

Conflict And Development II

26.1. Economics and Conflict: Empirical Connections

A substantial empirical literature that attempts to unearth the correlates of conflict. Systematic studies employing statistical methods begin with Collier and Hoeffler (1998, 2004) and Fearon and Laitin (2003). Perhaps the most widespread pattern from this literature is that conflict is negatively correlated with per-capita income. Let's take a critical look at this finding, using the theoretical discussion above.

26.1.1. A Negative Correlation. Fearon and Laitin (2003) study the onset of "civil war," defined by (1) "fighting between agents of (or claimants to) a state and organized, nonstate groups," (2) a yearly average of at least 100 deaths, with a cumulative total of at least 1000 deaths, and (to rule out genocides or one-sided massacres) (3) at least 100 deaths on both sides. These criteria are similar to, though not identical with others used in the literature⁴¹¹ They conclude that "per capita income ... is strongly significant in both a statistical and a substantive sense: \$1,000 less in per capita income is associated with 41% greater annual odds of civil war onset, on average ..."⁴¹²

I've deliberately put up — in gory detail — the Fearon-Laitin definition of conflict for you, so that you can compare it with other possible measures. Whether threshold-like criteria involving deaths are adequate indicators of conflict depends on the type of question that we, the analysts, have in mind.

26.1.2. Evaluating the Correlation: Other Measures of Conflict. Many types of organized unrest can lead to relatively low levels of deadly violence: demonstrations, strikes, coups, or the detention of political prisoners. Yet their overall costs might even exceed the costs imputed to civil wars. Think of the IRA movement in the UK, the Red Army Faction in West Germany in the late seventies, the Black Panther movement in the US, the permanent turmoil situation in Italy with either real or fabricated "extreme left" terrorist actions, the military coups in Greece and Turkey, the failed coups in France in 1958 and in Spain in 1981, as well as the ETA movement (again in Spain)

⁴¹¹These principally vary in the size of the thresholds and generally lack criterion 3.

⁴¹²They go on to note that "the income variable is not just a proxy for 'the West,' whose states might have low rates of civil war for reasons of culture or history that have little to do with income. The estimated coefficient ... remains strongly significant."

since the early 1970s. One could add the many revolutionary movements and bloody military coups in Latin America, in countries with per-capita income well above that of many Asian or African countries. How can it be that these trends do not sufficiently show up in the Fearon-Laitin findings? Is this because the number of deaths did not go beyond some arbitrary threshold of 50 or 100 yearly casualties? The measure matters, but the problem is that we do not have comprehensive data of this kind.

26.1.3. Evaluating the Correlation: Endogeneity. Both reverse causality and possible omitted variables can contaminate the interpretation of the measured negative correlation. Certainly, ongoing conflict will destroy productive capacity, leading to lower per-capita income. For instance, Hess (2003) estimates the cost of all civil wars to be 8% of world's GDP, and de Groot (2009) finds that global GDP in 2007 would have been 14.3% higher if there had not been any conflict since 1960. Collier and Hoeffler (2004a,b) estimate the typical cost of a civil war to be around \$50 billion and argue that this significantly reduces future growth. Gates et al (2012) argue that a medium-sized conflict with 2500 battle deaths increases undernutrition by an additional 3.3%, reduces life expectancy by about 1 year, increases infant mortality by 10%, and deprives an additional 1.8% of the population from access to potable water. Undoubtedly, that in turn affects per-capita income, so the tail may be wagging the dog.

There are also important omitted variables to be contended with. Both low per-capita income and conflict could be the joint outcome of weak political institutions or poor State capacity. Djankov and Reynal-Querol (2010) argue that country-specific historical factors are highly significant in explaining both conflict and weak institutions and that they render non-significant the role of low per capita income. Besley and Reynal-Querol (2014) find that local conflicts over the past few centuries are highly significant in explaining today's civil wars, as well as today's development outcomes. Ashraf and Galor (2013) and Arbath, Ashraf and Galor (2015) argue that genetic diversity explains both the level of development and social conflict.

26.1.4. Evaluating the Correlation: A Good Instrument?. A good instrument for per-capita income would alleviate some of these concerns. Here's one: try rainfall, as Miguel, Satyanath and Sergenti (2004) do. The idea is simple and reasonably compelling: rainfall shocks will affect per-capita income, and should have no *separate* effects on conflict. This latter assertion can, of course, be challenged, in ways more or less outlandish depending on how combative you want to get about exclusion restrictions.⁴¹³ That said, any such analysis must rely on regions in which rainfall significantly affects output, which explains Miguel, Satyanath and Sergenti's focus on sub-Saharan Africa, for which a first stage regression of income growth on weather shock works well.⁴¹⁴

Miguel, Satyanath and Sergenti (2004) work with a conflict database developed by the Peace Research Institute of Oslo (PRIO) in conjunction with the University of Uppsala. Unlike Collier-Hoeffler-Fearon-Laitin, they relate the incidence of civil conflict in sub-Saharan Africa (over 1981–1999) to the *growth rate* of per-capita GDP

⁴¹³ For instance: perhaps a rainfall shock negatively affects forest cover for guerrillas, which makes it easier to counter them. Or rainfall shocks create a water shortage or affects temperatures, which affects conflict quite apart from effects on per-capita income.

⁴¹⁴ This strategy is obviously limited. Rainfall shocks do not work well outside the sub-Saharan sample, and indeed, even over more recent time periods for sub-Saharan Africa.

Variable	[1] PRIO25	[2] PRIO25	[3] PRIO1000
Economic growth t	-0.410 (1.480)	-1.130 (1.400)	* -1.48 (0.82)
Economic growth $t - 1$	** -2.250 (1.070)	** -2.550 (1.100)	-0.77 (0.70)
Country Controls	Yes	No	No
Country Fixed Effects	No	Yes	Yes
Root mean square error	0.36	0.32	0.24
Observations	743	743	743

Table 26.1. ECONOMIC GROWTH AND CIVIL CONFLICT IN SUB-SAHARAN AFRICA, 1981–1999
Source: Miguel, Satyanath and Sergenti (2004), Table 4. *Notes.* Dependent variable for columns 1 and 2: deaths ≥ 25 ; for column 3, deaths ≥ 1000 , as reported by the Peace Research Institute of Oslo. Economic growth variables are instrumented by current and lagged growth in rainfall. Country-specific year time trends in all specifications. Huber robust standard errors in parentheses. * = significantly different from zero at 10% level. ** = significantly different from zero at 5% level. *** = significantly different from zero at 1% level.

(and not its level). In fact they do not find level effects, but the relationship they uncover for growth rates is strong: “a five-percentage-point drop in annual economic growth increases the likelihood of a civil conflict (at least 25 deaths per year) in the following year by over 12 percentage points, which amounts to an increase of more than one-half in the likelihood of civil war.” Table 26.1 reproduces the main results from this paper.

This is suggestive evidence that economic growth may quell conflict, but it is far from conclusive. There is no evidence that higher levels of per-capita income tend to bring down outbreaks of conflict, especially if we take the broader measures of conflict into account, as in Section 26.1.2. At best what we see from the (very useful) exercise summarized here is that *shocks* to economic growth appear to have an adverse effect on conflict. But even this observation, as we will argue more than once in the discussions to follow, will depend on the nature of the shock; see the Box on Oil and Coffee in Colombia, for instance.

26.1.5. Prize and Opportunity-Cost Effects Revisited. To interpret these results, it is very useful to return to the prize effects and opportunity-cost effects introduced in Section 25.3. Specifically, recall the opportunity cost effect, which states that economic growth increases the returns from productive activity, and so dampens the incentives to enter into conflict. It is not at all far-fetched to imagine that this is exactly what is happening, at least on those felicitous occasions when economic growth reduces conflict. Indeed, this is the interpretation favored by Collier and Hoeffler (1998, 2004) and Miguel, Satyanath and Sergenti (2004).⁴¹⁵ It is a venerable and compelling

⁴¹⁵ A somewhat different argument is advanced by Fearon and Laitin (2003): that States in poor societies are ill-equipped to handle the demands and pressures of conflicting groups and so succumb more easily to open conflict.

argument that goes back to Becker (1968), Ehrlich (1973) and Grossman and Kim (1995), and it is echoed in the work of many others.⁴¹⁶

That said, it would be inadequate (to say the least) to trot out the opportunity cost argument as the only game in town when there is economic growth. True, the opportunity cost of conflict is lower, but so presumably are the gains from conflict in a poorer society: there is less to seize. If there is a serious argument to be made that growth *invariably* reduces conflict, it must connect the opportunity costs of conflict *relative* to the potential gains from conflict. But the movement of per-capita income up or down does not immediately affect this relative magnitude in any particular way. So even if considerations of opportunity cost are appropriate — and we believe they are — once nested into the context at hand, the explanation leaves something to be desired.

In summary, theories of uneven growth demand that we keep track of the opportunity cost of engaging in conflict *relative* to the expected payoff from it. It may well be that the latter rises while the former increases less so, thereby making rebellion a more likely outcome. Specifically, a change in economic fortunes can have two effects. One changes the cost of seizing a prize, the other affects the prize itself. It is this schizophrenic nature of economic change that generates really interesting predictions about conflict and development, but those predictions will need to be examined under a finer lens, and not through considerations of aggregate income alone. We will return to this question.

26.1.6. State Capacity Again. A second explanation for the prevalence of social conflict in poorer countries is one favored by Fearon and Laitin (2003a): the State is too weak, either to adequately solve the competing claims of different groups, or to effectively prevent conflict when it does break out. Their empirical findings, while similar to those of Collier and Hoeffler, are interpreted thus: “[T]he civil wars of the period have structural roots, in the combination of a simple, robust military technology and decolonization, which created an international system numerically dominated by fragile states with limited administrative control of their peripheries ... [O]ur analysis suggests that while economic growth may correlate with fewer civil wars, the causal mechanism is more likely a well-financed and administratively competent government.”

Just as in the case of the opportunity cost argument, the effect of a weak state on the likelihood of conflict must balance two forces in opposite directions. Weak states are easier to confront, true, but the payoff from victory is equally modest, if for no reason than the fact that victory can in turn be challenged (Mehlum and Moene, 2015). Moreover, a really weak state can be very easy to overcome — say, in the form of a bloodless coup — which may not be reflected in indicators of conflict. So, while “state capacity” certainly matters, it may matter in a highly non-linear fashion that demands more research. This is the argument that we outlined in Section 25.3.3.

And finally, returning to questions of endogeneity, state capacity and conflict can jointly evolve in a self-reinforcing manner. For instance, countries that have undergone civil war experience a loss in capacity (see, e.g., Chowdhury and Mansoob, 2013), which makes the government less able to manage public affairs, to effectively confront future uprisings, or to generate growth. The recent contributions by Besley and Persson

⁴¹⁶ For instance, Hirshleifer (1995) writes: “[R]ational behavior in a conflict interaction ... is for the poorer side to specialize more in fighting, the richer side more in production.”

(2008, 2009, 2010, and 2011) and Mc Bride et al (2011) have not only popularized among economists the notion of “state capacity,” but have developed a more nuanced theoretical basis for thinking about the intertwined connections between capacity and conflict.

Oil, Coffee and Conflict in Colombia

The Colombian civil war is rooted in the violence that followed the assassination of the populist leader Jorge Eliécer Gaitán, followed by a period of repression that spawned the organization of guerrilla groups in the 1960s, spearheaded by the Revolutionary Armed Forces of Colombia (FARC). It became a conflict in which several actors were involved: FARC and the National Liberation Army (ELN) on the one side, aligned against the government of Colombia and various paramilitary groups on the other, and a large involvement of crime syndicates in between, not to mention the contributions and backing of anti-guerrilla forces by multinational companies and the United States government. FARC and its compatriots claim to fight for land redistribution and social justice, the Colombian government for law and order, the paramilitary groups for staving off the threat of communism.

While low-intensity for much of the period from the 1960s to the present, conflict has spiked over different periods, leading to immense loss of life (well over 200,000 killed) and an enormous amount of civilian displacement (over 5 million between 1985 and 2012). A historic ceasefire deal signed in 2016 between the FARC and the Colombian government was narrowly rejected in an entirely polarized referendum, following which a revised peace deal was ratified and signed. But sadly, no peace deal can fully overcome the extraordinary polarization of economic, political and ethical opinion, and the situation remains violent.

Both the paramilitaries and guerrilla forces rely on funding, often via predation. Apart from drugs, kidnappings and extortion, there was the substantial predation on the municipal funds generated by natural resources, particularly oil, which is a major export for Colombia. Oeindrila Dube and Juan Vargas (2013) study how Colombian violence was affected by the movements of world prices for oil and coffee. (Colombia is a major exporter of both.) For each of these commodities, they interacted its price with the amount of that good produced in each municipality. There are several considerations involved in doing this right: see this footnote for more.⁴

Their results: when coffee prices rise, conflict falls more in coffee-producing municipalities. In sharp contrast, when oil prices rise, conflict *increases* in oil-producing municipalities. These observations are in line with the model described above. Coffee production is a relatively labor-intensive activity, so that a rise in coffee prices is likely to lead to an increase in wages relative to the overall price index. The opportunity cost argument then kicks in, reducing conflict. On the other hand, oil extraction and processing is capital-intensive, so that the opportunity cost argument runs in the opposite direction, with positive shocks generating conflict.

As it so happens, coffee prices fall by 68% over 1997–2003, while oil prices rise by 137% over 1998–2005. The Dube-Vargas estimates suggest that the former led to 18% more guerrilla attacks and 31% more paramilitary attacks in the average coffee municipality, relative to non-coffee municipalities. In contrast, the rise in oil prices appears to induce an additional increase of 14% in paramilitary attacks in the average oil municipality. Again,

there is evidence of the channel: oil municipality tax revenue increases, and so does the kidnapping of politicians and leaders.

⁴¹⁷Briefly, it is easier to define an oil-producing municipality rather than a coffee-producing municipality, because the intensity of coffee production can be endogenous to the extent of conflict. There are similar concerns with Colombian coffee prices. Thus coffee production needs to be instrumented with production suitability and internal coffee prices by production volumes in competing countries; see their paper for details.

26.1.7. Tocqueville vs Olson. Finally, we discuss the empirical relationship between group size, the public or private nature of the payoffs, and conflict.⁴¹⁷ Our theory, developed in Section 25.4, implies that larger groups are associated with conflict if the prize is public, while the opposite is true if the prize is private. This idea can be explored with the UCDP/PRIO Armed Conflict Dataset, which records conflicts between ethnic groups and the State.⁴¹⁸

As already discussed, ethnic conflicts account for between 50–75% of internal conflicts since 1945 (Fearon and Laitin 2003, Doyle and Sambanis 2006), so looking at the ethnic groupings is not a bad idea. The dataset used provides information on the homelands of 929 ethnic groups. Because these ethnic homelands are often spread out over countries, that gives us 1475 distinct group-country pairs in the dataset. Their homelands are fixed for the analysis: a frozen snapshot from the late 1950s and early 1960s.⁴¹⁹

As a proxy for a private prize, consider oil reserves located in the homeland of each ethnic group. The underlying presumption is that the State seeks to extract those resources (or output from the homeland) and distribute them more evenly across the country, and that the ethnic group in question can either accept the State policy, or reject it. Other private prizes are explored in Mayoral and Ray (2019). To implement the idea of a public prize, we consider several proxies for the *lack of access* to public goods. The public prize is then represented by the potential expansion of such public goods if the battle against the State is won. In the baseline specification, we use — again a frozen snapshot — a pre-sample index capturing the *lack of political and civil rights*.⁴²⁰

Each column in Table 26.2 reports on a different linear probability specification, all with country and year fixed effects, and lagged conflict. Column 1 regresses conflict on only two variables: the population share of the ethnic group (*SIZE*) and group-level oil abundance on the homeland of that group (*OIL*). *SIZE* has no particular sign of any significance. This is precisely what the theory would lead us to expect, as it predicts that the *unconditional* effect of group size on conflict is ambiguous. In contrast, the

⁴¹⁷The analysis that follows is based on Mayoral and Ray (2019).

⁴¹⁸Data on group-level conflict comes from Cederman, Buhaug and Rod (2009, who use the UCDP/PRIO Armed Conflict Dataset (Gleditsch et al. 2002) and check this list against previous sources that identify ethnic civil wars (such as Fearon and Laitin 2003, Licklider 1995 and Sambanis 2001). Ethnic conflicts are coded based on whether mobilization was shaped by ethnic affiliation.

⁴¹⁹This has advantages and disadvantages. On the negative side, settlement patterns may be outdated for some parts of the world. On the positive side, it alleviates concerns that ethnic group locations are endogenous to the conflicts we aim to explain.

⁴²⁰This baseline specification for public prizes can be augmented by alternative proxies. Each such proxy seeks to measure the gains from seizure of political power at the Center. See Mayoral and Ray (2019) for more details.

Dependent Variable: PRIO25 Conflict							
	[1]	[2]	[3]	[4]	[5]	[6]	[7]
SIZE	-0.015 (0.307)	0.032 (0.101)	0.066*** (0.001)	0.066** (0.013)	-0.002 (0.915)	0.011 (0.656)	0.084** (0.019)
OIL	0.448** (0.040)	0.684*** (0.009)	0.771*** (0.007)		0.887* (0.062)	0.828* (0.069)	
SIZE× OIL		-13.628*** (0.000)	-14.433*** (0.000)		-14.455** (0.036)	-12.836** (0.026)	
SIZE× PRIVATE INDEX				-0.049*** (0.001)			-0.046** (0.016)
SIZE× LACK RIGHTS					0.068* (0.062)	0.083** (0.035)	
SIZE× PUBLIC INDEX							0.023* (0.080)
PRIVATE INDEX				0.002** (0.017)			0.002 (0.122)
PUBLIC INDEX							0.110 (0.386)
CONTROLS	No	No	Yes	Yes	No	Yes	Yes
LAG	0.895*** (0.000)	0.895*** (0.000)	0.894*** (0.000)	0.894*** (0.000)	0.898*** (0.000)	0.900*** (0.000)	0.900*** (0.000)
R ²	0.844	0.844	0.847	0.847	0.850	0.855	0.853
Obs	64839	64839	55289	54486	41314	38341	35755

Table 26.2. GROUP SIZE AND CONFLICT. Source: Mayoral and Ray (2019, Table 1). This table regresses PRIO25 conflict on group size and indices of private and public prizes, along with interactions between these variables as suggested by the theory in Section 25.4. All regressions contain year dummies and country fixed effects. The time period considered is 1960–2006 (1975–2006) in regressions 1–3 (4–7). *p*-values are reported in parentheses. **p* < 0.10, ***p* < 0.05, ****p* < 0.01.

presence of OIL unambiguously increases conflict — a well known and predictable implication of the “prize effect” studied earlier in this chapter.

Column 2 interacts SIZE and OIL. The idea is to see if the effect of ethnic group size on conflict is exacerbated or attenuated in the presence of a private prize. The theory tells us that that *small* groups influence conflict even more when there are private prizes at stake. Working through the implied tangle of double negatives, you should be able to see that this prediction is the same as the assertion that the coefficient of our interaction term must be negative and significant. And indeed, that’s what it is. Column 3 adds on controls to the regression in Column 2. The results are the same. Column 4 replaces OIL by an alternative proxy of privateness, PRIVATE INDEX, computed using three indicators of resource abundance: oil, land and mineral abundance on the homeland. Again, the same result is obtained.

Column 5 introduces the interaction of public prize (as measured by LACK RIGHTS) with group size, on top of the earlier interaction. Recall that to allay concerns of reverse causality, LACK RIGHTS is a pre-sample time-invariant index computed by averaging its values from 1972 (the first year it exists) to 1975. Then, the resulting index is employed in regressions including post-1975 observations only.⁴²¹ The interaction of SIZE and

⁴²¹Note that LACK RIGHTS does not appear as an independent regressor, as it is subsumed in the country fixed effects

LACK RIGHTS has the predicted positive sign and is highly significant. (Column 6 is a variant of 5 with all additional controls introduced, with the same results.)

Finally, Column 7 introduces an alternative proxy of publicness, called PUBLIC INDEX, obtained by combining five indicators of (pre-sample) lack of public goods: lack of political rights, lack of civil rights, the level of autocracy, group exclusion from central power and infant mortality rates.⁴²² Our conclusions remain unchanged.

These effects are not only significant, they are sizable. For LACK RIGHTS = 0 and a high value of oil (at the 95th percentile) an increase of one standard deviation in SIZE decreases the unconditional probability of conflict incidence by 4.9%. Similarly, if OIL = 0 and LACK RIGHTS is high (= 1), an increase of one standard deviation in SIZE increases the probability of conflict by 7.3%.

It is worth noting an obvious but important point: while the data are replete with conflicts over private and public payoffs, the two are sometimes closely intertwined. For instance, even a conflict as seemingly primordial as Rwanda was permeated with economic looting, such as land grabs under the cover of ethnic violence. The Second Civil War in the Sudan is about different cultural and religious identities, but it is also — to some degree — about oil; so is the Chechnyan War. The Zimbabwean conflict is about identity and political power, but it is also about land, and so on. In the light of these expected complications, it is of interest that the two interaction predictions made by the theory hold up separately and robustly. They give some confidence that our basic model of conflict is not drawn from a vacuum; that the theory does really say something about the world. In the next chapter we take this theory a step further.

26.2. Similarity and Difference

The great revolutions of the twentieth century were born of economic *difference*, of the realization that a relatively small elite reaped most of the rewards while a large, struggling proletariat suffered under a disproportionately small share of the pie. The traditional literature on crisis and revolution focuses near-exclusively on *class* conflicts. More recently, the work of Piketty (2014) and co-authors has documented the rise of economic inequality in the second half of the twentieth century. Movements such as *Occupy* have re-highlighted the awareness of economic differences, and the connections between those differences and social unrest.

The previous chapter introduced us to basic concepts, theories and empirical regularities in the study of social conflict. Our simple workhorse model allowed us to capture the idea of different groups contributing resources in order to win a “prize,” which might be public or private in nature. Examples of the former include political power or cultural or religious dominance. Examples of the latter would include resource revenues or land holdings. But — as the previous paragraph implicitly begins to ask — *which* are the relevant groups? Every society has a number of potential fissures or divisions, that ordinarily lie dormant. Society could split (if it splits at all) along economic, religious, occupational, demographic, gender or geographical lines.

Karl Marx justifiably stands at the apex of all studies on within-country conflict. For Marx, class is the only relevant social cleavage and *class conflict* the fundamental source of social unrest. This view is unambiguous: at the end of the day, it is *economic*

⁴²²See Mayoral and Ray (2019) for a lot more detail using these indices separately.

class that determines a social split. The salient battle is between the economic elites and the economic have-nots. For Marx, class conflict paves the road to the ultimate downfall of capitalism, with workers seeing control of the means of production from the capitalists. So the struggle across economic classes has been viewed as focal, and often correctly so. Quite apart from the great revolutions of the early and mid-20th century, “class consciousness” continues in some shape or form to the present day: witness, for instance, the explicit awareness of and discontent over high inequality that followed on the heels of the financial crisis of 2008.⁴²³ Class conflict, or the fear of it, is also at the heart of all taxation systems, which invariably keep an eye open for some degree of progressivity. There are battles fought today between groups that seek to redistribute to the dispossessed, while other groups oppose these moves. These battles are not just waged through physical violence and bloodshed, but sometimes through relatively peaceful protests, strikes, or political lobbies — or even the democratic process of voting. As Warren Buffett unabashedly put it in an interview to CNN, “actually, there’s been class warfare going on for the last 20 years” (then going on to add: “and my class has won”).

26.2.1. Conflict and Inequality. That said, the relationship between inequality and social conflict appears to be far more nuanced, and in the stark form posited by Marx, tenuous at best. Researchers, mostly in political science, have tried for decades to find a convincing empirical connection; see, e.g., Nagel (1974), Midlarski (1988) and and Muller, Seligson and Fu (1989). Lichbach (1989) mentions forty three papers on the subject; some, according to him, “best forgotten.” He concludes that the overall evidence obtained by all these works is thoroughly mixed. Some studies support a possible relationship between inequality and conflict, and others show no relationship at all. Under several measures of inequality including the Gini, conflict appears to be low *both* for low and for high values of inequality. Midlarsky (1988) remarks on the “fairly typical finding of a weak, barely significant relationship between inequality and political violence . . . rarely is there a robust relationship between the two variables.”

That said, it is possible that these studies measure conflict in the wrong way, or too narrow a way. It is entirely plausible “class struggle” envisioned by Marx takes the dominant form of social unrest — strikes, demonstrations and the like — rather than an armed civil war. Therefore, empirical work on this nexus should pay special attention to indicators of “lower voltage” social unrest. Does that change the picture? Some suggestive connections are provided in Table 26.3 and Figure 26.1. These use the Cross National Time Series (CTNS) dataset, with information on 170 countries over 1960–2005, and combine this information with Gini coefficients for income inequality. Conflict information includes various measures of social unrest based on assassinations, strikes, guerrilla warfare, government crises, purges, riots, revolutions, and anti-government demonstrations (we show some of these). The CTNS combines these into an overall measure of social unrest, which we also use. It should be very

⁴²³ Inequality made it to the headlines of articles in the popular press; e.g., *Time Magazine*, 1 April 2014, “There is a Class War Going On and the Poor are Getting their Butts Kicked,” or *The Observer* 30 November 2014, “Class War is Back Again and British Politicians are Running Scared.” Cartier boss Johann Rupert declared he could not sleep because of the fear that “rising inequality will spark class war,” CNN/Money, June 2015. Earlier, in 2006, the bosses were a bit more bullish: “there is class warfare, all right, but it is my class, the rich class, that is making war, and we are winning” (Warren Buffett in *The New York Times*, 26 November 2006).

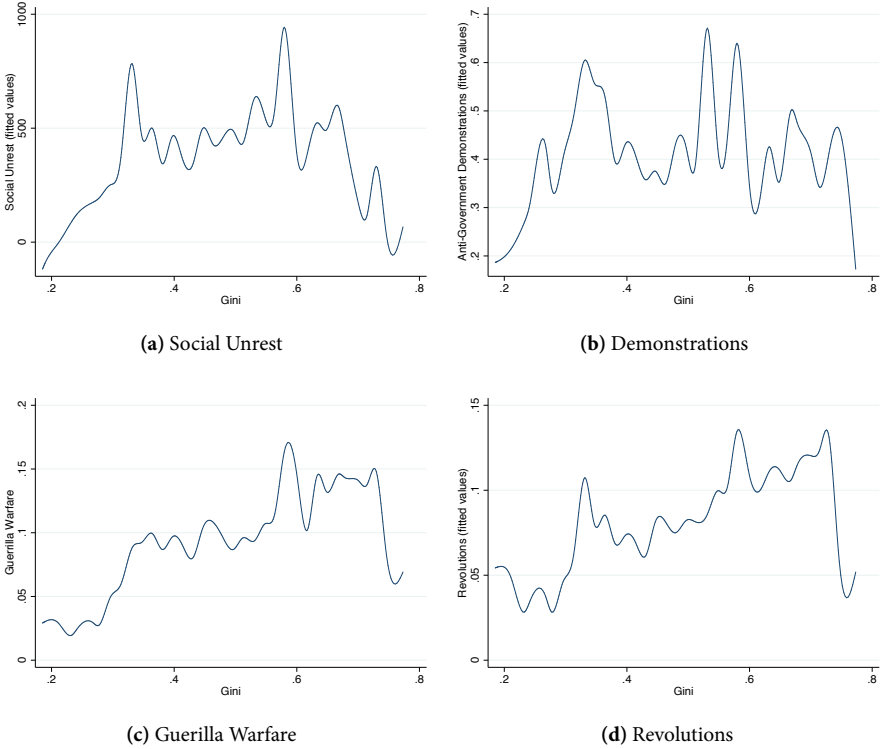


Figure 26.1. INEQUALITY AND CONFLICT. This figure plots various indicators of conflict against economic inequality as measured by the Gini coefficient. Throughout, the relationship is roughly inverted-U shaped, showing that there is no obvious positive or negative connection between inequality and conflict.

clear from Figure 26.1 and Table 26.3 that there is no straightforward relationship between inequality and conflict. By itself, this does not prove the Marxist hypothesis to be wrong. It could still be that *whenever* conflict occurs, it is between the haves and the have-nots. But it is suggestive — if such conflicts were invariably the focal ones, why would high-inequality societies remain suspiciously silent?

26.2.2. Motive and Means. One possibility is that even this broader perspective on social conflict does not do a good job in picking up *all* forms of unrest. Certainly, one could think of antagonisms simmering just below the surface, which are deeply felt and yet not visible in any form of statistically compiled data. This sort of “suppressed violence” is not hard to imagine. After all, class conflict could often be latent and inadequately expressed because, in a word, the rich have the means but not the motive, while the poor have the motive but lack the means. The experience of grassroots movements such as *Occupy* show how difficult it is to sustain a conflict on the basis of energy, enthusiasm and anger alone. Where class conflict has emerged into the open,

Components of Social Unrest, 1960–2005				
	[1] Guerrilla	[2] Riots	[3] Revolutions	[4] Demos
GINI	**2.992 (0.022)	**8.602 (0.014)	1.456 (0.141)	*7.336 (0.093)
GINI ²	**−3.759 (0.010)	**−8.234 (0.013)	*−1.822 (0.097)	*−7.971 (0.062)
GDP	−0.036 (0.543)	−0.012 (0.951)	−0.006 (0.904)	0.239 (0.292)
POP	−0.129 (0.360)	0.610 (0.125)	0.087 (0.387)	***1.114 (0.001)
DEMOC [POLITY2]	−0.004 (0.384)	−0.006 (0.515)	−0.002 (0.447)	***−0.043 (0.002)
Lag	✓	✓	✓	✓
C	1.618 (0.399)	−6.942 (0.279)	−1.275 (0.384)	**−9.647 (0.041)
Country FE	✓	✓	✓	✓
Year FE	✓	✓	✓	✓
R ²	0.296	0.405	0.341	0.365
Obs	3360	3360	3358	3274

Table 26.3. INEQUALITY AND CONFLICT. Dependent variables are taken from the CTNS dataset for 1960–2005. *p*-values in parentheses. * = significantly different from zero at 10% level. ** = significantly different from zero at 5% level. *** = significantly different from zero at 1% level.

it has been dependent on sustained financing as well as labor. Money and finance are synergistic in conflict.⁴²⁴

26.2.3. The Salience of Similarity. But it is also possible to challenge the Marxian position more directly. There are persistent and disturbing ways in which conflict occurs across economically *similar*, rather than different groups. That conflict is over resources that are explicitly and directly contested: a limited pool of jobs (e.g., natives versus immigrants), the same customers (business rivalries across organized groups), or scarce land. Because the conflict is over the direct use of a resource, the groups are often remarkably similar in their economic characteristics. The gains from conflict are immediate: the losing group can be excluded from the sector in which it directly competes with the winners.

⁴²⁴This is a line of argument that Esteban and Ray (2008, 2011) employ to explain the salience of non-class conflict, perhaps along religious or ethnic lines. There is also a literature that argues, both theoretically and empirically, that more unequal countries appear to carry out less redistributive policies, when a standard median voter argument would have perhaps suggested the opposite. See, e.g., Perotti (1996) and Benabou (2003). The main argument here is that the poor may be less active politically.

When employment, or land, or business resources are scarce, like is often pitted against like, invariably to the great disappointment of conventional Marxists. Left-leaning politicians often gravitate to such positions. For instance, U.S. Presidential candidate Bernie Sanders recently stated in an interview⁴²⁵ that open borders posed a threat:

“Bring in all kinds of people, work for \$2 or \$3 an hour, that would be great for them. I don’t believe in that ... You know what youth unemployment is in the United States of America today? ... You think we should open the borders and bring in a lot of low-wage workers, or do you think maybe we should try to get jobs for those kids?”

When local labor is compared to foreign labor, it is not hard to predict which of the two will get the boot.

Yet, while the immigrant-native schism is the best known example of conflict caused by economic similarity, it is by no means the only one. For instance, in developing countries, and at the heart of all ostensibly ethnic or religious conflicts, the land-grab often plays a central role. A leading example is the Rwandan conflict, where economic desperation was clearly seen to play a major role in what appeared to be unreasoning ethnic hatred; see Box. But Rwanda is far from being the only example of land conflicts disguised as ethnic hatred. Finally, labor and land do not exhaust the similarity interface: there are also business interests. For instance, ostensibly religious conflicts in India are laden with sinister economic undertones; witness, for instance, the systematic decimation of rival businesses during the anti-Sikh pogroms of 1984. Likewise, Hindu-Muslim conflicts are inextricably linked with economic motives. As Asgar Ali Engineer (1987) wrote of one of these episodes (in Meerut, India):

“If [religious zeal] is coupled with economic prosperity, as has happened in Meerut, it has a multiplying effect on the Hindu psyche. The ferocity with which business establishments have been destroyed in Meerut bears testimony to this observation. Entire rows of shops belonging to Muslims ... were reduced to ashes.”

The disturbing salience of economic similarity has not gone unnoticed among astute commentators. Rogers Brubaker and David Laitin (1998) called it “the eclipse of the left-right ideological axis.” And Donald Horowitz (1985), in his treatise on ethnic conflict, observed that

“The Marxian concept of class as an inherited and determinative affiliation finds no support in [the] data. Marx’s conception applies with far less distortion to ethnic groups. ... In much of Asia and Africa, it is only modest hyperbole to assert that the Marxian prophecy has had an ethnic fulfillment.”

Bengal elections 2021

The Rwandan Genocide

Over a span of approximately 100 days in mid-1994, between 500,000 and 900,000 people were killed in Rwanda. Both militia and civilians murdered other civilians (Armstrong, Davenport, and Stam 2020; BBC News 2011), which included 70% of Rwanda’s Tutsi

⁴²⁵ See <http://www.vox.com/2015/7/28/9014491/bernie-sanders-vox-conversation>, Vox, July 16, 2015.

population. Not surprisingly, the roots of this horrific genocide go back many years. Political and economic cleavages between the two groups existed even before the colonial influences of Germany and Belgium. While Hutus constituted the majority of the population, the Tutsi eventually gained political dominance over most of Rwanda by the mid-19th century (Kamola 2007). Under the reign of King Rwabugiri (1860–95), social and economic inequality between the two ethnic groups was sharply defined, with Hutus subjugated to Tutsi patrons by a feudal contract called *uburetwa* (Kamola 2007; Magnarella 2005).

The Hutu-Tutsi distinction persisted under German influence and was deliberately sharpened during Belgian colonization. While the purely ethnic origins of a Hutu-Tutsi distinction are unclear — these may have arisen from caste-like occupational distinctions — the Belgians introduced an identity card system that indicated the “ethnicity” of each person and thus disabled socioeconomic mobility (Magnarella 2005). The key criterion in determining whether an individual was Tutsi was cattle ownership (Mamdani 2005). Primordial hatreds apart, an economic cleavage between the two groups based on occupational clustering was never very far behind.

The economic narrative leading to the genocide has been understated (Kamola 2007), but it was not at all a simple distinction between rich Tutsi and poor Hutu. By the time Rwanda gained independence in 1961, there was severe within-group inequality amongst the Hutu: a small group of Hutu elites enjoyed political and economic benefits including control over the coffee industry, while the Hutu majority in rural areas were left impoverished (Kamola 2007). These elites faced growing political and economic instability, as Tutsi refugees based in Uganda began conducting assaults into Rwandan territory, and then as Rwanda’s increasing dependence on the coffee industry made the economy vulnerable to price fluctuations. As the global coffee price plummeted in the 1980s, famine erupted throughout the Rwandan countryside. A currency devaluation directed by the World Bank raised the domestic prices of food and farm inputs, while cash revenues from coffee received by farmers stayed frozen (Chossudovsky 1996).

In order to keep an economically deprived Hutu majority under control, Hutu elites pointed to the Tutsi population within and outside the country as their common enemy (Magnarella 2005). The prize was plain for all to see: given the historical antagonism between the two groups, it was easy enough to convince the poorer Hutus that the Tutsi population had to be driven permanently out of Rwanda so as to resolve the land and food shortage. This prize effect was duly supplemented by the opportunity cost effect: low coffee prices meant low rural employment, allowing the easy mobilization of young men into the militia (Chossudovsky 1996). A sizable portion of foreign aid inflow was used to purchase arms (Chossudovsky 1996; Magnarella 2005). The stage was set for a perfect storm. Hutu militias and civilians slaughtered their neighbors with guns and machetes, with initial coordination often achieved via a popular radio station that called for the extermination of the Tutsi (Yanagizawa-Drott 2014). The killings were horrifyingly efficient, with many thousands of Tutsi dying every day.

Was this primordial hatred of the Tutsi, or a land grab dressed up in the guise of primordial hatred? That the Tutsi constituted a well-defined enemy cannot be doubted. And yet, the violence spread so rapidly within local communities — civilians were murdered by their own neighbors. André and Platteau (1998) point to extreme land shortages as an explanation for the growing hostility and distrust within rural communities prior to the massacre. In their study area in Northwest Rwanda, the authors find that the share of households owning less than 1/4 hectare of land increased from 36% to 45% between 1988 and 1993 (André and Platteau 1998). Land disputes were frequent, and desperate youths with no employment opportunities fell into theft and delinquency.

Moderate Hutu died in large numbers during this conflict. In the study area during the 1994 genocide, people with large land property (*mostly Hutu*) were killed at a rate much higher than the total death rate of the community. The violence in 1994 was not only about ethnic antagonism but also driven by destitute people tempted to grab a share of the victims' property (André and Platteau 1998).

While there is no doubt that the deep-rooted cleavage between the Hutu and the Tutsi provided ground for persecution of the Tutsi, abject economic conditions and growing wealth inequality of Rwanda leading to 1994 seem to have triggered the outbreak of an abhorrent mass violence, previously unseen in Rwandan history:

"[E]conomic desperation, blighting individuals' presents and their perceived futures, was a contributor to the willingness of many thousands of poor famers and urban dwellers (a) to fear the possibility of a Tutsi land-and-jobs grab under a victorious RPF regime, (b) to be tempted by more specific hopes for land and jobs, or, more crudely still, to participate in order to grab a share of the victims' property." (Austin, 1996, p.10, quoted in André and Plateau 1998).

Garth Austin's observations for Rwanda find supportive echoes in the studies of Prunier (1996), André and Platteau (1998), and many others. They also find echoes in the ethnic conflicts of many other countries.

26.3. Conflict and Ethnic Divisions

If conflicts of exclusion across economically similar groups are often salient, rather than redistributive conflicts across economically dissimilar groups, then it is natural to expect that the ethnic card will be played, and played often. After all, "ethnicity" — broadly defined to include religion, language-based or geographical characteristics — is the perfect marker to separate groups that are economically similar. Indeed, more than half of the civil conflicts recorded since the end of World War II have been classified as "ethnic."⁴²⁶ Such conflicts involved 14% of the 709 ethnic groups categorized worldwide (Fearon 2003). Surprising? In view of our previous discussion, not really. While I don't mean to suggest that *all* conflicts between ethnic groups are those between economically similar groups, they often are. Ethnicity can serve as a convenient rallying cry to include and exclude.

Of course, for that to happen, the society in question must have ethnic divisions to draw upon to begin with. That leads to the following hypothesis: "ethnically divided" societies are more likely to engage in conflict. Do we have evidence to support this view?

26.3.1. Ethnically Divided? Fractionalization and Polarization. The first question is: just what does "ethnically divided" mean? As a first pass, we could (and should) count the *number* of ethnic groups in a society. But we also need to take account of their relative representations in society — their population shares. The *fractionalization index*, first introduced in the 1964 edition of the Soviet Atlas Narodov Mira, does just this. If $\{n_1, n_2, \dots, n_m\}$ stand for the population shares of m ethnic groups, then fractionalization F is given by:

$$F = \sum_{i=1}^m n_i(1 - n_i), \quad (26.1)$$

⁴²⁶See, for the instance, the Political Instability Task Force (2012), or Fearon and Laitin (2003a,b).

which can be interpreted as the probability that two individuals drawn at random from the society will belong to different groups. To see this, pick two people at random from the society, and suppose that the first belongs to group i . The probability that the second person will *not* belong to the same group is just $1 - n_i$ (note that probabilities are just equal to group population shares). Now weight this event by the probability that the first person is from group i (which is n_i) and add over all groups to get the measure F , as described in equation (26.1).

Fractionalization is a famous index that has been put to work on several occasions. It has indeed been usefully connected to low per-capita GDP (Alesina, Baqir and Easterly 2003), slow economic growth (Easterly and Levine 1997), underprovision of public goods (Alesina and La Ferrara 2005), or to poor governance (Mauro 1995). As you will be asked show in an exercise, it is also closely connected to the Gini coefficient of economic inequality. Not surprisingly, this is the measure that leading scholars initially used as a possible correlate of conflict; see Collier (2001), Collier and Hoeffler (1998, 2004), and Fearon and Laitin (2003a).

But it is unclear that fractionalization captures underlying tensions. As an example, consider a society with m equally-sized groups, so that $n_1 = n_2 = \dots = n_m = 1/m$. Then, applying the formula in equation (26.1), we see that

$$F = \sum_{i=1}^m n_i(1 - n_i) = m \frac{1}{m} \frac{m-1}{m} = \frac{m-1}{m}, \quad (26.2)$$

which rises with the number of groups. Indeed, F would be at its highest in a world where every individual formed a separate group! Would that be conflictual? Is that we mean when we say that a society is “ethnically divided”? Certainly not according to Donald Horowitz (1985), who observed: “A centrally focused system [with few groupings] possesses fewer cleavages than a dispersed system, but those it possesses run through the whole society and are of greater magnitude.” That points to a different measure, one that would lay greater emphasis on the bunching of population.

And indeed, there does not appear to be a strong empirical relationship between conflict and ethnic fractionalization, if the latter is used on its own with no other measure of ethnic divisions. Ethnic fractionalization is at best marginally significant (as in Fearon and Laitin 2003), and a general lack of significance for ethnic fractionalization permeates the results by Miguel, Satyanath and Sergenti (2004) or the studies by Collier and Hoeffler (1998, 2004). It is not surprising that Fearon and Laitin (2003) conclude that the observed “pattern is thus inconsistent with ... the common expectation that ethnic diversity is a major and direct cause of civil violence.”

Return now to the question of population bunching. Remember that in Chapter 10, we introduced the notion of a *polarized* distribution, in which the spikiness of population sizes plays a more emphatic role. This concept was introduced by Esteban and Ray (1994).⁴²⁷ As explained in that chapter, polarization is designed to measure social “antagonism,” which is assumed to be fueled by two factors: the “alienation” felt between members of different groups and the sense of “identification” with one’s own

⁴²⁷ See also Wolfson (1994), Esteban and Ray (1999, 2011a), and Duclos, Esteban and Ray (2004), who all develop related measures of polarization that attempt to incorporate deep cleavages.

group. Recall equation (10.4), reproduced here as:

$$P = \sum_{i=1}^m \sum_{j=1}^m n_i^2 n_j d_{ij}, \quad (26.3)$$

where n_i , as before, is the population share of group i , and d_{ij} is some measure of intergroup "distance." As already discussed in Chapter 10, the squared entry in the formula assigns power to population concentrations, so that the measure favors population bunching and will not perennially rise with increased diversity. In this sense the measure is quite different from fractionalization. To see this, go back to the same example of m equally sized groups, and set every inter-group distance to be the same. Then in that setting:

$$P = \sum_{i=1}^m \sum_{j \neq i} n_i^2 n_j = \sum_{i=1}^m n_i^2 (1 - n_i) = \frac{m-1}{m^2}. \quad (26.4)$$

Observe that P indeed climbs as the number of groups goes from 1 to 2. But thereafter the value of P declines with m , in sharp contrast to fractionalization. Beyond the expansion from one to two groupings, polarization declines with the continued splintering of groups, while fractionalization goes up. Rather than being two broadly related ways of measuring the same thing, the two measures emphasize different aspects of a fundamentally multidimensional phenomenon.

Fractionalization and polarization are only two ways of measuring ethnic divisions. There are others. But this is where some theory can play an important role in narrowing down the alternatives. Our model of ethnic conflict suggests that these two measures, taken together, are the only salient ones. We turn to this point now.

26.3.2. Linking Conflict to Fractionalization and Polarization. Suppose that m groups are engaged in conflict for some common prize. Recall the formula for net payoff per person from equation (25.4) for any group i , which can be rewritten as

$$\frac{r_i N_i}{r_1 N_1 + r_2 N_2 + \dots + r_m N_m} \pi_i - (1/2) r_i^2,$$

when there are several groups engaged in conflict. Nothing really changes in how we find the optimal solution for r_i . Taking derivatives yet again and noting that total conflict R equals $r_1 N_1 + r_2 N_2 + \dots + r_m N_m$, we have the analogue of equation (25.7):

$$\pi_i \left[\frac{N_i}{R} - \frac{N_i^2 r_i}{R^2} \right] = r_i,$$

for every group i . Again, a little algebra (try it now if you didn't before!) leads us exactly to equation (25.7), reproduced here:

$$\pi_i p_i (1 - p_i) = r_i^2. \quad (26.5)$$

A complete analysis of this equation for three or more groups is beyond the scope of our book, but we can obtain some insights by supposing that the population is equally divided across the m groups, so that $n_1 = n_2 = \dots = n_m = 1/m$. With a common prize at stake, the per-capita prizes will then also be symmetric: $\pi_1 = \pi_2 = \dots = \pi_m = \pi$.⁴²⁸

⁴²⁸If you are interested in a fuller treatment, see Esteban and Ray (2011).

Then *every* group faces exactly the same equation (26.5), so that $r_i = r$ for all i ,⁴²⁹ and the probability of success is just $p_i = 1/m$ for every group. Therefore overall conflict R is given by

$$R = Nr = N\pi \frac{1}{m} \frac{m-1}{m} = N\pi \frac{m-1}{m^2}. \quad (26.6)$$

How does this value of R change with the number of groups m ?

Suppose, first, that the prize is public. Then π is not diluted by the number of groups, because the main characteristic of a public prize is that the per-capita payoff to an individual is independent of the number of people sharing it. (Recall the detailed discussion in Section 25.4.) But then, *R behaves exactly as the polarization measure P does*; compare equations (26.4) and (26.6)! Conflict increases from one group to two (as it must, of course), but then *declines in m thereafter* (assuming equal population division across the groups).⁴³⁰

Now suppose that the prize is private. In this case, we have Π units of money (or oil or minerals, or just plain loot) at stake, so that $\pi = \Pi/N_i$. *Nothing* changes in the analysis above, all the way up to and including equation (26.6), provided we continue to assume equal division of the population across the m groups: π is just to be interpreted as Π/N_i , which is the same value for each group. The only difference is that when m changes in our thought experiment, and the prize is private, the value of π is indeed affected. Recalling (26.6), we must now conclude that

$$R = Nr = N\pi \frac{m-1}{m^2} = N \frac{\Pi}{N_i} \frac{m-1}{m^2} = \Pi \frac{m-1}{m},$$

where we use the fact that $N_i/N = 1/m$. But now *R is fully in line with the fractionalization index F* ; see equation (26.2)! When the prize is private, conflict goes up with a more diversified society.

In summary, the notion of “ethnic divisions” is subtle, and not so easily reduced to a single measure of diversity. Fractionalization is a measure that emphasizes social diversity; it entertains many divisions. Polarization, in contrast, thrives on a small number of deep divisions. What is useful and quite remarkable about the theory we’ve discussed is that it does not stop at that rich-sounding but rather empty phrase: “things are complex.” Rather, it allows us to formulate a specific prediction: that conflict will be related to ethnic polarization when the prize is public, while it will be related to ethnic fractionalization when the prize is private. Yes, it’s complex, but that complexity can still be harnessed to make sharp predictions.

26.3.3. The Empirics of Polarization, Fractionalization and Conflict. In their important contribution, Montalvo and Reynal-Querol (2005) study the effect of ethnic polarization on intermediate and high-intensity civil war, as defined by PRIO. They study the simple version of P defined by 0-1 group distances, and apply the formula in

⁴²⁹If you have been following this astutely, which I hope you have, you will see that for *two* groups and public prizes, r_1 always equals r_2 without having to make the equal population-division assumption; see Section 25.4. But that is not true when there are three or more groups

⁴³⁰Indeed, as Esteban and Ray (1999, 2011) observe, this correspondence between P and R (with public goods) is not just a happy coincidence arising from the assumption of equal population division across the groups; it holds more generally. While we do not go into those details here, it is worth noting that if population is allocated across three groups conflict is higher when two groups are equal-sized and the third group is vanishingly small, compared to the case in which population is divided equally across all three groups. This is quite different from the corresponding outcomes for two groups (see Exercise xx for more).

the first equality of equation (26.4). (They do not relate polarization to public prizes and fractionalization to private prizes.) We summarize their main result by quoting them (p. 805):

"The first column [in a multi-column table of regressions] shows that the index of ethnolinguistic fractionalization ... has no statistically significant effect on the incidence of civil wars. This result is consistent with Fearon and Laitin (2003a) and Collier and Hoeffler (1998). If we substitute the index of ethnic fractionalization by ... ethnic polarization [which is the measure in (26.4)] ... we find (column 2) a positive and statistically significant effect on the incidence of civil wars ... Column 3 checks the relative strength of the index of ethnic polarization versus fractionalization, and shows that the coefficient on ethnic fractionalization is not significantly different from zero, while the one on polarization is positive and significant."

Yes, bunching does matter, and a measure of polarization that's sensitive to it does appear top be sensitive to conflict as well. But more can be said. The theory in the previous section can be extended to relate conflict to in a general way to ethnic division, and it turns out that only the two measures of polarization and fractionalization play a role — the former when the prize is public, and the latter when the prize is private. (Yes, we kept it simple by studying only equal-sized groups, but the argument is considerably more general.) Let us measure the intensity of conflict — call it C — by per capita level of resources expended in conflict. Esteban and Ray (2011a) argue that C is described by the approximate formula

$$C \sim [\lambda P + (1 - \lambda)F], \quad (26.7)$$

for large populations, where λ is the relative degree to which the prize is public, and P and F are the polarization and fractionalization indices described earlier in (26.1) and (26.3), the former constructed binary distances, and the latter using inter-group distances d_{ij} derived from "public" payoff losses; that is, the per-capita loss to group j from adopting group i 's favorite public good. In short, the theory tells us to obtain data on P and F , and combine them in a particular way. It informs us, moreover, that F alone is unlikely to be significant in explaining conflict, as the resulting omitted variable P would confound the effects laid bare in (26.7).

Esteban, Mayoral and Ray (2012a, b; EMR henceforth) study 138 countries in five-year intervals over 1960–2008. To compute P and F , EMR rely on Fearon (2003), who identifies over 800 "ethnic and ethno-religious" groups in 160 countries. For inter-group distances, they follow Fearon (2003), Laitin (2000), and Desmet et al. (2012) by employing the *linguistic distance* between two groups as a proxy for distances in the space of public policy; see EMR for details.⁴³¹

EMR use the value of oil reserves per-capita as a proxy for privateness. They create an index of "publicness" by measuring the degree of power afforded to those who run the country, "more democratic" being regarded as correlated with "less power" and

⁴³¹ Such a proxy undoubtedly takes EMR out on a limb, but reflects a common tradeoff. On the negative side, linguistic distances are at best an imperfect proxy for the unobserved "true distances". But something closer to the unobserved truth — say, answers to survey questions about the degree of intergroup antagonism, or perhaps a history of conflict — are deeply endogenous to the problem at hand. Whether the tradeoff is worth it is something that only a mixture of good intuition and final results can judge.

Variable	[1]	[2]	[3]	[4]
	PRIO-C	ISC	PRIO-C	ISC
<i>P</i>	*** 5.16 (0.001)	*** 19.50 (0.002)	- 1.48 (0.606)	- 16.33 (0.227)
<i>F</i>	* 0.93 (0.070)	* 3.56 (0.061)	0.76 (0.196)	0.31 (0.878)
<i>PA</i>			*** 11.174 (0.003)	*** 61.89 (0.001)
<i>F</i> (1 - Λ)			* 1.19 (0.097)	*** 10.40 (0.000)
GDPPC	** - 0.34 (0.047)	*** - 2.26 (0.004)	* - 0.36 (0.080)	*** - 3.02 (0.001)
POP	*** 0.24 (0.000)	*** 1.14 (0.000)	*** 0.21 (0.001)	*** 1.30 (0.000)
CONST	-	0.90 (0.915)	-	9.19 (0.398)
Controls	yes	yes	yes	yes
(Pseudo)- R^2	0.35	0.43	0.36	0.44
Observations	1125	1111	1104	1090
Countries	138	138	138	138

Table 26.4. Ethnicity and Conflict. *Notes.* All specifications employ region and time dummies, not shown explicitly. *p*-values are reported in brackets. Robust standard errors adjusted for clustering have been employed to compute *z*-statistics. Source: Esteban, Mayoral and Ray (2012b).

consequently a lower valuation of the public payoff to conflict. The latter indicator is multiplied by per-capita GDP to convert the “poor governance” variables into monetary equivalents. (The results are robust to the precise choice of this conversion factor; see EMR.) To obtain *relative publicness*, the two indices are converted into a single ratio.

Columns 1 and 2 in Table 26.4 record the results for each specification of the conflict intensity variable — the death-based outcome PRIO-C and the aggregated indicator of several conflict dimensions ISC. Ethnicity turns out to be a significant correlate of conflict, in sharp contrast to the findings of the previous studies mentioned above. Throughout, *P* is highly significant and positively related to conflict. *F* also has a positive and significant coefficient.

Quite apart from statistical significance, the effect of these variables is quantitatively important. Taking Column 1 as reference, if we move from the median polarized country (Germany) to the country in the 90th percentile of polarization (Niger), while changing no other institutional or economic variable in the process and evaluating those variables at their means, the predicted probability of experiencing conflict (i.e., the probability of observing strictly positive values of PRIO-C) rises from approximately 16% to 27%, which implies an increase of 69%. Performing the same exercise for *F* (countries at the median and at the 90th percentile of *F* are Morocco and Cameroon, respectively) takes us from 0.19% to 0.25% (an increase of 31%).

In Columns 3 and 4 in Table 26.4, the main independent variables are $P * \Lambda$ and $F * (1 - \Lambda)$, just as specified by the theory; where Λ is our estimated degree of relative publicness. Polarization interacted with Λ is positive and highly significant, and the same is true of fractionalization interacted with $1 - \Lambda$. These results confirm the

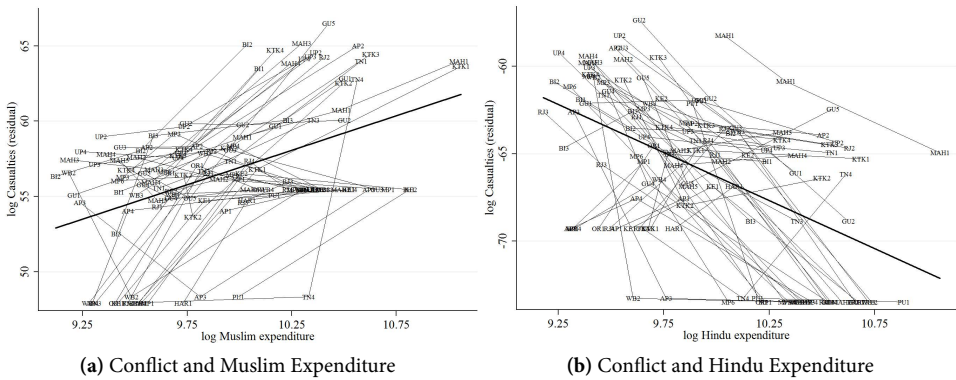


Figure 26.2. CONFLICT AND PER-CAPITA EXPENDITURE. Each panel plots the residual of casualties after region and time effects have been removed, in the 5-year period following expenditures. Each line segment connects three data points for a region. Source: Mitra and Ray (2014, Figure 4).

relevance of both polarization and fractionalization in predicting conflict once the variables are interacted with relative publicness in the way suggested by the theory.

Indeed, the level terms P and F are no longer significant on their own, *once* entered in interacted form with Λ . EMR (2012a,b) present a large number of variations on these regressions. Check out these papers for more detail.

26.4. The Economics of Ethnic Violence

Mitra and Ray (2014) study the determinants of the different waves of Hindu-Muslim violence. Accordingly with their work a clear pattern emerges: conflict appears to react significantly and positively to an increase in Muslim per-capita income, while the opposite reaction occurs to an increase in Hindu per-capita income: conflict declines. The very fact of a connection between changes in group relative incomes and subsequent conflict is of interest, as it suggests a clear instrumental basis for conflict.

Figure 26.2 summarizes the findings by Mitra and Ray. Each panel contains lines that connect a particular region of India over three rounds of the National Sample Survey, ordered by the (the logarithm of) Hindu and Muslim per-capita expenditure in those rounds. (The Survey uses expenditure as a proxy for income.) The vertical axis records the logarithm of total “casualties” — killed plus injured — in the five-year period starting immediately after the rounds. Region-specific and time-specific effects on conflict have been eliminated from the latter number: only the residuals are plotted. The line segments are generally upward-sloping in the first panel of the figure, and downward-sloping in the second showing that indeed conflict follows an increase in Muslim per-capita income, while a decline occurs after an increase in Hindu per-capita income. Mitra and Ray argue that the rise in Hindu income represents an opportunity cost effect, much like the change in coffee prices in Colombia in the Dube-Vargas study. It serves to reduce Hindu-Muslim violence. The rise in Muslim incomes, on the other hand, is analogous to the change in oil revenues in the Dube-Vargas setting: it aggravates the desire to loot, or seek to retribution against an upstart community.

The work of Mitra and Ray illustrates the story of ethnic conflict that we have in mind. It is an instrumentalist view, and quite opposed in spirit to the notion espoused by Samuel Huntington (1996); that such violence is a “clash of civilizations.” (The instrumentalist view, incidentally, is far from being our creation; see, e.g., Brubaker and Laitin 1994.) The argument runs in two steps. First, economic *similarity*, not difference, can breed tensions — indeed, such tensions, involving as they do the direct contestation of resources, can be extremely acute. Second, the resolution of such tensions involves the use of existing ethnic divisions or categories to create a sense of Us and Them, thereby accentuating the salience in those divisions. We recognize that such an instrumentalist view cannot survive entirely on its own: there must be some exploitable historical animosity embedded in those ethnic divisions. Nevertheless, on the surface, a conflict across economically similar groups that differ in caste, ethnicity or geography can be a profoundly economic conflict!

It is entirely reasonable that with uneven growth or globalization, some social or economic groups will benefit more than others, possibly on account of their fortuitous positioning.⁴³² This is certainly true of income groups, because higher incomes or wealths may permit individuals to incur the threshold costs that are needed for training and entry into a new occupation, or to incur the setup costs for entering a new business. But it is also true of ethnic groups whenever such groups exhibit some degree of geographical or sectoral specificity. Returning to the Hindu-Muslim example: it is certainly the case that the Gulf boom led to differential Hindu-Muslim gains. Rising oil prices resulted in a sizable increase in the demand for labor in the Gulf countries. Indian Muslims were more likely to emigrate there than Indian Hindus. In turn, this flow resulted in remittances back to India from the Gulf, affecting Muslim incomes and expenditures in India, often generating highly visible real estate improvements, and presumably improving the ability to enter new business sectors.

These changes in group-specific relative incomes can have deep effects on individual aspirations, and possibly on resulting frustrations; see Appadurai (2004), Ray (1998, 2006), and Genicot and Ray (2014). Albert Hirschman’s parable (see Hirschman and Rothschild, 1973, and also Gurr 1968) of a multi-lane traffic jam comes to mind: you’re in one of the lanes, stationary like all the cars around you. Now the cars in the other lane begin to move. Do you feel better or worse? Presumably, that depends on how long the other lane has been moving. Unevenness can be tolerated or even welcomed as it raises aspirations across the board, but it will be tolerated for only so long. In the flip side of this parable, uneven growth is frustrating rather than inspiring, and economic development may be threatened by violent means.

The Tunnel Effect

Remove?

You are driving through a two-lane tunnel, where both lanes are in the same direction and, guess what, you get caught in a serious traffic jam. No car is moving in either lane as far as you can see. You are in the left lane and your spirits are not exactly high. After a while, however, the cars in the right lane begin to move. Do you feel better or worse? It

⁴³²This is in line with the argument of Robert Bates (1983), who emphasizes the impact of uneven growth facilitating the emergence of an economic and cultural elite. They provide the leadership and the means for the escalation.

depends on how long the right lane has been moving. At first, you know that the jam has cleared further ahead and that your turn to move will come soon. Given this imminent prospect of movement, your spirits do lift considerably, even though you haven't yet moved. However, if the right lane keeps moving for long enough with no sign of things clearing up on the left lane, you soon end up frustrated and maybe just gate crash into the right lane yourself. Of course, if there are many people gate-crashing, everything will probably come to a halt anyway.

Hirschman and Rothschild [1973] used this example to discuss an apparently very different issue: the tolerance for inequality in income distribution along the path toward economic development.

It has been the experience of several developing economies that the level of inequality in the distribution of income increases over the initial phases of development. The responses to such a rise in inequality have been varied, both across economies as well as within the same economy at different points in time, and they have ranged from an enthusiastic acceptance of the growth process that accompanied the rise in inequality to violent protests against it in the form of social and political upheaval. Such differences in the tolerance for inequality may be explained with the help of the tunnel analogy.

Suppose that an individual's welfare at any point of time depends on both his present as well as expected future level of contentment (or, as a proxy, income). Although the individual generally has good information about present income, his information about future income may be far more limited.

Now consider an improvement in the economic or social position of some others around him. The individual's response to such an improvement will depend on his beliefs as to what it implies for his own prospects. If he believes such a rise in others' fortunes is indicative of brighter prospects for himself in the foreseeable future, then the improvement in their relative incomes would not make him worse off; in fact, he may be better off despite this decline in his relative income, given higher expectations about his future income. Hirschman and Rothschild described such an increase in an individual's utility (and hence a tolerance of greater inequality) resulting from an improvement in others' economic status as the *tunnel effect*.

Of course, if such an improvement in the welfare of others were to persist for a sustained period of time, without any improvement in one's own welfare, initial acceptance of the improved condition of others would soon give way to anger and frustration, as in the tunnel example. Moreover, increased inequality may not be tolerated at all if the perceived link between the growing fortunes of others and the individual's own welfare is weak or nonexistent. The greater the extent of segregation in society to begin with, the higher the possibility of this outcome. Thus sharp existing differences along racial, cultural, social, and economic lines might cause an individual to view his circumstances as fundamentally different from those of others who have attained success.

Such variations in the responses of individuals to a rise in the fortunes of others explain the differences in the tolerance of inequality, both across societies and over time. In societies with greater heterogeneity, groups of people may perceive their fortunes as being delinked, or worse, negatively correlated with those of other groups. For instance, countries such as India or Pakistan might tend to have a much lower tolerance level for inequality compared to (relatively) more homogeneous societies such as Mexico. However, even within Mexico itself, the tolerance level for inequality was much higher in the initial phases of the development process. Sustained improvement in the lives of a few at the cost of the masses led to a weakening of the tunnel effect, resulting in outbursts such as the Tlatelolco massacre in 1968, which vented the frustration of those in the "left lane."

Hirschman's tunnel effect hypothesis conveys an important lesson. If growth and equity in income distribution are considered to be the two principal objectives of the process of economic development, the development strategy has to be devised by keeping in mind the social and political context. If, given the social structure, the tunnel effect is weak (i.e., tolerance for inequality is low), a strategy of "grow first, distribute later" is unlikely to meet with success. Even with strong initial tunnel effects, the development process may be thwarted if ruling groups and policy makers are insensitive to the erosion of these effects over time.

Notice that such frustration may not necessarily be tied to inter-group *inequality*. The improvement in the economic fortunes of a rival group may be viewed as a threat (or a source of frustration) even when that rival group is poorer than your group. In the latter case, an increase in cross-group *equality* can be conflictual. The key word is *unevenness*, not inequality.⁴³³ If two groups have disparate incomes, as in a caste-based or feudal society, cross-group interaction may be limited and pose little threat. But as the fortunes of the deprived group improve, the previously advantaged groups may feel threatened and react with violence (see, e.g., Olzak and Shanahan 1856). This argument echoes Tocqueville's study of the French Revolution, in which he repeatedly stressed the apparent paradox that the Revolution was the outcome of improvement, not impoverishment. It was precisely because the middle classes were becoming richer that they were more conscious of where they felt they *should* stand. In that new light, the privileges of aristocracy were unacceptable. And so it was that "[t]he French found their position insupportable, just where it had become better ..." In summary, "[i]t is not always that from going from bad to worse that a society falls into revolution" (Tocqueville, 1856).

Observe that in the Olzak-Shanahan argument, it is the advantaged groups that have the upper hand in igniting a conflict — perhaps the disadvantaged groups are too poor or in a numerical minority. In the Tocqueville argument, it is the rising frustration of the relatively disadvantaged groups that leads to the proverbial storming of the Bastille (though not proverbially in his case). Just *which* group has this power to ignite a conflict may be deeply rooted in the history of the society.

26.4.1. Difference and Similarity: A Summing Up. The traditional economic view of conflict is that it is driven by large inequalities in income and wealth. Oddly enough, the empirical support for this assertion is mixed. We've discussed why this might be so. We need good theory to precipitate the form of the relationship, followed by empirical research that takes serious advantage of the theory. While there is little doubt — simply by looking at the world around us — that large inequalities create social tension and unrest, it is entirely unclear what the specific structure of that relationship should be; for instance, whether a measure of inequality or polarization should be used as an explanatory variable. The technology of conflict, such as the synergistic use of labor and financing, also requires careful study. It is only with such building blocks in place that we can begin to conjecture the particular relationship to be examined. We believe that this is a significant open area for research.

⁴³³There is little evidence for the argument that the relative deprivation of a group, or indeed, overall economic inequality, is conflictual; see, for instance, Lichbach (1989) for cross-country studies, and Spilerman (1970, 1971, 1976), Wilson (1978), and Olzak and Shanahan (1996) on race riots in the urban United States.

Our second point is that the possibility of class-driven conflict does not preclude the existence of other sources of social discontent. In the next section we shall examine the case of ethnic conflict. But the more basic observation is that similarity can be directly conflictual when resources are limited and economic change is unevenly distributed. This is possibly relevant even for developed countries, but it is a first-order consideration in developing countries. Non-class conflict is the outcome, and ethnicity is a convenient marker to categorize individuals on either side of some quasi-artificial divide. It isn't that the marker isn't real: it is certainly as real or more than the dividing line between, say, the viciously competitive supporters of rival soccer teams. It doesn't take much for people to fight. But additionally, more than a soccer match is at stake: it is the division of economic gains. From this point of view, conflict is more about the *change* in the relative income status of two similar groups rather than the overall level of inequality, a consideration that also appears in Stewart (2002). How group-based aspirations are formed, and how certain groups might react to frustrated aspirations remains an important and open research direction.

26.4.2. Ethnic Salience: A Summary and Research Directions. A society has several potential cleavages, most of which lie dormant at any one point of time. After all, the term "ethnicity" covers a variety of traits that could have been invoked to substantiate a division: religion, language, regional identity, gender, and so forth. And overlying all these, though sometimes obscured, is the deep difference that comes from economic inequality. Just how these various factors interact, and exactly which cleavage is ignited in any given situation, are research topics of first-order importance. In particular, we need to understand why an ethnic division often acquires salience over an economic division.

From this perspective, the results on ethnic divisions and violence that we've just summarized really represent the tip of the iceberg. For instance, the fact that an ethnic division exists is not enough reason for it to be invoked. We also need to study the economic characteristics of each ethnic group, along with their demographics. The theoretical framework has to be enriched to allow for a far more nuanced interaction of economics and ethnicity. It is only such a framework that can suggest the right specification to take to the data. Such a research project seems indispensable if we are to truly understand the fundamental connections between inequality, ethnicity, development and conflict.

Here are some specific arguments that bear on the salience of non-class markers in conflict, as well as the interaction between economic and ethnic characteristics. We have already touched briefly on some of these issues in Sections ?? and 26.2.3, but they are worth additional elucidation in the specific context of ethnic conflict.

In the first place, economic demarcation across classes is a two-edged sword: while it breeds resentment, the very poverty of the have-nots separates them from the means for a successful insurrection. Conflict isn't always an outpouring of individuals onto the streets, though in times of extreme stress it may well be. Yet even such movements that are explicitly based on class — *Occupy* being a recent and visible example — require sustained organization and financing so as not to die out. That requires, in turn, a commitment to class struggle by some socially aware sub-segment of the wealthy, so that a large rebellion by the proletariat or the peasantry can be sustained in a viable

way. This is rare, and in developing countries, where the problem of poverty are so endemic, it is rarer still.

Secondly, in conflicts across groups that are not demarcated by pure economic considerations, each group will have both poor and rich members, with the former supplying conflict labor and the latter supplying conflict finances. Esteban and Ray (2008) use this line of reasoning to argue for the salience of ethnic conflict. As an example, suppose that individuals can be rich or poor and of either of two ethnic identities. The issue is then whether individuals will prefer to form alliances using class or ethnicity. When effective activism requires both labor and finance, this will happen more easily with ethnic alliances. Therefore, controlling for the size of the prize, the poor of the majoritarian ethnic group will prefer an ethnic to a class alliance.

This argument suggests an interesting interaction between inequality and ethnicity, in which ethnic groups with a higher degree of within-group inequality will be more effective in conflict (Esteban and Ray, 2011b). Such a hypothesis is entirely distinct from — though complementary with — the notion of “horizontal inequality” across ethnic groups, in which economic differentials *across* ethnic groups is an important correlate of conflict (Sambanis, 2005, Stewart, 2002, Cederman, Weidmann and Gleditsch, 2011, Østby, 2008). Both hypotheses are worth testing. As an example, Huber and Mayoral (2014) compute the Gini index of the income distribution within ethnic groups as well as across groups for a number of countries. In their study, within-group inequality is highly significant in explaining violent conflict. Between-group horizontal inequality is not. Here again is an echo of the similarity-differences theme discussed earlier. More research on this theme is surely needed.

Third, the possibility of conflict across ethnic lines — while conceivably economic — *presumes* that there is some reason for there to be conflict across groups to begin with. There are two broad views on the ethnicity-conflict nexus; see, e.g., Brubaker and Laitin (1998), and Fearon (2006). The “primordialist” view, e.g. Huntington (1996) and Ignatieff (1993), takes the position that ethnic differences are ancestral, deep, and irreconcilable, and for these reasons invariably salient. In contrast, the “instrumental” approach pioneered by Bates (1983) and discussed in Brubaker and Laitin (1998) sees ethnicity as a strategic basis for coalitions that seek a larger share of economic or political power. Under this view, ethnicity is a device for restricting the spoils to a smaller set of individuals. Certainly, the two views interact. Strategic ethnic conflict could be exacerbated by hatreds and resentments — perhaps ancestral, perhaps owing to a recent clash of interests — that are attached to the markers themselves. And there could be factors at play other than economic considerations or hatreds: for instance, exclusion might be easier if ethnic groups are geographically concentrated (see, e.g., Matuszeski and Schneider (2006) and Weidmann, Rød, and Cederman (2010)).

Fourth, it is worth taking note of the possible inadequacy of political institutions to solve the competing claims of the main social groups in developing countries. Developing countries were born from a process of decolonization — often a sudden and hasty decolonization — that left newborn governments especially vulnerable to a host of competing claims. As Mayoral and Ray (2015) have argued, post-colonial societies inherited certain institutions — progressive taxation, land reform, public provision of education or health care — that were designed to temper class conflict. That focus finds its echo even in scholarship. Noteworthy contributions such as Acemoglu,

Johnson and Robinson (2001) or Glaeser (2002)) often invoke the implicit viewpoint of class to evaluate institutions. For instance, the differential effect of civil and common law is often viewed through the different treatment of private ownership. Our concern is different: ethnically divided countries (which are correlated with poorer countries) may be less equipped to make transfers across ethnic groups than across income classes. Such class-sensitive arrangements are no coincidence, as the colonizing countries from which these newcomers separated have had centuries of experience in developing those very institutions. But the divisions in the newly born countries are often *ethnic*, and there are few analogous institutions for the differing fiscal treatment of ethnic groups. Such countries are therefore more prone to conflictual challenges on ethnic fronts.

Thus, economic policy in developing countries must often adapt to the realities of ethnicity, religion or caste. After all, ethnic differences are often a (noisy) proxy for economic differences. The reason developing countries hone in on those ethnic differences — rather than focus on class *per se* — is that individual income is far harder to observe, and can be an inadequate basis for policy.⁴³⁴ Ethnicity, while imperfect, is observable and is frequently used as a second-best solution.

Particularly in sub-Saharan Africa, but also in many other developing countries, income inequality is closely attached to ethnic identity. As an illustration, the Gini index of incomes can be decomposed into the inequality between ethnic groups (BGI), the inequality within groups (WGI), and a residual overlap term. In sub-Saharan Africa, the between-group term accounts for a large part of recorded inequality: it is more than 3 times as large as in the OECD countries and 50% larger than in other developing countries.⁴³⁵ In addition, BGI is the component of the Gini decomposition that co-moves most with the Gini, with a correlation of almost 0.7. Hence, explaining income inequality in sub-Saharan Africa often goes hand in hand with explaining between group inequality.⁴³⁶

Given these correlations with economics, and given the general difficulty of observing individual incomes, it is hardly any surprise that public discourse often focuses on ethnicity. But it isn't just discourse, it is also public action. For instance, government expenditures are often biased towards group-specific investments or transfers, rather than universal public investment. This bias is specially remarkable in SSA countries where ethnic divisions are deeper. Public investments often have a strong ethnic undertone; see, e.g., the study of road-building in Kenya by Burgess et al (2015). Even explicit and formal policies have been formulated on the basis of non-economic markers. India has possibly the largest affirmative action program in the world; it is all based on a massive reservation of job, college admissions, and political positions *by caste*. While that reservation has been historically justified on the basis of past inequities perpetuated on the so-called Scheduled Castes, there is little doubt that it has served as a proxy for *economic* redistribution. Such policies, even

⁴³⁴That isn't to say that discourse in developed countries is immune to playing the ethnic card. Perhaps the most visible recent example is Ta-Nehisi Coates' (2016) call for direct transfers ("reparations") to African-Americans.

⁴³⁵Data on ethnic inequality comes from Huber and Mayoral, 2014.

⁴³⁶Alesina et al. (2013) show that what mostly matters for development are economic differences between ethnic groups coexisting in the same country, rather than ethnic diversity *per se* or income inequality conventionally measured (i.e., independent of ethnicity). Easterly and Levine (1997) were the first to stress the key role of ethnic identity. See also Stewart (2002) and more recently Cederman et al (2011).

when well-intentioned, create an enormous salience for claims that are ethnic-based, and generate ethnic violence when those claims are not acceded to. A particularly recent example comes from Gujarat, where the influential and generally well-heeled Patel community has demanded “their share” of quotas in government jobs. In August of 2015, violence broke out in Ahmedabad, leaving several dead.

At one level such violence is reminiscent of an absurdist drama. How does an economically better-off community ask for quotas? The answer becomes clear when one recognizes that such ethnic divisions correlate with income, but do not correlate perfectly. Therefore, there are always grievances that can be justified: a rich person from a Scheduled Caste can get a government-sanctioned advantage relative to a poor Patel. And yet, ethnicity — caste, in this case — needs to be retained because it is an observable, and all too often, income is not.

26.5. Concluding Remarks

We have presented a panoramic view of the literature on social conflict and economic development organised around three widely shared views: higher standards of living reduce the probability of conflict; inequality nurtures conflict; and most conflicts in developing countries are ethnic in nature. On the way, we have also described a number of research questions still open in each of these three broad fields. To briefly conclude, we summarize these research suggestions into three major lines of potential progress in our understanding of economic development and social conflict.

The first one takes seriously into consideration that economic growth is unbalanced by nature. The uneven impact of sector- or group-specific economic fortune upsets traditional social and economic rankings. We must think not just of high aspirations that serve to inspire, but high aspirations that can serve to frustrate. These considerations seem particularly relevant when differential economic growth takes place among previously similar groups.

The second major research problem is to better explain the link between income inequality and social conflict. The one thing we know is that that connection is far from straightforward, and at many points in this text we have emphasized both this fact and the possible reasons for it. There is much to be gained from a closer marriage between theory and empirics, similar to — but going well beyond — the analysis of the determinants of ethnic conflict just summarized in the last section. The discipline imposed by theory will tell us which are the relevant independent variables, and how they interact.

The third line of research is related to the second, but goes beyond it. We have a long and distinguished tradition in theories of social conflict based on economic *distance*. But a substantial share of social conflict can be attributed to economically *similar* groups. The dividing cleavage is then non-economic (though the conflict can still be over economic resources). Typically, that cleavage manifests itself along ethnic lines. For this reason, the interaction between ethnic identity and economic characteristics, and how such interaction might result in ethnic conflict, is a research topic of the highest importance.

In short, we need to broaden our horizons beyond economics, even for conflicts that are intrinsically economic in nature. We must explore more fully the interdependence

between income distribution, ethnic identity, economic development and social conflict.