

Globalization and the Ethnic Divide: Recent Longitudinal Evidence*

Phanindra V. Wunnava, *Middlebury College, IZA, & EPRN*

Aniruddha Mitra, *Bard College*

Robert E. Prasch, *Middlebury College*

Objective. This article investigates the impact of increasing global integration on economic growth, emphasizing its interaction with the level of ethnic heterogeneity in a society. *Methods.* We perform a feasible generalized least squares estimation of a random effects model on a longitudinal sample of 103 countries taken over the period 1992–2005. *Results.* We find that economic globalization has generally had a beneficial impact on economic growth. We also find that societies marked by greater ethnic heterogeneity have gained more from global integration. Further, while ethnic heterogeneity has been a significant impediment to growth over the sample period, religious and linguistic heterogeneity have not. Finally, we find that democracies have significantly outperformed autocracies over this period. *Conclusion.* Our results suggest that globalization may have a role in redressing the detrimental impact of ethnic cleavages in a society.

A central theme in recent discussions of economic growth has been the impact of global economic integration (Sachs et al., 1995; Frankel and Romer, 1999; Vamvakidis, 2002; Yanikkaya, 2003; Dreher, 2006; Rodrik, 2008). Additionally, there has been an increased scholarly interest in the consequences of ethnic fragmentation for developing societies (Easterly and Levine, 1997; Alesina et al., 2003; Alesina and La Ferrara, 2005; Montalvo and Reynal-Querol, 2005; Campos et al., 2011). This study will focus on the role and interdependence of these factors in constructing a narrative of growth in the years immediately before the current recession.

In particular, we address the following questions. First, does ethnic fragmentation impede the growth prospects of a nation? Second, does globalization, defined as the increasing integration of local economies with international commodity and capital markets, at least partially ameliorate the detrimental impact of ethnic fragmentation on economic growth?

While the first question has generated a significant empirical literature since the first-generation studies of Mauro (1995) and Easterly and Levine (1997), empirical investigations of the second remain scarce. There is, of course, a significant interdisciplinary literature investigating the impact of globalization on the likelihood of ethnic conflict (Appadurai,

*Direct correspondence to Phanindra Wunnava, Middlebury College, Warner 502E, Middlebury, VT 05753 (wunnava@middlebury.edu,) who shall share all data and coding for replication purposes. The authors would like to thank Arnab Biswas for outstanding work in compiling the data; Sarah King, Christian A. Johnson Summer 2011 research intern at Middlebury College, for her able research assistance; Nita Mitra, Brenda Ellis, two anonymous referees, and the editors of this journal for their constructive critique and suggestions. Wunnava and Mitra would like to thank their late colleague Professor Robert E. Prasch for his genuine friendship and inspiration and would like to dedicate this article to his memory. An earlier version of this article was circulated as IZA (Institute for the Study of Labor, Bonn, Germany) Discussion Paper # 6459. The usual caveats apply.

1996; Tilly, 2003; Chua, 2003; Bussman and Schneider, 2007; Olzak, 2011). However, conflict is not the only mechanism whereby ethnic fragmentation impedes growth.¹

While there is a well-documented and argued concern that globalization tends to foment ethnic discord (Appadurai, 1996; Tilly, 2003; Chua, 2003; Bussman and Schneider, 2007; Olzak, 2011), such an outcome is anything but inevitable. Despite the long history of violence between Hindu and Muslim communities in South Asia, Jha (2013) finds that overseas trading ports, which had both a greater incidence of poverty and greater diversity of religion than comparable towns in the region, nevertheless experienced far greater communal harmony: Muslim monopolization of overseas trade routes constituted a communal resource that could be neither replicated nor expropriated by Hindus, reducing the incentive for predation on the part of the latter. At the same time, economic competition within the Muslim community contributed to more favorable terms of trade for the Hindu majority, further reducing the incentive for violence. As such, a key object of our study is to investigate the consequences of globalization on economic growth, both directly and indirectly as partially compensating for the detrimental impact of ethnic fragmentation.

Our analysis reveals the following: on the average, ethnic fragmentation, as captured by the Ethnolinguistic Fractionalization Index (ELF), has had a significant negative impact on growth over the period 1992–2005. Interestingly, the observed impact of fragmentation appears to be sensitive to the ordinate of group identity used to measure ethnic differences: consistent with prior evidence (Alesina et al., 2003), we do not find any impact of fragmentation when ethnic groups are identified purely on the basis of language or religion. Significant effects emerge only when we employ a broader conception of ethnic identity, embracing descent, language, and religion. Acknowledging the conceptual challenges to defining ethnicity (Horowitz, 2000; Fearon 2003), our finding is consistent with the idea that individual comprehension of ethnic identity goes beyond a shared language or religion, which accounts for a greater impact of ethnic fragmentation than social cleavages formed solely along the latter lines.

Turning to the consequences of globalization, the data reveal a significant positive impact of integration over the period in question. However, gains from global integration have not been distributed uniformly over nations: our results indicate that societies marked by greater ethnic fragmentation have gained more from global integration. Thus, globalization may have, at least partially, compensated for the adverse economic impact of ethnic fragmentation documented in the literature.

The article is organized as follows: the next section presents the conceptual foundations of our analysis and provides a brief review of the relevant literature; the section after that introduces the data and the methodology used in our analysis; the fourth section reports our results; and the last concludes the article by indicating the policy implications of our analysis and directions for future research.

Conceptual Preliminaries and Related Literature

As stated previously, the object of our study is to investigate the role and interplay of ethnic fragmentation and global integration in shaping the recent growth experience of nations. We start this section with a brief discussion of why ethnic fragmentation may impede growth and then take up the potentially adverse impact of globalization in

¹ See Fearon and Laitin (2003) for a contribution that denies any significance to ethnic heterogeneity among the causes of conflict.

fragmented societies. We end the section by stating the need to control for institutional quality in any analysis such as ours.

Ethnic Fragmentation and Economic Growth

The literature on ethnic politics distinguishes between two alternate schools of thought on the nature and consequences of ethnicity, namely, primordialism and constructivism. The former conceptualizes ethnic identity as an immutable tie that derives from the *assumed givens of social existence* in the form of contiguities of race, language, location, religion, and social practices (Geertz, 1963). Individuals who share such ties are bound to each other “as the result not merely of personal affection, tactical necessity, common interest or incurred moral obligation, but at least in great part by virtue of some unaccountable absolute import attached to the very tie itself” (Geertz, 1963:109). By contrast, constructivism posits that the ascriptive nature of ethnicity provides a relatively observable and stable ordinate of group formation in pursuit of an instrumental objective, typically a greater share of the social surplus. Hence, ethnic groups are essentially coalitions or special interest groups formed in a distributional conflict and evolve in response to specific economic needs faced by its members.²

Both theories inform the economic literature on ethnic fragmentation, albeit translated into the language of rational choice.³ While even a cursory review of the literature is beyond the scope of this article,⁴ the following mechanisms have been emphasized in identifying ethnic fragmentation as a significant impediment to economic growth. First, it reduces state expenditure on needed public goods (Alesina et al., 1999; Alesina and La Ferrara, 2000; Miguel and Gugerty, 2005). Alesina et al. (1999) suggest that a fragmented society may see the formation of ethnic special interests that influence the state into increasing transfers to favored ethnic groups at the expense of funding core public goods that are not excludable on the basis of ethnicity. Furthermore, the likelihood of special interest capture of state expenditure tends to erode individual incentives to contribute to public goods.

The literature has identified several channels through which ethnic fragmentation reduces the incentive to contribute to public goods: Alesina and La Ferrara (2000) contend that individuals have a preference for interacting with members of their own ethnic group.⁵ Sharing a public good necessitates contact with *ethnic others* and the resultant disutility leads to lower levels of contribution relative to a homogeneous society. In a related argument, Vigdor (2004) contends that the individual incentive to contribute to a public good depends on the degree to which the individual values the communal benefit from the good in addition to the purely private benefit. The importance assigned to the former, in turn, depends on the degree to which the individual feels part of the community defined by access to the good. A diversity of ethnic identities within the community reduces the degree to which the individual identifies with it, thereby reducing the incentive to contribute.

²As articulated by Bates (1974:471) in an early statement of the theory, “ethnic groups persist largely because of their capacity to extract goods and services from the modern sector and thereby satisfy the demands of their members for the components of modernity. In so far as they provide these benefits to their members, they are able to gain their support and achieve their loyalty.” See Chandra (2012) for a recent restatement of the theory.

³It must be acknowledged that the lack of reliable data has rendered the evolution of ethnic identities a relatively unexplored topic in economics. See Campos et al. (2011) for a rare exception.

⁴See Alesina and La Ferrara (2005) for a comprehensive survey.

⁵This preference could be primordial, originating either in the domain of the emotional or in the categorical nature of cognition (Tajfel and Turner, 1986). Alternatively, it could arise from purely instrumental reasons as a means to address agency or collective action problems (Miguel and Gugerty, 2005).

Finally, in a departure from preference-based arguments, Miguel and Gugerty (2005) emphasize the role of social sanctions in solving the collective action problems that plague the provision of public goods. Such sanctions are imposed more effectively within than between ethnic groups and it is this that accounts for greater collective action failures and consequent low level of contributions in more fragmented societies.

A second consequence of ethnic fragmentation is to promote the adoption of inherently inefficient policies designed to further the rent-seeking objectives of ethnic coalitions (Mauro, 1995; Easterly and Levine, 1997). As observed by Easterly and Levine (1997), the government in a fragmented society is often formed by an alliance of ethnic parties where each party is allocated a share of ministries depending on electoral prominence. In such situations, each party may independently choose a policy that maximizes rents for its ethnic constituency without taking into account the compatibility of this policy with choices made by other parties. The uncoordinated nature of the decision process may lead to the adoption of a policy vector with mutually incompatible components.

Third, ethnic fragmentation may increase the level of corruption in a society (Shleifer and Vishny, 1993; Mauro, 1995; Easterly and Levine, 1997). As observed by Shleifer and Vishny (1993), a homogeneous society is likely to have a monolithic structure of coordinated corruption where each bureaucrat is required to consider the effect of his rent extraction activity on the expected revenues of other officials and, hence, of the monolith. By contrast, a fragmented society governed by ethnic alliances is likely to experience a situation where each bureaucrat is free to maximize corruption rents on behalf of his or her ethnic group without caring about potential negative externalities on the revenues of the bureaucracy as a whole. This may lead to an increase in the total level of corruption.

Finally, ethnic fragmentation may increase the likelihood of conflict in a society (Collier and Hoeffler, 2004; Montalvo and Reynal-Querol, 2005; Blimes, 2006), though the evidence appears to indicate that the impact operates indirectly via impeding economic development, which, in turn, enhances motives for grievance and creates conditions favorable for conflict. The precise mechanisms are clarified in the following subsection.

Economic Globalization and Ethnic Discord

The debate on globalization has been at the forefront of scholarly interest for several decades now. While neoliberal orthodoxy is unanimous in identifying the phenomenon as beneficial and, indeed, necessary for economic progress, there have been dissenting voices, even within the mainstream of neoclassical economics (Stiglitz, 2002; Rodrik, 2008). In particular and as stated previously, there is a concern that global integration may prove particularly detrimental for fragmented societies by magnifying the adverse economic consequences of ethnic heterogeneity, not least by increasing the likelihood of ethnic violence. We devote this subsection to an examination of the arguments, postponing a statement of the counterarguments to a later section.

Rational choice arguments on the negative impact of globalization on ethnic violence rest on the idea that global integration impedes economic development and increases the level of inequality in a society. If we accept the adverse developmental impact of globalization as given, it is clear that such a result would increase the economic and political motives for grievance that lie at the root of conflict (Gurr, [1970] 2011). Second, it would weaken the state's fiscal position and thereby undermine its ability to combat rebellion and, hence, increase the relative desirability of conflict for the political formation

representing the disaffected (Collier and Hoeffler, 2004). Finally, it should help a rebel organization mobilize for conflict by reducing the opportunity cost for any individual recruit to participate (Fearon and Laitin, 2003).

While the above mechanisms are not specific to fragmented economies, it may be argued that such societies face a comparatively greater likelihood of violence from the adverse developmental impact of globalization because the greater salience of ethnic identities aids the process of mobilization for conflict. Conditional on the same motives for grievance, therefore, a fragmented society is more likely to experience conflict than a homogeneous society where ethnicity is a less salient marker of collective identity.

The argument rests on the idea that even when the economic or political exclusion that provides the motive for conflict is not defined on ethnic lines, the ensuing conflict is likely to be *ethnicized* simply because ethnicity provides a more efficient means of mobilizing a conflict coalition than other markers of group identity (Esteban and Ray, 2008; Eck, 2009).⁶ To see why this is the case, note that any state or nonstate actor, either engaged in or anticipating possible conflict, must identify and recruit individuals to either participate in violence or provide other forms of support to “the cause.” As noted by Eck (2009), ethnicity provides an often easily observable ordinate to identify a target group for recruitment that enables the organization to focus on individuals who are most likely to join, thereby reducing the cost of recruitment.

Further, mobilization requires the leaders of an insurgent organization to make credible commitments to potential recruits concerning the distribution of rents to be acquired in the course of the conflict. As observed by Weinstein (2007), shared ethnic identity enhances the credibility of such commitments. Even if the commitments made by the leaders of a rebel organization are not credible, shared ethnic identity may aid recruitment by confronting the individual recruit with a *security dilemma* (Eck, 2009): if it is ethnicity that defines the enemy, an individual who finds the promises of the organization incredible or harbors no discontent against the *ethnic other* may be compelled to volunteer for conflict simply to ensure his or her own security. Note that the positing of this security dilemma reduces the problem of defection for an organization mobilizing on the basis of ethnicity. An individual who wishes to dissociate from violence may be, or think of himself or herself as being, forced to continue if only to ensure the survival of the individual or his or her immediate family.

Finally, Esteban and Ray (2008) point out that the rich and the poor contribute differently to the production of violence in that the poor are more likely to be active combatants, while the rich are more likely to contribute financially. The two forms of contribution are complementary inputs in the production of violence and a conflict coalition requires both in order to have a reasonable probability of success. A priori, a coalition mobilized on the basis of ethnicity is more likely to include both types of contributors and therefore has a greater likelihood of success than a coalition mobilized upon some other ordinate of group identity such as class. As such, ethnicity constitutes a more desirable basis for mobilization than other ordinates of group identity, even when the roots of an emerging conflict may not fully correspond to an ethnic divide.

Turning now to the distributional impact of globalization, one may distinguish between two dimensions of inequality, namely, *between* and *within* ethnic groups. If the benefits or costs of globalization are distributed asymmetrically between ethnic groups (Chua, 2003), income inequality takes the form of *ethnic inequality* and this may become the basis of an

⁶See Eck (2009) for a comprehensive discussion.

emergent conflict.⁷ There are several variants of the argument. In the simplest narratives, an increase in the level of inequality between groups creates a demand for redistribution on the part of the excluded. In situations where the state is unable to meet this demand via economic policy, marginalized groups may turn to conflict as the last recourse.

Interestingly, even if the state is able to implement redistributive economic policies, the policies may be sufficiently distortionary as to actually reduce welfare. This can lead to conflict precisely due to the reasons stated in the previous paragraph. Note also that the demand for redistribution and the resistance to it may take the form of *rent seeking*, where ethnic special interests expend resources in order to influence government policy in their favor. Since rent seeking imposes a significant cost to society, this can lead to conflict even if the state is able to implement redistributive economic policies in a manner that does not have adverse developmental consequences. Finally, globalization invariably rearranges opportunities and costs such that it inevitably promotes migration both within a country and across borders. Such migration brings hitherto separated groups into contact. Consequently, a growing society may experience violence both due to increasing ethnic competition (Olzak, 2011) and increasing ethnic fragmentation due to reasons stated in the previous subsection.

Even if income inequality is not defined on ethnic lines, increasing income inequality within ethnic groups may lead to conflict as a result of ethnic elites manipulating the population into believing that distinct ethnic interests exist and that their group is being threatened by another. The invention of an imaginary enemy serves to divert the attention of the working class from any emergent concern over uneven growth or disparities of income and opportunity. In such instances, conflicts that might otherwise be ascribed to colliding class interests takes place along ethnic lines (Simmel, 1955).

A second mechanism emerges from the previously cited contribution by Esteban and Ray (2008). Note that an individual with a high endowment of wealth can contribute more to the group conflict effort, despite having a high opportunity cost of participation and, hence, lower incentive to be personally engaged in any violence. On the other hand, an individual with a low wealth endowment can contribute little to the group conflict effort but has greater incentive to participate. An increase in inequality concentrates wealth in the hands of those who can contribute more, without increasing the opportunity cost of participation for the median member of any self-identified group. Consequently, the group contribution to conflict effort increases and, hence, the likelihood of conflict.

The Role of Institutional Quality

It would be fair to surmise that economics has reached a working consensus that institutions, taken in the sense of “humanly devised constraints that shape the incentives in human exchange” (North, 1990), play a critical role in determining the economic prospects of a nation.⁸ In particular, scholars have gathered considerable evidence affirming that the

⁷Note that this is essentially a variant of the *modernization theory* of ethnic conflict that identifies the roots of ethnic violence as lying in the unequal distribution of the fruits of modernization. See Bates (1974) as a key contribution.

⁸It should be acknowledged that the notion of institutions as formal and informal constraints on rational choice reintroduced to economics by North (1990) and Williamson (1985) is not representative of social science as a whole. The economic conception of institutions is limited and it has been argued that what economics calls “institutions” are perhaps more accurately described as “conventions” or behavioral regularities that emerge to solve coordination problems confronted by rational actors, and are perpetuated as “self-fulfilling conjectures” on the part individuals (Calvert, 1995): the individual conforms because it is in her best interest

quality of institutions in a society has a critical role in determining the impact of both global integration (Rodrik, 2008) and ethnic fragmentation (Rodrik, 1999; Collier, 2000; Easterly, 2001). This affirms the need to control for institutional quality in any study such as ours. Acknowledging the inherent multidimensionality of institutional structure (Bang and Mitra, 2011), we nevertheless follow praxis now conventional in the economic literature in restricting our analysis to the type of political regime and the security of private property rights as measures of institutional quality.

Theoretically, one may identify the following mechanisms whereby the insecurity of private property rights may impede economic growth (Besley and Ghatak, 2010). First, the threat of expropriation acts as a tax on property, reducing the ex ante returns to physical and human capital and, hence, the incentive for accumulation. Second, such insecurity requires individuals to spend in unproductive ways on their property, thereby reducing the resources available for productive expenditures. Third, insecure property rights reduce the economic and sometimes even the physical mobility of productive assets, thereby lowering the potential for gains from efficient production. Finally, they prevent the use of assets as collateral and hence reduce access to credit. Indeed, cross-national evidence (Rodrik et al., 2004; Acemoglu et al., 2005; Jamali et al., 2007) overwhelmingly supports the importance of property rights as a contributor to economic growth.⁹

In contrast to the role of property rights, the macroeconomic literature lacks a consensus on the economic impact of differing political regimes (Kurzman et al., 2002). Following Gerring et al. (2005), one may identify the following mechanisms whereby “democracy”¹⁰ plays a key role in economic growth. First, it promotes the accumulation of physical capital by ensuring greater security of private property rights relative to more authoritarian regimes and by reducing inequality via redistributive policies that include, but are not limited to, granting access to markets and public goods to hitherto marginalized groups. Second, it promotes the accumulation of human capital by confronting incumbent political elites with relatively greater incentives to enhance the quality of life for the underprivileged, in terms of improved nutrition, public health, and education. Finally, relative to other types of regimes, democracies provide greater stability of the political environment, greater prevalence of the rule of law, reduced corruption, improved efficiency and transparency of the bureaucratic machinery, and a greater inclination to adopt needed economic policies.

Unfortunately, none of the above arguments are beyond critique. Focusing on the last mechanism for want of space, note that relative to authoritarian regimes that do not care about the electoral consequences of policy decisions, a democracy may actually find it difficult to implement policies that require a sacrifice of current consumption in order

to do so, given the belief that other individuals will conform, and this is true for all members of society. Such a conception of institutions has been criticized on a number of grounds, notably by the New Institutionalism school in sociology. First, the assumptions of rational choice that underlie the theory are not free of caveat. Second, the theory inadequately explains why certain conventions are adopted by society over others. Third, it ignores the fact that institutions serve to establish what is perceived as instrumentally rational. In other words: “Institutions do not just constrain options: they establish the very criteria by which people discover their preferences” (DiMaggio and Powell, 1991:11).

⁹It should be acknowledged that the microeconomic evidence is not as conclusive. See Section 2.4 of Besley and Ghatak (2010) for an idea.

¹⁰Let us briefly note that the term “democracy” has been deployed in this empirical literature in a rather idiosyncratic manner. Any political theorist would point out that the term “democracy” has been used to convey much more than simply the idea of majority rule. So, for example, Adam Smith and the several authors of *The Federalist Papers* each understood that majorities could never be counted upon to protect either minorities or the property rights of the wealthy. From usage, we can infer that by “democracy” this literature is in fact invoking the notion of a “constitutional democracy,” that is to say rule by majorities whose policy space is limited by “checks and balances” including an independent judiciary charged with maintaining the preagreed boundaries commonly known as “rights.”

enhance growth in the long run (Rao, 1984). Further, another reason to doubt the superior quality of policy decisions taken by democratic governments is that democracies may be more vulnerable to manipulation by special interests relative to authoritarian regimes (Olson, 1982).

Methodology and Variables

Our base empirical specification employs a standard neoclassical growth regression (Barro, 1991; Barro and Sala-i-Martin, 1995) augmented with measures of institutional quality, ethnic fragmentation, and economic globalization. Formally,

$$\begin{aligned} Growth_{it} = & \beta_0 + \beta_1(Initial\ Per\ Capita\ GDP)_{it} + \beta_2(Human\ Capital)_{it} \\ & + \beta_3(Technology)_{it} + \beta_4(Property\ Rights)_{it} + \beta_5(Democracy)_i \\ & + \beta_6(Social\ Fragmentation)_i + \beta_7(Economic\ Globalization)_{it} + \varepsilon_{it}. \end{aligned} \quad (1)$$

As noted by Przeworski et al. (2000), models based on averaging the relevant variables are particularly unsuited to growth regressions including institutional and political variables since averaging may lead to the political characteristics of a given instant of time being related to growth experience at a different instant, thereby leading to spurious conclusions regarding the relevance of such variables. Hence, Equation (1) is estimated using an explicit time series methodology in the form of a random effect generalized least squares model. All exercises are conducted on a sample of 103 countries, listed in the Appendix, comprising an unbalanced panel of 1,572 observations taken annually over the period 1992–2005.

Description of Variables

The dependent variable ($Growth_{it}$) is the annual percentage growth in adjusted per capita GDP of country i in year t . Data on this variable are taken from the Penn World Table (PWT). The set of independent variables includes the initial GDP per capita, again taken from PWT and measured in 2000 U.S. dollars, to account for the initial endowment of capital. Since the canonical neoclassical theory of growth (Ramsey, 1928; Solow, 1956) is based on the assumption of diminishing marginal returns to capital, it follows that with the structure of preferences and the state of technology being constant, an economy relatively abundant in capital will grow at a slower rate in per capita terms than one in which is capital scarce.¹¹ We, therefore, expect the initial per capita GDP to have a negative impact on the rate of growth.

The second independent variable, namely, human capital, again plays a central role in neoclassical narratives of growth (Romer, 1990; Barro, 1991). Following today's conventions (Barro, 1991), we measure it by the level of gross secondary school enrolment in an economy. A high level of secondary school enrolment thus denotes a high level of human capital and is expected to have a positive impact on the annual rate of growth. Data on this variable come from the Cross-National Time-Series Data Archive.

¹¹This is the *convergence hypothesis* of neoclassical growth economics in its original form, so named because it predicts that poor economies scarce in capital will grow at a faster rate than rich economies with a relative abundance of capital, leading to a convergence of per capita income in the world over time. See Barro and Sala-i-Martin (1995) for a rigorous statement of the theory as well as an idea of the existing evidence.

Also consistent with the neoclassical paradigm, which posits a critical role for technology as a determinant of growth, we include a variable capturing the state of technological advance in an economy. The results presented in the text are based on per capita energy consumption as a proxy for the level of technology, the rationale being that a high level of per capita energy consumption indicates a more technologically advanced society that can be expected to achieve a high rate of growth. Data on this variable are taken from the World Development Indicators (WDI).¹²

The first of two institutional characteristics included in the set of regressors is a dummy variable that takes the value 1 if the incumbent regime is democratic and 0 if it is an autocracy. Following Jamali et al. (2007), a democracy is identified minimally as a polity where the executive and legislative organs of the state are either directly or indirectly elected via free popular elections.¹³ Since our analysis covers a longer period than Jamali et al. (2007), the variable has been updated using information from the Database of Political Institutions (Beck et al., 2001).

The second institutional variable captures the security of private property rights within a polity. The measurement of property rights constitutes one of the more disputed topics in economics, since operational definitions of the concept vary widely. Consider, for example, one of the most commonly used measures (Rodrik et al., 2004; Acemoglu et al., 2005), namely, the *Investment Profile Index* taken from the International Country Risk Guide (ICRG). The index measures the security of property rights based on the magnitude of expropriation risk, enforcement of contractual agreements, and delays in payments receivable.

By contrast, the measure constructed by the Fraser Institute is based on judicial independence, the impartiality of courts, protection of intellectual property, the absence of military interference in governance, and the overall integrity of the legal system. The Heritage Foundation, on the other hand, measures the security of property rights using information on the independence and corruption within the judiciary, the enforceability of private contracts, the risk of expropriation, and the degree to which the government enforces laws pertaining to private property rights.

To avoid choosing between the alternative operational definitions, we construct a measure of private property rights by aggregating the ICRG indices called *Investment Profile*, *Corruption*, *Law and Order*, and *Bureaucratic Quality*, which cover most aspects considered by the above definitions. The weights assigned to these components are calculated on the basis of principal components analysis (PCA), as per standard practice in the empirical literature (Knack and Keefer, 1995; Dreher, 2006). The aggregate property rights index ranges from 1.41842 to 14.9143 for our sample.

The penultimate explanatory variable is the *KOF Index of Economic Globalization* introduced by Dreher (2006). Economic globalization is defined as the “long distance flow of goods, capital and services as well as information and perceptions that accompany market exchanges” (Dreher, 2006:1092). It is measured by an index that aggregates two components. The first component measures the actual volume of flows in the form of trade, foreign direct investment, portfolio investment, and income paid to foreign nationals. The second measures restrictions on trade and the international mobility of capital in the form

¹²It should be mentioned that our results are robust to other measures of technology, such as the number of personal computers per 1,000 people (Jamali et al., 2007). These are available on request.

¹³This is essentially the Schumpeterian notion of *contestation* (Schumpeter, 1942), whereby a democracy is identified as an “institutional arrangement for arriving at political decisions in which individuals acquire the power to decide by means of a competitive struggle for the people’s vote.” Note that constitutional monarchies like Malaysia or Thailand are classified as democracies as per this definition.

of import barriers, mean tariff rates, taxes on international trade, and capital controls. The aggregate index of economic globalization ranges from 0 to 100, where higher values are taken to indicate a greater degree of economic globalization. For our sample, however, the range is 11.38–98.89 approximately.

Finally, ethnic fragmentation is measured by the ELF. Introduced to economics by Easterly and Levine (1997), this is essentially a Herfindahl index that measures the probability that two individuals chosen at random from the total population will belong to different ethnic groups, where the groups are differentiated on the basis of both ethnicity and language, primarily the latter. Formally, $ELF = \sum_{i=1}^G n_i(1 - n_i) = 1 - \sum_{i=1}^G n_i^2$, where n is the share of group i in the total population and $i = 1, \dots, G$. We use the version of ELF computed by Roeder (2001) and the index ranges between 0.003 and 0.919 for our sample.¹⁴

Relevance of the Sample Period

The time period explored in our analysis has been marked by profound changes in the social and economic fabric of nations induced by increased globalization. While the debate over the economic consequences of globalization has long moved beyond the confines of the economics discipline, there is a distinct lack of studies that focus on the growth experience of nations over the last two decades. In particular, there is a dearth of rigorous empirical analyses of the relative performance of democratic and autocratic regimes in the *new economy* created by technological advancement, institutional change, and the increasing integration of local commodity and asset markets with the global economy. As importantly and given the concern that globalization creates an environment favorable to identity-based political action (Appadurai, 1996; Tilly, 2003), the relative impact of global integration on homogenous and fragmented societies has not received the attention it merits in the empirical literature on economic growth. This study is a partial attempt to fill this void.

Empirical Analysis

Model I of Table 1 presents the results of our initial specification. Consistent with recent evidence on the importance of global integration to economic growth (Dreher, 2006), we find that economic globalization has had a significantly positive impact on the rate of growth over the sample period: on the average, a one standard deviation increase in the KOF Index of Economic Integration improves the rate of growth by an approximate factor of 0.6 and the impact is significant at the 1 percent level. Also in line with existing evidence (Mauro, 1995; Easterly and Levine, 1997; Alesina et al., 2003), social fragmentation as

¹⁴While the most commonly used measure of ethnolinguistic fractionalization is still the one introduced to economics by Easterly and Levine (1997), it nevertheless suffers from a number of limitations. First, it is constructed on the basis of data from the Soviet ethnographical volume *Atlas Narodov Mira* published in 1964. It is by now well accepted that ethnic boundaries evolve over time in response to the specific political and economic needs faced by a group (Horowitz, 2000). Hence, the index of Easterly and Levine (1997) is outdated. Second, the Soviet data sometimes catalogue distinct groups under the same umbrella category, the most glaring example of which is the classification of Hutus and Tutsis in Rwanda as one ethnic group called Banyarwanda. The measure of Roeder (2001) is based on data collected in 1985 and is, moreover, sensitive to some of the more problematic coding issues that plague the Soviet data. See Posner (2004) on the identification and measurement issues that confront the measurement of ethnic heterogeneity.

TABLE 1
Random Effects Generalized Least Squares Estimates

Model I: Initial specification										
Model II: Alesina decomposition of social fragmentation into ethnic, cultural, and religions fractionalization										
Model III: Ethnic heterogeneity interacted with globalization										
Dependent variable: growth_rate[Mean: 2.691215; SD: 3.955736]										
Variable name	Mean	SD	Est. Coefficient	z-Value	Est. Coefficient	z-Value	Est. Coefficient	z-Value	Est. Coefficient	z-Value
GDPC92	6,852.878	8,895.051	-0.0002236	-6.17***	-0.000231	-6.26***	-0.0002203	-6.26***	-0.0002203	-5.98***
HCAP	3,725.084	10,942.68	0.0000616	3.30***	0.0000534	2.84**	0.0000543	2.84**	0.0000543	2.91***
PROPR	9,529481	2,589024	0.1440192	2.52**	0.1288724	2.21**	0.1630932	2.21**	0.1630932	2.79***
DEMOC (dummy)	0.8778626	0.3275486	1.494482	3.34***	1.086153	2.33**	1.367191	2.33**	1.367191	3.01***
ECONGLOB	59.70394	18.25504	0.0655089	5.36***	0.0685227	5.47***	0.0340737	5.47***	0.0340737	1.75*
TECH	2,328.919	2,367.226	0.0002628	2.06**	0.0002331	1.81*	0.0002309	1.81*	0.0002309	1.81*
ELF	0.409834	0.2744061	-1.858279	-2.18**						
ETH	0.4002346	0.2445405			-2.663953	-1.94*			-6.550199	-2.78***
LIN G	0.3532283	0.2861344			0.0423511	0.04				
REL	0.418907	0.2382921			0.5515035	0.53				
ECONGLOB x ETH	22.34987	14.3035							0.078886	2.07**
									Wald $\chi^2_8 = 121.91$	***
									Wald $\chi^2_9 = 111.10$	***

Effective sample: 1,572 observations (103 countries x 16 years, unbalanced).

***Significant at 0.01.

**Significant at 0.05.

*Significant at 0.10.

GDPC92: initial per capita GDP in 2000 U.S. dollars; HCAP: gross secondary enrolment level; PROPR: constructed index of property rights; DEMOC: dummy variable for democracy; ECONGLOB: KOF index of economic globalization; TECH: technology as captured by per capita energy consumption; ELF: ethnolinguistic fractionalization index (Roeder, 2001); ETH: ethnic fractionalization index (Alesina et al., 2003); LIN G: linguistic fractionalization index (Alesina et al., 2003); REL: religious fractionalization index (Alesina et al., 2003); ECONGLOB x ETH: interaction term between economic globalization and ethnic fractionalization.

captured by ELF has been a significant impediment to growth over the sample period: a standard deviation increase in the index reduces the rate of growth by an approximate factor of 1.8 and the impact is again significant at the 1 percent level.

With respect to the standard covariates of growth, the coefficient on initial per capita GDP is negative and significant at the 1 percent level, as predicted by the convergence hypothesis. Confirming the role of human capital as a key determinant of growth, the coefficient on the education variable is positive and significant at the 1 percent level. The state of technology, as captured by per capita energy consumption, is seen to have a positive impact on the rate of growth at the 5 percent level, indicating that the importance of technological advancement in shaping the growth experience of developing nations over the 1990s (Jamali et al., 2007) continued over the first five years of the present century.¹⁵

Finally, with respect to the institutional determinants, our analysis confirms the importance of secure property rights as a determinant of growth: on average, a standard deviation improvement in the property rights index is seen to increase the rate of growth by an approximate factor of 0.14 and the impact is significant at the 1 percent level.¹⁶ We also find that democracies have significantly outperformed autocratic regimes over the period under study.¹⁷

Disaggregating Ethnolinguistic Fractionalization

A key challenge to the measurement of ethnic heterogeneity concerns the choice of ordinate used to identify ethnic groups. As noted by Posner (2004), ethnic cleavages are multidimensional and the salience of a particular dimension of ethnic difference is salient depending on the social context and the historical moment under observation. Hence, there is no reason to assume that identifying groups on the basis of language and religion, for example, will map into the same ethnic landscape. Unfortunately, the ELF is based on precisely this assumption. As such, we follow Alesina et al. (2003) in distinguishing between ethnic, religious, and linguistic cleavages in society. It should be clarified that while the indices of religious and linguistic fractionalization focus on the precise dimensions of group difference conveyed by the nomenclature, ethnic fragmentation a la Alesina et al. (2003) includes both racial and linguistic dimensions. Hence, the three indices should not be regarded as mutually exclusive.

As seen from Model II of Table 1, the exercise leaves signs and significances virtually unchanged for all of the other variables. Further, the magnitudes of the coefficients remain

¹⁵It should be noted that the results presented in Table 1 are not directly comparable to Jamali et al. (2007), who proxied technology with the number of computers per 1,000 people. Using this as our measure of technology leaves signs and significances unchanged for virtually all of our variables but alters the magnitude of the coefficients. The results are again available on request.

¹⁶Recall that our measure of property rights has been constructed via principal components analysis from the ICRG indices called *Investment Profile*, *Corruption*, *Law and Order*, and *Bureaucratic Quality*. As robustness checks on the validity of this measure, we first replicated our analysis by using the Investment Profile Index alone as the measure of property rights as is the dominant convention in the cross-national literature (Rodrik et al., 2004; Acemoglu et al., 2005) and then used domestic credit to the private sector as percentage of GDP (Leblang, 1996; Jamali et al., 2007) as the relevant measure. Both exercises yielded closely comparable results for each of our variables.

¹⁷As a robustness check, we followed Jamali et al. (2007) in distinguishing between democracies, autocracies, and bureaucracies, which are autocratic regimes that codify laws through the presence of a legislature (Przeworski et al., 2000). While this confirmed our basic result that democracies have experienced a significantly greater rate of growth than autocracies, we did not find that bureaucracies have significantly outperformed democracies as in Jamali et al. (2007). In fact, we failed to unearth any evidence that bureaucracies have outperformed autocracies over the period in question. The results are available on request.

fairly comparable to the original specification. Of the various dimensions of group difference, we see that ethnic fragmentation has taken a significant toll on economic growth over the sample period: on the average, a one standard deviation increase in ethnic fragmentation reduces growth by an approximate factor of 2.67 and the impact is significant at the 5 percent level. By contrast, the growth impacts of religious and linguistic fragmentation, though positive, are insignificant at any acceptable level. It should be noted that the relative salience of a more general conception of ethnicity over the purely linguistic and religious dimensions of group difference is consistent with existing evidence (Alesina et al., 2003; Montalvo and Reynal-Querol, 2005).¹⁸

Ethnic Heterogeneity and Globalization

The last exercise undertaken in this study investigates whether the impact of economic globalization on the growth experience of an economy depends on the existing level of ethnic fragmentation. To this end, we introduce an interaction term between the economic globalization index and the index of ethnic fragmentation (Alesina et al., 2003) used in the previous specification. Given the statistical insignificance of linguistic and religious fragmentation in all of our previous specifications, we omit these variables from the list of regressors.¹⁹

As seen from Model III of Table 1, the coefficients on the neoclassical covariates of growth remain comparable in sign, significance, and magnitude to the previous specifications: the initial per capita GDP retains its negative impact on the rate of growth at the 1 percent level of significance; human capital retains its positive impact at the 1 percent level; and technology its positive impact at the 5 percent level. Further, the institutional determinants of economic growth are seen to have the impacts detected earlier. As before, we find that democracies have significantly outperformed autocratic regimes over the sample period and that countries ensuring greater security of private property rights have grown more.

Also as before, we find that economic globalization has had a significant positive impact on the rate of growth over the period under consideration even though ethnic heterogeneity has taken a significant toll. Indeed, once we introduce the interaction term between economic globalization and ethnic fractionalization, the coefficient on the ethnic fractionalization variable is larger than any of the previous specifications and remains so regardless of whether we use the Alesina et al. (2003) or the Fearon (2003) measures of heterogeneity and whether we include or exclude the nonethnic dimensions of group difference from our model.

Significantly for our purpose, the coefficient on the interaction term between the ethnic fractionalization index and the index of economic globalization is positive and significant

¹⁸As a robustness check, we disaggregated the ELF following Fearon (2003), who distinguishes between ethnic and cultural fractionalization using the structural distance between languages spoken within the polity to approximate the cultural distance between groups. Again, while ethnic fractionalization was seen to have a significant negative impact on growth at the 5 percent level, the influence of cultural fractionalization was positive but insignificant. Coefficients on all other variables remained closely comparable to the original specification. Interestingly, the detrimental impact of ethnic fractionalization on economic growth persists at the 5 percent level even when we explicitly control for conflict by introducing variables capturing the average annual number of riots, revolutions, and assassinations over the sample period. This suggests the existence of causal mechanisms other than conflict whereby ethnic fragmentation impedes growth. The conflict variables were taken from the Cross-National Time Series Data Archive (CNTS) and the first two were additionally seen to have a negative impact on conflict at the 1 and 5 percent levels, respectively.

¹⁹Retaining the linguistic and religious fractionalization indices yields nearly identical results as those reported in the text. These results are again available on request.

at the 5 percent level. This suggests that economies characterized by greater ethnic heterogeneity may have gained more from increased global integration over the period under consideration. In other words, global integration may have provided a partial mitigation of the detrimental impact of ethnic fragmentation on economic growth.

Why Relatively Diverse Societies May Have Gained More from Globalization

As previously mentioned, ethnically fragmented societies attain relatively low rates of growth due to rent-seeking activity on the part of ethnic coalitions that, at the limit and in the absence of good institutions, take the form of ethnic violence. Such societies experience two distinct impacts of globalization. On one hand, increasing global integration of commodity and asset markets enhances economic growth. On the other hand, the economic prosperity induced by globalization reduces the likelihood of conflict, both by increasing the opportunity cost of violence as well as reducing the motives for grievance that induce conflict (Hegre et al., 2003). The resultant increase in political stability, in turn, enhances growth.

That globalization may reduce internal violence in heterogeneous societies rather than foment greater discord may be argued on several grounds. First, the economic development brought about by globalization increases popular demand for good governance along with institutional reforms in the form of democratization in authoritarian societies. Moreover, reform of the political process in existing democracies both reduces motives for grievance and facilitates the resolution of ethnic grievances via nonviolent means.

Second, international trade is typically accompanied by the diffusion of ideas and norms (Bhagwati, 2004) that may alter the ethos of ethnic discrimination prevailing in a formerly closed society. In particular, as argued by Mousseau and Mousseau (2008), globalization exposes formerly insulated societies to norms of market culture that prioritize the rights of an individual over the historically dominant rights of a group. If this is true, one may expect to see the reduced salience of group identities and, hence, reduced likelihood of group violence. Third, and on a related note, the global diffusion of norms of respect for individual and minority rights may compel individual states to respect these values, if only to avoid costly sanctions that would threaten the economic benefits of globalization (Dreher, Gaston, and Martens, 2008). De Soysa and Vadlamannati (2011) find compelling evidence in favor of this thesis.

Finally, narratives that identify globalization as a destabilizing influence in fragmented societies generally point to its impact in worsening inequality both between and within ethnic groups. If, for example, the resulting pattern of rewards and costs attributable to globalization places the fortunes of one or another ethnic group at risk, those affected might be inclined to band together for the purposes of improving their prospects. It is also possible that the process of globalization may induce incumbent ethnic elites to seek their fortunes by deepening their ties to foreign firms and institutions at the expense of their fellow nationals, if they perceive such a strategy as granting them greater benefits.²⁰ In this latter case, economic elites face a tradeoff between repression and—effectively—buying off resistance through the redistribution of income or opportunities. If the latter course is selected, economic elites would want to prevent violence, if necessary via a process of redistribution along ethnic lines. Note that we do not deny that worsening within-group inequality, if it occurs, may present ethnic elites with a challenge to maintain their

²⁰This is because the elites rather than the ethnic population at large are in a position to take advantage of the changes induced by globalization when it first occurs.

hegemony and there could be an impulse to manipulate or manufacture ethnic differences to facilitate this end. However, such a strategy and the associated risk of conflict would threaten the rents from globalization and this may encourage elites to seek other means to reduce or resolve preexisting ethnic conflicts. Note also that increased economic growth produces additional income with which to pay for nonviolent means of appeasement such as transfers or jobs programs, and so forth.

Policy Implications and Further Research

The preceding empirics indicate that societies with greater ethnic fragmentation may find it in their interest to adopt policies promoting greater integration of the local economy into international markets. Such policies, if carefully constructed, constitute a direct impetus to economic growth. As importantly, they provide a partial mitigation of the detrimental economic impact of fragmentation. The following caveats are, however, in order. First, our analysis focuses on the economic dimension of globalization alone. Yet globalization is essentially multidimensional (Keohane and Nye, 2000; Dreher, 2006, Dreher et al., 2008) and it is not clear if the cultural or political dimensions of the phenomenon would have the same impact on the salience of ethnic identities as the purely economic aspect. An investigation of the multidimensionality of global integration, especially with respect to the relative salience and interplay of its various dimensions, constitutes an immediate agenda for our future research in the area.

Second, the economic dimension of globalization that constitutes the focus of this study presumes a necessary integration of both commodity and capital markets. Given the concern that financial integration, as practiced in the last two decades, may have actually taken a toll on development (Rodrik and Subramanian, 2009), it is logical to ask if each of these distinct forms of integration differ in their consequences for the salience of ethnic conflict. Disentangling the impacts of various components of economic integration comprises another important extension of this study.

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Appendix

List of Countries

Albania, Algeria, Argentina, Armenia, Australia, Austria, Azerbaijan, Bahrain, Bangladesh, Belarus, Belgium, Bolivia, Botswana, Brazil, Bulgaria, Cameroon, Canada, Chile, China, Colombia, Costa Rica, Cote d'Ivoire, Croatia, Cyprus, Denmark, Dominican Republic, Ecuador, Egypt, El Salvador, Estonia, Ethiopia, Finland, France, Gabon, Germany, Ghana, Greece, Guatemala, Haiti, Honduras, Hungary, Iceland, India, Indonesia, Iran, Ireland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Republic of Korea, Latvia, Lithuania, Luxembourg, Malaysia, Malta, Mexico, Moldova, Mongolia, Morocco, Mozambique, Namibia, Netherlands, New Zealand, Nicaragua, Nigeria, Norway, Oman, Pakistan, Panama, Paraguay, Peru, Philippines, Poland, Portugal, Romania, Russia, Senegal, Singapore, Slovenia, South Africa, Spain, Sri Lanka, Sweden, Switzerland, Syria, Tanzania, Thailand, Togo, Trinidad and Tobago, Tunisia, Turkey, Ukraine, United Kingdom, United States, Uruguay, Venezuela, Vietnam, Zambia, Zimbabwe.