

June 11, 2010

First Draft

Minorities at Risk in Resource-Based Conflicts

by

Jean-Paul Azam and Véronique Thelen

Toulouse School of Economics (University of Toulouse 1, ARQADE)

Abstract: This paper analyses econometrically the determinants of the violence that some governments inflict on some minorities within their own countries. It first discusses the domestic-level diversionary theory of war of Tir and Jasinski (2008). It argues that their econometric results do not allow them to draw the conclusions that they present, and offers a more satisfactory approach. Using the same data set, but a more satisfactory approach, we show that the domestic-level diversionary theory of war is strongly rejected by the data. The paper then presents a more satisfactory approach, suggesting that foreign aid has some influence on this type of violence, which it reduces marginally.

Acknowledgments: Financial support by the AFD (Agence française de développement) is gratefully acknowledged, but the views expressed herein do not necessarily reflect the views of this institution.

1. Introduction

The pattern of violence observed during civil wars shows that civilians are most of the time the main target of the warring parties, while direct confrontation between two armies is fairly rare. The mainstay of this kind of “wars” is the widespread perpetration of one-sided violence, which has become the prominent characteristics of most conflicts in the course of the 20th century, as emphasized in particular by Cairns (1997). The bombing of the city of Guernica by the Condor legion during the Spanish civil war¹ may be seen as a watershed, as clearly perceived by the Spanish painter Picasso. There were no military targets in Guernica, just civilians to be terrorized. A recent data-set on this kind of one-sided violence over the recent period has been produced by Eck and Hultman (2007), together with an econometric analysis of its strategic determinants. Their findings support the view that violence against civilians responds to some strategic motivations and cannot be interpreted as a mere collateral damage entailed by fighting proper. Moreover, as suggested by Azam and Hoeffler (2002), such violence is not necessarily taking place during a civil war, but may in fact be in some cases a substitute for fighting proper. Sometimes, violence against civilians is used as a deterrent for preventing an escalation into fighting proper, the latter being potentially based on reciprocal looting of the kind described in Azam (2002), which sometimes also involves violence against civilians as a side effect. This deterrence effect of violence against civilians has been analyzed theoretically by Azam and Hoeffler (2002), with some empirical support using refugee data. Lyall (2009) confirms econometrically that indiscriminate violence is deterring rebellion, using data on shelled villages in Chechnya.

Often, the countries where this kind of violence occurs, whether during a civil war or as a substitute for it, are relying heavily on the export of extractive resources like oil, gems, or other kinds of minerals. Fearon (2005) shows econometrically that oil is a key determinant of

¹ See Beevor (1982) on the Spanish civil war.

the occurrence of civil war. However, Fjelde (2009) brings out an important caveat by showing that the relationship between oil and civil war is not mechanical, and that some form of corruption can mitigate its impact. Nevertheless, Lujala (2009) confirms that oil and other extractive resources are liable to increase the level of violence during civil conflicts. Esteban, Morelli and Rohner (2010) show that the presence of oil over their territory increases the incidence of violence against ethnic minorities, conventionally called “Minorities at Risk” (MAR). The present paper is an attempt at understanding further the strategies that the players are pursuing in these resource-exploiting countries, and why violence against civilians is so common in those cases.

Tir and Jasinski (2008) have offered a new explanation for this kind of violence, based on the “domestic-level diversionary theory of war”. They observe that a large share of this kind of violence against civilians falls on some well defined ethnic or religious groups, rather than indiscriminately on all sorts of civilians. Their claim is that some governments use this type of violence as a way of getting some popular support by triggering a form of “rally around the flag” effect at a domestic level. The following quotation gives the flavor of their main argument: “... mounting unpopularity makes it rational for the leader to attempt to rally the in-group behind him/her by using force against an ethnic minority that he/she has designated a serious threat” (Tir and Jasinski, 2008, p.645). The key mechanism invoked by Tir and Jasinski is that this kind of violence will trigger an increased support behind the ruler who exerts it against a minority. Their assumption is summarized by the following quote: “the leader’s expectation – that by seeking security from the purported minority threat, the in-group will likely respond by increasingly supporting the leader and his/her actions” (Tir and Jasinski, 2008, p.645-6). These quotes bring out clearly that the Tir-Jasinski hypothesis is composed of two elements: (i) there exists a trade off whereby increasing the violence perpetrated against some minority group reduces the ruler’s unpopularity and increases the

support he/she gets from the in-group, and (ii) the rulers actually exploit this trade-off whenever they need it. However, their econometric exercise does not address this issue at all. What they produce is a (pseudo-) reduced form estimation, which shows that the violence perpetrated against the minorities is positively correlated with some index of the ruler's unpopularity, which is in fact measured by the occurrence of some trouble (riots, demonstrations, etc.). This only tells us that these two variables tend to move together, but does not tell us anything about either causality, or even the existence of a trade off. The present paper then shows that Tir and Jasinski's "domestic-level diversionary theory of war" is squarely rejected by a proper econometric test, using the same data set.

Moreover, in the real world, dictators do not choose to victimize some minorities in a vacuum. The international community is always involved, either virtually or physically. Azam and Saadi-Sedik (2004) provide a theoretical framework for thinking about the different ways in which a foreign power can intervene for preventing or mitigating the kind of violence against a minority group that the Tir-Jasinski paper describes. Azam and Saadi-Sedik discuss the foundations of a self-enforcing threat of sanctions, bringing out the fairly obvious point that sanctions are only implemented when the threat of sanctions is ineffective, i.e., failing to deter the dictator from inflicting this violence. Moreover, they show that it is precisely the fact that sanctions will actually be implemented in some cases while they are ineffective that makes their threat credible, and thus makes them effective in other cases. However, they show that foreign aid may be at times cheaper to use for buying off the dictator on condition that he/she refrains from victimizing the minorities than to inflict sanctions. Hence, the foreign power may in fact use three different strategies for preventing or mitigating the persecution of minorities by an oppressive ruler: (i) the foreign power may put out a credible threat of sanctions, (ii) it may give foreign aid for buying off the dictator, or (iii) it may inflict the sanctions. The cheapest solution is obviously (i), as it entails no actual expenditures.

Moreover, in a game-theoretic framework, this kind of self-enforcing threat does not need to be made explicit under the “common-knowledge” assumption. This is arguably how the international community is always virtually present in all countries where the ruler is wondering whether to inflict some violence on some minority or not. Then, when either the cost of inflicting the sanctions or the oppressor’s degree of harshness toward the minorities is too high, foreign aid might be used as a way of preventing this kind of violence. Lastly, the most expensive and the least effective is probably the military intervention, which might be used in some cases when all else has failed. However, they do not offer any empirical test of these predictions.

The present paper offers an alternative approach to the Tir-Jasinski hypothesis, which fits the data about the violence perpetrated against minorities at risk more closely. The next section sketches the proper way of capturing the diversionary violence approach, with a view to derive its econometric implications. Then, confronting this hypothesis to the data unambiguously leads to a clear rejection. By contrast, we present some econometric tests that support the view that foreign aid is effective as a tool for reducing the violence against the MARs, and that it is in part used for this purpose, as it turns out to be endogenous in the estimated regressions.

2. The Diversionary Theory of Violence against Minorities at Risk

The diversionary theory used by Tir and Jasinski, and briefly presented above, claims that the violence exerted against the minorities at risk is not an aim in itself, but is just a political tool used by the ruler to abate unpopularity and increase support. This can be captured by a simple model where the violence perpetrated against the minorities, denoted v , is expected by the ruler to have a negative impact on the unpopularity u that reduces his/her welfare or his/her expected chance of staying in power. Denoting θ some other exogenous

variables that are liable to increase his/her unpopularity, then the unpopularity/violence tradeoff may be written as:

$$u = u(v, \theta), u_v < 0, u_\theta > 0, \quad (1)$$

where the subscripts denote the corresponding partial derivatives. Moreover, we assume that this function is convex in v , in order to capture the decreasing returns to violence against minorities as a tool for reducing unpopularity, which might eventually meet a floor level at very high levels of violence.

Then, the Tir-Jasinski theory makes it clear that the main aim of the ruler is to reduce his/her level of unpopularity, while the violence against the minorities is just a tool, i.e. a cost item, that he/she would not incur were it not for its impact on the popularity objective. This can be captured by assuming that the ruler wants to minimize the following loss function, taking the tradeoff (1) into account.

$$\min_{u,v} L(u, v, \lambda), L_u > 0, L_v > 0, L_\lambda > 0, \quad (2)$$

where λ is a set of contextual exogenous variables that increase the loss entailed by unpopularity, e.g., the proximity of elections, which translates the expected cost of unpopularity into a high probability of losing power.

Figure 1 describes the simultaneous choice of u and v made by the ruler seeking to minimize (2) subject to the constraint (1). As standard micro-economics has taught us, the ruler's choice will be found where an indifference curve of the loss function (2), here denoted Iso- L , is tangent to the constraint $u(v, \theta)$. Then, the figure clearly implies that the ruler's preferred $\{u^*, v^*\}$ pair will be a function of the exogenous variables $\{\theta, \lambda\}$. In particular, the ruler's demand for violence against the minorities at risk will be governed by the following reduced-form equation:

$$v^* = f(\theta, \lambda). \quad (3)$$

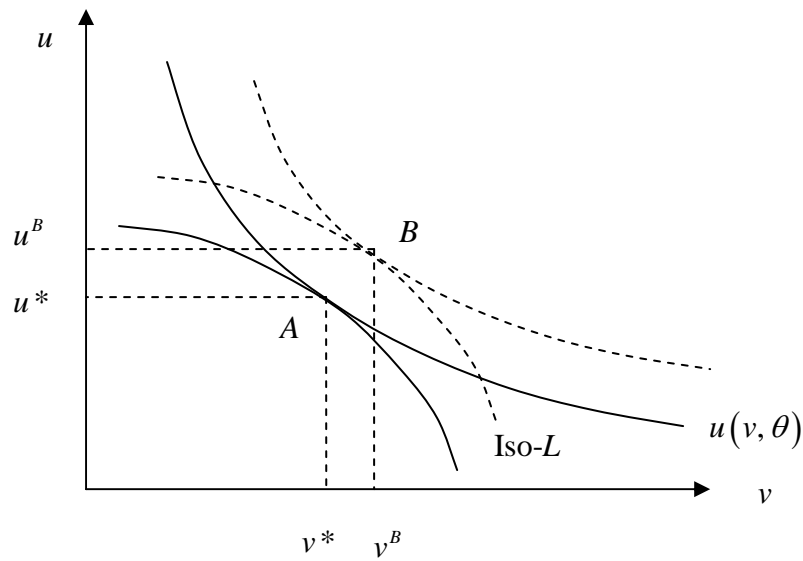


Figure 1. The Simultaneous Choice of u and v .

Now this very simple modeling exercise gives us the framework that we need to devise an econometric evaluation of Tir-Jasinski's diversionary theory. What we need to estimate is the trade-off (1), but we cannot assume for that purpose that the level of violence against MARs is exogenous. Instead, the reduced-form equation (3) shows that it is endogenous, because it is jointly determined with the chosen level of unpopularity. Within this simple game-theoretic framework, this simultaneous determination only matters if we assume that the government uses some information about the determinants of his/her unpopularity that the econometrician does not observe. In other words, endogeneity here means precisely that there are some components of θ that the ruler observes when making his/her decision, and not the econometrician. Otherwise, i.e. in the unlikely case where the econometrician has at least as much information as the ruler has when selecting his/her preferred level of violence against the minorities, this problem could be neglected.

The key point, from an empirical point of view, is that the ruler's behavior will necessarily be affected by this unobservable information, if it is relevant. Our econometric approach aims precisely at extracting from observing the ruler's behavior against the

minorities enough of this unobserved information to mitigate the implied omitted variable bias. The method used is an extension of the standard Hausman test. It involves two steps: (i) a reduced-form equation is estimated for the level of violence on the minorities at risk, representing (3). While the deterministic part of this equation captures the effects on the ruler's choice of the information that is shared between him/her and the econometrician, the residuals provide the net impact of the information that the latter is missing. Then, (ii) that information is used in a second step, for estimating the trade-off (1), as an additional variable included along with the observed ones.

The intuition behind this econometric approach can be easily understood using figure 1. Imagine that an unobserved shock, from the econometrician viewpoint, shifts the $u(v, \theta)$ curve upwards, as depicted on figure 1 by the dotted convex line. Then, the government will respond by minimizing the loss function as done previously, but using the information on the shock that escapes the econometrician's scrutiny. The equilibrium point will thus move from A to B , as depicted on the diagram. Hence, a careless econometrician would infer that there is an upward-sloping relation between these two variables. However, there are econometric methods that allow us to take care of this problem, as explained above. The idea is to use the government's response, here entailing a shift from v^* to v^B , in order to control for the shock that is observed by the ruler and unobserved by the econometrician. This is what "controlling for endogeneity" means in the present analysis.

Before proceeding to perform this two-step analysis, it is worth emphasizing the differences between our method and Tir and Jasinski's one. Remember that the latter run a series of regressions where the dependent variable is the level of violence perpetrated by the ruler against the minorities at risk, while the level of unpopularity is one of the independent variables. Hence, their equations are neither an estimate of the relevant trade off (1), nor an estimate of the reduced-form equation (3). Then, these regression equations can only

represent some equilibrium relationship linking u and v , when some missing exogenous variables are moving. For example, in figure 1, if some components of θ was changing, then we would predict that the optimum point would also change as described at figure 1. Assume for instance that the trade-off is shifted upwards by some exogenous shock. Then, most probably, the ruler would react by increasing a bit the level of violence, while also letting some increase in unpopularity occur, because of the assumed decreasing returns to violence, as captured by the shift from A to B depicted on figure 1. This is what Tir and Jasinski's equations are capturing. We show below that a correct econometric approach leads in fact to the rejection of their hypothesis.

3. Data and sources

The main dependent variable used in our first exercise aimed at testing (1) is a proxy for the level of troubles and hostility to the governing regime in the country. Following Pickering and Kisangani (2005) and Tir and Jasinski (2008), we use the political unrest incidents from the Cross National Time-Series Data Archive (CNTS, 2010) as indicator of government unpopularity. This measure represents the number of general strikes, riots and anti-government demonstrations. It is a proxy to capture the extent to which the citizens of the country are dissatisfied with their government. These data are mainly derived from *The New York Times*. General strikes are any strikes of more than 1,000 industrial or service workers against national government policies. The riots are any violent demonstration of more than 100 citizens involving the use of physical forces. Finally, the anti-government demonstrations are any peaceful public gathering of more than 100 citizens for the primary purpose of displaying their opposition to government policies, excluding demonstrations of anti-foreign nature. This variable is thus a count variable with lots of zeros. In our sample covering from 1996 through to 2003, 18 countries always have an index equal to zero, meaning that they have not experienced any strikes, riots or anti-government demonstrations during the whole

period. Among them, we have for example Vietnam, Togo, Mali and Hungary, and another 8 of these countries are located in Sub-Saharan Africa and most of them have experienced an internal conflict during the period (from the PRIO definition), like for example Niger and Angola. About 35 countries have an index greater than zero most of the years, meaning that most of the years between 1996 and 2003, these countries incur a positive number of anti-government demonstrations. The countries with the highest number of demonstrations are Indonesia, Argentina, China, Venezuela, Bangladesh, Israel and Bolivia.

The other key variable in this exercise is the MAR variable. The Minorities at Risk (MAR) project analyses conflicts in more than 110 countries. The project defined a “minorities at risk” as a group that “collectively suffers, or benefits from, systematic discriminatory treatment vis-à-vis other groups in a society; and/or collectively mobilizes in defense or promotion of its self-defined interests”. From this dataset, we can get information about the government use of armed force against a minority group in a given year. This dataset includes different indicators of violence from 1996 to 2003, and as in Tir and Jasinski (2008) we focus on high intensity activities of the government. These activities include the limited use of force by the government against protesters, the unrestrained use of force against protesters, military campaigns against armed rebels, military destruction of targets, military massacres of suspected rebel supporters and ethnic cleansing. We thus have an indicator for each country and each year of the violence perpetrated against the minorities at risk.

In our sample, 38 countries have never used violent repression against minorities. These include both developed and developing countries; and 12 countries have used violent repression against minorities each year (in Bolivia, Burundi, Israel, Philippines, Sudan, Thailand, Turkey and Uganda) and in some countries, repression has been used against more than 3 minorities (China, India, Indonesia and Mexico). The Table A1 in the appendix gives more descriptive statistics splitting the sample between the countries that have never used

repression against MAR and countries that have used forces at least once during the period 1996 to 2003. The countries that have never used forces against MAR groups have on average a lower index of government unpopularity, of political discrimination, number of MAR groups and level of aid received per capita and a higher Polity index and GDP per capita.

Regressors

We use the standard measure of foreign aid, namely Official Development Assistance (ODA) per capita. This variable aggregates the disbursements of loans and grants by official agencies of the members of the Development Assistance committee (DAC) to promote economic development and welfare in the recipient countries. These data are measured in constant U.S. dollars and the source is the online OECD Development Database on CRS Aid Activities. In our sample, 12 countries are aid donors, mainly OECD member countries. To control for the performance of the country's economy and its characteristics, we use GDP per capita and its growth rate, population and the percentage of urban population; the source of these data is the World Bank's online World Development Indicator (WDI).

We also use another control variable from the MAR dataset which is the net number of MAR groups living in the country. The latter controls for the fact that a greater number of minorities provides more targets for the government. The number of minorities may also influence the government index of unpopularity. We do not use the relative size of the MAR population like in Tir and Jasinski (2008) because this variable is an estimate of the group's share of the country's population and is available only for 1998. We also control for the political conditions using two different measures. First using the MAR data set, we have some information about the degree of institutionalized political discrimination against MAR groups. We have thus an index ranging from 0 to 4 that represents the average level of political discrimination against the minorities in the country. An index equals to zero means that there

is no discrimination against the MAR groups. An index equals to 4 represents a repressive policy entailing the exclusion of the MAR groups from the political process and a restricted participation. In a robust estimation we also include the Polity IV (2010) regime data.

We also include the state's military capacity from the Correlates of War Material Capabilities data set (Bennett and Stam 2000). Greater military capacity increases the power of the government and its ability to defeat the targeted MAR group and may also influence the index of unpopularity of the government. This is the widely used Composite Index of National Capability based on the total population, the urban population, iron and steel production, energy consumption, military personnel and the military expenditures of all state members.

We also control for ongoing armed conflict within the state, as reported by the UCDP/PRIO Armed Conflict Dataset (Gleditsch *et al.* 2002). The presence of violence in the country may influence the index of government unpopularity and repression against MAR. This variable controls also for the uses of force implemented because of a conflict situation and not necessarily for diversionary reasons. We also control for approaching executive election using data from Golder (2005) as the traditional diversionary studies argue that diversionary actions are more likely to occur before elections even if other studies show that in fact popularity is always important. In any case, including of this variable does not change the main results and it only has a positive impact on the government unpopularity index but not on repression against minorities.

To control for the presence of natural resources and the extractive resources, we use first two dummy variables, one for countries where there are known diamond deposits as defined by the DIADATA (Gilmore *et al.* 2005). It represents any country where there are known diamond activity (meaning production and confirmed discovery) and in our sample we have 23 such countries. The other dummy variable is for the 13 countries of our sample that

produce more than ten million metric tons of iron ores per year. We also add a variable to take into account the geography of the country. We use the measure of “rough terrain” computed by Fearon and Laitin (2003), which is the proportion of the country that is considered as mountainous. We also use from the World Bank’s online World Development Indicator (WDI) the net forest depletion that is calculated as the product of unit resource rents and the excess of roundwood harvest over natural growth. Finally, we include the level of oil production (in million tonnes) from British Petroleum (2009) as it may influence violence against the minorities.

Finally, we use different variables in the reduced-form equations presented below to control for endogeneity bias. We use life expectancy at birth from the WDI dataset and several geographical dummy variables, “Camp David” (Egypt and Israel), Latin American countries, Sub-Saharan countries, former USSR countries, ASEAN countries and OECD countries. These variables help to control for country characteristics such as geography and civilization as well as for some historical determinants that may still influence the allocation of foreign aid.

The objective is to test the diversionary hypothesis presented in the paper of Tir and Jasinski (2008) using the same data. Thus, we want to test whether there is a trade-off between troubles and violence against the minorities and if governments with a high index of unpopularity use this trade-off to stay in power. We have a sample of 110 countries from 1996 to 2003 from the MAR dataset but this analysis is restricted to the period 1996 to 2001 because of some explanatory variables. Estimations over the period 1996 to 2003 are presented in table 2.

Methodology

To control for the omitted variables bias which may affect the level of repression against MAR and the popularity of the government as described above, we use a version of

the Hausman test taking into account the non-linearity of our dependent variables. This procedure has two stages: first, a reduced-form equation is estimated for the endogenous variable, here the level of violence against MAR, using exogenous regressors. Then, the residuals resulting from this estimation are included as a regressor in the structural equation of government index of unpopularity. If it turns out to be significant, then the endogeneity assumption cannot be rejected. The instrumental variables for the reduced form equation of the violence against MAR are contextual variables which affect the preferences of the government like for example the government military capability or the level of political discrimination.

To explain the level of repression against MAR and to test for the impact of foreign aid as a tool for reducing this violence, we also use the same methodology with a reduced form equation for the level of foreign aid. The level of foreign aid received by the country is liable to be endogenous to the level of repression. Aid is potentially allocated to some extent with a view to control the repression against minorities. Thus, we also have to use this procedure to control for the endogeneity of foreign aid and violence against MAR. The instrumental variables for the reduced form equation of the level of ODA per capita are variables which affect the preferences of the donor community for example the development objectives of the donors here captured by the level of life expectancy.

4. The Diversionary Theory Rejected

In each of the next two tables we test for the diversionary theory according to the method described above. These tables contain various estimations using different control variables or different instruments. Equation [1] is the reduced-form equation explaining repression against MAR using exogenous variables only, from which we use the residuals that we include in the next three columns in order to control for endogeneity, as explained above. These equations are globally significant, and suggest that an acceptable reduced-form

equation for the repression against MAR depends mainly on the incidence of an armed conflict in the country, the number of MAR groups and the level of discrimination that they are subjected to, the level of military capability of the government, and whether the country is a former member of the Soviet Union, where repression against MAR seems to be less common, according to this dataset and this reduced-form equation.

In the next three columns, we present various specifications of the structural equation aimed at capturing the structural relation (1) in the theoretical framework discussed above. The dependent variable is now the index of government unpopularity. In column [2], repression against the MAR is included without any control for endogeneity, and it is highly significant with a positive sign that seems to contradict the Tir-Jasinski hypothesis. In the next two columns, endogeneity is duly controlled for, and the positive sign persists, with an even larger coefficient. Moreover, the residuals from column [1] are not significant in column [3], while they are only weakly significant, at the 10 % level, in column [4], suggesting that reducing unpopularity is not the main reason why rulers use repression against MAR. Column [4] is derived from column [3] by deleting two variables that are not significant in column [3], namely the number of MAR groups in the country and the level of political discrimination against the MAR. On the face of it, column [4] suggests that the index of unpopularity of the government is increasing with the level of repression against MAR and the share of the urban population in the country, and it is decreasing with the incidence of an armed conflict. The two economic control variables, namely GDP per capita and its growth rate fail completely to be significant in this equation.

Table 1: Impact of Repression of MAR on Government Unpopularity (i)

	Repression against MAR [1]	Index of Government Unpopularity [2]	Index of Government Unpopularity [3]	Index of Government Unpopularity [4]
Repression against MAR	-	0.7221*** (0.1623)	1.1488* (0.5900)	1.5454*** (0.4242)
Residual Rep against MAR	-	-	-0.4996 (0.6340)	-0.8947* (0.4791)
Constant	-1.5693*** (0.5073)	-2.2382*** (0.4820)	-2.2352*** (0.4822)	-2.0395*** (0.4999)
GDP pc	-0.0000 (0.0000)	-0.0000* (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
GDP pc growth	0.0055 (0.0163)	-0.0151 (0.0259)	-0.0142 (0.0270)	-0.0134 (0.0264)
Ongoing Armed Conflict	0.8271*** (0.1088)	-0.6013** (0.2593)	-0.8544** (0.3386)	-1.0041*** (0.3580)
Political election	0.0676 (0.1663)	0.7254** (0.3215)	0.7412** (0.3244)	0.7553** (0.3051)
Urban Population (% of Total)	-0.0038 (0.0058)	0.0214*** (0.0067)	0.0229*** (0.0073)	0.0243*** (0.0070)
Political Discrimination against MAR	0.3023*** (0.1051)	0.1663 (0.1131)	0.1130 (0.1536)	-
Number of MAR groups	0.2877*** (0.0837)	0.1641** (0.0692)	0.0977 (0.0928)	-
Government Military Capability	10.8548* (5.8040)	-	-	-
OECD	-0.1867 (0.8726)	-	-	-
USSR	-2.1845*** (0.6230)	-	-	-
Sub Saharan	0.3296 (0.2973)	-	-	-
Latin America	0.3304 (0.3576)	-	-	-
ASEAN	0.5549 (0.4129)	-	-	-
Observations	543	547	543	543
Wald Chi deux	444.48***	58.82***	59.13***	44.92***

Eq 1 is Tobit Regression and Eq 2, 3 and 4 are negative binomial regression. Robust standard errors in parentheses and Clusters on 110 countries.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2: Impact of Repression of MAR on Government Unpopularity (ii)

	Repression against MAR [5]	Index of Government unpopularity [6]	Repression against MAR [7]	Index of Government unpopularity [8]
Repression against MAR	-	1.9057*** (0.5387)	-	1.7708*** (0.5104)
Residual Rep against MAR	-	-1.1839** (0.5909)	-	-1.1719* (0.6124)
Constant	-1.5361*** (0.5089)	-2.1525*** (0.5680)	-1.5031*** (0.5160)	-1.9302*** (0.4522)
GDP pc	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)	-0.0000 (0.0000)
GDP pc growth	0.0040 (0.0183)	-0.1001*** (0.0188)	0.0073 (0.0146)	-0.0387 (0.0502)
Ongoing Armed Conflict	0.8590*** (0.1078)	-1.2043*** (0.3881)	0.9161*** (0.1068)	-1.1515*** (0.3026)
Urban Population (% of Total)	-0.0053 (0.0059)	0.0237*** (0.0075)	-0.0060 (0.0059)	0.0224*** (0.0060)
Political election	0.1557 (0.1556)	0.3468 (0.2250)	-	-
POLITY	-0.0168 (0.0233)	0.0825*** (0.0235)	-	-
Government Military Capability	10.9364* (5.8463)	-	-	-
Political Discrimination against MAR	0.2950** (0.1149)	-	0.2957*** (0.1075)	-
Number of MAR groups	0.2774*** (0.0875)	-	0.2667*** (0.0714)	-
OECD	-0.0302 (0.9570)	-	-0.3118 (0.8026)	-
USSR	-2.0595*** (0.6410)	-	-0.8468* (0.4728)	-
Sub Saharan	0.3506 (0.3146)	-	0.1090 (0.3193)	-
Latin America	0.5179 (0.4031)	-	0.5330 (0.3738)	-
ASEAN	0.6253 (0.4316)	-	0.3664 (0.4339)	-
Observations	533	533	873	873
Wald Chi deux	502.73***	67.85***	376.71***	50.35***

Eq 1 and 3 are Tobit Regression and Eq 2 and 4 are negative binomial regression. Robust standard errors in parentheses and Clusters on 110 countries.

* significant at 10%; ** significant at 5%; *** significant at 1%

Table 2 presents two further robustness checks that confirm that the diversionary theory is rejected by the data. In column [5] the POLITY variable is added as an instrument, and it is also added as a regressor in column [6]. This is an index of political freedom that is increasing with the quality of democratic institutions (and decreases with the harshness of dictatorship). As expected, more democratic regimes are more prone to let government unpopularity be expressed than more dictatorial regimes against the MAR. Column [7] and [8] differ from columns [1]-[4] by removing political elections and the government military capability from the list of instruments and the list of regressors in the structural-form equation. Removing these variables allows us to use a much larger sample, including the full eight years from the MAR dataset. The results remain qualitatively the same across these different specifications and sample sizes, suggesting that the rejection of the diversionary theory of violence against the MAR is quite robust.

We now try to substitute a more satisfactory theory to the diversionary one for explaining violence against MAR. As mentioned in the introduction, two key variables are potentially important, given the state of knowledge on civil wars and other forms of violent conflict in developing countries. These are natural resources, on the one hand, and foreign influences, as mainly exerted through foreign aid, on the other hand. We now offer a series of estimates suggesting that this research avenue is much more fruitful than the diversionary theory rejected above.

5. Explaining Repression against MAR

Table 3 follows roughly the same method for presenting the results as the previous two tables. The first column, i.e. [9] presents a reduced-form equation for the measure of foreign aid used here, namely ODA per capita, as explained above. This equation is globally significant, suggesting that the inflow of foreign aid in a recipient country depends positively on the number of MAR groups, the level of military capability of the government, and the

growth of GDP per capita. It depends negatively on population, life expectancy at birth and on GDP per capita. Some geographical or historical dummy variables also play a part in determining the level of foreign aid allocated to each recipient country.

The next two columns present two equations explaining the repression against MAR, including foreign aid as a regressor. In column [10], we do not control for endogeneity, and ODA per capita fails to be significant. By contrast, equation [11] includes a control for endogeneity, and this makes ODA p.c. weakly significant, with a negative sign. The residuals from the reduced-form equation are included for controlling for endogeneity, and they turn out to be significant. These results suggest that donors are using foreign aid in part as a way to reduce repression against the MAR, as suggested by Azam and Saadi-Sedik (2003), as mentioned in the introduction. However, the aid-repression trade-off thus identified is only weakly significant. We show below that this can be improved upon by controlling also for natural resources. Beside this impact of foreign aid, equation [11] also shows that this kind of repression is stronger when an armed conflict is ongoing in the country, when the number of MAR group is larger and they are more discriminated, and when the government has a higher level of military capability. Then, a few geographical or historical dummy variables are also useful for explaining the incidence of this repression. The significant and negative coefficient of GDP per capita shows that leaders of wealthier countries are less likely to use force against ethnic minorities, consistent with the conflict literature.

Table 3: Repression against MAR (i)

	Reduced-Form ODA p.c. [9]	Repression against MAR [10]	Repression against MAR [11]
ODA pc	-	0.0016 (0.0011)	-0.0065* (0.0039)
Residual ODA pc	-	-	0.0110** (0.0049)
Constant	430.6164*** (69.3798)	-2.5370*** (0.3806)	-1.8454*** (0.4340)
GDP pc	-0.0034** (0.0015)	-0.0001* (0.0000)	-0.0001** (0.0000)
Ongoing Armed Conflict	2.0473 (3.2471)	0.1944*** (0.0642)	0.1998*** (0.0580)
Political Discrimination against MAR	-1.7450 (2.3464)	0.3496*** (0.0899)	0.3163*** (0.0860)
Number of MAR groups	2.9952* (1.7942)	0.2344*** (0.0555)	0.1978*** (0.0522)
Government Military Capability	780.9726*** (156.7974)	10.9691*** (3.0259)	9.1764*** (2.8477)
OECD	-42.9635 (29.4027)	0.1296 (0.7500)	-0.1007 (0.6342)
USSR	-36.6465*** (8.3944)	-1.2821*** (0.3981)	-1.2736*** (0.3657)
Sub Saharan	-33.8869** (14.2980)	0.7064*** (0.2661)	0.5912** (0.2519)
Latin America	4.2379 (13.6143)	0.5625* (0.3205)	0.4847 (0.3035)
ASEAN	-0.7432 (9.3062)	0.9129*** (0.2929)	0.6694** (0.2612)
Camp David	126.0774* (68.4930)	1.2996* (0.7557)	1.8588*** (0.7142)
Population (log)	-31.3539*** (4.2547)	-	-
Life Exp at birth	-1.2963* (0.7355)	-	-
GDP pc growth	0.9178** (0.4474)	-	-
Observations	645	658	645
Wald Chi deux	161.18***	350.69***	424.88***

Eq 1 is Tobit Regression and Eq 2 and 3 are negative binomial regression. Robust standard errors in parentheses and Clusters on 108 countries. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 4: Regression against MAR (ii)

	Reduced-Form ODA p.c. [12]	Regression against MAR [13]	Regression against MAR [3]
ODA pc	-	-0.0069*** (0.0025)	-0.0058** (0.0029)
Residual ODA pc	-	0.0119*** (0.0036)	0.0107*** (0.0039)
Constant	427.7585*** (69.4150)	-1.7589*** (0.3571)	-1.6706*** (0.3913)
GDP pc	-0.0033** (0.0016)	-0.0001*** (0.0000)	-0.0001*** (0.0000)
Ongoing Armed Conflict	2.9919 (3.5645)	0.2457*** (0.0465)	0.2198*** (0.0474)
Political Discrimination against MAR	-2.6632 (2.4685)	0.2637*** (0.0863)	0.3107*** (0.0884)
Number of MAR groups	2.3317 (1.8228)	0.2162*** (0.0415)	0.2293*** (0.0467)
Government Military Capability	595.1380*** (172.8401)	9.9422*** (3.7983)	13.7508*** (3.8122)
Proportion Mountainous Terrain	0.1363 (0.1587)	0.0124*** (0.0043)	-
Oil production (million tonnes)	-0.0291 (0.0366)	0.0018 (0.0014)	0.0015 (0.0013)
Net Forest Depletion (% of GNI)	-2.7821 (1.8990)	0.0160 (0.0415)	0.0886*** (0.0321)
Diamond Producing Countries	12.5353 (10.7471)	0.5228** (0.2204)	0.2664 (0.2139)
Iron Ores Producing Countries	6.9684 (10.2466)	-1.2541*** (0.4191)	-1.2833*** (0.4072)
USSR	-40.4417*** (8.3276)	-1.5681*** (0.3819)	-1.4265*** (0.3557)
Camp David	126.5961* (67.2328)	1.9500*** (0.6807)	1.5633** (0.6910)
OECD	-49.3118 (30.2536)	-	-
Sub Saharan	-38.0042** (16.3211)	-	-
Latin America	-0.1480 (13.9253)	-	-
ASEAN	-4.3134 (8.7397)	-	-
Population (log)	-30.7797*** (3.9912)	-	-
Life Exp at birth	-1.3006* (0.7221)	-	-
GDP pc growth	1.0215** (0.4649)	-	-
Observations	639	639	639
Wald Chi deux	213.82***	882.26***	632.55***

Eq 1 is Tobit Regression and Eq 2 and 3 are negative binomial regression. Robust standard errors in parentheses and Clusters on 108 countries. * significant at 10%; ** significant at 5%; *** significant at 1%

Table 4 enriches table 3 by adding various measures of the extractive resources available in the country. Column [12] displays the new reduced-form equation, with the expanded list of instruments, while column [13] and [14] show two equations involving two slightly different combinations of regressors and controlling again for endogeneity. In both of them, the aid-repression trade-off comes out even more significant than before, while the residuals also strongly support the endogeneity assumption. This confirms that donors are actively using part of their aid, or the leverage that aid is giving them, with a view to reduce the violence perpetrated against MAR. Among the added resource variables, one notices that the proportion of mountainous terrain and the level of net forest depletion seem to be creating some multicollinearity, as the latter is only significant when the former is removed. The surprising result is that oil production is not significant, although it has a positive sign, while iron ore has a negative and significant impact, suggesting that iron ores mines do not entail the kind of violence against MAR that diamonds seem to have in equation [13]. However, in a robustness check where we exclude the variable “Government Military Capability” and we have thus an estimation over the period 1996 to 2003, the coefficient of the oil production variable turn out significant at the 10% level and positive.

Hence, although extractive resources seem to play some ambiguous role in determining the pattern of violence, we have found one highly robust finding, namely that countries that receive more foreign aid perpetrate less violence against their minorities at risk. This seems to be a fairly robust result that adds a line at the positive effects of foreign aid that economists have looked for over the recent years.

6. Conclusion

This paper has first tried to test the domestic diversionary theory of violence against minorities at risk (MAR) offered by Tir and Jasinski (2008). After explaining why the original

approach followed by these two authors was inappropriate for testing their theory, we have provided a simple framework consistent with their hypothesis. Then, confronting this to the data turned out to reject consistently this theory by showing (i) that there is no trade-off between the government's level of unpopularity, as measured by these two authors, and the level of violence perpetrated by the government against these MAR, as we find a positive slope even after controlling for the alleged endogeneity of the repression against MAR; and (ii) that endogeneity is only weakly significant, even with the wrong sign, suggesting that rulers decide on victimizing MAR without necessarily paying much attention to the impact that this could have on their level of unpopularity.

We have then tried to substitute a more satisfactory theory of violence against the MAR to this empirically deficient one. We argued on the basis of current wisdom in conflict theory that extractive resources are probably a key determinant of the incidence of this kind of violence, while foreign aid is used with some success by donors with a view to reduce this kind of repression. This was done by showing (i) that there is a significant aid-repression trade-off, and that (ii) donors are actually using it to reduce violence, as shown by our endogeneity test. The results regarding extractive resources are more mixed, and probably call for further research, using more detailed measures of their quantities produced or in reserves and of their geographical location.

Appendix

Table A1: Main summary statistics

	Observation	Mean	Median	Std. Dev.	Min.	Max.
Index of Government unpopularity	880	0.966	0	2.414	0	37
Repression against MAR	874	0.501	0	0.926	0	8
Polity	864	2.990	6	6.391	-10	10
Political Discrimination	874	1.852	2	1.202	0	4
Number of MAR groups	874	2.371	2	1.692	1	11
Gov. Military Capability	661	0.008	0.002	0.021	.00005	0.149
Ongoing Armed Conflict	880	0.239	0	0.709	0	7
Urban Population (% of Total)	880	52.28	54	22.29	7.42	100
ODA pc	880	43.37	22.86	59.14	0	506.99
GDP pc	880	4552.6	1322.7	7668.5	81.0	37227.2
GDP pc growth	879	3.858	3.967	5.197	-16.74	88.95
Life Exp. at birth	880	65.68	68.79	10.32	35.61	81.76
Population (log)	880	9.530	9.336	1.486	6.35	14.07

Countries who have never used force against MAR

	Observation	Mean	Median	Std Dev.	Min.	Max.
Index of gov. unpopularity	304	0.487	0	1.585	0	20
Political Discrimination	304	1.651	1.5	1.196	0	4
Number of MAR	304	1.908	2	0.929	1	4
Military capability	229	0.009	0.002	0.025	0.0002	0.149
Ongoing armed conflict	304	0.029	0	0.169	0	1
Polity	296	5.003	8	6.081	-9	10
ODA p.c.	304	38.07	23.49	56.51	0	413.6
GDP pc	304	8048.3	2400.9	10742.9	122.1	37227.2
GDP pc growth	304	4.254	3.917	6.738	-16.7	88.95

Countries who have used forces against MAR at least one time

	Observation	Mean	Median	Std Dev.	Min.	Max.
Index of gov. unpopularity	576	1.219	0	2.720	0	37
Political Discrimination	570	1.960	2	1.193	0	4
Number of MAR	570	2.619	2	1.938	1	11
Military capability	432	0.008	0.002	0.018	0.0001	0.134
Ongoing armed conflict	576	0.351	0	0.847	0	7
Polity	568	1.942	4	6.301	-10	10
ODA p.c.	576	46.17	22.65	60.33	0	506.9
GDP pc	576	2707.7	965.03	4383.0	81.00	26151.9
GDP pc growth	575	3.649	3.973	4.149	-16.74	27.46

References

- Azam, Jean-Paul (2002): "Looting and Conflict between Ethno-Regional Groups: Lessons for State Formation in Africa", *Journal of Conflict Resolution* 46 (1): 131-153.
- Azam, Jean-Paul, and Anke Hoeffler (2002): "Violence Against Civilians in Civil Wars: Looting or Terror?", *Journal of Peace Research*, 39 (4): 461-485
- Azam, Jean-Paul, and Tahsin Saadi-Sedik (2004): "Aid v. Sanctions for Taming Oppressors: Theory and Case Study of the Iraqi Kurds", *Defence and Peace Economics*, 15 (4), 343-364.
- Bennett, D. Scott and Allan C. Stam. 2000. EUGene: A conceptual manual, *International Interactions* 26(5): 179-204.
- Beevor, Antony (1982): *The Spanish Civil War*, Cassell: London.
- British Petroleum. 2009. "BP Statistical Review of World Energy 2010", Dataset, <http://www.bp.com/statisticalreview>.
- Cairns, Edmund (1997): *A Safer Future: Reducing the Human Cost of War*, Oxfam Publications: Oxford.
- Cross-National Time-Series Data Archive. 2010. Project Director: Arthur S. Banks. <http://www.databanksinternational.com> (accessed March, 2010).
- Esteban, Joan, Massimo Morelli and Dominic Rohner (2010): Strategic Mass Killings, paper presented at the "Political Economy and Development" workshop, Paris School of Economics, June 4, 2010.
- Fearon, James D. (2005): "Primary Commodity Exports and Civil War", *Journal of Conflict Resolution*, 49 (4): 483-507.
- Fearon, James D. and David D. Laitin, 2003. Ethnicity, Insurgency and Civil War, *American Political Science Review*, 97(1) (February):75-90.
- Fjelde, Hanne (2009): "Buying Peace? Oil Wealth, Corruption and Civil War, 1985-99", *Journal of Peace Research*, 46 (2), 199-218.
- Gilmore, Elisabeth, Nils Petter Gleditsch, Päivi Lujala & Jan Ketil Rød, 2005. Conflict Diamonds: A New Dataset, *Conflict Management and Peace Science* 22(3): 257–292
- Gleditsch, Nils Petter, Peter Wallensteen, Mikael Eriksson, Margareta Sollenberg and Havard Strand. 2002. Armed conflict 1946-2001: a new dataset. *Journal of Peace Research* 39(5):615-37.
- Lujala, Päivi (2009): "Deadly Combat over Natural Resources: Gems, Petroleum, Drugs, and the Severity of Armed Civil Conflict", *Journal of Conflict Resolution*, 53 (1): 50-71.

- Lyall, Jason (2009): "Does Indiscriminate Violence Incite Insurgent Attacks? Evidence from Chechnya", *Journal of Conflict Resolution*, 53 (3), 331-362.
- Minorities at Risk Project. 2009. "Minorities at Risk Dataset." College Park, MD: Center for International Development and Conflict Management. <http://www.cidcm.umd.edu/mar/data.asp> (accessed December, 2009).
- Pickering, Jeffrey and Emizet F. Kisangani. 2005. Democracy and diversionary military intervention: Reassessing regime type and the diversionary hypothesis. *International Studies Quarterly* 49(1): 23-43.
- Polity IV. (2010). "Political Regime Characteristics and Transitions, 1800-2008", Dataset, <http://www.systemicpeace.org/polity/polity4.htm>
- Tir, Jaroslav, and Michael Jasinski (2008): "Domestic-Level Diversionary Theory of War: Targeting Ethnic Minorities", *Journal of Conflict Resolution*, 52 (5), 641-664.
- World Bank. 2010. "World Development Indicators", Dataset, <http://data.worldbank.org/indicator>