.017	0.016	0.017	0.605	0.490	0.606
Falkland Islands (Malvinas)	2000	.	.	.	.	.	.	.	.
Faroe Islands	2000	.	.	.	.	.	.	.	.
Fiji	2000	0.548	0.548	0.066	0.364	0.039	0.710	0.660	0.738
Finland	2000	0.132	0.141	0.048	0.043	0.049	0.889	0.865	0.896
France	2000	0.103	0.122	0.174	0.122	0.190	0.922	0.965	0.908
French Guiana	2000	.	0.115	.	.	.	.	.	.
French Polynesia	2000	.	0.608	.	.	.	.	.	.
Gabon	2000	0.769	0.782	0.844	0.199	0.870	0.887	0.869	0.886
Gambia	2000	0.786	0.808	0.686	0.236	0.689	0.570	0.000	0.572
Georgia	2000	0.492	0.475	0.029	0.029	0.029	0.632	0.433	0.662
Germany	2000	0.168	0.164	0.149	0.128	0.156	0.903	0.966	0.869
Ghana	2000	0.673	0.673	0.460	0.108	0.485	0.814	0.889	0.811

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Gibraltar	2000	.	.	.	.	.	.	.	.
Greece	2000	0.158	0.030	0.108	0.107	0.108	0.700	0.884	0.655
Greenland	2000	.	0.219	.	.	.	.	.	.
Grenada	2000	0.266	.	0.000	0.000	0.000	.	.	.
Guadeloupe	2000	.	0.093	.	.	.	.	.	.
Guam	2000	.	0.732	.	.	.	.	.	.
Guatemala	2000	0.512	0.459	0.018	0.030	0.017	0.721	0.736	0.712
Guinea	2000	0.739	0.773	0.078	0.136	0.077	0.697	0.885	0.683
Guinea-Bissau	2000	0.808	0.814	0.046	0.000	0.046	0.506	.	0.506
Guyana	2000	0.620	0.069	0.008	0.000	0.008	0.000	.	0.000
Haiti	2000	0.095	.	0.003	0.018	0.002	0.293	0.000	0.315
Honduras	2000	0.187	0.055	0.015	0.071	0.011	0.842	0.914	0.764
Hong Kong	2000	0.062	0.213	0.519	0.465	0.525	0.232	0.428	0.193
Hungary	2000	0.152	0.030	0.014	0.015	0.013	0.726	0.720	0.726
Iceland	2000	0.080	0.082	0.228	0.383	0.192	0.910	0.872	0.921
India	2000	0.418	0.807	0.007	0.014	0.006	0.610	0.695	0.597
Indonesia	2000	0.735	0.768	0.001	0.005	0.001	0.631	0.691	0.608
Iran, Islamic Republic of	2000	0.668	0.746	0.021	0.029	0.020	0.327	0.356	0.324
Iraq	2000	0.369	0.369	0.011	0.021	0.010	0.853	0.834	0.847
Ireland	2000	0.121	0.031	0.215	0.408	0.162	0.544	0.672	0.441
Israel	2000	0.344	0.553	0.690	0.762	0.653	0.939	0.912	0.937
Italy	2000	0.115	0.115	0.043	0.037	0.044	0.958	0.970	0.953
Jamaica	2000	0.413	0.110	0.002	0.049	0.000	0.500	0.500	.
Japan	2000	0.012	0.018	0.020	0.024	0.019	0.755	0.806	0.728
Jordan	2000	0.593	0.040	0.191	0.217	0.187	0.803	0.787	0.799
Kazakhstan	2000	0.617	0.662	0.119	0.153	0.113	0.538	0.419	0.562
Kenya	2000	0.859	0.886	0.037	0.187	0.035	0.623	0.620	0.591
Kiribati	2000	0.051	0.024	0.022	0.000	0.023	0.000	.	0.000
Korea, Democratic People's Republic of	2000	0.039	0.003	.	.	.	.	.	.
Korea, Republic of	2000	0.002	0.002	0.007	0.011	0.006	0.833	0.878	0.755
Kuwait	2000	0.660	0.344	0.725	0.809	0.706	0.875	0.869	0.876
Kyrgyzstan	2000	0.675	0.595	0.252	0.251	0.252	0.703	0.697	0.704
Lao People's Democratic Republic	2000	0.514	0.638	0.037	0.211	0.030	0.507	0.524	0.498
Latvia	2000	0.587	0.580	0.421	0.369	0.433	0.754	0.794	0.741
Lebanon	2000	0.131	0.131	0.240	0.444	0.213	0.944	0.928	0.947
Lesotho	2000	0.255	0.254	0.004	0.000	0.004	0.000	.	0.000
Liberia	2000	0.908	0.904	0.134	0.000	0.136	0.549	.	0.549
Libyan Arab Jamahiriya	2000	0.792	0.076	0.324	0.630	0.275	0.639	0.673	0.625
Liechtenstein	2000	0.573	0.225	0.675	0.439	0.718	0.793	0.593	0.804
Lithuania	2000	0.322	0.322	0.166	0.210	0.157	0.690	0.687	0.690
Luxembourg	2000	0.530	0.644	0.533	0.448	0.557	0.854	0.891	0.803
Macau	2000	.	0.252	0.412	0.556	0.361	0.163	0.252	0.144
Macedonia, the former Yugoslav Republic of	2000	0.502	0.502	0.048	0.066	0.045	0.811	0.857	0.797
Madagascar	2000	0.879	0.020	0.012	0.042	0.011	0.770	0.540	0.773
Malawi	2000	0.674	0.602	0.073	0.063	0.073	0.783	0.338	0.783
Malaysia	2000	0.588	0.597	0.134	0.094	0.138	0.648	0.883	0.622
Maldives	2000	.	.	0.020	0.000	0.023	0.000	.	0.000
Mali	2000	0.691	0.839	0.104	0.090	0.104	0.767	0.279	0.769
Malta	2000	0.041	0.091	0.143	0.455	0.092	0.831	0.869	0.790
Marshall Islands	2000	0.060	0.060	0.079	0.339	0.054	0.000	0.000	0.000
Martinique	2000	.	0.065	.	.	.	.	.	.
Mauritania	2000	0.615	0.326	0.149	0.031	0.152	0.501	0.000	0.503
Mauritius	2000	0.463	0.455	0.084	0.039	0.088	0.593	0.498	0.591
Mayotte	2000	.	0.721	.	.	.	.	.	.
Mexico	2000	0.542	0.151	0.008	0.031	0.005	0.835	0.882	0.779
Micronesia, Federated States of	2000	0.701	0.748	0.111	0.630	0.045	0.618	0.497	0.498
Moldova, Republic of	2000	0.554	0.553	0.082	0.070	0.084	0.521	0.576	0.497
Monaco	2000	0.684	0.731	0.739	0.358	0.800	0.749	0.251	0.778
Mongolia	2000	0.368	0.373	0.008	0.101	0.006	0.641	0.628	0.637
Montserrat	2000	.	.	.	.	.	.	.	.
Morocco	2000	0.484	0.468	0.005	0.044	0.003	0.828	0.831	0.827
Mozambique	2000	0.693	0.813	0.051	0.110	0.050	0.819	0.543	0.821
Myanmar	2000	0.506	0.507	0.004	0.024	0.003	0.586	0.492	0.596
Namibia	2000	0.633	0.701	0.114	0.066	0.116	0.774	0.000	0.779
Nauru	2000	0.583	0.616	0.185	0.453	0.161	0.430	0.000	0.468
Nepal	2000	0.663	0.717	0.081	0.315	0.074	0.079	0.106	0.075
Netherlands	2000	0.105	0.514	0.294	0.294	0.294	0.903	0.884	0.904
Netherlands Antilles	2000	.	0.251	.	.	.	.	.	.
New Caledonia	2000	.	0.663	.	.	.	.	.	.
New Zealand	2000	0.397	0.166	0.371	0.547	0.300	0.830	0.826	0.829
Nicaragua	2000	0.484	0.047	0.046	0.060	0.045	0.788	0.943	0.748
Niger	2000	0.652	0.652	0.122	0.115	0.122	0.751	0.660	0.751
Nigeria	2000	0.851	0.850	0.029	0.016	0.029	0.834	0.836	0.833
Niue	2000	.	.	.	.	.	.	.	.
Norfolk Island	2000	.	.	.	.	.	.	.	.
Northern Mariana Islands	2000	.	0.775	.	.	.	.	.	.

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Norway	2000	0.059	0.067	0.140	0.182	0.128	0.956	0.948	0.956
Oman	2000	0.437	0.357	0.584	0.722	0.557	0.702	0.701	0.702
Pakistan	2000	0.710	0.719	0.034	0.162	0.030	0.094	0.096	0.094
Palau	2000	0.431	0.316	0.343	0.671	0.250	0.544	0.567	0.512
Palestinian Territory, Occupied	2000	.	0.010	0.788	0.804	0.784	0.799	0.876	0.787
Panama	2000	0.553	0.387	0.079	0.080	0.079	0.876	0.913	0.861
Papua New Guinea	2000	0.272	0.353	0.023	0.377	0.011	0.764	0.790	0.721
Paraguay	2000	0.169	0.598	0.091	0.187	0.082	0.654	0.774	0.589
Peru	2000	0.657	0.336	0.003	0.003	0.003	0.896	0.789	0.898
Philippines	2000	0.239	0.836	0.013	0.025	0.011	0.906	0.911	0.902
Poland	2000	0.118	0.047	0.057	0.071	0.056	0.759	0.773	0.756
Portugal	2000	0.047	0.020	0.041	0.060	0.039	0.915	0.935	0.899
Puerto Rico	2000	.	0.035	.	.	.	.	.	.
Qatar	2000	0.746	0.480	0.864	0.940	0.841	0.939	0.939	0.939
Reunion	2000	.	0.158	.	.	.	.	.	.
Romania	2000	0.307	0.172	0.011	0.042	0.007	0.924	0.945	0.902
Russian Federation	2000	0.245	0.249	0.098	0.088	0.100	0.766	0.805	0.756
Rwanda	2000	0.324	.	0.095	0.325	0.093	0.660	0.681	0.659
Saint Helena	2000	.	.	.	.	.	.	.	.
Saint Kitts and Nevis	2000	0.184	.	0.000	0.000	0.000	.	.	.
Saint Lucia	2000	0.177	0.317	0.000	0.000	0.000	.	.	.
Saint Pierre and Miquelon	2000	.	.	.	.	.	.	.	.
Saint Vincent and the Grenadines	2000	0.307	0.018	0.000	0.000	0.000	.	.	.
Samoa	2000	0.138	0.011	0.100	0.476	0.060	0.133	0.265	0.000
San Marino	2000	0.293	.	0.409	0.133	0.475	0.809	0.000	0.825
Sao Tome and Principe	2000	.	0.232	0.187	0.000	0.192	0.365	.	0.365
Saudi Arabia	2000	0.180	0.095	0.550	0.729	0.519	0.887	0.887	0.887
Senegal	2000	0.694	0.696	0.255	0.094	0.258	0.788	0.731	0.787
Serbia and Montenegro	2000	0.574	.	0.052	0.149	0.042	0.864	0.867	0.861
Seychelles	2000	0.203	0.161	0.219	0.000	0.250	0.700	.	0.700
Sierra Leone	2000	0.819	0.763	0.095	0.000	0.096	0.351	.	0.351
Singapore	2000	0.386	0.384	0.336	0.407	0.315	0.615	0.698	0.579
Slovakia	2000	0.254	0.255	0.010	0.024	0.008	0.689	0.629	0.708
Slovenia	2000	0.222	0.220	0.207	0.172	0.213	0.712	0.765	0.694
Solomon Islands	2000	0.111	0.525	0.013	0.000	0.013	0.423	.	0.423
Somalia	2000	0.812	0.033	0.005	0.000	0.005	0.799	.	0.799
South Africa	2000	0.752	0.865	0.074	0.154	0.064	0.886	0.892	0.856
Spain	2000	0.417	0.413	0.105	0.127	0.101	0.942	0.953	0.937
Sri Lanka	2000	0.415	0.465	0.017	0.082	0.015	0.044	0.000	0.051
Sudan	2000	.	.	0.021	0.024	0.021	0.931	0.844	0.932
Suriname	2000	0.733	0.331	0.127	0.099	0.130	0.716	0.000	0.713
Swaziland	2000	0.058	0.172	0.117	0.033	0.121	0.606	0.000	0.604
Sweden	2000	0.060	0.197	0.226	0.211	0.231	0.922	0.948	0.909
Switzerland	2000	0.531	0.544	0.414	0.426	0.410	0.924	0.921	0.913
Syrian Arab Republic	2000	0.540	0.182	0.052	0.061	0.051	0.359	0.549	0.327
Taiwan	2000	0.274	0.503	0.043	0.062	0.039	0.827	0.850	0.812
Tajikistan	2000	0.511	0.547	0.063	0.116	0.058	0.704	0.565	0.723
Tanzania, United Republic of	2000	0.735	0.898	0.017	0.023	0.017	0.855	0.786	0.854
Thailand	2000	0.634	0.634	0.023	0.054	0.019	0.835	0.856	0.821
Timor Leste	2000	.	0.526	0.160	0.447	0.146	0.023	0.000	0.026
Togo	2000	0.710	0.898	0.207	0.060	0.209	0.671	0.381	0.671
Tokelau	2000	.	.	.	.	.	.	.	.
Tonga	2000	0.087	0.378	0.012	0.157	0.000	0.000	0.000	.
Trinidad and Tobago	2000	0.648	0.125	0.079	0.058	0.081	0.749	0.868	0.726
Tunisia	2000	0.039	0.012	0.025	0.112	0.020	0.789	0.814	0.768
Turkey	2000	0.320	0.222	0.040	0.099	0.035	0.706	0.762	0.683
Turkmenistan	2000	0.392	0.398	0.057	0.123	0.051	0.724	0.595	0.748
Turks and Caicos	2000	.	.	.	.	.	.	.	.
Tuvalu	2000	0.163	0.137	0.000	0.000	0.000	.	.	.
Uganda	2000	0.930	0.923	0.052	0.195	0.051	0.797	0.820	0.793
Ukraine	2000	0.474	0.474	0.089	0.124	0.082	0.554	0.507	0.567
United Arab Emirates	2000	0.625	0.487	0.773	0.842	0.747	0.817	0.816	0.817
United Kingdom	2000	0.121	0.053	0.167	0.284	0.137	0.956	0.965	0.948
United States of America	2000	0.490	0.251	0.245	0.207	0.283	0.917	0.966	0.836
Uruguay	2000	0.250	0.082	0.043	0.035	0.044	0.730	0.648	0.736
Uzbekistan	2000	0.413	0.412	0.048	0.090	0.044	0.743	0.626	0.759
Vanuatu	2000	0.041	0.579	0.000	0.000	0.000	.	.	.
Venezuela	2000	0.497	0.069	0.083	0.036	0.094	0.821	0.865	0.817
Viet Nam	2000	0.238	0.238	0.002	0.014	0.001	0.771	0.781	0.762
Virgin Islands, British	2000	.	.	.	.	.	.	.	.
Virgin Islands, U.S.	2000	.	0.314	.	.	.	.	.	.
Wallis and Futuna	2000	.	.	.	.	.	.	.	.
Yemen	2000	.	0.008	0.053	0.294	0.048	0.919	0.902	0.919
Zambia	2000	0.781	0.873	0.034	0.035	0.034	0.823	0.559	0.824
Zimbabwe	2000	0.387	0.447	0.090	0.039	0.092	0.784	0.710	0.781