



## Economic shocks, civil war and ethnicity

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### ABSTRACT

Using a novel cross-country panel dataset, we show that commodity terms of trade declines cause civil war in countries with intermediate ethnic diversity. The civil war effects for highly diverse or homogenous societies are negative and insignificant. Since the size of the largest ethnic group explains 96% of the variation in the ethnic diversity measure, we conjecture that a key problem may be ethnic dominance: countries where the ethnic plurality is large, but not so large it cannot be challenged, may be most vulnerable to economic shocks. The findings may help to bridge the partly distinct literatures linking ethnicity and economic factors to conflict.

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### 1. Introduction

Civil conflicts remain a major economic development challenge. They lead to deaths and injuries, physical and economic insecurity, the loss and misallocation of assets, and potentially a different trajectory of long-run development. Internationally, they can cause trade disruptions, refugee flows, the rise of criminal and terrorist networks and impetus for war in neighboring countries (Blattman and Miguel, 2010; Cerra and Saxena, 2008; World Bank, 2011). Unfortunately, while the empirical literature has tested a large number of conflict determinants (Collier and Hoeffler, 2004; Fearon and Laitin, 2003; Sambanis, 2001), most are not robust across samples and estimation methods (Hegre and Sambanis, 2006). The recent survey by Blattman and Miguel (2010), concludes that the most robust determinants may be the level and growth rate of income per capita along with geographic factors like mountainous terrain.

Even so, Djankov and Reynal-Querol (2010) find that the effect of income levels is sensitive to controlling for country fixed effects and historical factors, and Bazzi and Blattman (2014, BB hereafter) find no evidence linking commodity export price growth to civil war onset for 118 developing countries from 1958 to 2007. The no-effect result in BB is robust to using six different measures of civil war onset and distinguishing three

commodity classes; controlling for a measure of commodity price shocks to household food and fuel consumption; and studying subsamples of for instance autocracies, intermediate democracies, and countries with high ethnic polarization. The authors additionally show that the earlier Brückner and Ciccone (2010) result that export price declines cause civil war in sub-Saharan Africa fails to be robust to several minor specification changes. They, therefore, conclude that commodity price shocks are unlikely to be an important determinant of civil war onset.

In this paper, we use a new dataset containing commodity export and import price shocks for 160 countries from 1970 to 2009 to show that commodity terms of trade declines have a large and robust effect on civil war onset in countries with intermediate levels of ethnic diversity. Since the size of the largest ethnic group explains 96% of the variation in the ethnic diversity measure, we also conjecture that a key problem may be ethnic dominance: countries where the ethnic plurality is large, but not so large that it cannot be challenged, may be most vulnerable to commodity price declines. This being said, the size of the largest group is also a strong predictor of the ethnic polarization measure defined in Montalvo and Reynal-Querol (2005) and based on Esteban and Ray (1994). Although the ethnic dominance concept seeks to capture the presence of a single large group, and polarization seeks to capture the presence of two or more large groups, we find that there is too little variation in the ethnicity data to clearly distinguish their effects. On this basis, we conclude that efforts to delink terms of trade declines from civil war onset may benefit from focusing on countries with intermediate ethnic diversity, ethnic dominance or high ethnic polarization.

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After we establish the main result, we try to explain the departure from BB's conclusion that commodity price declines have no clear effect on civil war onset. The evidence suggests that there are two minor reasons along with a major reason for the different results. The first minor reason is that BB use a different econometric specification: they test the effects of commodity price shocks during the current and two preceding years, while we focus on price shocks during the three preceding years. The second minor reason is that they test for differential effects of price shocks in ethnically polarized countries, but not in countries with intermediate ethnic diversity or ethnic dominance. The major reason, however, appears to be that we study the effects of terms of trade shocks – shocks to the ratio of export to import prices – instead of just shocks to export prices. In contrast to BB, who choose to ignore import price shocks based on the argument that developing country households do not spend much on imports, our starting point is that the open economy macroeconomics literature tends to predict that export and import price shocks will have the same general equilibrium effect (Agenor and Montiel, 1999; Easterly et al., 1993; Matsuyama, 1988; Mendoza, 1995; Rodrik, 1998, 1999; Turnovsky, 1993). To see this clearly, consider a textbook economy that exports 100 units at \$1 each and imports 20 units at \$5 each. In this case, a ten percent decrease in the export price and a ten percent increase in the import price will both decrease the trade balance and aggregate demand by \$10 on impact.

Apart from the civil war literature, the paper relates to the broader literature linking ethnicity to economic and political outcomes (Alesina et al., 2003; Easterly and Levine, 1997). While most of these studies test for a monotonic effect of ethnic diversity, we follow Temple (1998), Collier and Hoeffler (2004) and Montalvo and Reynal-Querol (2005) in studying the effect of intermediate ethnic diversity and particular group size distributions. However, instead of testing for a direct effect of ethnicity on social outcomes, we ask how ethnic dominance mediates the effect of terms of trade shocks. The fact that terms of trade growth is time-varying allows us to estimate a fixed effects panel and, therefore, control for unobserved country heterogeneity in civil war risk. In contrast, papers linking ethnicity directly to conflict are unable to include fixed effects as the standard ethnicity datasets in the literature are not time-varying. Miguel et al. (2004), (Table 5) test whether ethnic diversity exacerbates the conflict effect of rainfall-induced growth shocks in sub-Saharan Africa, but find no evidence that this is the case. On the other hand, Rodrik (1999) finds that external shocks (the standard deviation of terms of trade growth times the international trade-to-GDP ratio) hitting developing countries in the 1970s were associated with larger future growth declines in countries with high ethnic diversity, inequality, autocracy, or weak institutions. Unlike these papers, we document a non-linear effect of ethnic diversity. Brückner and Gradstein (forthcoming) find that the political risk effect of oil price induced income declines decreases with ethnic polarization, but the correlation between their political risk effect measures and our civil war measures is almost zero.

We believe that our findings may help to synthesize two distinct views of civil war: the long-standing literature in political science, which stresses the importance of ethnic differences (Gellner, 1983; Gurr and Harff, 1994; Horowitz, 1985; McGarry and O'Leary, 2013; Posen, 1993; Smith, 1986) and the recent economics literature, which stresses the importance of economic shocks (Angrist and Kugler, 2008; Chassang and Padro-I-Miquel, 2009; Dube and Vargas, 2013). The simplest interpretation may be Rodrik's (1999) argument that countries with a high level of latent social tensions (in our case, an ethnic dominance problem) are more likely to degenerate into redistributive conflict during economic downturns. Apart from increasing political tensions due to scarcity, recessions can, potentially, decrease the opportunity cost of fighting (Besley and Persson, 2008; Chassang and Padro-I-Miquel, 2009) or state capacity (Bates, 2008a, BB). Esteban and Ray (2011) and Esteban et al. (2013) link ethnic polarization to conflict intensity in a formal model and empirical study. Yet,

they do not address how the interaction between polarization and economic shocks might induce a conflict onset.

In the remainder of the paper, Section 2 describes our data and empirical methodology. Section 3 presents the main results. Section 4 explains why our results differ from BB's. Section 5 summarizes and concludes the paper.

## 2. Data and methodology

In this section, we introduce the data and methodology used to test the effect of commodity price shocks on the probability of civil war onset.<sup>2</sup> Table 1 displays the summary statistics.

### 2.1. Civil war

The main dependent variable is a dummy for civil war onset based on the UCDP/PRIO (v. 4) Armed Conflict Dataset of Gleditsch et al. (2002) and Themnér and Wallensteen (2011). The codebook defines a conflict as (p. 1) “a contested incompatibility that concerns government or territory or both where the use of armed force between two parties results in at least 25 battle-related deaths. Of these two parties, at least one is the government of a state.” Since the set of all conflicts includes governments fighting abroad, we focus on the subset which are internal armed conflicts or internationalized internal armed conflicts (p. 9): “Internal armed conflict occurs between the government of a state and one or more internal opposition group(s) without intervention from other states... Internationalized internal armed conflict occurs between the government of a state and one or more internal opposition group(s) with intervention from other states (secondary parties) on one or both sides.” Following most of the civil war literature (Blattman and Miguel, 2010), we define a civil war as an armed conflict with at least 1000 battle deaths per year. Finally, a civil war *onset* is defined as a year with civil war incidence that is not preceded by civil war incidence in the previous year.<sup>3</sup> In the latter case, we code the country-year as missing. In our opinion, the resulting dataset is a mixture of protracted wars with a fluctuating death toll (for instance, we count three onsets in Angola 1975–2002) and truly new wars, such as Iraq in 2003. However, our results are robust to using the alternative Correlates of War (COW) civil war onset dataset<sup>4</sup> and the less episodic Fearon and Laitin (2003) dataset, which does not count multiple onsets when an existing war intensifies.

### 2.2. Ethnicity

The main ethnicity dataset is Fearon (2003) who, after discussing the conceptual and practical difficulties of distinguishing ethnic groups, defines a prototypical ethnic group according to seven criteria. The two most important, and the only crucial ones, are common ancestry and a sense of community and self-consciousness as a group (Fearon, 2003, p. 201): “Members are conscious of group membership and view it as normatively and psychologically important to them.” The other five criteria include sharing distinguishing cultural features, such as language, religion and customs, having or at least “remembering” a homeland, and having a shared, collectively represented and at least partly fact-based history as a group. The literature on ethnicity and nationalism (Gellner, 1983; Horowitz, 1985; Smith, 1986) suggests that Fearon's criteria are widely accepted. The dataset codes 822 ethnic

<sup>2</sup> We focus on the onset rather than incidence of civil war since the two may have different determinants (e.g., Collier et al. (2001), Elbadawi and Sambanis (2002), the special issue of the Journal of Peace Research 41, 3, 2004 and BB). For instance, civil war incidence may depend on lagged incidence (Beck and Katz, 2011).

<sup>3</sup> We have six observations of civil war preceded by missing data. When we examined the six cases we found that four were likely to be true war onsets, while the remaining two (India and the Philippines in 1950) may have been ongoing civil wars. Thus, we recoded those two observations as missing. Since our terms of trade data begins in 1970, these wars are not included in the regressions.

<sup>4</sup> See <http://www.correlatesofwar.org/>.

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