



Economic shocks and civil conflict: Evidence from foreign interest rate movements[☆]

Peter Hull^{a,*}, Masami Imai^{b,1}

^a Department of Economics, Massachusetts Institute of Technology, Cambridge, MA 02142, United States

^b Department of Economics, Wesleyan University, Middletown, CT 06459-0007, United States

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ABSTRACT

We exploit annual variation in influential foreign interest rates to identify externally-driven components of short-run income shocks in small open economies from 1971 to 2004 and explore the statistical nature of the income–civil conflict nexus. Our results show that movements in foreign interest rates have important effects on civil conflict risk through domestic economic channels. More importantly, the income–conflict relationship is found to be nonlinear – the conflict risk of ethnolinguistically fragmented countries is found to be much more sensitive to shifts in economic conditions than that of homogeneous countries. These results suggest an important mechanism by which short-term economic shocks affect the trajectory of the political and economic performance of ethnically divided states.

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1. Introduction

The degree to which internal conflict has burdened economic development in recent history is difficult to overstate. Since 1960, one third of all countries have experienced at least one year of intranational war, defined as conflict that claims over 1000 lives within its borders, and twenty percent of the world has seen at least ten (Blattman and Miguel, 2010). Internal war has steadily surpassed the destructive legacy of international war, claiming over 16.2 million casualties between 1945 and 1999 – five times as many as the number of lives lost in comparable conflict between states (Fearon and Laitin, 2003). Ultimately, these figures may greatly understate the human cost; off the battlefield, the long-term effects of disease, disability, and social fragmentation that result indirectly from civil war extend well past the arrival of peace (Ghobarah et al., 2003). Beyond the social burden, the economic costs of civil conflict are

similarly high. Immediate consequences – the demolition or weakening of infrastructure, loss of technology, reduction of physical and human capital, and the diversion and destruction of the productive labor force – can slow or even reverse the process of development (Abadie and Gardeazabal, 2003; Collier, 2007; Sandler, 2000).

Although the economic and social toll of civil war is widely-recognized, its underlying causes remain elusive. In theory, local short-run economic conditions may affect the likelihood of civil war through changes to the potential warrior's opportunity costs of fighting (which include foregone non-conflict income) as shown by Grossman (1991), Dal Bó and Dal Bó (2011), and Chassang and Padró-i-Miquel (2009)², yet the body of empirical literature supporting such predictions with credible and robust evidence is still young. Earlier cross-country works of Collier and Hoeffler (2004) and Fearon and Laitin (2003), though finding strong negative correlations between economic conditions and the incidence of civil conflict, likely suffer from omitted variable and endogeneity biases. More recent empirical studies make use of plausibly exogenous shocks to economic growth (e.g., rainfall, and terms of trade) in an attempt to find cleaner estimates of the income–conflict relationship and also to explore the extent to which it is affected by institutional

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* Corresponding author. Tel.: +1 2076918800.

E-mail addresses: hull@mit.edu (P. Hull), mimai@wesleyan.edu (M. Imai).

¹ Tel.: +1 860 685 2155; fax: +1 860 685 2301.

² The implication of this theory is particularly relevant to economic development – if the state of the economy affects the likelihood of sudden civil war by altering the incentives of potential combatants, then countries may be more likely to become mired within a “conflict trap” (Collier, 2007).

quality and other socio-political factors (Besley and Persson, 2009; Brückner and Ciccone, 2010; Miguel et al., 2004)³.

This paper revisits these issues by introducing a new identification strategy to test the causal links between economic growth, civil conflict, and the socio-political setting. Specifically, we borrow from a large literature of open economy macroeconomics the finding that when capital is internationally mobile, small open economies are highly sensitive to interest rate fluctuations in large influential economies as they explicitly or implicitly peg their currencies to the base currency of their choice, thereby giving up their monetary independence (e.g., Aizenman et al., 2008; Borensztein et al., 2001; Calvo and Reinhart, 2002; di Giovanni and Shambaugh, 2008; Hausmann et al., 2001). In the most extreme case, the literature on the open-economy “trilemma” suggests that a country facing a completely open capital account and a fixed exchange rate must align its monetary policy to exactly match that of its base country (Frankel et al., 2004). We thus identify economic fluctuations in small open economies by interest rate movement in their base countries and its interaction with measures of the domestic exchange rate regime and capital account openness. The main identifying assumption for our purpose is that interest rates in influential countries (that is, countries to which currencies are typically pegged, such as the United States, France, and Germany) are determined exogenously to the domestic economic and political conditions of small developing countries at risk of internal conflict⁴.

Our identification strategy is similar in spirit to that of two closely related papers: Miguel et al. (2004) and Brückner and Ciccone (2010), which use rainfall and terms of trade shocks, respectively, as sources of exogenous variation in identifying the economic performance of sub-Saharan African countries. Our approach complements these papers and offers some additional benefits. One of the (non-) findings in Miguel et al. (2004) is that political, social, or geographical conditions do not seem to affect the propensity of a country to fall into civil war in response to negative economic shocks. These results notwithstanding, it is important to remember that in order to obtain strong identification with rainfall variation, Miguel et al. (2004) restrict their focus to sub-Saharan African countries where weather patterns have significant effects on economic performance. However, the exclusion of countries outside of sub-Saharan Africa reduces both sample size and the cross-country variation in these socio-political factors necessary to find meaningful nonlinearities in the income–conflict relationship. Since the movements in base country interest rates have been shown to exert powerful and broad effects on small open economies around the globe, we can expand our sample beyond sub-Saharan Africa. Our data set, thus, contains much richer variation in the institutional characteristics across countries, which, in turn, enables us to carry out more powerful tests on whether country-specific institutional characteristics amplify (or moderate) the effects of economic shocks on conflict risk⁵. In addition, examining the effects of economic conditions on civil conflicts through a different set of instruments is in itself a

valuable exercise, given that the robustness of previous results has been questioned⁶.

We find three notable results. First, our first-stage results reproduce the estimations of the relationship between base country interest rates and output growth that characterizes the literature of open economy macroeconomics; i.e., we show that a significant part of economic fluctuations in small open economies can be explained by base country interest rates and the interaction of base rates with domestic exchange rate regimes and capital account openness. Second, as with Miguel et al. (2004) and Brückner and Ciccone (2010), our second-stage results show that the estimated effect of domestic income shocks on the probability of civil violence is statistically significant and of a sizeable magnitude. Our most conservative estimates suggest that a negative shock in GDP growth by four percentage points in a given year (not uncommon in developing countries) increases the probability of civil conflict by approximately six percentage points. As the sample statistics suggest that in each year a country has on average an unconditional 16.7% chance of experiencing civil conflict (Table 1), this represents an increase in conflict risk by thirty percent. While this estimate is smaller in magnitude than those obtained from their sample of sub-Saharan African countries, it supports the qualitative conclusions of Miguel et al. (2004) and Brückner and Ciccone (2010) that negative short-run economic shocks elevate local conflict risk.

Lastly, we find one result that differs from previous papers. Miguel et al. (2004) do not find any nonlinearities in the conflict–income nexus; that is, political, social, or geographical conditions do not seem to amplify or moderate the effects of economic shocks on the propensity of a country to fall into civil conflict. Although we find no statistically significant evidence supporting the relevancy of religious diversity, reliance on oil or other natural resource exports, political institutional quality, or country terrain, we show that higher levels of ethnolinguistic diversity make a country more conflict-prone when its economy suffers a recession. This estimated nonlinearity is economically important. For a country at the 25th percentile of global ethnolinguistic fragmentation (such as Venezuela or Greece), a sudden decrease in GDP growth by one percentage point increases the probability of civil conflict by only a tenth of a percentage point. However, for a country at the 75th percentile (such as Kazakhstan or Ethiopia) the same economic shock increases the probability of internal violence by an average of 3.88 percentage points (23.2% from the typical annual likelihood of conflict). These results support the claim that slowed economic development may widen pre-existing ethnic rifts in countries with particularly fractionalized social institutions (Fearon, 2007).

The remainder of this paper is organized as follows. Section 2 discusses and summarizes the data used in this paper, and Section 3 describes in detail the empirical strategy. Section 4 provides a discussion of the main results and summarizes the findings from extensions that consider various socio-political and geographic factors. Section 5 describes the results of various robustness checks and their implications for both the main results and their extensions. Section 6 provides concluding remarks, with a brief case study presented in Section 7.

2. Data

An annual panel dataset consisting of 97 countries from 1971 to 2004 is constructed from a variety of sources. Variables of primary interest in the baseline model include the presence of internal violence, annual real output growth rates, measures of exchange rate regime and capital account openness, and base country interest rates. In addition, we consider various macroeconomic, social, and political variables

³ Recent empirical work also includes studies that utilize more disaggregated micro-economic data. Benmelech et al. (2010) make use of detailed data on Palestinian suicide bombers collected by the Israeli Security Agency to examine whether economic conditions affects the quality or productivity of suicide bombers. Krueger and Malečková (2003) study a connection between poverty and participation in terrorism, and Beber and Blattman (2010) use a hand-collected dataset on the characteristics of young soldiers in Uganda to measure the role of coercion and economic reward in military recruitment.

⁴ We briefly describe the case of Niger, a country with a strict currency peg to the French Franc, which fell into a series of violent civil conflicts shortly after Banque de France sharply raised its policy rate in the late 1980s in an attempt to match that of the Bundesbank. See Section 7.

⁵ A paper that is closely related to ours in this respect is Nunn and Qian (2010) who examine the impact of the US food aid on civil conflicts with global sample of developing countries. They show that ethnic fractionalization is an important mediating variable; i.e., food aid causes fewer conflicts in ethnically homogeneous countries.

⁶ See discussion of relevant econometric issues in Blattman and Miguel (2010), Ciccone (2011), Bazzi and Blattman (2011), and Miguel and Satyanath (2011). Notably, Miguel and Satyanath (2011) find sub-Saharan African growth to be less sensitive to rainfall shocks after 1999 and emphasize the need for alternative identification strategies.

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