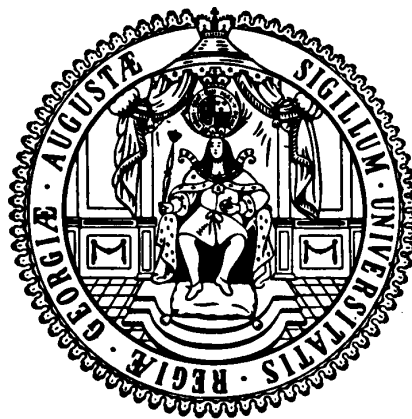# Ibero-Amerika Institut für Wirtschaftsforschung
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Ethnic Fractionalization, Migration and Growth

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Abstract

This paper has the aim of contributing to the existing research by analyzing
two particular topics. First of all, we update the data set used by Alesina et
al.(2003) into the 1990s to analyze the robustness of their results in a wider
time range. Furthermore, we analyze whether the effect of ethnic fractional-
ization is the same in different regions, particularly focusing on Sub-Saharan
Africa and Latin America. Secondly, we empirically investigate, if ethnic
fractionalization might be positive in a nation which is ethnically diverse due
to immigration. We try to distinguish between these two different kinds of
ethnic fractionalization in order to determine if the result empirically indi-
cates this multidimensionality of the index of ethnic fractionalization.

Keywords: Growth, Ethnic Fractionalization, Migration, Cross-country Re-
gression

1 Introduction

A wide range of studies have found robust evidence on the negative effect of high ethnic fractionalization on long-run growth in a cross section of countries (Easterly and Levine (1997), Easterly (2001), Alesina et al. (2003)). The channels through which ethnic fractionalization has a negative impact on growth, however, have been analyzed only partially by these studies. Furthermore, the impact of ethnic fractionalization on economic progress is far more complex than the existing empirical studies would suggest. For this reason this paper intends to extend the existing analysis in two ways.

First of all, it seems plausible and desirable to update the data set used by Alesina et al.(2003) into the 1990s to analyze the robustness of their results in a wider time range. Furthermore, it is worthwhile to check if the specified transmission channels of ethnic fractionalization on growth remain valid after the inclusion of the 1990s. Secondly, we empirically investigate, if ethnic fractionalization might be positive in a nation which is ethnically diverse partially due to in-migration. There is a large literature which suggests that the existence of co-ethnic networks has a large positive impact on trade and thus growth. The theoretical argument being, that immigrants have an informational and trust advantage in arranging trade with their home countries over their local counterparts (Epstein and Gang (2004), Casella and Rauch (1997), Rauch (2001)). We are the first to distinguish between these two different kinds of ethnic fractionalization in order to determine if the result empirically indicates this multidimensionality of ethnic diversity.

This paper is structured as follows. In the 2nd and 3rd section we will fo-

cus on the existing theoretical consideration and empirical research which has been produced so far. This is followed by a brief discussion of our data and methodology in section 4. Then we shall present and discuss our results in section 5. In section 6 we identify potential interesting future research questions and conclude.

2   Theoretical Framework

There are two different strands of literature, one which suggests that ethnic diversity is harmful for growth and another which suggests the opposite. Zak and Knack (2001), for instance, argue that high ethnic diversity increases the social distance between groups which in turn reduces the amount of trust in a society. Due to the significant information and enforcement problems in many (particularly risky) economic transactions, lack of trust will reduce the amount of beneficial economic transactions, increase transaction costs on monitoring and enforcement and make the closing of contracts impossible, which often happen to be incomplete, which in turn lowers efficiency and economic growth. A related insight emerges from the literature on 'social capital' which measures the number and intensity of social interactions and linkages between members of a society and has found that social capital is potentially conducive to economic development because it favors coopera- tion and reduces problems due to asymmetric information. The theoretical argument is that social capital is established harder between divided ethnic groups in a society.[1]

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[1]However, the theoretical literature on social capital also suggest that social capital slows down the transition process of development between one stage and the next and is therefore bad for economic growth. See Banerjee and Newman (1998), Arnott and Stiglitz

Furthermore, some authors argue that ethnic diversity increases the likelihood for conflict. Collier and Hoeffler (1998) model the likelihood of a civil war as a cost-benefit calculation of potential rebels. While ethnic diversity is likely to increase the incentive to incite rebellion due to grievances (perceived and actual) experienced by individual ethnic groups, having very large numbers of ethnic groups might make the coordination of a successful rebellion difficult. Thus, Collier and Hoeffler argue that civil wars are particularly likely in ethnically polarized societies, where a few ethnic groups vie for political control.

Hence, not only violent, but also political conflict has been hypothesized as channel through which high ethnic diversity negatively influences economic growth. Alesina and Drazen (1991) suggest that groups may attempt to shift the burden of economic stabilization and reform onto other groups when stabilization has significant distributional implications. Even though it is agreed that stabilization requires cuts in public expenditure to eliminate the budget deficit, the distribution of the allocation of the costs is not agreed upon. The process leading to stabilization can therefore often be described as a war of attrition, which delays stabilization and only ends when certain groups allow the others to decide about the allocation of the burden of the fiscal adjustment. More politically polarized countries will experience longer periods of instability. If different ethnic groups are strongly politically polarized then the model also applies in the context of ethnic diversity. Similar arguments are made by Easterly and Levine (1997) who argue that high ethnic diversity leads to poor policy choices. Governments either find it difficult to agree on

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(1991)

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painful economic reforms, attempt to shift the burden to other groups, or simply try to enrich themselves as they fear that their tenure might be limited due to the strong resistance from other ethnic groups. Svensson (1998) develops a game-theoretic rent-seeking model in which groups compete over common-pool resources. Even in a repeated interaction game cooperation might not be enforceable and the groups sustain their costly appropriation efforts.

In general, political regimes in ethnically diverse countries are often found to be more engaged in inefficient "identity politics" than in more efficient "performance politics". In the former situation, a political regime or party is supported not for its performance in terms of furthering prosperity, but for being led by people from the same group, while in the latter situation economic and political performance is rewarded. As most ethnically diverse countries are diverse at the national level and relatively homogeneous at the regional level, "identity politics" persist at the national level. With these politics people are reminded of differences and therefore an environment of low trust and cooperation is built and maintained. Collier (1998) argues that loyalty to ethnically-based parties is often maintained irrespective of economic performance and the government delivers patronage to the loyalists rather than services to the median voter.

A further disadvantage of high ethnic diversity is that it is believed to reduce the provision of public goods. Alesina, Baquir and Easterly (1999) formulate a model which links the heterogeneity of preferences across ethnic groups in a city to the amount and type of public goods the city supplies. A jurisdiction with two or more polarized groups (in the sense that these groups have pref-

erences very far away from the median) would prefer to keep taxes low and deduct resources from the public good to private consumption. This results in a suboptimal provision of the public good which is then to the detriment of all.[2]

These theories may all lead to vicious cycles of high ethnic diversity, poor economic performance, and greater ethnic identification as a result as marginalized groups will build up even stronger identities in the face of poor economic performance and their social exclusion (Akerlof and Kranton, 2000).

On the positive side, ethnic or linguistic diversity which is due to immigration may improve trade opportunities for a country. Immigrants form ethnic networks between their home and host country (Casella and Rauch, 1997). Girma and Yu (2000) provide evidence that the trade-immigration linkage is driven by the new information brought by immigrants about their home country and not so much existing business connections and personal contacts with their home country. This would mean that ethnic networks enhance trade between dissimilar countries. Gould (1994) describes the positive effect of co-ethnic networks as immigrants having links to their home country which is like a human-capital externality that enhances trade opportunities (most likely between developed and developing countries). Trade is enhanced by a decrease in transaction costs to trade. Furthermore, bilateral trade flows are positively affected by the preference of immigrants for home country products. Gould (1994) finds that the trade enhancing effect is the strongest in the export sector and a relatively small community of immigrants is needed

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[2]It should be noted that other forms of social distance, such as high income inequality or a geographical segregation of groups that could be unrelated to ethnic diversity, could also deliver such a result.

to exhaust this effect. A relatively large community, however, is needed to exhaust the positive trade effect in the import sector.

Similarly, ethnic diversity of a country increases the attractiveness of that country for immigrants who often migrate to countries with existing networks of immigrants of the same origin. This increases the efficiency and adaptability of the labor market to economic change, and, to the extent that the skills of the immigrants complement the home country population, is likely to improve the growth performance of that country. Lastly, ethnic diversity might be seen as beneficial because it increases the variety of products on offer in a country. As much of trade between rich countries is driven by such a taste for variety, there would logically be considerable benefit if such variety could be provided within one's own borders.

This paper therefore aims to investigate the respective merits of the two theories on ethnic diversity and co-ethnic networks in an empirical analysis to complete the picture. We will investigate whether ethnic diversity has a growth enhancing effect in "immigration countries" which works against the negative effect of high ethnic diversity due to battles over scarce resources.

3 Existing Empirical Investigations

The pioneering paper by Easterly and Levine (1997), as well as a follow-up study by Alesina et al. (2003) argues that ethnic conflict reduces economic growth by leading government to adopt inefficient economic policies and low public good provision. Using cross-country seemingly unrelated regression the authors show that the negative impact of ethnic fractionalization operates via certain policy variables on growth. This link between ethnic diversity

and the individual policy variable is further analyzed by separate regressions which link ethnic fractionalization significantly to the quality of policy and institutions. These identified channels have hurt Sub-Saharan Africa particularly which had the highest measured fractionalization and in turn had the lowest economic growth in the period of 1960-1990. For instance, the negative coefficient of the ethnic variable of -0.019[3] implies that Uganda has 1.77 percentage points lower annual growth in per capita income in the base line specification than South Korea merely due to different degrees of ethnic fractionalization - 0,002 in South Korea versus 0,93 in Uganda.

As noted in the last section, other forms of social distance, especially income inequality could also lead to polarization of interests between groups and therefore have identical implications for the economic performance in a country. Easterly (2001) shows indeed that societies with a low class and income divide grow the fastest and the channels through which high ethnic diversity and high inequality have an impact on growth happen to be the same.

Moreover, extensions by Easterly (2001) show that the negative impact of high ethnic fractionalization can be mitigated by strong institutions which they measure using the data from the International Country Risk Guide. These indicators measure the strength of the rule of law, judicial independence, bureaucratic quality, and protection of property rights. In countries with such strong institutions, the negative effect of ethnic fractionalization on economic growth can be largely avoided (Easterly 2001).

On the other hand, several empirical studies find that immigrant links play an

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[3]See Table 2

important role in determining bilateral trade flows. Gould (1994) shows that immigrants' ties to their home country play a key role in explaining bilateral trade flows of the U.S.. Girma and Yu(2000) investigate the link between immigration and trade using U.K. data. They find evidence that immigration from non-Commonwealth countries has a significant trade enhancing effect. Both studies find a pro-import, but most importantly pro-export effect.

4   Data and Methodology

Since our first objective was to update and extend the analysis of Alesina et al. we used the same variables and extended the dataset where possible using the same data sources to include the 1990s. This was possible for all variables except telephones per 1000 workers for which we introduced the variable telephones per 1000 people instead.[4] We decided to focus in our research on the ethnic fractionalization variable "ethnic" only which was constructed by Alesina et al. (2003). This is mainly due to the fact that we deemed it to be the most reasonable measure of ethnic fractionalization available to date.

The variable "ethnic" is measured by a one minus a Herfindahl concentration index

$$Fract_j = 1 - \sum_{i=1}^{N} s_{ij}{}^2 \tag{1}$$

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[4]Source: WDI 2003, this variable displays a very high correlation with the original variable telephone per 1000 workers. See Appendix Table 9

where s is the share of group i (i = 1,...,N) in country j. The index takes values from zero to one for each country. In practical terms this index measures the probability that two random drawn individuals belong to a different ethnic group. The data to construct this index, i.e. the values for the group shares, are mainly taken from the Encyclopedia Britannica (2001). A separate ethnic group is defined if there exist distinguishing linguistic and/or ethnic characteristics.

Table 1 in the appendix shows the average fractionalization measures of the different indices for the different regions of the world. Note that Sub-Saharan Africa displays the highest average index for all measures of fractionalization. The index "ethnic" gives a more realistic picture of fractionalization in Latin America than the ethno-linguistic measure (ELF) since this region is not fractionalized due to linguistic but ethnic groups.

The second objective of this paper was to combine the two existing strands of literature concerning the differential impact of ethnic diversity on economic performance. Thus, we needed to define what constitutes an immigration country, in order to single out the alleged positive impact of ethnic diversity due to immigration. We used three different definitions for the variable "immigration country". Table 8 in the appendix lists the countries included using the different definitions.[5]

Our first definition is that a country is an immigration country, if the per-

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[5]However, we cannot prove whether co-ethnic networks exist in each of these countries. For a first analysis of our idea we used the least restrictive definitions.

centage of foreign population was bigger than 4 percent of total population between 1965 and 1990 and the total population exceeds one million. Data on the share of foreign population are from the United Nations Population Division (1994).[6] The assumption was made because the ethnic network effects described in the literature where found in countries where the foreign population share was higher than 4 percent. It is also reasonable to assume that for network effects to take place a certain critical mass of foreign population must be present.[7] Thirty-two countries, for which data is available, fall into this classification.

Our second definition is that a country is classified as an immigration country if it was mainly created by settlement from abroad, -forced or free, within the past 300 years and the descendants of foreign settlers constitute the majority of the population today. This variable is clearly unsuspicious in regards to endogeneity. Data is taken from the CIA World Factbook, where the group share of ethnic groups are listed.

Our third definition classified any country as migration country which experienced positive net migration between 1960 and 1965. This definition also has the advantage of not being endogenous. Data is not available before 1960 and is aggregated to five year periods. The data comes from the UN Population Division (2003).

In our empirical analysis we use the common methodology of Seemingly Unrelated Regressions. This is for two particular reasons. First of all, it allowed us to be comparable with existing findings such as Easterly and Levine

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[6]Available at the University of California Davis, http://migration.ucdavis.edu/

[7]Furthermore, a certain market size will be needed to create positive trade effects.

(1997) and Alesina et al. (2003). Secondly, and more importantly, Seemingly Unrelated Regressions display a clear advantage over cross-country growth regressions of this kind. In particular, this method allows for country random effects to be correlated across decades and yields more efficient estimators than alternative methods. In other words, the effects of the independent variables on growth are allowed to be correlated within a country specific framework over time which is a clear advantage to standard OLS estimates. Furthermore, like OLS, SUR allow for a time invariant correlation between the independent variable and growth, but the estimates are derived by incorporating decade specific correlations. SUR seems more favorable since it allows for a more detailed picture than OLS where effects are averaged over a 30 or 40 year horizon. SUR instead specifies a regression for each of the four decades, analyzing the impact of a specific variable measured at the start of each decade on growth by assuming that this impact is not different between the decades.

To get a first idea, the methodology we used to test for different effects of ethnic diversity in immigration and non-immigration countries is a simple interaction term between the immigration Dummy and the variable "ethnic". The hypothesis being that if a country is classified as an immigration country we would expect a distinct positive or at least compensating impact of ethnic diversity on growth.

5 Results

5.1 Extending the Data Set

Before we intend to analyze if ethnic diversity has a distinct effect on growth in immigration countries we wanted to confirm and update the base line analysis by including the 1990s. The results are noteworthy by themselves, as they lend support to the original argument, but also show some contradiction. Table 2 shows that the results of the updated data analysis. The first two columns in Table 2 reproduce the original findings of Alesina et al. with the difference that the variable "log telephones per worker" has been replaced by "log telephones per people" in regression (4). To see the changes due to inclusion of this different variable see the appendix.[8]

The original argument was that high ethnic fractionalization leads to an adverse policy environment. This is shown when comparing regressions (1) and (4) in the first two columns of Table 2, as the inclusion of variables measuring the quality of the policy environment and public good provision renders the negative impact of "ethnic" to insignificance. The influence of ethnic diversity is more than halved.

If we include now data up to 1999, the following changes can be observed. First of all, if we concentrate on specification (1), it confirms and strengthens the original findings that ethnic fractionalization has a negative impact on growth, as the results remain almost unchanged in terms of magnitude and significance. However, the coefficient of the Dummy for Sub-Saharan Africa gains in magnitude and significance. This hints at the continuing diverging

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[8]For comparison with the original Alesina et al. results see Appendix Table 9.

growth experience of this region and the problem observed first by Easterly and Levine that the model cannot fully explain this diverging growth trend even though high ethnic diversity is one of the main characteristics of this region.

Secondly, the variable "schooling" becomes insignificant. The significance and magnitude of the other coefficient shows not much variation. It is interesting that schooling becomes insignificant once we include the 1990s and telephone per thousand people. One possible explanation is that the variation of schooling has strongly declined in the 1990s and that physical and human capital infrastructure is highly correlated for all decades, but particularly in the 1990s. We find that the difference between the minimum and maximum value of the "log of 1 + average years of school attainment" dropped from 2.29 in 1960 to 2.09 in 1990. In the 1960s the correlation coefficient between the level of schooling and telephones per thousand people takes a value of 0.83, for the 1990s it had increased to 0.89. Pritchett (1999) analyzes why education has no significant influence on growth in a cross-country setting and suggests three different explanations. First of all, it might be the case that indeed schooling creates no human capital. Secondly, the marginal returns to human capital are falling rapidly where demand for educated labor is stagnant. Lastly, the institutional environments in many countries have been sufficiently perverse that the human capital accumulated has been applied to activities that served to reduce economic growth.

However, the most important finding is, once we include data for the 1990s, that we find a weaker channel of ethnic fractionalization via policy on growth. The negative impact of ethnic fractionalization remains significant in mag-

nitude. The effect of ethnic fractionalization is more significant and twice as large in magnitude if we compare regression (4) without the 1990s and regression (4) where the 1990s are included. Moreover, in specification (1), the effect of ethnic fractionalization on growth is as large as before and even more significant.

This implies one of the two following explanations. Firstly, it might be that ethnic diversity has gained a bigger impact on growth in the 1990s. This is possibly due to a higher frequency and severity of conflict between groups. Secondly, other transmission channels of ethnic fractionalization on growth might be existent. In particular, it might be the case that the long run impact of ethnic diversity on negative growth performance is not captured by the policy variables used alone, but that there is a long term growth handicap associated with ethnic fractionalization that operates via some omitted variable which comes particularly to bear in the extended 40 year horizon.[9] As the scope of this paper shall be limited to the topic of migration and its interaction with ethnic fractionalization, the second hypothesis can not be tested here to a satisfying extent. To test the first hypothesis we ran a separate regression for each decade to assess whether the impact of "ethnic" increased between the 1960s and the 1990s. The results indicate that this is indeed the case as the only decade in which "ethnic" has a negative significant impact, even after the inclusion of the policy variables, are the 1990s. For all other decades the impact of "ethnic" in the extended regression is not statistically different from zero. The findings are shown in Table 3.

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[9]One hypothesis is that there might be a long term impact of ethnic diversity via inequality on growth. This hypothesis cannot be fully tested due to missing and unreliable inequality data in the considered period.

Furthermore, we investigate whether the sizable impact of ethnic fractionalization in the 1990s is due to the fact that countries with high ethnic fractionalization not only experienced adverse policy effects, but also a higher incidence of violent conflict in the 1990s. Moreover, we test the model for different regional areas separately in order to investigate whether the findings of Alesina et al. are valid universally or in specific regions only.

Conflict incidence increased substantially between the 1960s and the 1990s and is concentrated in countries of Sub-Saharan Africa. This explains why countries with high ethnic fractionalization experienced such low growth in the 1990s, even after controlling for inefficient policies. The Prio Database of the International Peace Research Institute Oslo[10] confirms this assessment, as the crude measure of numbers of conflicts lists 82 incidences of violent conflict beginning in the 1960s, 87 in the1970s, 102 in the 1980s, jumping to 172 incidences at the beginning of the 1990s in the whole world. Even though this measure holds no information concerning the intensity and duration of violent conflict[11] it confirms the sheer fact that the incidences of civil conflict has increased dramatically in the 1990s. In the 1960s, 34 conflicts took place in Sub-Saharan Africa and Latin America, in the 1970s it were 33 and in the 1980s incidence dropped slightly to 30 in the 1980s. However, in the 1990s the figure jumped to 77 in these two regions. This might well be the main reason why ethnic fractionalization remains significant after incorporating the 1990s, despite the inclusion of policy variables.

We tried to further validate this hypothesis by controlling for countries in

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[10]Prio Database of the International Peace Research Institute Oslo, www.prio.no

[11]This topic would make for an interesting paper by itself.

which a civil conflict prevailed. However, the influence of the conflict variables on growth is not significantly different from zero. The variable "Ethnic" does not lose in significance. [12]

Furthermore, if the impact of ethnic fractionalization is differing in the four decades, it might also differ between regions. The sample is therefore divided into two subgroups. As we do not have sufficient numbers of observations to analyze the model for Sub-Saharan Africa and Latin America separately, we combined the two to one group including 85 countries. We compare this with "the rest of the world" including 75 OECD, Asian and some Arab countries. The results are shown in Table 4.

Strikingly, the results differ very much between the two subgroups. Considering Sub-Saharan Africa and Latin America, the impact of the variable measuring ethnic fractionalization remains sizeable and significant even after the inclusion of the policy variables. It seems very much plausible that the problem in those two regions therefore arises because of violent conflicts between fractionalized groups and not alone because of battles between groups in the political sphere leading to inefficient policies and low public good provision.

Contrarily, in the "rest of the world" the hypothesis of Alesina et al. and Easterly and Levine seems to explain the growth differences between countries rather well. Inefficient policies and low public good provision explain the diverging growth trends due to ethnic fractionalization. In these regions

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[12]The results are not reported here. Data is from the Prio Database. Multiple definitions of civil conflicts were tested: minor-, intermediate civil conflict, civil war (internal and internationalized internal) and frequency in a decade. None of this specifications produced significant results.

it seems to be indeed the case that the transmission channel of high ethnic fractionalization and its negative impact on growth can be explained alone by an adverse policy environment.

5.2 Migration and Ethnic Fractionalization

The second aim of this paper is to reconcile the two theoretical arguments of the different effects of fractionalization and in-migration on growth presented in the first part of this paper. So far we have argued empirically that fractionalization of groups is problematic as it leads to conflicts of political and also violent nature, both hampering growth. Now, we hypothesize that in-migration leads to higher ethnic fractionalization and those countries that can be characterized as highly ethnically diverse and in which this diversity partially emerged because of settlers or migrants should also experience positive effects due to diversity and not only negative effects. We do not argue that in immigration countries, which are fractionalized, models which explain inefficient policies and low public good provision are no longer valid. We rather investigate whether positive effects of in-migration also prevail and which effect dominates in a cross-country setting. This gives rise to important policy implications which will be described in the last section of this paper. However, before turning to our empirical analysis of this issue we would like to highlight some of our constraints in testing the hypothesis. First of all, our measure of ethnic diversity which is assumed to be constant over the forty year horizon does not allow for variation due to migration within this time frame. Secondly, the link between ethnic diversity and migration is clear, but is only a partial explanation for ethnic diversity in a

given country. Thus, using the index of ethnic fractionalization in order to test the theory of co-ethnic networks is not fully satisfying, but inevitable in our setting. Thirdly, in line with these problems, to draw a clear definition what constitutes an "immigration country" is less straightforward for our purpose. Therefore we tested three different dummy variables.

Utilizing the new dataset we tested if there is a distinguished effect of ethnic fractionalization on economic performance in countries which are ethnically diverse partly due to immigration or foreign settlement. The argument being, those countries which display high ethnic diversity partly due to immigration and foreign settlement might be capable to reap the benefits of such an increased diversity via increased trade.

The mean ethnic diversity is slightly higher in immigration countries than non-immigration countries. This is true for definition 1, where the share of foreign population is considered and 3 where the net inflow of migrants is considered. Not surprisingly, the countries categorized as immigration countries using definition 2 do not exhibit a higher mean ethnic diversity. We only included countries in which descendants of foreign settlers constitute the majority of the population.

First of all we test 'definition 1'[13] where 32 countries are classified as immigration countries. The results are shown in Table 5. Concerning regression (1) and (2) our hypothesis seems to be validated to some extent. The coefficient on the interaction term 'ethnic*immigration' has the expected positive sign and halves the growth decline caused by ethnic fractionalization in the

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[13]Definition 1: Immigration country is defined as having a population greater than 1,000,000 and an immigrant share higher then 4 percent in the period 1965-1990.

first case and nearly mitigates it in the second. That is, countries with high fractionalization partly due to immigration seem to be less exposed to slower growth. However, the coefficients on the interaction term and the dummy are not significant. The positive mitigating effect looses further significance when we include all policy variables (see regression 3). It seems to be the case that the policy variables and not the immigrant links are the most important determinants of growth rates.[14]Moreover, the question here is, whether immigrants are attracted by the positive economic situation or are also the cause for positive growth enhancing effects. As we do not have data before 1965 and we think that a country must have had a positive stock of migrants over several years for the growth-enhancing effects to take place, we have created the alternative dummies.

Secondly, our results for 'definition 2'[15] indicate a similar picture. Here we consider only countries created or dominated by foreign settlement. This fact seems to have positive consequences for subsequent growth. The coefficient of the interaction-term implies that the negative effect of ethnic diversity on long-run growth is more than mitigated. Concerning the two first regression specifications there is small positive net-effect of ethnic fractionalization in countries whose majority are descendants of foreign settlers. If the policy variables which measure the quality of governmental policy are taken into account the interaction-term and dummy again become insignificant. However,

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[14]Furthermore, as a side note, the immigration dummy displays a negative coefficient which is not always statistically significant and rather small in magnitude. One possible interpretation of the Dummy coefficient is that it might capture population growth due to immigration.

[15]Our second definition is that a country is classified as an immigration country if it was mainly created by settlement from abroad, -forced or free, within the past 300 years and the descendants of foreign settlers constitute the majority of the population today.

we caution to overvalue this result. Only very few countries are considered here and therefore the result depends much on the inclusion of particular countries.

Thirdly, the findings for the different effect of ethnic diversity in countries which experienced positive net-migration in 1960 - 1965 on growth are weakly in line with the above results. However, the coefficient of the interaction-term is not significant in neither of the regressions. The conclusion being, that the results weakly point in the direction of the above outlined hypothesis.

These results leave the question of the channels through which ethnic fractionalization in immigration countries has an influence on long-run growth. The first hypothesis is that immigration countries are especially exposed to conflicts over scarce resources in the political sphere and therefore inefficient policies that subsequently affect long-run growth negatively. We ran simple regressions using all policy variables. The policy indicators show no different relationship with ethnic fractionalization in immigration countries using definition 1 and 3 (foreign population, net positive inflow) when compared to the relationship of ethnic fractionalization and policy in the whole world. Thus, we conclude that the policy channels are important in immigration countries, but not more important than in the rest of the world. Interestingly, the settler country dummy, that is definition 2, shows a different, in fact positive significant correlation with the quality of policy.[16]

Of major interest is to investigate further whether a growth enhancing effect of high ethnic fractionalization via a trade channel prevails in immigration

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[16]This is also in line with the findings of Acemoglu (2001).(The results are not reported here.)

countries. Trade, that is exports and imports as a share of GDP, increased dramatically between the 1960s and 1990s in most countries. Furthermore, the variation of trade between countries changed.[17] We find weak evidence of a positive relationship between high ethnic diversity and trade for definition 1 and 2, but not for definition 3. Our hypothesis is that definition 3 has the advantage of not being endogenous, however, does not differentiate between immigration countries with a very high and stable net inflow of migrants over a long period and a short (5 year) and rather small net inflow. Table 6 depicts the correlation between openness and ethnic diversity for the different decades and different definitions. The highest correlation between trade flows and ethnic diversity is found in the 1960s considering definition 1 and falls thereafter. For definition 2 the correlation coefficient is the highest in the 1990s. Thus, a correlation between trade and ethnic fractionalization in immigration countries is present, but tiny and we cannot reproduce the strong findings of trade-enhancing co-ethnic networks found in country case studies, here using ethnic fractionalization and immigration country status in a cross-country setting.

To analyze further whether there is a different effect of ethnic fractionalization on growth in immigrant and non-immigration countries we ran separate regressions for these two groups of countries for definition 1 and 3 (See Table 7 in the appendix). We dropped definition 2 due to insufficient numbers of observation.[18]

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[17]Both patterns of change can not be explained by the variable 'ethnic fractionalization' as we assume it to be constant over the 40 year horizon. Furthermore the index would also change very slowly in response to migration.

[18]A separate regression using only 12 observation is not sensible with SUR.

Results for definition 1 indicate that the influence of ethnic fractionalization on growth in the baseline specification is slightly larger and more significant in non-immigration countries. The effect of ethnic fractionalization on growth is explained through the policy variables in non-immigration countries. In the 32 immigration countries, however, the effect of "ethnic" on growth remains hardly changed and significant when including the policy variables. This underlines the above argument that there are other channels than policy which make ethnic fractionalization growth hampering in some countries.

Results for definition 3 behave more in line with the above argument that ethnic diversity is not growth hampering in immigration countries. The coefficient of ethnic fractionalization on growth remains small and insignificant for all specifications involving countries with positive net migration between 1960 and 1965. On the other hand, countries with no positive net migration within this timeframe display the usual behavior, namely that the coefficient of ethnic is significant and large in the baseline specification and is explained after the inclusion of the policy variables. In order to further validate the findings for countries with positive average net-migration, the period considered for definition 3 is extended up until 1970. Now China, Cameroon, Laos, Lebanon, Norway and El Salvador are included into the category.[19] Egypt, Fiji, the United Kingdom, Honduras and Malaysia drop out of the category. However, the regression results with emphasis on the influence of ethnic fractionalization on growth remain the same as above. There is no

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[19]Most of these countries experienced high positive net migration due to war refugees. Nevertheless, we want to stick to a constant definition, despite possible limitations.

significant negative effect of ethnic fractionalization on growth.[20]

To conclude this section, we find no clear, only suggestive, evidence that ethnic fractionalization in "immigration countries" has a positive growth enhancing effect which counteracts the measured negative effect of ethnic fractionalization. This might be partially due to the weak link between ethnic fractionalization and migration, as migration does not seem to change the ethnic index significantly.

6   Conclusion and Future Research Questions

In the end, it seems clear that the negative impact of ethnic fractionalization on growth remains significant and robust if we include the 1990s in our empirical analysis. Interestingly, the transmission channels which explained how ethnic fractionalization negatively affects growth, namely via policy variables, is less prominent in the extended analysis, as ethnic fractionalization remains a significant negative explanatory power in the growth regression after the inclusion of the policy variables. Thus, the negative impact of ethnic fractionalization on economic growth cannot be fully explained and there might be some other transmission channels which link high ethnic fractionalization to poor growth performance than the one's investigated and specified so far. In particular, the different results for the different regions in the world suggest that Sub-Saharan Africa and Latin America do not only face an adverse policy environment, but that high ethnic fractionalization remains an obstacle to growth most likely due to conflict. Furthermore, the negative implication of high ethnic fractionalization has become more predominant

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[20]Results are not reported here.

in the 1990s which makes in itself an interesting future research topic, as it seems very likely that this is again due to the increased incidences and severity of civil conflict.

Moreover, as already mentioned above, there might be a further conceivable transmission channel of high ethnic fractionalization on growth, namely income inequality. Especially, if one considers a longer time horizon, very high income inequality, which might be a result of high ethnic fractionalization and segregation in connection with badly designed institutions, might lead to a reduction in growth via the sub-optimal provision and accumulation of factors of production, such as physical and human capital. This explanation gains validity especially in countries with imperfect markets. A further inquiry into this matter seems very much worthwhile, but rather difficult to facilitate due to the limitation of useable data sources.

Concerning migration, ethnic fractionalization and growth, this paper suggests that there is a mitigating positive impact in countries which are characterized as immigration countries. This gives some empirical validation to the co-ethnic network theory in a cross-country setting. Three different, but related, definitions give an indication that there exists indeed a positive growth impact in countries characterized by high ethnic fractionalization and strong migration flows and stocks. This mitigating positive impact is lost, once we include the policy variables, which suggests that controlling for the policy environment is of greater importance than the impact of immigration and connected trade effects on growth. Promising future research in this field should focus on the network enhancing trade effect of immigration in a country cross-section framework, in order to strengthen the argument above

and confirm the case studies concerning co-ethnic network theory in a wider setting.

In conclusion, this paper confirms and strengthens the initial assessment that ethnic fractionalization is one of the key determinants of a negative policy environment and subsequent poor growth performance. However, it also illustrates that our understanding about the impact of ethnic fractionalization on growth is far from complete, other dimensions and transmission channels of ethnic fractionalization on growth seem to be present. Namely, that countries, in particular in Sub-Saharan Africa and Latin America, face the additional negative impact of increased civil strive and violence with all the associated negative consequences for growth. On the other hand, as was shown in the separate regressions for immigrant and non-immigration countries ethnic fractionalization is not necessarily a "problem". Furthermore, we put emphasis on the findings by Easterly (2001) which show that democratic institutions can partly resolve ethnic conflict. Thus, countries with high ethnic fractionalization and a high divide between groups face the danger, but not necessarily the consequences of growth retardation. Hence, the challenge ahead, in particular in Sub-Saharan Africa and Latin America, is the full participation of all ethnic groups in the economic development process, which might be a way to overcome this serious obstacle in many developing countries.

7   Appendix

Table 1
Sample Means of Indices by Region

	ELF	Ethnic	Language	Religion
Latin America & Carribean	0.265	0.405	0.179	0.442
Sub-Saharan Africa	0.651	0.658	0.652	0.496
Eastern & Central Europe	0.315	0.366	0.32	0.491
Western & Southern Europe	0.147	0.177	0.196	0.311
Middle East	0.244	0.453	0.33	0.346
East & South East Asia	0.306	0.353	0.457	0.462

Source: Alesina et al. (2003)

*Note:*ELF: Ethno-Linguistic Fractionalization,
constructed by Easterly and Levine (1997)
using the Russian Atlas Narodov Mira

Table 2

Dependent Variable: Growth rate 1960-1980, 1960-1999

Variable	1	4	Inclusion of 1990s 1	Inclusion of 1990s 2	Inclusion of 1990s 3	Inclusion of 1990s 4
Dummy for the 1960s	-0.099	-0.166*	-0.056	-0.06	-0.095	-0.028
	(-1.19)	(-1.73)	(-0.37)	(-0.90)	(-1.31)	(-0.37)
Dummy for the 1970s	-0.102	-0.163*	-0.059	-0.062	-0.091	-0.025
	(-1.22)	(-1.71)	(-0.89)	(-0.93)	(-1.25)	(-0.33)
Dummy for the 1980s	-0.122	-0.179*	-0.079	-0.082	-0.109	-0.042
	(-1.46)	(-1.88)	(-1.20)	(-1.23)	(-1.49)	(-0.55)
Dummy for the 1990s			-0.071	-0.074	-0.107	-0.039
			(-1.09)	(-1.12)	(-1.47)	(-0.51)
Dummy for Sub-Saharan Africa	-0.007	-0.013***	-0.010***	-0.011***	-0.014**	-0.014**
	(-1.53)	(-2.75)	(-2.50)	(-2.76)	(-3.22)	(-3.27)
Dummy for Latin America & Caribbean	-0.018***	-0.017***	-0.015***	-0.013***	-0.011***	-0.014***
	(-4.85)	(-4.46)	(-4.61)	(-3.98)	(-3.29)	(-4.05)
Log of initial income	0.038*	0.067***	0.026	0.028*	0.04**	0.029
	(1.73)	(2.76)	(1.60)	(1.69)	(2.19)	(1.54)
Log of initial income squared	-0.003*	-0.006***	-0.002*	-0.002**	-0.003***	-0.003***
	(-1.93)	(-3.66)	(-1.94)	(-2.06)	(-2.77)	(-2.66)
Log of schooling	0.013***	0.005	0.012***	0.011***	0.011***	0.003
	(3.11)	(0.96)	(3.10)	(3.04)	(2.80)	(0.7)
Assassinations		-17.986*		-31.025***	-23.228***	-22.31***
		(-1.95)		(-3.16)	(-2.56)	(-2.51)
Financial Depth		0.011**			0.016***	0.012***
		(1.99)			(3.34)	(2.47)
Black Market Premium		-0.015***			-0.018***	-0.015***
		(-3.46)			(-4.81)	(-4.07)
Fiscal surplus/GDP		0.113***			0.102***	0.109***
		(3.64)			(3.64)	(3.94)
Log of telephones per people		0.022***				0.018***
		(3.64)				(3.41)
Ethnic	**-0.019***	**-0.004**	**-0.018***	**-0.019***	**-0.013**	**-0.01***
	(-2.96)	**(-0.55)**	**(-3.22)**	**(-3.22)**	**(-2.17)**	**(-1.65)**
No. Obs.	264	179	356	349	267	257
Adj R2	0.38	0.57	0.34	0.35	0.47	0.5

Source: Own Calculations

Note: t-stats in parentheses;

0.01, ** 0.005, *** 0.001 Significance level

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Table 3
Dependent Variable: Growth rate for noted decades

Variable	1960	1970	1980	1990	1960	1970	1980	1990
Dummy for the 1960s	-0,3644* (-1,72)				-0,2611 (-0,93)			
Dummy for the 1970s		-0,4914** (-2,76)				-0,4296** (-1,98)		
Dummy for the 1980s			-0,2014 (-1,61)				-0,1880 (-1,44)	
Dummy for the 1990s				-0,0376 (-0,23)				0,0652 (0,37)
Dummy for Sub-Saharan Africa	-0,0148 (-1,35)	-0,0092 (-1,22)	-0,0105 (-1,62)	-0,0176*** (-2,36)	-0,0198* (-1,68)	-0,0066 (-0,88)	-0,0123 (-1,77)	-0,0165*** (-2,10)
Dummy for Latin America& Caribbean	-0,0206*** (-3,10)	-0,0154*** (-2,49)	-0,0296*** (-5,59)	-0,0099* (-1,79)	-0,0245*** (-3,04)	-0,0155*** (-2,28)	-0,0210*** (-3,63)	-0,0073 (-1,06)
Log of initial income	0,1064* (1,91)	0,1431*** (3,10)	0,0549* (1,72)	0,0171 (0,43)	0,0899 (1,25)	0,1454*** (2,70)	0,0643 (1,95)	0,0040 (0,10)
Log of initial income squared	-0,0074* (-2,01)	-0,0098** (-3,25)	-0,0036* (-1,74)	-0,0013 (-0,57)	-0,0070 (-1,50)	-0,0119*** (-3,40)	-0,0053*** (-2,43)	-0,0013 (-0,56)
Log of schooling	0,0174** (1,96)	0,0152** (2,10)	0,0118* (1,74)	0,0086 (1,09)	0,0127 (1,25)	0,0058 (0,76)	0,0040 (0,47)	0,0015 (0,14)
Assassinations					51,937 (0,87)	-17,867 (-1,06)	-14,798 (-1,33)	-86,466** (-2,06)
Financial Depth					-0,0003 (-0,03)	0,0054 (0,48)	0,0145 (1,63)	0,0097 (1,06)
Black Market Premium					-0,0180 (-1,07)	-0,0286*** (-2,75)	-0,0085 (-1,54)	-0,0211** (-2,19)
Fiscal surplus/GDP					0,0724 (0,56)	0,1988*** (2,82)	0,1339*** (3,33)	0,1758*** (2,49)
Log of telephones per people					0,0117 (0,84)	0,0395*** (3,89)	0,0212** (2,05)	0,0150 (1,11)
Ethnic	**-0,0069** **(-0,54)**	**-0,0256*** (-2,35)**	**-0,0153*** (-1,66)**	**-0,0120*** (-2,44)**	**0,0008** **(0,06)**	**0,0048** **(0,41)**	**-0,0008** **(-0,08)**	**-0,0193*** (-1,83)**
No. Obs.	38	88	94	92	38	67	74	78
Adj R2	0,23	0,28	0,38	0,15	0,37	0,62	0,59	0,29

Source: Own Calculations
Note: t-stats in parentheses;
0.01, ** 0.005, *** 0.001 Significance level

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Table 4
Dependent Variable: Growth rate 1960-1999

Variable	Africa and Latinam 1	Africa and Latinam 4	Rest of the world 1	Rest of the world 4
Dummy for the 1960s	0.127	-0.037	-0.249***	0.006
	(1.2)	(-0.30)	(-2.58)	(0.05)
Dummy for the 1970s	0.125	-0.033	-0.249***	0.008
	(1.17)	(-0.27)	(-2.58)	(0.06)
Dummy for the 1980s	0.099	-0.053	-0.262***	-0.005
	(0.93)	(-0.43)	(-2.72)	(-0.04)
Dummy for the 1990s	0.12	-0.054	-0.256***	0.004
	(1.03)	(-0.44)	(-2.68)	(0.03)
Log of initial income	-0.026	0.03	0.076***	0.026
	(-0.93)	(0.94)	(3.21)	(0.86)
Log of initial income squared	0.002	-0.003	-0.005***	-0.004**
	(0.81)	(-1.50)	(-3.63)	(-2.06)
Log of schooling	0.011**	-0.004	0.011**	0.008
	(1.98)	(0.54)	(2.25)	(1.54)
Assassinations		-24.819***		-16.353
		(-2.57)		(-0.76)
Financial Depth		0.036***		0.01*
		(2.33)		(1.84)
Black Market Premium		-0.015***		-0.018***
		(-2.82)		(-2.87)
Fiscal surplus/GDP		0.113***		0.083*
		(2.84)		(1.95)
Log of telephones per people		0.022***		0.026***
		(2.48)		(3.26)
Ethnic	**-0.014***	**-0.016***	**-0.019***	**-0.001**
	(-1.81)	**(-1.77)**	**(-2.52)**	**(-0.063)**
No. Obs.	181	105	175	114
Adj R2	0.23	0.42	0.24	0.39

Source: Own Calculations

Note: t-stats in parentheses;

0.01, ** 0.005, *** 0.001 Significance level

Table 5
Dependent Variable: Growth rate 1960-1980, 1960-1999

Variable	1	2	3	4	5	6	7	8	9
Dummy for the 1960s	-0.0577 (-0.87)	-0.0518 (-0.78)	-0.045 (-0.58)	-0.056 (-0.86)	-0.052 (-0.79)	-0.045 (-0.59)	-0.046 (-0.70)	-0.045 (-0.68)	-0.006 (-0.08)
Dummy for the 1970s	-0.061 (-0.91)	-0.054 (-0.81)	-0.041 (-0.54)	-0.057 (-0.90)	-0.054 (-0.82)	-0.041 (-0.53)	-0.049 (-0.74)	-0.047 (-0.71)	-0.004 (-0.05)
Dummy for the 1980s	-0.08 (-1.21)	-0.074 (-1.11)	-0.057 (-0.75)	-0.078 (-1.20)	-0.074 (-1.12)	-0.057 (-0.75)	-0.069 (-1.05)	-0.067 (-1.02)	-0.021 (-0.27)
Dummy for the 1990s	-0.074 (-1.12)	-0.067 (-1.01)	-0.056 (-0.73)	-0.072 (-1.11)	-0.067 (-1.02)	-0.056 (-0.74)	-0.062 (-0.95)	-0.06 (-0.92)	-0.019 (-0.25)
Dummy for Sub-Saharan Africa	-0.009** (-2.21)	-0.0095** (-2.31)	-0.013*** (-3.03)	-0.009*** (-2.35)	-0.01*** (-2.51)	-0.014*** (-3.34)	-0.01*** (-2.52)	-0.011*** (-2.84)	-0.014*** (-3.30)
Dummy for Latin America& Caribbean	-0.015*** (-4.43)	-0.014*** (-3.92)	-0.016*** (-4.34)	-0.013*** (-3.74)	-0.011*** (-3.19)	-0.016*** (-4.23)	-0.016*** (-4.84)	-0.014*** (-4.25)	-0.015*** (-4.60)
Log of initial income	0.027 (1.59)	0.026 (1.52)	0.033* (1.77)	0.026 (1.61)	0.026 (1.57)	0.033* (1.79)	0.023 (1.4)	0.024 (1.42)	0.023 (1.21)
Log of initial income squared	-0.002* (-1.87)	-0.002* (-1.79)	-0.003*** (-2.85)	-0.002* (-1.92)	-0.002* (-1.91)	-0.003*** (-2.86)	-0.002* (-1.67)	-0.002* (-1.70)	-0.003*** (-2.33)
Log of schooling	0.012*** (3.04)	0.011*** (2.89)	0.002 (0.5)	0.012*** (3.32)	0.012*** (3.09)	0.003 (0.73)	0.012*** (3.26)	0.011*** (3.16)	0.004 (0.8)
Assassinations	-25.81*** (-2.51)	-25.81*** (-2.51)	-25.906*** (-2.87)	-26.762*** (-2.58)	-26.762*** (-2.58)	-26.396*** (-2.93)		-30.399*** (-3.13)	-21.029*** (-2.46)
Financial Depth			0.009* (1.75)			0.009* (1.71)			0.012*** (2.42)
Black Market Premium			-0.015*** (-4.03)			-0.016*** (-4.25)			-0.016*** (-4.22)
Fiscal surplus/GDP			0.161*** (5.02)			0.162*** (5.06)			0.114*** (4.23)
Log of telephones per people			0.019*** (3.51)			0.018*** (3.22)			0.021*** (3.9)
Ethnic	**-0.021*** (-3.19)**	**-0.023*** (-3.50)**	**-0.010 (-1.39)**	**-0.02*** (-3.35)**	**-0.022*** (-3.48)**	**-0.011* (-1.67)**	**-0.018*** (-2.85)**	**-0.02*** (-3.09)**	**-0.003 (-0.48)**
Immigrant Dummy	-0.004 (-0.74)	-0.008 (-1.39)	0.0003 (0.05)						
Immigrant *Ethnic	**0.011 (0.98)**	**0.018 (1.60)**	**-0.001 (-0.06)**						
Migrant Dummy				-0.018** (-2.33)	-0.019*** (-2.32)	-0.007 (-0.88)			
Migrant*Ethnic				**0.032* (1.66)**	**0.033* (1.66)**	**0.018 (0.89)**			
Netmigration Dummy							-0.008 (-1.46)	-0.011** (-2.01)	-0.006 (-1.08)
Netmigration*Ethnic							**0.007 (0.77)**	**0.013 (1.38)**	**-0.005 (-0.49)**
No. Obs.	342	336	246	345	339	249	356	349	257
Adj R2	0.35	0.35	0.51	0.36	0.35	0.51	0.35	0.36	0.51

Source: Own Calculations

Note: t-stats in parentheses;
0.01, ** 0.005, *** 0.001 Significance level

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Table 6
Correlation Table

Correlation Coefficients	Trade/GDP 1960	Trade/GDP 1970	Trade/GDP 1980	Trade/GDP 1990
Ethnic Fractionalization* Definition 1	0.2287	0.1673	0.1162	0.1596
Ethnic Fractionalization* Definition 2	0.0883	0.1648	0.148	0.2509

Definition 1: foreign pop. as percentage of total pop.
> 4 percent, pop. > 1Mio.
Definition 2: descendants of foreign settlers maj. of pop.

Source: Own Calculations

Table 7
Dependent Variable: Growth rate 1960-1999

Variable	Immigration		Non-Immigration		Positive Net-migration		No Net-migration	
	4	1	4	1	1	4	1	4
Dummy for the 1960s	0.0891	0.1838	-0.1036	-0.1319*	-0.0059	0.318	-0.071	-0.0534
	(0.61)	(1.57)	(-1.15)	(-1.71)	(-0.07)	(-2.44)	(-0.77)	(-0.54)
Dummy for the 1970s	0.083	0.1767	-0.0973	-0.133*	-0.0116	0.3123	-0.0728	-0.0478
	(0.57)	(1.5)	(-1.09)	(-1.72)	(-0.14)	(-2.41)	(-0.78)	(-0.48)
Dummy for the 1980s	0.0719	0.1669	-0.1152	-0.1569**	-0.0239	0.2972	-0.0963	-0.066
	(0.5)	(1.42)	(-1.29)	(-2.03)	(-0.29)	(-2.3)	(-1.04)	(-0.67)
Dummy for the 1990s	0.0804	0.171	-0.116	-0.1499*	-0.0189	0.3004	-0.0884	-0.0657
	(0.55)	(1.46)	(-1.30)	(-1.94)	(-0.23)	(-2.32)	(-0.96)	(-0.67)
Dummy for Sub-Saharan Africa	-0.0282***	-0.0295***	-0.0094*	-0.0019	-0.0256***	-0.027***	-0.007	-0.0115***
	(-3.71)	(-4.04)	(-1.86)	(-0.41)	(-3.26)	(-2.35)	(-1.56)	(-2.53)
Dummy for Latin America& Caribbean	-0.0316***	-0.0201***	-0.0136***	-0.0139***	-0.0198***	-0.0108	-0.0154***	-0.0143***
	(-4.15)	(-2.96)	(-3.38)	(-3.79)	(-3.18)	(-1.22)	(-4.13)	(-3.71)
Log of initial income	0.0000	-0.0263	0.0466**	0.0443**	0.0153	-0.0561*	0.0288	0.0344
	(0)	(-0.94)	(2.09)	(2.21)	(0.75)	(-1.82)	(1.21)	(1.4)
Log of initial income squared	-0.0004	0.0015	-0.0042***	-0.0032***	-0.0011	0.0021	-0.0021	-0.0034**
	(-0.21)	(0.92)	(-2.97)	(-2.49)	(-0.90)	(1.14)	(-1.41)	(-2.27)
Log of schooling	-0.0167*	-0.0116*	0.0054	0.0208***	-0.0024	0.0108	0.0167***	0.0038
	(-1.83)	(-1.91)	(1.07)	(4.93)	(-0.37)	(1.07)	(3.7)	(0.78)
Assassinations	66.6764		-27.4089***			14.9003		-21.5579***
	(1.46)		(-3.03)			(0.42)		(-2.46)
Financial Depth	0.0002		0.0113*			0.011		0.0143**
	(0.03)		(1.84)			(1.17)		(2.32)
Black Market Premium	-0.0142***		-0.013***			-0.0433***		-0.0138***
	(-2.43)		(-3.09)			(-5.04)		(-3.43)
Fiscal surplus/GDP	0.0438		0.1918***			0.0579		0.1262***
	(0.8)		(4.71)			(0.94)		(4.08)
Log of telephones per people	0.0109		0.0207***			0.0131		0.0213***
	(0.89)		(3.45)			(1.04)		(3.46)
Ethnic	**-0.020***	**-0.021***	**-0.0079**	**-0.0223***	**-0.0064**	**-0.0084**	**-0.0181***	**-0.0037**
	(-2.04)	**(-2.34)**	**(-1.00)**	**(-3.27)**	**(-0.70)**	**(-0.67)**	**(-2.51)**	**(-0.49)**
No. Obs.	22	26	64	71	31	26	70	64
Adj R2	0.48	0.41	0.53	0.38	0.43	0.46	0.34	0.51

Source: Own Calculations
Note: t-stats in parentheses;
0.01, ** 0.005, *** 0.001 Significance level

Table 8
Immigration Country Definitions

Countries Included	Definition 1		Definition 2	Definition 3	
	Argentina	Singapore	Argentina	Albania	Jordan
	Australia	Somalia	Australia	Argentina	Liberia
	Belgium	Sweden	Brazil	Australia	Libya
	Burundi	Switzerland	Canada	Austria	Luxembourg
	Canada	Syria	Chile	Bahamas	Malaysia
	Congo	Togo	Haiti	Belgium	Netherlands
	Cote DIvoire	United Kingdom	Israel	Brunei	New Zealand
	France	United States	Jamaica	Canada	Nigeria
	Gabon	Venezuela	New Zealand	Central African Rep.	Senegal
	Gambia	Zambia	Trinidad Tobago	Congo	Singapore
	Hong Kong	Zimbabwe	Uruguay	Cote DIvoire	South Africa
	Ireland		United States	Denmark	Sweden
	Israel		Venezuela	Djibouti	Switzerland
	Jordan			Egypt	Tanzania
	Lebanon			Fiji	Uganda
	Libya			France	United Kingdom
	Malawi			Gambia	United States
	Malaysia			Honduras	Venezuela
	Netherlands			Hong Kong	
	New Zealand			Hungary	
	Pakistan			Israel	

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Table 9
Dependent Variable: Growth rate 1960-1989

Variable	1	2
Dummy for the 1960s	-0.233***	-0.166*
	(-2.34)	(-1.73)
Dummy for the 1970s	-0.227***	-0.163*
	(-2.28)	(-1.70)
Dummy for the 1980s	-0.243***	-0.179*
	(-2.45)	(-1.88)
Dummy for Sub-Saharan Africa	-0.017***	-0.013***
	(-3.11)	(-2.75)
Dummy for Latin America & Caribbean	-0.015***	-0.017***
	(-4.14)	(-4.46)
Log of initial income	0.081***	0.067***
	(3.23)	(2.76)
Log of initial income squared	-0.007***	-0.006***
	(-3.98)	(-3.66)
Log of schooling	**0.009***	**0.005**
	(1.85)	**(0.96)**
Assassinations	-23.705***	-17.985*
	(-2.58)	(-1.95)
Financial Depth	0.013**	0.011**
	(2.12)	(1.99)
Black Market Premium	-0.018***	-0.015***
	(-4.10)	(-3.45)
Fiscal surplus/GDP	0.165***	0.11***
	(4.45)	(3.64)
Log of telephones per worker	0.006***	
	(2.41)	
Log of telephones per people		0.022***
		(3.64)
Ethnic	-0.005	-0.004
	(-0.75)	(-0.54)
No. Obs.	175	179
Adj R2	0,56	0,57

Source: Own Calculations
Note: t-stats in parentheses;
0.01, ** 0.005, *** 0.001 Significance level

8 Bibliography

References

[1] Acemoglu D. B., et al.: The Colonial Origins of Comparative Development. In:*The American Economic Review*, Vol. 91, 1369-1401, 2001

[2] Aghion, P. et al.: Endogenous Political Institutions. In:*The Quarterly Journal of Economics*, Vol. 119, Issue 2, 565-612, 2004

[3] Akerlof, G. A. and Kranton, R. E.: Economics and Identity. In:*The Quarterly Journal of Economics.*, Vol. CXV, Issue 3, 2000

[4] Alesina, A. and Baquir, R. and Easterly, W.: Public Goods and Ethnic Divisions. In:*The Quarterly Journal of Economics*, 1243-1284, November 1999

[5] Alesina, A. and Drazen, A.: Why are Stabilizations delayed? In:*The Quarterly Journal of Economics*, Vol. 81, No. 5, 1170-1188, 1991

[6] Alesina, A. et al.: Fractionalization. In:*Journal of Economic Growth*, No. 8, 155-194, 2003

[7] Alesina, A. and Ferrara, E. L.: Ethnic Diversity and Economic Performance. In:*NBER Working Paper Series*, No. 10313, 2004

[8] Annett, A. : Social Fractionalisation, political instabilits and the size of government. In:*The American Economic Review*, Volume 81, Issue 1, 179-190, 1991

[9] Arnott, R. and Stiglitz, J. E.: Moral Hazard and Nonmarket Institutions: Dysfunctional Crowding Out of Peer Monitoring? In:*the American Economic Review*, Vol. 81, No. 1, 179-190, 1991

[10] Banerjee, A. and Newman, A. F.:Information, the Dual Economy and Development. In:*Review of Economic Studies*, Vol 65, No. 4, 631-653, 1998

[11] Barret, D. B.: Endogenous Political Institutions.Christian Encyclopedia. New York: Oxford University Press. 1982

[12] Bates, R. H.: Ethnicity. Havard University, 2005 www.cid.havard.edu/cidpeople/bates/Ethnicity_Paper.pdf/

[13] Casella A. and Rauch J. E.: Anonymous Market and Group Ties in International Trade. In:*NBER Working Paper Series*, Working Paper 6186, 1997

[14] Collier, P.: The Political Economy of Ethnicity. 1998, www.worldbank.org/html/rad/abcde/collier.pdf

[15] Collier, P. and Hoeffler, A.: On economic causes of civil war. In:*Oxford Economic Papers*, 50:563-573, 1998

[16] Center for Research on Inequality, Human Security and Ethnicity (CRISE). 2004. About CRISE. http://www.crise.ox.ac.uk/.

[17] Dickson, E. and Scheve, K.: Social Identity, Political Speech, and Electoral Competition. Working Paper, 2004 www-personal.umich.edu/ scheve/edks0204.pdf

[18] Easterly, W. and Levine, R.: Africa's Growth Tragedy: Policies and Ethnic Divisions In:*The Quarterly Journal of Economics.*, Vol.112, No. 4, 1203-1250, 1997

[19] Easterly, W.: The Middle Class Consensus and Economic Development. In:*Journal of Economic Growth*, No.6, page 317-335, 2001

[20] Easterly, W.: Can Institutions Resolve Ethnic Conflict. In:*Economic Development and Cultural Change*, Vol. 49, 687-706, 2001

[21] Easterly, W.: Empirics of Strategic Interdependence: The Case of the Racial Tipping Point. In:*DRI Working Paper*, No.5, 2004

[22] Englebert, P.: Solving the Mystery of the Africa Dummy. In:*CEPR Discussion Paper Series*, No. 4616, September 2004

[23] Epstein, G.S. and Gang I.: Ethnic Networks and International Trade. In:*World Development*, Vol28, No. 10, 1821-1835, 2000

[24] Fearon, J. D.: Ethnic Structure and Cultural Diversity by Country. In:*Journal of Economic Growth*, 8:195-222, 2003

[25] Girma, S. and Yu, Z.: The Link between Immigration and Trade: Evidence from the UK. In:*GLM Research Paper*University of Nottingham, N. 23, 2000

[26] Gould, D. M.: Immigrant Links to the Home Country: Empirical Implications for U.S. Bilateral Trade Flows. In:*The Review of Economics and Statistics*, 302-316,1994

[27] Greif, A.: Contract Enforcement and Economic Institutions in Early Trade: The Mehgrebi Traders' Coalition. In:*The American Economic Review*, 83:525-548, 1993

[28] Mkandawire, T.: Shifting Commitments and National Cohesion in African Countries. In: Wohlgemuth, L, S. Gibson, S. Klasen, and E. Rothschild (eds.) Common Security and Civil Society in Africa. Uppsala: NAI.,1998

[29] Posner, D. N.: Measuring Ethnic Fractionalization in Africa. In:*American Journal of Political Science*, forthcoming

[30] Pritchett, L.: Where Has the Education Gone? In:*World Bank Policy Research Working Paper Series*, No. 1581, 1999

[31] Rauch, J. E.: Business and Social Networks in International Trade. In:*Journal of Economic Literature*, Vol. 39, 4: 1177-1203, December 2001

[32] Rodrik, D.: Where did all the Growth go? External Shocks, Social Conflict, and Growth Collapses. In:*Journal of Economic Growth*, 4: 385-412, December 1999

[33] Svensson, J.: Foreign Aid and Rentseeking. In:*Policy Research Working Paper*, World Bank, N.1880, 1998

[34] UNDP: Human Development Report 2004: Cultural Liberty in Today's Diverse World, New York: Oxford University Press, 2004

[35] World Bank: World Development Report 1992, New York: Oxford University Press, 1992

[36] World Bank: World Development Report 2002/03, New York: Oxford University Press, 2002

[37] Zak P. J. and Knack S.: Trust and Growth. In:*The Economic Journal*, No. 111, pages 295-321, April 2001