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Inequality and Fractionalization

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Summary. — We present evidence that ethnic fractionalization explains variations in per capita income, institutions, and schooling better than inequality. To do so, we identify instruments for ethnic fractionalization and inequality based on historical experience and geography. While simultaneously instrumenting for both variables, we find that ethnic fractionalization is negatively related to the level of income, schooling, and institutional quality, but inequality is not consistently related in a statistically significant way. If anything, the evidence suggests that inequality is positively related to economic development. We also show that previous results indicating negative effects of inequality may be inadvertently capturing the impact of ethnic fractionalization.

Key words — inequality, ethnic fractionalization, growth

1. INTRODUCTION

Recent work identifies both inequality and ethnic fractionalization as potentially harmful to long-run economic growth. More specifically, inequality and ethnic fractionalization may help facilitate factors that directly lower economic growth, such as lower public goods provision, underinvestment in physical and human capital, and increased violent conflict. Given that ethnic fractionalization and inequality often occur simultaneously in societies, it is important, yet difficult, to separate out the impact of these two phenomena. Parsing out the relative importance of inequality and ethnic fractionalization in economic growth is the primary goal of this paper.

This goal is important because inequality and fractionalization may affect growth through different channels and, therefore, differing relative impacts may generate different policy priorities. If inequality is the primary culprit in slowing growth, then growth-enhancing policy might focus on alleviating the consequences of differential opportunities based purely on income differences. For example, following the ideas in Galor and Zeira (1993), access to credit markets could be a key pillar in a plan to improve human capital accumulation and growth. Also, if inequality is hampering growth, a country should be more willing to trade-off disincentive effects of high taxes for equality promoting redistributive programs.

On the other hand, if ethnic fractionalization is paramount, then policy solutions might prioritize institutional reforms that allow grievances with their roots in ethnic difference to be addressed (Alesina, Baqir, & Easterly, 1999; Alesina & La Ferrara, 2005). Ethnic fractionalization occurs when conflict within a country is exacerbated by groupings along racial or ethnic lines. [1] There is a large literature on potential solutions for alleviating ethnic conflict. Such solutions include social sanction mechanisms, public goods that form linkages across different factions of society and democratic governance and civil society that allow for peaceful resolution of competing priorities (e.g., Alesina & La Ferrara, 2005; Dasgupta & Kanbur, 2007; Miguel & Gugery, 2005; Varshney, 2001).

Parsing out the relative importance of inequality and fractionalization is difficult when they are both properly recognized to be endogenous. In previous work, estimating the effects of inequality alone has proven difficult due to issues of specification and endogeneity (Banerjee & Duflo, 2003). For example, a large economic literature discusses the conditions under which technological change will be "skill-biased," thus increasing the wages of those who already possess valuable skills and access to education (Acemoglu, 2002). Similarly, productivity growth need not occur equally across sectors, generating fluctuations in income distribution as well as advances to total productivity (Taylor & Arida, 1988). The empirical literature confirms the existence of non-neutral growth. Son and Kakwani (2008) document substantial regional variation in pro-poor and anti-poor growth and identify factors—including share of agriculture in gross domestic product (GDP) openness to trade, and inflation—that affect the distributional implications of growth. Edward (2006) also documents regional variation in the distributional implications of growth and argues that over 1993–2001 growth has not benefitted the poor at the same rate as the wealthy. A final example is found in Dutt (2012) who discusses a number of different mechanisms through which the evolution of the functional distribution of income is endogenized in Post Keynesian growth models. Recent advances in the inequality and growth literature attempt to overcome this endogeneity issue by instrumenting for inequality with geographical characteristics (Easterly, 2001a, 2007).

In contrast, the econometric literature generally treats fractionalization as exogenous. While this may be an appropriate specification in classic growth regressions spanning 30 or so

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years, it is less acceptable over the longer time spans implicit in income level regressions (Alesina, Devleeschauwer, Wacziarg, Kurlat, & Easterly, 2003). For example, most migration occurs into those countries with higher levels of economic and institutional development, implying that OLS coefficients will underestimate the negative impacts of ethnic fractionalization (Freeman, 2006; Mayda, 2005). Moreover, ethnic identities are not definite categories. The choice to identify as part of a group or an individual will respond to relative costs and benefits (Darity, Mason, & Stewart, 2006). Also, ethnic identity may evolve in response to conflict or just variation between social organizations (Kanbur, Rajaram, & Varshney, 2011; Richards, 2011). Similarly, national boundaries may be endogenous, which could create reverse causality between fractionalization and income per capita (e.g., Alesina & Spolaore, 1997; Alesina, Spolaore, & Wacziarg, 2005). Finally, ethnic fractionalization may hinder the development of institutions and provisions of public goods while countries are in the early stages of development but have a smaller (or non-existent) negative impact once the institutions of democracy and rule of law have been implemented (Easterly, 2001b).

Our contribution rests on our treatment of both inequality and ethnic fractionalization as endogenous variables. We build on recent work by Putterman and Weil (2010) and Ahlerup and Olsson (2012) on the historical determinants of inequality and ethnic fractionalization, which identifies suitable instruments for examining the relative roles of ethnic fractionalization and inequality. We find that fractionalization is an important determinant of per capita income, school enrollment, and institutional quality. Most importantly, we demonstrate that, when inequality and ethnic fractionalization are simultaneously added as endogenous variables in such regressions, ethnic fractionalization has a negative and significant effect while inequality enters with a positive and usually statistically insignificant effect. We show these results are robust to using either income inequality or wealth inequality as the measure of inequality. These results are also robust to numerous controls and different estimation strategies. Finally, our results also clearly indicate that fractionalization must be treated as an endogenous variable.

2. PREVIOUS LITERATURE

A large literature finds a role for inequality in affecting economic development through numerous channels. For example, in a seminal paper, Galor and Zeira (1993) show that inequality can affect human capital accumulation– and, therefore, growth– in the presence of credit market imperfections. Galor and Moav (2004) extend this idea by arguing that inequality can be helpful in earlier stages of development when large investments in physical capital are primary drivers of growth but that the effects observed in Galor and Zeira (1993) may dominate later on. Moreover, Persson and Tabellini (1994) show how inequality can affect physical capital accumulation via a demand for redistributive policies; Alesina and Perotti (1996) argue that inequality affects physical capital investment through its effect on political instability; and Banerjee and Newman (1993) demonstrate a role for inequality in affecting occupational choice and the extent of entrepreneurship. Others have linked inequality to the development of low quality institutions as the political elite block institutional reform that would benefit the country as a whole but challenge their own dominance (e.g., Acemoglu, Johnson, & Robinson, 2001, 2005; Engerman & Sokoloff, 1997, 2000). [2]

At the same time, others have focused on the negative impact of a related but different aspect of societal division—ethnic fractionalization. Easterly and Levine (1997) show the negative consequences of ethnic fractionalization while paying particular attention to African development and argue that fractionalization interferes with the provision of growth promoting public goods. Others have confirmed the consequences of ethnic fractionalization (e.g., Alesina *et al.*, 2003), but Alesina and La Ferrara (2005) argue that fractionalization only has negative consequences in non-democracies where the lack of ability to coordinate across different ethnic groups may have more severe consequences. Finally, many papers demonstrate how ethnic tension can lead to increases in violent conflict (e.g., Fearon & Laitin, 2011; Michalopoulos & Papaioannou, 2011; Montalvo & Reynal-Querol, 2005).

Not all studies find a negative relationship between ethnic fractionalization and economic and political outcomes. Fractionalization also implies greater diversity which can increase productivity through faster and more diverse idea generation and complementary skills that support more complex economic activities. For example, Page (2007) argues that more diverse organizations have a wider variety of perspectives and talents to solve relevant problems. Similarly, Ashraf and Galor (2011) demonstrate that greater cultural diversity can lead to improved economic growth because diverse societies have more latent skills that facilitate the adoption of new technologies. It is important to note that these positive effects deal with diversity of backgrounds, perspectives, and skills, which need not correlate strongly with ethnic diversity. Indeed, Alesina, Harnoss, and Rappaport (2013) use birthplace diversity as a measure of this second kind of diversity and show that it is relatively uncorrelated with ethnic fractionalization. Moreover, they show that birthplace diversity has a positive impact on economic growth and ethnic diversity has a negative impact. Importantly for our work, Alesina *et al.* (2003) and Alesina and La Ferrara (2005) also argue that ethnic fractionalization is endogenous and careful examinations of the role of ethnic fractionalization in affecting economic outcomes must take that into account. Similarly, Kanbur *et al.* (2011) suggest that failing to account for endogeneity of ethnic identities is a main shortcoming of economic investigations of the relationship between ethnic divisions and violent conflict. Finally, Alesina *et al.* (2005) point out that national boundaries are not exogenous and, therefore, the level of ethnic fractionalization within a country may respond to economic outcomes.

In addition, Engerman and Sokoloff (1997, 2000) argue that ethnic fractionalization may have also played a role in the development of institutions by allowing the elites to readily identify a group that could be excluded from suffrage. Thus, ethnic fractionalization may have negative impacts on development independent of the level of economic inequality. Indeed, their work highlights two potential roles of ethnicity in political development: it can be a tool for identification or a potential ideological fault line. However, the work of Engerman and Sokoloff (1997, 2000) also points to a link between ethnic fractionalization, inequality, and economic outcomes if ethnic identities are used to exclude certain groups from accumulating wealth through means such as land holding. Thus, *a priori*, it is unclear whether ethnic differences or inequality are both playing independent roles in long run development.

In spite of a strong theoretical foundation for the effects of inequality on development, robust empirical evidence has been difficult to find. Clarke (1995) and Deininger and Squire (1998) find evidence that inequality is harmful for growth. Forbes