



FONDATION POUR LES ETUDES ET RECHERCHES SUR LE DEVELOPPEMENT INTERNATIONAL

## **What is hidden behind the indicators of ethno-linguistic fragmentation?**

**by  
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Several authors have argued that ethnic fragmentation has a negative impact on level of economic performance, in particular Easterly and Levine (1997) and, among others, Alesina *et al.* (2003) using alternative measurements of ethnic fragmentation. However, this negative relationship has been debated with regard to the use of different criteria to delineate ethnic groups and of different measures of ethnic fragmentation. First, some authors have underlined how difficult the definition of ethnic groups is and have challenged the data sources as well as the mathematical tools used to measure ethnic fragmentation (Fearon, 2003, Posner, 2004). The exogeneity of ethnic fragmentation has also been put into question on several grounds given its dependence to historical elements or social behaviors and possibly economic performances. The present study deals precisely about the structural factors determining the indicators of ethno-linguistic fragmentation.

The different concepts of ethno-linguistic fragmentation found in the literature are first summed up: the so-called ELF index (Ethno-linguistic fragmentation index) used by Easterly and Levine (1997), Ethnic and Language fragmentation indexes (Alesina *et al.*, 2003), Fearon (2003)'s indexes of fragmentation with a specific definition of ethnic groups and augmented by the language distance between groups and last, the politically relevant ethnic groups (PREG) index of fragmentation from Posner (2004). To approach the endogenous character of fragmentation, the link between countries' surface, population density and ethnic fragmentation has been analyzed through statistical correlations.

The results show close relationships between the ethnic structures and the countries' surface and population density, leading to cast doubt on the exogeneity of ethnic fragmentation. The positive correlation between most fragmentation indices and the log of countries' surface first emphasizes that the bigger the country, the more fragmented is the ethnic structure. On the contrary, the significant negative link between most fragmentation indices and the log of countries' population density stresses that the denser the country, the more homogenous are ethnic groups. An exception is highlighted for the PREG index that is significantly and positively related to population density, underlining that denser population may generate the formation of more numerous political factions.

For both the surface and the population density, the significant correlations tend to support their use to instrument ethno-linguistic fragmentation indexes in economic performance regressions, provided they meet all other requirements for being valid instruments, which is not always the case. Anyway, it is enough to cast doubt on the robustness of regressions using indicators of ethno-linguistic fragmentation without relevant instrumentation. This caveat is however invalid for the measure of linguistic fragmentation of Alesina *et al.* (2003) for which no significant correlation with surface and population density has been found.

The study's findings highlight consequently the need for a deeper analysis of the mechanisms underpinning the formation and evolution of countries' ethnic structures and of a higher availability of updated data on ethnic groups. Conclusions join the suggestions previously stressed in the literature considering ethnic fragmentation as endogenous and would then require the use of adequate instruments based on exogenous geographical and structural characteristics. Finally and most importantly, it is worth pointing out that more caution is needed when asserting that such a complex concept as ethnic fragmentation can negatively influence economic performance in a causal manner.

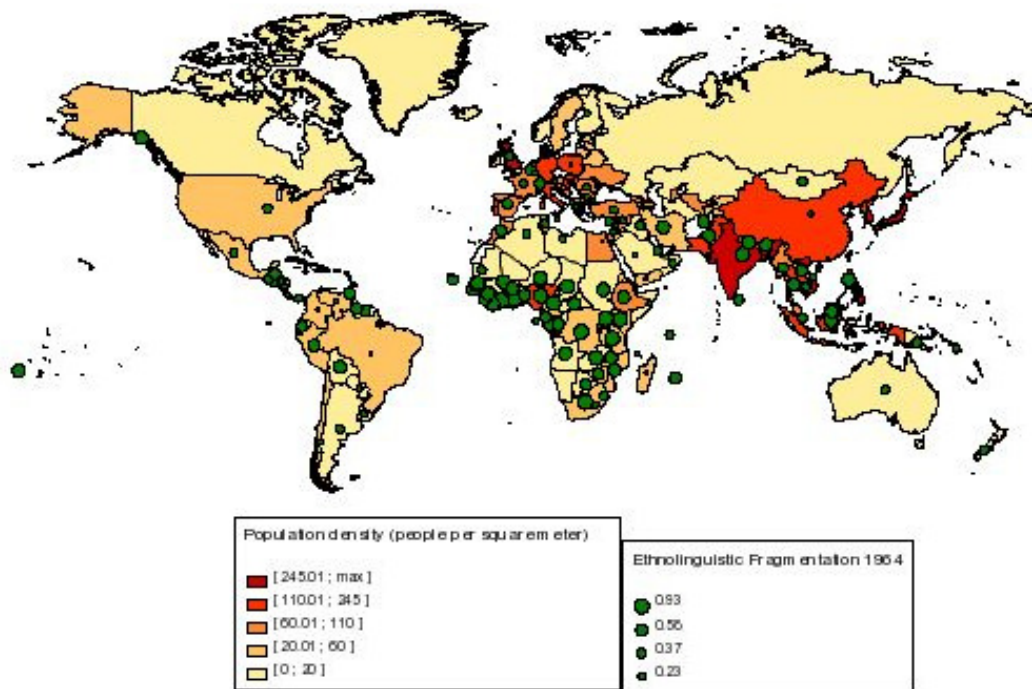


Figure 1: Density and ethno-linguistic fragmentation measured by ELF index.

Reference:

Labar K. (2010), What is hidden behind the indicators of ethno-linguistic fragmentation?  
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