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THE POLITICAL ECONOMY OF SOCIAL VIOLENCE: THEORY AND EVIDENCE FROM A CROSS-COUNTRY STUDY

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The Political Economy of Social Violence: Theory and evidence from a cross-country study

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Abstract: *Why are some countries more prone to social violence than others? Drawing on theoretical and empirical insights from the fields of political economy, sociology and criminology we develop and empirically test a holistic theory of social violence that accounts for political-institutional, socio-economic and socio-demographic factors. We find that hybrid political regimes, political-institutional volatility, poverty, inequality and ethnic diversity are associated with higher rates of social violence. Unexpectedly, higher rates of economic growth are also found to be robustly correlated with higher rates of social violence.*

Key words: *Social violence, political institutions, poverty, inequality, economic development.*

Introduction

In recent years development scholars have devoted substantial attention to understanding the causes and consequences of state failure. Most cross-country empirical studies in this genre seek to explain the determinants of political violence, such as civil wars and coup d'états. By contrast, there are comparatively few studies that address the causes and consequences of social violence—i.e. acts of violence between individuals or small groups of individuals that do not have an explicitly political motivation. Yet social violence represents a far greater risk to human security worldwide than political violence. According to data produced by the World Health Organization (WHO), in 2002 there were approximately 170,000 war-related deaths and over 500,000 deaths due to interpersonal violence worldwide. In 2004 the counts were 182,000 and 598,000 respectively. Moreover, in recent years several authors have noted an apparent global decline in armed political conflict since a peak in the early 1990s and a concomitant rise in social violence (Fajnzylber et al. 2000; Moser and McIlwaine 2006; Rodgers 2009; Harbom and Wallensteen 2009).³

Social violence is not only a direct threat to human security, but also to socio-economic development. Acute insecurity has been linked to elevated levels of expenditure on medical

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3 It should be noted that Moser and McIlwaine (2006) provide a much more nuanced typology of violence and Rodgers (2009) argues that the apparent shift in the nature of violence is merely a change in the manifestation of political struggle, and hence the dichotomous categorization used here is false. A more precise definition of social violence is provided in the following section, and we return to the question of the line between political and social violence in the conclusion.

services and law enforcement activities, lost productivity due to injury or premature death, reductions in the hours employees are willing to work (e.g. shift work that requires individuals to travel at night), higher insurance premiums for firms, and the diversion of resources that could be used for investment towards private security provision (Freire and Polèse 2003; Soares 2006; WHO 2002). In countries with high rates of social violence these direct and indirect costs can add up to a sizable fraction of GDP (ibid).

In this paper we seek to explain why some countries are more prone to social violence than others. Drawing together theoretical perspectives and empirical evidence from studies produced in the political economy, sociology and criminology traditions, we develop and empirically test a holistic model of social violence that accounts for the role of political institutions, socio-economic conditions and socio-demographic factors. Our sample of 134 countries over two years (i.e. 268 observations) has much broader country coverage than previous studies, including many more low-income countries.

Our results indicate a strong correlation between ‘hybrid’ and unstable political institutions at the national level and high rates of social violence. We also find that a significant amount of variation in rates of social violence across countries can be explained by socio-economic and socio-demographic factors such as levels of poverty, inequality and ethnic diversity—findings which are consistent with previous studies. While the links between poverty, inequality, ethnic diversity and social violence are fairly well theorised, the mechanisms linking national-level political institutions to social violence are less-well understood.

The following section outlines our theory of social violence, summarises the theoretical and empirical literature that has sought to identify the determinants of political and criminal violence and advances our basic hypotheses. Section 3 outlines the data and the OLS specifications that we employ to test these hypotheses. Section 4 summarises our empirical results. Section 5 concludes with a discussion of the theoretical and empirical challenges of advancing our understanding of the determinants of social violence.

Towards a Theory of Social Violence

We define social violence as acts of violence committed by individuals or groups that do not reflect an attempt to contest government authority. Examples include individual assaults, homicides, gang violence and communal violence. This definition contrasts with that of political violence, which we understand to be perpetrated by organised groups of armed individuals with the explicit aim of challenging (and, if successful, appropriating) the authority of the state to monopolise the legitimate use of violence within its borders. Although social violence defined in this way has not been the explicit focus of quantitative empirical studies in the past, the works political economists, sociologists and criminologists taken together provide fertile ground for developing a theory of social violence and testable hypotheses concerning the origins of variation in social violence across countries.

Our general theory consists of three parts. The first part seeks to explain why people *don't* behave violently. We assume (pessimistically) that a Hobbesian equilibrium naturally prevails and that the absence of violent behaviour in a society therefore requires explanation. We propose that the presence of impersonal political-institutional regimes that allocate executive

authority in a consistent and predictable manner stimulates the adoption of ‘self-control’ as a social norm, reducing overall levels of violence in a society. The second part of our model addresses the opposite question: why *do* people choose to behave violently? As we will see, even in contexts where political order is well-established, rates of social violence vary significantly over time, and across countries with similar political-institutional characteristics. So the first component of the theory is a partial explanation, at best. To answer this second question, we focus on socio-economic deprivations and opportunities as motives for individuals to violate social norms of self-control. Finally, we consider contextual factors related to the socio-demographic characteristics of a population that may have ‘conditioning’ effects that interact with the political-institutional and socio-economic factors that influence rates of social violence.

Political-institutional configurations and social violence

One of the key findings of recent research on state failure and civil war is a strong link between national level political-institutional configurations (or ‘regime types’) and the likelihood of political instability and conflict (Gates et al. 2006; Goldstone et al. 2010; Hegre et al. 2001; Hegre and Sambanis 2006). In particular, these studies find that strong democratic and strong autocratic regimes are less prone to political instability and violence than weak democracies and weak autocracies where institutions governing executive recruitment, constraints on the executive and political competition align in ‘inconsistent’ ways (Gates et al. 2006). In this paper we refer to these intermediate configurations as ‘hybrid’ political institutions.

There is an interesting parallel between this finding and those of sociologists and historical criminologists seeking to explain variations in homicide rates across countries and over time. La Free and Tseloni (2006) find a strong correlation between hybrid political institutions and higher homicide rates in a cross-country study employing a sample of 44 countries. And Eisner (2001) provides empirical evidence of a secular decline in homicide rates in Western European countries over the last several centuries, arguing that the underlying cause of this phenomenon relates to the political consolidation of nation states over the same period.

Goldstone et al. (2010) suggest that the link between hybrid political institutions and the probability of civil war relates to the ability of states to effectively suppress organised armed resistance. They argue that every country contains groups with grievances that may inspire rebellion, but that ‘it is where regimes are paralysed or undermined by elite divisions and state-elite conflicts that revolutionary wars can be sustained and states lose out to insurgencies’ (191). If this logic is extended to more mundane forms of everyday violence, it can be argued that hybrid political institutions impede the ability of states to enforce the rule of law, hence reducing the credibility of the threat of third-party enforcement for deviance that generally encourages individuals (and groups) to internalise the costs of enforcing laws by exercising self-control.

An alternative mechanism linking political institutions to social violence was proposed by sociologist Norbert Elias (1978) in relation to declining homicide rates in Europe. In brief, Elias proposed that the consolidation of nation states was associated with increasing social and economic interdependence among ruling elites, the concomitant development of norms of self-control in the upper tiers of society, and the subsequent internalisation of these norms

among the popular classes. In articulating this causal chain between political order and social violence, Elias emphasised the primacy of the process of state formation as the underlying cause of the social-psychological changes that ultimately led to lower levels of criminal violence (Eisner 2001).

Whether one adopts a political economy perspective stressing the opportunity costs of engaging in violent behaviour or a historical-sociological one that emphasises the evolution and dissemination of social norms of self-control, the nature of political institutions emerges from the literature as a possible determinant of variation in rates of social violence across countries. We therefore hypothesise that political-institutional configurations that clearly define the terms of executive authority and political competition will be correlated with lower levels of social violence across countries.

Socioeconomic conditions and social violence

However, there is empirical evidence that countries with similar political-institutional regimes experience different rates of violence, and that individual countries experience fluctuations in rates of violence over time despite stable political-institutional regimes (LaFree and Drass 2002). This suggests that the political-institutional hypothesis is incomplete. In order to account for this variation we turn to theoretical propositions and empirical evidence linking socioeconomic conditions to violence. In particular, we focus on the possible effects of absolute deprivation (i.e. poverty), relative deprivation (i.e. inequality) and economic opportunity.

Empirical studies of the determinants of political violence generally find a positive association between poverty and the probability of conflict (Collier and Hoeffler 2004; Fearon and Laitin 2003; Hegre and Sambanis 2006; Goldstone et al. 2000). By contrast, the widely-hypothesised link between inequality and political conflict has not been robustly established in empirical studies. While some authors find inequality is associated with certain conditions such as low-level conflict (Alesina and Perotti 1996; Muller and Seligson 1987) or humanitarian emergencies (Nafziger and Auvinen 2002), most notable studies find no relationship between inequality and civil violence (Collier and Hoeffler 2004; Fearon and Laitin 2003). However, several authors have noted that different kinds of inequality exist and may have differential impacts. In particular, it has been argued that *horizontal* inequalities (i.e. inequality between groups) can lead to the politicisation of group identities and stimulate inter-group (as opposed to inter-class) violence (Stewart 2001; Østby 2008).

In the case of criminal violence, the theoretical and empirical links between poverty, inequality economic opportunity and violence are more consistent. In a meta-analysis of 214 quantitative criminological studies, Pratt and Cullen (2005) find strong support for hypothesised associations between poverty, inequality and criminality across a variety of geographic units (e.g. neighbourhoods, cities, US states). However, there is general recognition that poverty and inequality have differential effects. Generally speaking, poverty is associated with higher levels of less violent crimes (such as property crimes) while inequality is more strongly associated with violent crimes, such as assault and homicide (Thorbecke and Charumilind 2002). Several cross-country studies confirm the inequality-violent crime link (Cole and Gramajo 2009; Fajnzylber et al. 2002b, 2002a), but the poverty-violent crime link has largely been ignored in the cross-country literature (Pridemore 2008).

Fajnzylber, Lederman and Loayza (2000; 2002b, 2002a) found that crime rates tend to be countercyclical, suggesting that the growth of licit economic opportunities provided by an expanding economy reduces the risk of criminal violence.⁴ Yet La Free and Drass (2002) provide indirect evidence that rapid economic growth and high rates of violence go together. In sum, there is strong evidence of a link between inequality and criminal violence, strong intra-country evidence of a link between poverty and criminal violence, and inconsistent evidence of a link between economic growth and criminal violence.

Theoretically, the relationships between poverty, inequality and economic opportunity (on the one hand) and the propensity of individuals or groups to behave violently (on the other) are intuitive. Poverty (i.e. absolute deprivation) creates positive incentives for individuals to use any means necessary to acquire needed resources and reduces the opportunity cost of using risky strategies (such as violence) to do so. Similarly, inequality (i.e. relative deprivation) and perceived injustice may inspire individuals or groups to turn on their leaders or each other, even if the opportunity costs of doing so are high. And economic opportunity, which offers an alternative avenue to a better future and increases the opportunity costs of using violence as a means of advancing individual or collective well-being, could be expected to reduce the probability of reliance on violent strategies.

Based on these theoretical positions and existing empirical evidence we hypothesise that higher levels of poverty and inequality will be associated with higher levels of social violence, and that greater economic opportunity will be associated with lower levels of social violence.

Socio-demographic factors and social violence

While political-institutional and socio-economic factors constitute the core of our model, theory and evidence suggest that certain socio-demographic factors may exacerbate the risks of both political and social violence. Three factors stand out in particular: ethnic diversity, population age structure and urbanisation.

Scores of studies in the both the civil war and criminology literatures have investigated a hypothesised association between ethnic diversity and violence. In the civil war literature, a correlation has been established, but not consistently (Hegre and Sambanis 2006; Laitin 2007). This may, however, reflect measurement issues given the ‘robust negative relationship between social divisions and economic performance’ (Blattman and Miguel 2010 (forthcoming)) and the theoretical linkages between conflict, ethnicity and inequality (Easterly and Levine 1997; Alesina and La Ferrara 2005; Alesina and Perotti 1996). Interestingly, ethnic dominance has been shown to increase the risk of wider civil conflict (Collier and Hoeffler 2004), whereas ethnic fractionalisation increases the risk only for low-level violence (Hegre and Sambanis 2006). This suggests a possible interaction effect between inequality and ethnic diversity that hasn’t been explored in the criminology literature despite a well-established finding that racial and ethnic diversity increases the probability of criminal violence across countries and across geographic units within individual countries (Cole and Gramajo 2009; Fajnzylber et al. 2000; Pratt and Cullen 2005).

⁴ Similarly, civil war studies find that economic growth reduces the probability of conflict (e.g. Collier and Hoeffler 2004). Theoretically, it is assumed that legitimate economic opportunity raises the opportunity costs of engaging in violence.

Large youth cohorts may increase the risk of violence. Goldstone (2002) notes that historical episodes of political instability and violence have often been associated with the demographic phenomenon of ‘youth bulges’—i.e. a period during which there is an unusually high proportion of 15-24 year olds relative to adults in a population. Young males in particular are the main protagonists in political and criminal violence (Elbadawi and Sambanis 2000; Mesquida and Wiener 1996; Neapolitan 1997; Neumayer 2003). Theoretically, both opportunity and motive perspectives suggest youth bulges may increase risks of violence. Large youth cohorts may reduce the opportunity costs of engaging in violence by making rebel or gang recruitment easier or more attractive as a livelihood strategy (Collier and Hoeffler 2004). Sizable youth cohorts may also engender frustration or aggression where access to education and job opportunities are scarce (Cincotta et al. 2003; Goldstone 1991).

The youth bulge theory has found some empirical support in longitudinal cross-country studies of political violence (Urdal 2006), but has not been firmly established. Among criminologists it is a widely recognised fact that the overwhelming majority of acts of violent crime are committed by young men (Neapolitan 1997). Yet there is inconsistent empirical evidence of a link between youth bulges and criminal violence in the cross-country literature, with some studies finding no effect (Cole and Gramajo 2009; Fajnzylber et al. 2002a) and others finding a positive and statistically significant one (Krahn et al. 1986; LaFree and Tseloni 2006; Conklin and Simpson 1985).

Finally, there is a long-hypothesised link between urbanisation and violence. Early sociologists such as Weber and Durkheim argued that the social dislocations associated with ‘modernisation’—i.e. urbanisation and industrialisation—create conditions ripe for social violence as traditional social institutions break down and are gradually replaced by ‘modern’ (i.e. formal-legal) ones. More recently, scholars have suggested that rapid urban growth may create a volatile socio-political atmosphere conducive to violent confrontations between individuals and groups as they compete for scarce resources and confront the social strains associated with the integration of rural migrants into city life (Cole and Gramajo 2009; Goldstone 2002). From a criminological perspective, the generalised anonymity of city living is assumed to reduce the probability that a criminal act will result in punishment, and there is some evidence from research in the US that larger cities experience higher homicide rates than smaller ones or rural areas (Glaeser and Sacerdote 1999). However, the authors of this study conclude that the underlying cause is not city size *per se* but rather that larger cities have higher proportions of single-parent households, a finding consistent with the strong evidence that ‘family disruption’ is a robust predictor of criminal violence across geographic units (Pratt and Cullen 2005). Overall, higher *levels* of urbanisation have not been robustly linked to higher levels of violence, but the relationship between rates of urban growth and violence has not been adequately explored in cross-country studies.

Other factors

There are a handful of other factors that have been shown to be correlated with conflict and which we include as controls in our model. Whether or not a country is a significant producer of illegal drugs has been found to be correlated with homicide rates (Fajnzylber et al. 2000; Fajnzylber et al. 2002a). There is also evidence that countries at war experience higher rates of social violence, and that this effect is correlated with the number of battle deaths (Archer

and Gartner 1984). Finally, there is a very persistent finding in the criminology literature that Latin America and the Caribbean is the most violent region in the world, even when all other hypothesised determinants of (criminal) violence are taken into account. However, according to our data Sub-Saharan Africa is in fact the most violent region in the world. As both regions have substantially higher mean rates of social violence than other major world regions, we control for possible regionally-specific effects in each case.

Data and Method

We test the various components of our model individually and then together using OLS regression analysis. Our measure of social violence is the number of deaths due to intentional injury per 100,000 population as estimated by the WHO's Global Burden of Disease Project (WHO 2004, 2008; Mathers et al. 2003). The WHO distinguishes between deaths that are due to self-inflicted injury, violence and war. We use the estimates of deaths due to violence. This indicator has been employed in several previous studies as a proxy for national homicide rates and is generally considered to be more robust than the widely used homicide statistics produced by the United Nations Office on Drugs and Crime (UNODC). The UNODC data is based on victimisation surveys which differ widely in their collection methodologies, definitions of homicide and reliability.⁵ By contrast, the WHO data is generated using a standardised collection methodology and is based on the reports of medical professionals rather than police authorities. It should also be noted that the WHO data is more accurately interpreted as an indicator of overall levels of violence in a society than as an indicator of homicide rates *per se*. Deaths due to intentional injury may include everything from a lethal bar fight (i.e. manslaughter) to gang violence to premeditated murder.

To date, the WHO has produced estimates on violence-related deaths covering 191 countries for the years 2002 and 2004. From this we create a pooled sample excluding countries with populations of less than one million for which data for our independent variables was available. The resultant sample consists of 134 countries and 268 observations. The countries in our sample account for over 95% of the total world population and 97% of total world GDP. This represents a significant step forward in terms of country coverage vis-à-vis previous empirical studies of social violence. Appendix B provides a full list of the countries included in our sample. Table 1 provides descriptive statistics of social violence rates by region. It also demonstrates that the characteristics of our sample are comparable to those of the whole WHO sample. In our analysis we use the natural log of the social violence rate as the dependent variable to account for a non-normal distribution across our sample.

⁵ See UNODC (1999), overview and history sections and <http://www.unodc.org/unodc/en/data-and-analysis/United-Nations-Surveys-on-Crime-Trends-and-the-Operations-of-Criminal-Justice-Systems.html>.

Table 1: Regional profiles of deaths due to social violence per 100,000 – 2002 & 2004 (pooled)

Region	Countries	Observations	Mean	SD	Min	Max
Sub Saharan Africa	36	72	19.36	11.69	2.56	67.95
Eastern Europe & Central Asia	28	56	6.76	6.62	0.78	32.94
Latin America & Caribbean	22	44	18.32	17.78	0.48	82.63
North America & W. Europe	18	36	1.46	1.16	0.68	5.94
East Asia & the Pacific	15	30	6.83	6.47	0.54	21.10
Middle East & North Africa	10	20	3.57	3.07	0.71	11.98
South Asia	5	10	7.67	3.80	3.55	14.84
Our sample	134	268	11.14	12.34	0.48	82.63
Total WHO sample	191	382	10.02	11.43	0.21	82.63

Our linear model is structured as follows:

$$\text{Ln Social Violence} = \alpha + \beta_1 \text{Pol-Inst} \gamma + \beta_2 \text{Soc-Ec} \gamma + \beta_3 \text{Soc-Dem} \gamma + X\gamma + \epsilon$$

where β_1 represents a vector of political-institutional indices, β_2 a vector of socio-economic variables, β_3 a vector of socio-demographic factors and $X\gamma$ is our vector of controls. Our political-institutional vector includes two indicators. The first is a dummy variable that captures whether or not a country has hybrid political institutions. This is derived from Marshall and Jaggers' (2009) Polity IV database which categorises countries on a 21 point scale from fully autocratic to fully democratic regime characteristics based on the nature of institutions governing the openness of executive recruitment, competitiveness of executive recruitment, constraints on the chief executive and competitiveness of political participation. Political regimes have often been classified as autocracies, anocracies (or 'transitional') or democracies based on where they fall on this 21 point scale. Given that studies vary in what numerical values they use to delineate between polity types, and the criticisms of the arbitrary nature of coding political regime types using such methods, we employ a recent typology of political institutions following Goldstone et al (2010). Based on Polity IV ratings of executive recruitment and the competitiveness of political participation, this new typology classifies countries into five distinct political regime types: full autocracies, partial autocracies, partial democracies, partial democracies with factionalism, and full democracies. We classify countries as having hybrid political institutions if they are neither full autocracies nor full democracies.⁶ The second indicator captures the stability of a nation's political institutional regime over time. Drawing on the Polity IV data, we create an index of 'polity volatility' measured as the log of the total number of changes in a country's 21 point polity score between 1980 and 2000.⁷

6 We also include countries at war or in transition (-66, -77 and -88 on the Polity IV scale) in our hybrid dummy and refer to these regimes later in the text as 'transitional'. Vreeland (2008) has suggested that the common practice of coding states at war as transitional regimes artificially inflates the likelihood of transitional states to be empirically associated with civil war onset. We acknowledge this as a potential problem for civil war, but less of a problem for our study as our dependent variable measures social violence. We ran our models with a hybrid polity variable that both included and excluded transitional regimes with no discernable differences.

7 As we employ this new measure of political institutions, we additionally tested two other measures of political

Our socio-economic vector includes indicators of poverty, inequality and economic opportunity. Following Goldstone et al (2010) and Pridemore (2008) we use a country's infant mortality rate (UN 2008b) as a proxy for poverty and log transform values to normalise the sample distribution. We make use of the Standardized World Income Inequality Database (Solt 2009) for our estimates of inequality. SWIID GINI estimates attempt to correct for certain factors that have undermined the comparability across countries and over time of similar indices of inequality (Deininger and Squire 1996; UNU-WIDER 2008). The database provides two estimates for each country and year: an indicator of 'gross' income inequality and an indicator of 'net' income inequality. The latter indicator factors in the effects of taxation on overall income inequality. We use this indicator based on the assumption that net inequality is the more relevant issue if the perception of material inequity is the mechanism that links inequality to the probability of social violence. Finally, we use the average annual growth rate of GDP per capita in the five years prior to the measurement year for each observation as an indication of economic opportunity.

For our socio-demographic vector we include a measure of youth as a percentage of the adult population (UN, 2006) to test the hypothesis that age structure influences rates of social violence. To test the hypothesis that rapid urbanisation may lead to heightened levels of social violence we use the average annual urban growth rate for the period 2000-2005 (UN 2008c). This is in contrast to several previous studies that purport to test this hypothesis but incorrectly use *levels* of urbanisation as opposed to *rates* of urban growth (Fajnzylber et al. 2000; Fajnzylber et al. 2002a). Our measure of ethnic diversity is a composite index of ethnic and linguistic fractionalisation from Alesina et al (2003).

Our controls include a dummy variable that captures whether or not a country is a major producer of illegal drugs, following Fajnzylber, Lederman and Loayza (2000). To control for the previously observed correlation between war intensity and social violence we include the natural log of war deaths for each country and year from the WHO database. To capture possible regionally-specific effects that render Latin America and the Caribbean and Sub-Saharan Africa the most violence regions in the world by far we include regional dummy variables. Finally, we include a measure of GDP per capita as a measure of level of economic development. Full details of all variables used, time periods covered and sources are shown in Appendix A.

Results

Table 2 presents the results of OLS regressions that test each of the three dimensions of our model independently. Column 1 tests our hypothesis concerning political-institutional configurations using our measures of hybrid political institutions and 'polity volatility'. Column 2 tests our hypotheses concerning social-economic conditions, and includes the log of infant mortality rate, GINI, and five-year average rate of GDP growth per capita. We test

institutions as robustness checks. We used Goldstone et al's (2000) coding of transitional polities countries with values from 1 to 7 on the Polity2 score; and also the perceived strength of the rule of law in a country drawn from the World Bank's World Governance Indicators database (Kaufmann et al. 2009) as a perception based indicator of political institutional quality. These alternative indicators yielded essentially identical result in terms of the magnitude, sign and significance levels of the coefficients, and did not affect other independent or control variables in substantive ways.

out hypotheses concerning socio-demographic structure with measures of ethnic diversity, youth bulge and urban growth rates in column 3. Each of aspect of the model is tested with our set of controls. Apart from the unexpected positive, consistent and robust relationship between GDP growth and social violence rates, our results are largely consistent with our hypotheses.

Political-institutional factors

Column 1 confirms that countries with hybrid political institutions have higher rates of social violence than autocracies or democracies and that past political-institutional volatility is robustly correlated with a country's subsequent rate of social violence. Regarding our control variables, the natural log of war deaths and our drug production dummy are positive and significant, as expected. We also find GDP per capita to be negatively correlated with social violence and the regional dummy variables to be positively correlated.

Socio-economic conditions

Column 2 tests the relationships between poverty, inequality, economic opportunity and social violence. As expected, both poverty and inequality are positively and significantly correlated with social violence. However, contrary to our expectations, higher rates of economic growth appear to be positively correlated with rates of social violence. There are (at least) two possible explanations for this finding. First, it may be a spurious result. The single order correlation between per capita GDP growth and social violence rates is insignificant and shares some of its variance with logged IMR (-.137), logged GDP per capita (.196) and Gini (-.339). Including these variables in a model with GDP growth may be creating a misleading result due to issues of multicollinearity. We tested this by running various specifications with different combinations of these variables and still found a positive and statistically significant correlation—an issue we return to in the discussion. We also note that our control for GDP per capita becomes insignificant in this model. Again, this is likely due to a colinearity issue: GDP per capita and infant mortality rates are highly correlated ($r=-.898$)⁸. We also find that our regional dummy variables continue to be significant.

⁸ We ran the model excluding ln GDP per capita with no substantive differences.

Table 2: OLS analysis of social violence theory (1)

Dep. Var. = Ln Social Violence Rate			
	(1)	(2)	(3)
Hybrid polity	0.630*** (0.137)		
Polity volatility	0.108** (0.0492)		
Infant mortality		0.348*** (0.106)	
Gini		0.0235*** (0.00702)	
GDP growth		0.0629*** (0.0166)	
Ethnic diversity			0.975*** (0.249)
Youth bulge			2.581*** (0.942)
Urban growth			0.0479 (0.0588)
Ln of GDP per capita	-0.134** (0.0677)	-0.0742 (0.0954)	-0.154* (0.0813)
Ln of war deaths	0.135*** (0.0470)	0.166*** (0.0469)	0.124** (0.0484)
Drug production	0.239 (0.156)	-0.0550 (0.158)	0.0163 (0.170)
LAC	1.001*** (0.153)	1.058*** (0.170)	0.990*** (0.162)
SSA	1.014*** (0.144)	0.593*** (0.163)	0.531*** (0.171)
Constant	1.765** (0.682)	-0.172 (1.077)	1.286 (1.002)
Observations	268	268	268
R-squared	0.599	0.611	0.576

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Socio-demographic structure

Turning to the socio-demographic component of our theory, Column 3 confirms a positive and statistically significant relationship between ethnic diversity and social violence. This result is more consistent with the findings in the criminology literature than the findings of civil war studies. We also find that greater youth cohorts in a population are associated with an increased likelihood of social violence. However, we find no significant support for the theory that countries experiencing rapid urban population growth suffer from higher levels of social violence. This result was found to be robust to myriad alternative specifications. Again,

our controls for past hybrid political institutions, war-related deaths and regional dummy variables are all positive and statistically significant. GDP per capita is negative and significant and the drug dummy is insignificant.

Integrated model of social violence

Table 3 summarises the results of the tests of our general theory of social violence by integrating all three model components. Column 1 includes all of our explanatory variables. Overall, we find support for each component of our theory with some caveats. Hybrid political institutions, political-institutional volatility, infant mortality, inequality and ethnic diversity all remain positively and significantly correlated with rates of social violence. By contrast, our youth bulge and urban growth measures are insignificant. As in Table 2, GDP growth also remains positive and significant, confounding our expectations. With regard to our control variables GDP per capita and drug production dummy are insignificant while our controls for war-related deaths and regional effects are positive and significant. In Column 2 we drop all insignificant variables and find an almost identical result in terms of coefficient magnitudes and overall model fit.

In Column 3 we examine the insignificant correlation between youth bulge and social violence found in Columns 1 and 2. Countries with high infant mortality tend to have high fertility rates, high (adult) mortality rates, and hence youth-biased age structures. Our data confirms this: infant mortality rates and population age structures are highly correlated ($r=.898$). Column 3 demonstrates that the exclusion of the infant mortality measure renders our youth bulge variable positive and statistically significant.

In terms of our control variables, GDP per capita and illicit drug production are found to be insignificant while war-related deaths and our regional dummy variables remain highly statistically significant across all specifications. With regards to drug production, it may be the case that our data is simply too crude to adequately capture the assumed effects of drug economies on rates of social violence. The persistently significant correlation between our regional dummy variables and social violence indicates that our model is incomplete. We expected that political-institutional, socio-economic and socio-demographic factors would collectively account for regional differences in rates of social violence. Our results suggest that there are some regionally-specific factors (e.g. neighbourhood effects) that we have not accounted for. The most surprising result is a consistently positive and statistically significant correlation between growth in GDP per capita and rates of social violence.

Table 3: OLS analysis of social violence theory (2)

	Dep. Var. = Ln Social Violence Rate		
	(1)	(2)	(3)
Hybrid Polity	0.393*** (0.140)	0.377*** (0.138)	0.397*** (0.140)
Polity Volatility	0.085* (0.048)	0.079* (0.046)	0.096** (0.048)
Infant Mortality	0.255** (0.127)	0.236*** (0.065)	
Gini	0.019*** (0.0071)	0.020*** (0.007)	0.021*** (0.007)
GDP growth	0.050*** (0.016)	0.053*** (0.016)	0.060*** (0.016)
Ethnic Diversity	0.697*** (0.235)	0.643*** (0.227)	0.694*** (0.229)
Youth Bulge	0.186 (1.16)		1.75* (0.920)
Urban Growth	0.058 (0.054)		
Ln of GDP per capita	0.059 (0.096)		-0.044 (0.084)
Ln of war deaths	0.142*** (0.045)	0.144*** (0.044)	0.151*** (0.045)
Drug production	-0.082 (0.160)		
LAC	0.948*** (0.170)	0.934*** (0.153)	0.871*** (0.156)
SSA	0.499*** (0.176)	0.537*** (0.162)	0.585*** (0.163)
Constant	-1.62 (1.11)	-0.954*** (0.253)	-0.621 (1.01)
Observations	268	268	268
R-squared	0.65	0.65	0.65

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

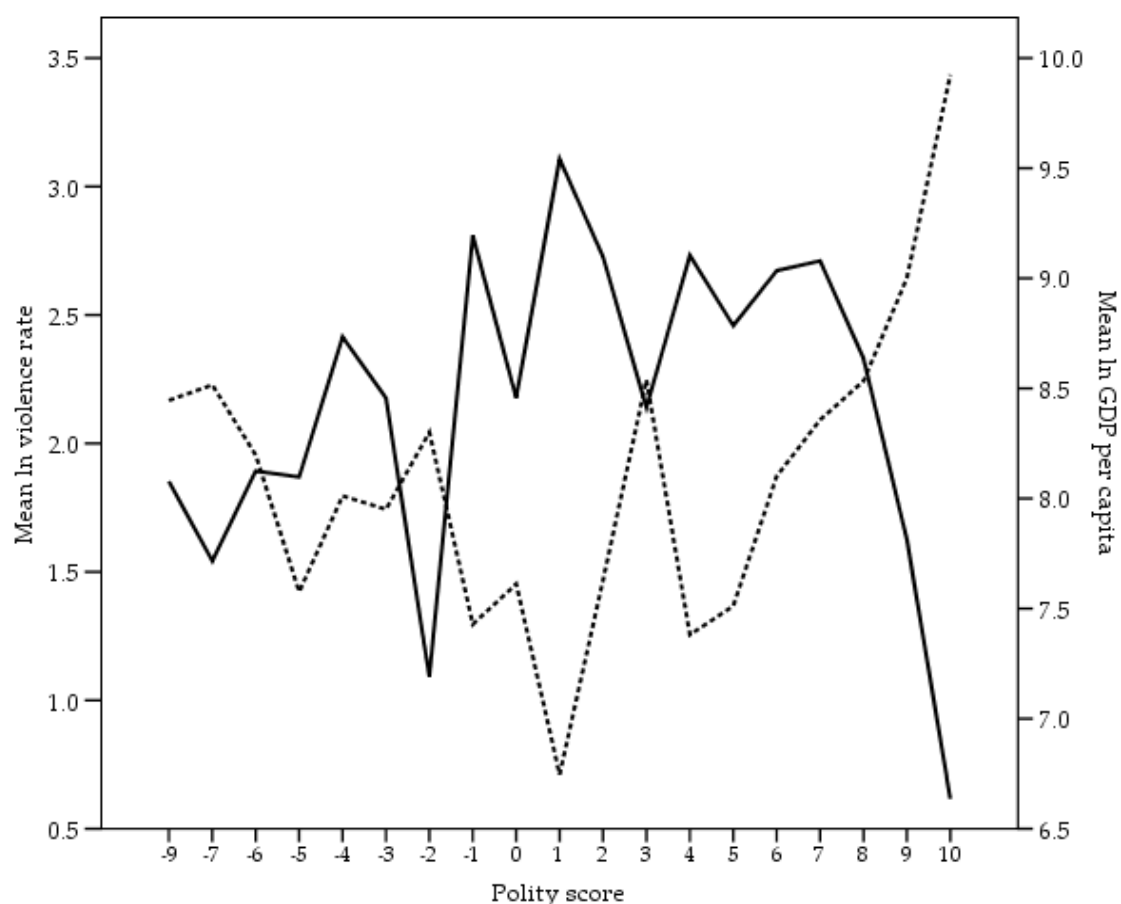
Discussion

While our empirical results are generally consistent with our hypotheses, our statistical strategy does not in itself provide an adequate basis for causal inference. With regards to the political-institutional hypothesis, there are two possible alternative interpretations of our results: high rates of violence promote hybrid political-institutions and political-institutional volatility, or some unobserved factor sustains both hybrid political institutions and high rates of violence.

High rates of violence can undermine the legitimacy of political institutions and actors, which may in turn sustain political volatility (Diamond 1999; LaFree 1998). This weak version of a reverse causality argument does not negate our hypothesis. By contrast the stronger argument that rising rates of violence may stimulate political-institutional volatility runs directly counter to our thesis. There is, however, little evidence that this is the case. For example, the 1970s was a period of rapid and substantial rises in rates of violent crime in many industrialised democracies (Eisner 2008; LaFree and Drass 2002), yet these did not result in the de-stabilisation of political institutions. We do acknowledge that there may be some chance of a threshold effect, whereby a certain level of violence needs to be reached, and perhaps maintained for a certain period of time before political volatility results, but we cannot test this using our current dataset. Moreover, we note that our measure of past political-institutional volatility is consistently and significantly correlated with present rates of social violence. In this case, reverse causality is not a logically plausible explanation, although an omitted variable bias cannot be ruled out.

The argument for a causal link between political institutions and social violence is further strengthened when we consider the complex relationships between our dependent variable and our various explanatory variables within the broader context of development theory. As noted in the introduction, high levels of violence generate a variety of social costs. Bates (2001) has argued that these costs can be sufficiently high to impede socio-economic development and are only overcome where a state manages to establish a monopoly over the legitimate use of violence within its territory. Once this political order is achieved individuals are able to direct resources away from personal defence and enforcement and towards investment, and reduced uncertainty about the future security of investments encourages them to do so. In sum, Bates outlines a causal chain that runs from political order to reduced violence to economic development. Our data are certainly consistent with this hypothesis. Figure 1 provides a graphical illustration of the relationships between political regime type, social violence and GDP per capita. The solid line represents the mean violence rate of country clusters according to their raw polity score. The dotted line represents GDP per capita plotted in the same way.

Figure 1: Relationships between violence, wealth and political institutions



The near perfect inverse relationship between regime type and violence (on the one hand) and regime type and income (on the other) provides a striking graphical indication of strong links between these variables, consistent with the theory. However, given that the raw polity scale cannot be considered continuous, it is difficult to infer what kinds of political-institutional arrangements are most prone to violence. The shape of the curves indicates that the poorest and most violent countries are those with hybrid political institutions (falling in the middle of the scale), while strong autocracies and democracies (at either pole) exhibit less violence and higher incomes. This is consistent with the longstanding hypothesis that strong, coherent political institutions are good for growth, whether or not they reflect democratic values—although the least violent and wealthiest countries in the world tend to be strong democracies.⁹

⁹ Huntington (2006 [1968]) argued that the maintenance of political order requires ‘strong, adaptable, coherent political institutions’ and that ‘the differences between democracy and dictatorship are less than the differences between those countries whose politics embodies consensus, community, legitimacy, organization, effectiveness, stability, and those countries whose politics is deficient in these qualities’ (1).

Table 4: Regime type and social violence

Polity type	Observations	Mean	SD	Min	Max
Full Democracy	66	2.69	2.99	0.54	13.70
Full Autocracy	15	6.11	4.78	2.11	21.05
Partial Autocracy	56	12.66	8.54	1.09	32.89
Partial Democracy	80	13.77	12.47	0.48	67.95
‘Transitional’	13	16.00	16.42	1.87	52.41
Partial Democracy w/ Factions	38	18.32	18.17	2.70	82.63

Table 4 provides a more nuanced picture by summarising mean rates of social violence according to the six regime types used to construct the dummy variable of hybrid political institutions. As expected, strong democracies and strong autocracies have the lowest rates of social violence, while intermediate regimes have higher rates of violence. Notably, partial democracies—and especially those that have factional political competition—have the highest rates of violence (alongside ‘transitional’ regimes). This provides a clue as to why armed rebellions are apparently in decline and social violence on the rise. The proliferation of democracies following the end of the Cold War has resulted in the channelling of political contestation through (weak) democratic institutions. Institutionalised political contestation in the absence of institutionalised self-restraint may stimulate sporadic acts of violence between individuals and groups aligned with opposing political factions without fomenting organised armed rebellions.

The story becomes more complicated when we consider the causal relationships between socio-economic factors and social violence. If political order suppresses violence, paves the way for investment and growth and reduces poverty, a virtuous cycle of falling violence and falling poverty may ensue assuming that escape from poverty lessens incentives for individuals to engage in violent behaviour. Conversely, a vicious cycle of high levels of inequality and high rates of violence may be hypothesised. The costs of violence fall hardest on the poorest strata of society, who tend not only to be the primary perpetrators of violence but also the primary victims. As a result, violence ensnares the poorest, while those with the means to insure themselves against the worst consequences of violence (e.g. with private security and medical care) may be able to steadily improve their lot, thereby exacerbating overall social inequality. In other words, there may be endogenous relationships between violence, poverty and inequality that we are unable to identify with the data and methods employed here.

Similarly, the correlation observed between poverty and youth bulges noted above raises the possibility that a link between youth bulges and violence found in previous studies may be due to inadequate controls for poverty. However, the close correlation between the two makes it difficult to tease apart independent effects given the data and methods used here.

The most puzzling question that emerges from our results is why higher rates of economic growth—all other things equal—are robustly correlated with higher rates of social violence. One explanation could be derived from the ‘modernisation’ perspective: rapid growth is socially disruptive, eroding norms of self-restraint. Alternatively, it may be the case that

rapidly growing countries experience rising inequality and social strain; our data unfortunately do not permit a test of this hypothesis. It may be the case that political order reduces violence and sets the stage for growth, but that rapid growth (in the short run) exacerbates social tensions and stimulates violence—a potential concern for rapidly modernising countries such as India and China.

Conclusion

Civil wars, which have recently received substantial academic attention, are rare and destructive. By contrast, social violence is widespread and possibly represents an equally significant threat to socio-economic development. Development scholars should therefore devote more attention to understanding the causes and consequences of social violence.

Our results suggest that political violence and social violence share at least one common underlying cause: hybrid political institutions. Hybrid political institutions create uncertainty about the basis of legitimate authority in a society and undermine state capacity to maintain the rule of law. This can create spaces for insurgent activities, force individuals and groups to bear the burden of directly defending their interests, inhibit economic growth and undermine a state's capacity to deliver public goods, further exacerbating the conditions of poverty and inequality that drive people to commit violent acts. Moreover, democratic institutions may lessen the risk of organised armed rebellions but increase the risk of social violence where these institutions are weak. Overall, our results indicate that the establishment and maintenance of a stable political order is a first-order condition for reducing social violence and cultivating norms of self-restraint. This paves the way for economic development, which—if managed well—can reduce poverty and alleviate inequality, diminishing incentives for individuals and groups to choose to engage in violent behaviour.

Further research is needed to clarify the specific mechanisms that link macro-level political institutions to everyday violence. In the case of ethnic diversity, for example, the failure of political institutions to effectively mediate conflicts between ethnic factions or ameliorate horizontal inequalities may explain the strong correlation we find between ethnic diversity and violence. Perhaps most importantly, however, we need to look beyond the current theoretical and empirical consensus that institutions are important determinants of development. The next step is to understand why and how societies arrive at political settlements that result in stable and coherent political-institutional regimes.

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Appendix A: Variable Descriptions and Sources

Variable	Description	Time period	Source
Ln Social Violence Rate	The natural log of deaths due to intentional injury per 100,00 population.	2002 & 2004	(WHO 2004, 2008)
Hybrid Polity	Based on the Polity2 variable from the PolityIV dataset, with missing values substituted with the Kristian Skrede Gleditsch's Modified Polity2 score. Coded as a dummy variable coded as 1 if Polity2 score took a value between 0 and 7 inclusive.	2002 & 2004	Authors' calculation from (Skrede Gleditsch 2008; Marshall and Jagers 2009)
Rule of Law	Rule of Law variable from the World Bank's World Governance Indicators dataset, 1996-2008. The indicator captures 'perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence'.	2002 & 2004	(Kaufmann et al. 2009)
Political Volatility	The natural log of the sum of the absolute number of points change in the Polity2 score, 1980-2000	1980-2000*	Authors' calculation from (Skrede Gleditsch 2008; Marshall and Jagers 2009)
Infant Mortality	The natural log of the Infant Mortality Rate	2000-2005*	(UN 2008b)
GINI	The GINI Net score from the Standardised World Income Inequality Dataset	2002 & 2004 or nearest year(s)	(Solt 2009)
GDP per capita growth	Annual growth of real GDP per capita (constant prices, Laspeyres method), 2005 international dollar equivalent from the Penn World Tables 6.3	2002 & 2004	(Heston et al. 2009)
Ethnic Diversity	Ethnic and Linguistic Fractionalization score from Alesina et al (missing values for Yemen added from Roeder's ELF1985)	Constant *	(Alesina et al. 2003; Roeder 2001)
Youth Bulge	Youth population as a proportion of the total adult population, calculated as the population aged 15-24 as a percentage of the population aged 15 and over.	2000-2005*	(UN 2008a)
Urban Growth	Annual percentage change in the urban population.	2000-2005*	(UN 2008c)
Hybrid Polity (lagged)	The average Polity2 score for the years 1980-1989	1980-1989*	Authors' calculation from (Skrede Gleditsch 2008; Marshall and Jagers 2009)
GDP per capita	The natural log of real GDP per capita (constant prices, Laspeyres method), 2005 international dollar equivalent	2002 & 2004	(Heston et al. 2009)
War Deaths Rate	The natural log of deaths due to intentional injury per 100,00 population.	2002 & 2004	(WHO 2004, 2008)
Drug Production	Dummy variable coded 1 if a country was listed as one of the US government's 'Major Illicit Drug Producing and Transit Countries' for any year from 2000-2005	2000-2005*	International Narcotics Control Strategy Reports, 2000-2005
Regional Dummies	Dummy variable according to World Bank classification of world regions	Constant *	(WorldBank 2008)

Note: An* indicates the value on that variable is the same for observations in both 2002 and 2004.

Appendix B: Countries included in our sample, 2002 & 2004

North America & Western

Europe

Austria
Belgium
Canada
Denmark
Finland
France
Germany
Greece
Ireland
Italy
Netherlands
Norway
Portugal
Spain
Sweden
Switzerland
United Kingdom
United States

East Asia & Pacific

Australia
Cambodia
China
Indonesia
Japan
Laos
Malaysia
Mongolia
New Zealand
Papua New
Guinea
Philippines
Singapore
South Korea
Thailand
Vietnam

Eastern Europe & Central Asia

Albania
Armenia
Azerbaijan
Belarus
Bosnia-
Herzegovina
Bulgaria
Croatia
Czech Republic
Estonia
Georgia
Hungary
Kazakhstan
Kyrgyz Republic
Latvia
Lithuania
Macedonia
Moldova
Poland
Rumania
Russia
Serbia &
Montenegro
Slovakia
Slovenia
Tajikistan
Turkey
Turkmenistan
Ukraine
Uzbekistan

South Asia

Bangladesh
India
Nepal
Pakistan
Sri Lanka

Latin America & the Caribbean

Argentina
Bolivia
Brazil
Chile
Colombia
Costa Rica
Cuba
Dominican
Republic
Ecuador
El Salvador
Guatemala
Haiti
Honduras
Jamaica
Mexico
Nicaragua
Panama
Paraguay
Peru
Trinidad &
Tobago
Uruguay
Venezuela

Middle East & North Africa

Algeria
Egypt
Iran
Iraq
Israel
Jordan
Lebanon
Morocco
Tunisia
Yemen

Sub Saharan Africa

Benin
Botswana
Burkina Faso
Burundi
Cameroon
Central African
Republic
Cote D'Ivoire
Ethiopia
Gabon
Gambia
Ghana
Guinea
Guinea-Bissau
Kenya
Lesotho
Liberia
Madagascar
Malawi
Mali
Mauritania
Mauritius
Mozambique
Namibia
Niger
Nigeria
Rwanda
Senegal
Sierra Leone
Somalia
South Africa
Sudan
Swaziland
Tanzania
Uganda
Zambia
Zimbabwe

Appendix C: Correlation Coefficients for Dependent, Independent and Control Variables

	Ln Social Violence Rate	Hybrid Polity	Rule of Law	Polity Volatility	Ln Infant mortality	Gini	GDP growth	Ethnic diversity	Youth Bulge	Urban growth	Hybrid Polity (lag)	Ln of GDP per capita	Ln War deaths Rate	Drug production	LAC	SSA
Ln Social Violence Rate	1															
Hybrid Polity	0.3951	1														
Rule of Law	-0.6678	-0.3832	1													
Polity Volatility	0.4581	0.2887	-0.5596	1												
Ln Infant mortality	0.6703	0.368	-0.8018	0.479	1											
Gini	0.5965	0.2087	-0.4297	0.2334	0.5481	1										
GDP growth	-0.108	-0.0601	0.1048	0.061	-0.1373	-0.3386	1									
Ethnic diversity	0.5348	0.262	-0.4353	0.3131	0.5457	0.3277	-0.1125	1								
Youth Bulge	0.6496	0.2849	-0.7066	0.3792	0.8988	0.6242	-0.2528	0.4763	1							
Urban growth	0.3567	0.1727	-0.3435	0.1638	0.4633	0.3152	-0.0607	0.1742	0.4907	1						
Hybrid Polity (lagged)	0.1876	0.1397	-0.0108	0.0466	0.0583	0.3745	-0.1254	0.0074	0.1148	0.0583	1					
Ln of GDP per capita	-0.6081	-0.4202	0.786	-0.5202	-0.8979	-0.4433	0.1955	-0.5191	-0.825	-0.4489	0.0183	1				
Ln War deaths Rate	0.3264	0.2533	-0.442	0.1414	0.3655	0.1878	-0.2146	0.2744	0.3172	0.2379	-0.0683	-0.4091	1			
Drug production	0.1958	-0.0155	-0.234	0.0595	0.1167	0.2729	-0.0449	0.0728	0.1695	0.2465	0.1441	-0.0754	-0.0362	1		
LAC	0.2544	-0.0285	-0.1515	0.0996	-0.0521	0.3515	-0.2042	-0.0198	0.1042	0.0264	0.2548	0.06	-0.1407	0.5293	1	
SSA	0.5018	0.2793	-0.3412	0.2222	0.6612	0.4506	-0.2102	0.565	0.5949	0.3443	-0.0287	-0.6168	0.288	-0.215	-0.2686	1

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