

Guns, Books, or Doctors?

Conflict and Public Spending in Haiti: Lessons from Cross-Country Evidence

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Abstract

Haiti's economic development has been held back by a history of civil conflict and violence. With donor assistance declining from its exceptional levels following the 2010 earthquake, and concessional financing growing scarce, Haiti must learn to live with tighter budget constraints. At the same time, the United Nations forces that have provided security in the past decade are scaling down. Against this backdrop, this paper explores the conditions under which

public spending can minimize violent conflict, and draws possible lessons for Haiti. Drawing on an empirical analysis of 148 countries over the period 1960–2009, simulations for Haiti suggest that increases in military spending would be associated with a higher risk of conflict, an observation in line with Haiti's own history. Greater welfare expenditure (education, health, and social assistance), by contrast, would be associated with lower risk of conflict.

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**Guns, Books, or Doctors?
Conflict and Public Spending in Haiti:
Lessons from Cross-Country Evidence¹**

SCD Background Paper

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INTRODUCTION

A history of political instability and violence, fed by a lack of inclusiveness, has contributed to preventing Haiti from realizing its developmental aspirations. The country has become trapped in a low equilibrium that year after year has made it one of the poorest and least equal countries in the world. Against this backdrop, Haiti has used the substantial increase in donor assistance over the past decade and enhanced access to concessional borrowing to finance public spending aimed at greater inclusion and fewer grievances. As a result, the country's human development indicators have improved.

However, this social and infrastructure spending has become particularly vulnerable as financing circumstances change. Aid is now dropping from the exceptional levels that followed the 2010 earthquake, as is Haiti's access to concessional financing.² Furthermore, the United Nations Stabilization Mission in Haiti (MINUSTAH), which has ensured security since 2004, is scaling down its presence, triggering a debate on whether the national budget should fund an increase in military spending to fill the gap.

With a shrinking envelope, can the budget adjust without jeopardizing the recent progress achieved in human development? Can it adjust without increasing the risk of violence, which would hamper growth prospects? Can any lessons be drawn to help Haiti, especially concerning questions of what types of public spending can reduce grievances and conflict? In other words, would doctors, books or guns be the most effective?

Detailed country data and in-depth analysis would usually be required to provide the beginning of an answer. But in a low-income country such as Haiti, the long time series needed to identify such relationships are not available.³ As an alternative, this paper draws on time-series cross-section data from 148 countries over the 1960-2009 period. Simulations for Haiti suggest that moving more resources to welfare spending (education, health, and social transfers) would be associated with a lower risk of conflict. Increases in military spending would on the contrary be associated with a higher risk of conflict.

The paper proceeds as follows: Section I discusses the literature on public spending and conflict; Section II reviews some characteristics of Haiti; Section III presents our approach and the data; Section IV describes the results and simulations for Haiti; and the final section concludes.

² Lower international oil prices reduce the availability of concessional resources from the República Bolivariana de Venezuela through the Petrocaribe agreement.

³ See Singh and Weber (1997), for example, for an interesting discussion on the influence of the composition of public spending on economic growth in Switzerland based on continuous time-series going back to the 1950s.

I. Public Spending and Conflict

There is a significant body of research investigating why some countries experience violent civil conflict. Previous work points to rebel motivation arising from grievance and injustice (Gurr, 1970; Wimmer et al., 2009; Cederman et al., 2011) or economic opportunity and greed (Collier and Hoeffler, 1998, 2004). Other parts of the literature emphasize the characteristics of the state and the different facets of state capacity (Fearon and Laitin, 2003; Buhaug and Rød, 2006; Hendrix, 2010; Thies, 2010). A key aspect of state capacity is having the material resources to govern and using fiscal policy to advance government's priorities. In this regard, research has pointed out the importance of government spending in preventing violent conflict. That work emphasizes specific types of spending including military spending and social spending such as programs for education, health, and social security.

Military Spending

Collier et al. (2009) argue that financial and military feasibility (and thus the coercive and administration capacity of a state) play an important role in explaining the occurrence or lack of rebellion. Weak states (i.e. ones that do not have sufficient bureaucratic presence across their national territory in the form of police and military forces) will face difficulties in enforcing laws, imposing order, and maintaining peace. Similarly, Fearon and Laitin (2003) suggest that "most important for the prospects of a nascent insurgency are the government's police and military capabilities and the reach of government institutions into rural areas."⁴ Military spending is an important aspect of state capacity to pacify violent conflict through coercion and policing (Hendrix, 2010).

In consolidated democracies, where there is significant governmental oversight over the budget, increasing military expenditure provides public goods for citizens in the form of security from domestic and international conflict. In mixed regimes and autocracies, on the other hand, military spending is primarily used for repression, patronage to regime loyalists, or direct rents to the military to prevent possible coup attempts (Collier and Hoeffler, 2007).

In this regard, Herbert et al. (2013) point out that the emergence of rebel groups in the Central African Republic partly stemmed from the state's inability to protect its citizens from violence and poverty. The state's capacity and authority in many core state functions were too weak. Along the

⁴ Previous studies have mainly focused on the duration of violent conflict, relying on military personnel per capita taken from the Correlated of War (COW) Material Capabilities data set (Hendrix, 2010). A key argument is that because a strong military can defeat rebel groups more easily, it contributes to shortening the duration of conflict (Mason and Fett, 1996; Mason et al., 1999; DeRouen and Sobek, 2004). There is also evidence to the contrary (Balch-Lindsey and Enterline, 2000).

same lines, Hegre and Sambanis (2006) show that the number of military personnel tends to be negatively and robustly correlated with civil war onset.

The opposite could also be suggested, however. Increasing military spending could provide opponents within the military with the resources they need to overthrow a regime. Larger military budgets may not generate efficiency and loyalty, but may result from political leaders bribing the military to keep them from staging a coup (Belkin and Schofer, 2003; Acemoglu et al., 2009; Keefer, 2010). Many countries that are in danger of civil war face other risks as well (Bodea and Elbadawi, 2007; Svolik, 2009; Roessler 2011). Stacking the military with loyalists or members of a particular ethnic group by shuffling, arresting, or executing high-ranking officers, or by creating multiple and overlapping units suspicious of each other, can undermine the quality of the military forces and further weaken vulnerable regimes.

Furthermore, Henderson and Singer (2000) argue that because higher military expenditure crowds out social spending and reduces economic growth and investment, resulting citizen grievance is more likely to fuel violent conflict. Collier and Hoeffler (2007) find that military spending is at best ineffective in reducing the risk of internal conflict. Similarly, recent work by Taydas and Peksen (2012) finds no effect of military spending on civil war onset.

Singh et al. (2014) argue that the effect of military spending is conditional on the importance of a country's oil and gas production. These authors find that higher levels of military spending are associated with lower risk of both minor and major conflict onset in countries that are rich in oil and gas. By contrast, in countries with little or none of these resources, increases in military spending are associated with a higher risk of conflict. For oil-poor countries with limited resources, military spending could be perceived as crowding out more important spending, fueling citizens' grievances, and raising risk of conflict. As economies become richer in oil and can tap more resources, their governments may be less constrained and military spending may take place without reducing other programs. Furthermore, as these governments grow richer, they may represent more attractive prizes to rebels. The governments may need larger military budgets to fend off unwanted claims on their treasuries, either through patronage or rebel action.

Social Spending

Azam (2001) observes that "the occurrence of civil conflict is intimately related to the failure of government to deliver the type of public expenditure that people want; i.e. with a strong redistributive component such as health and education." In earlier work, he uses a game theory model that explicitly links redistributive policy adopted by states with domestic peace (Azam, 1995). Governments could thus also foster their legitimacy, and thereby reduce the risk of conflict, by signaling that they care about their populations. This could be done in a variety of ways, such as increasing spending to promote water sanitation, basic health, or education (Stasavage, 2005).

Taydas and Peksen (2012) argue that spending resources on social welfare programs leads to more loyalty and support from citizens, which increases the difficulty of rebel recruitment.⁵ Through welfare policies that influence positively the living standards of citizens, governments can outspend the opposition, helping gain support from a broad segment of the population, co-opt political opposition, and decrease the incentives for organizing a rebellion. Social safety nets, transfers, and investment in public goods show people that the state cares, and prevents disadvantaged members of society from falling below a certain level of poverty and experiencing absolute desperation. It has been argued that this strategy, namely government commitment to redistribution in favor of the poor, was used by rulers in the West in the nineteenth century to increase their legitimacy and prevent revolutions (Acemoglu and Robinson, 2000).

Robins (2012) mentions that studies of the attitudes and priorities of conflict-affected people have concluded that the degree to which a state meets its citizens' everyday needs is an important component of their assessment of its legitimacy. From this perspective, positive encounters with frontline service officials build legitimacy for the state, particularly in fragile and conflict situations where the state was previously mistrusted, or outright feared (Brinkerhof et al., 2012). Similarly, in his study in Medellin, Colombia, Guerrero (2011) finds that a quick upgrading of basic services (infrastructure, health, and education) in the city's less favored districts improved political support for and trust in government.

Taydas and Peksen (2012) also argue that social spending promotes economic development more broadly, thereby raising the opportunity cost of rebellion. Government investment in human capital has a positive influence on social mobility, labor opportunities, and the distribution of earning capacities (Korpi and Palme, 1998; Chu et al., 2000; Justino, 2003; Rudra, 2004; Thyn, 2006). It leads to better-skilled and more productive workers, enhancing the international competitiveness of the economy (Schultz, 1963; Van de Walle, 1996; King, 1998; Gupta and Verhoeven, 2001; Brown and Hunter, 2004; Avelino et al., 2005; Burgoon, 2006). As social policies improve the quality of life in society and promote wealth, the likelihood of violence will decrease.

Authors have documented a number of cases in which cash transfer programs were introduced to improve national cohesion (Moss et al., 2015). Mexico, for instance, launched its *Progres*a program in part to address the roots of the 1990s Chiapas uprising, while the rapid expansion of Argentina's *Jefes y Jefas de Hogar* attempted to defuse tensions stemming from rising unemployment. Kenya extended cash transfers to promote stability following the political violence of 2008. Similarly, financial interventions in Sierra Leone and Nepal are argued to have been

⁵ Hypotheses are tested using a data set for 153 countries for the period 1975-2005. The same dependent variable is used as in Fjelde and de Soysa (2009). The independent variable is welfare spending, which combines education, health, and social security spending, as percentage of GDP. Statistical results with imputed data consistently show that welfare spending is negatively related to the onset both of armed conflict (defined as resulting in at least 25 battle deaths) as well as major civil war (1,000 battle deaths).

designed to promote social cohesion and contribute to the peace process. Using panel data, Taydas and Peksen (2012) and Singh et al. (2014) show that higher levels of public spending on welfare (education, health, and social transfers) are associated with lower risks of conflict.

Based on the existing quantitative evidence, there is an emerging consensus in the literature that education in particular has a general pacifying effect on conflict (Østby and Urdal, 2010).⁶ As discussed above, Thyne (2006) argues that by investing state resources in education, governments send a strong signal to citizens that they are trying to improve their lives.⁷ Education creates opportunities for economic development and social equality, both of which lower grievances that can lead to civil war. Education is also argued to increase the opportunity costs for youth to take up arms (Collier and Hoeffler, 2004). Barakat and Urdal (2009) provide evidence that higher levels of educational attainment increase the opportunity cost for male youth (the key suppliers of rebel labor) to engage in violent conflict and reduce the risk that large bulges in the male youth population are associated with violent conflict.⁸

At the micro level, the failure of the Sudanese government to provide adequate educational resources for the southern region has been cited as a major grievance leading to a 22-year-long civil war (Glickman, 2000; Deng, 2001; Breidlid, 2005). Similarly, Richards (2003) places the government's failure to provide adequate education at the center of rebel decisions to go to war in Sierra Leone. Brett and Specht (2004), who have been conducting interviews with young soldiers, have found strong micro-level support for the expectation that lack of schooling, in addition to poverty and dearth of alternative work opportunities, are important reasons for joining a rebel group. Oyefusi (2008) also finds that low educational attainment significantly increased the willingness of young people to participate in armed struggle for control of local resources in Nigeria's oil-rich Niger Delta.

Furthermore, Thyne (2006) suggests that education promotes social cohesion by encouraging students to cultivate interpersonal skills and thus learn how to resolve disputes peacefully. Such social cohesion enables the country to achieve economic and social stability, which lessens the incidence of violent conflicts. Lipset (1959) argues that education broadens one's outlook, increases tolerance for other members of society, restrains extremist activity and doctrines, and

⁶ See Østby and Urdal (2010) for an extensive literature review.

⁷ Empirical tests were carried out on 160 countries for the period 1980-1999. The dependent variable, civil war onset, is based on Fearon and Laitin (2003). Five variables measure education: total government expenditures allocated to education as a percentage of GDP, primary enrollment rates, secondary enrollment rates, postsecondary enrollment rates, and adult literacy rates. Results show a moderate to strong association between all the education variables and lower conflict risk, with the exception of postsecondary education, which does not have any significant effect.

⁸ They use a new global data set (120 countries, 1970-2000) measuring cohort-specific educational attainment rates. Violent conflict is operationalized by the UCDP/PRIO low-intensity armed conflict. The key finding is that the effect of large young male cohorts on conflict is mitigated by higher secondary education attainment, especially in low-to-middle income societies.

increases one's ability to pursue personal interests using the political process. Similarly, Brady et al. (1995) and Heyneman (2003) argue that schools are one of several agents of socialization that provide people the means to pursue their needs in a peaceful manner. Education provides civic skills to people, ultimately leading to increased political participation and social stability.

Education, however, may not always lead to peace. Rapid expansion of education in developing countries may increase the number of educated people to a level where the market cannot absorb them, so that it fuels violent conflict (Huntington 1968; Oyefusi 2010). Urdal (2006), for example, shows that the impact of large youth cohorts on terrorism is magnified in countries experiencing a rapid expansion of education. Lange and Dawson (2010) and Lange (2012) also argue that education is more likely to fuel violent conflict, especially ethnic violence in countries with ethnic divisions, ineffective political institutions, and/or low incomes. Reasons include the frequent provision of education in a segregated manner with biased curriculum which tends to deepen ethnic antagonisms. Also, schools provide diverse resources that can be exploited to organize collective movements, so that education intensifies citizens' mobilization power, potentially triggering ethnic violence.

II. Haiti's Context

Growth and Violence

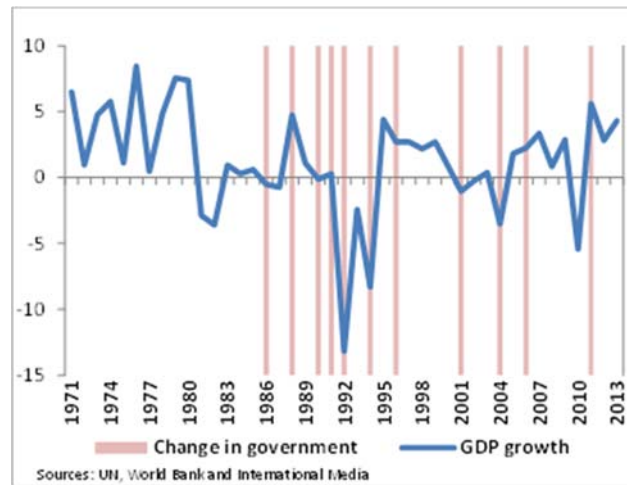
Haiti has comparative advantages, including proximity and access to major markets; a young labor force and a dynamic diaspora; and substantial geographic, historical, and cultural assets. There is a pent-up demand and many untapped markets that the private sector can explore. Areas of economic opportunity for the country include agribusiness, light manufacturing, and tourism. According to the World Economic Forum, Haiti's economic fundamentals could allow the country to become a vibrant economy and grow by 6-8 percent a year if adequate policies were in place (World Economic Forum, 2011).

Haiti's growth performance over the last four decades has been disappointing, however, and poverty remains endemic. Among other factors, a history of political instability and violence has prevented the country from realizing its aspirations, trapping it in a low equilibrium that year after year makes it one of the poorest and most unequal countries in the world. GDP per capita fell by 0.7 percent per year on average between 1971 and 2013. As a result, in 2012, about 59 percent of Haitians lived in poverty, and 24 percent in extreme poverty. In headcount terms, that means that almost 6.3 million Haitians could not meet their basic needs and 2.5 million could not even cover their food needs.

Political violence has flared regularly throughout Haiti's history, leading to government instability (Figure 1). At independence in 1804, Haiti was at the forefront of history as the first nation to

abolish slavery. Since then, however, with the exception of the 30-year period of autocratic rule (1957-1986) under Francois Duvalier (Papa Doc) and his son Jean-Claude Duvalier (Baby Doc), Haiti has weathered a succession of short-lived governments. The country has struggled with little success to develop the institutional mechanisms and policy fundamentals essential to the development progress.

Figure 1 : Annual GDP Growth vs. Changes in Government, 1971-2013



Between 1986 and 2014, the country had 18 changes of government (Table 1). In addition, according to the Cross-National Time Series data archive, there were 20 major cabinet changes from 1986 to 2006 (meaning a replacement of the prime minister or 50 percent of the cabinet members). Empirical investigations have shown that such cabinet changes are detrimental to growth (Aisen and Veiga, 2013). These studies estimate that Haiti would have grown by 1.2 percentage points faster if it had achieved an average level of political stability.⁹ In this regard, the past decade has been comparatively stable. With security provided by a large UN military presence (the United National Stabilization Mission in Haiti—MINUSTAH), two presidents have been chosen by election. Stability remains fragile, nevertheless, with frequent changes in government and repeated postponements of elections.

⁹ Aisen and Veiga (2013) examine 169 countries. On average over the period 1980 to 2004, Haiti has seen almost one cabinet change every year (0.95), while the overall mean in the sample was 0.47. Moving to the sample mean of political stability, Haiti's growth rate would have increased by 1.16 percentage points. Calculations from an accompanying paper by Antoine et al. (2014).

Table 1 : Haiti's Governments, 1971-2016

ADM.	PRESIDENTS	PERIODS SERVED	TIME SERVED
1	President Jean Claude Duvalier	4/1971 to 2/1986	15 years
2	President Henri Namphy (civilian-military junta)	2/1986 to 8/1988	2 years
3	President Leslie F. Manigat	2/1988 to 6/1988	4 months
4	President Henri Namphy (military junta)	6/1988 to 9/1988	3 months
5	President Prosper Avril (military junta)	9/1988 to 4/1990	20 months
6	President Hérard Abraham (military junta)	3 days in 4/1991	3 days
7	President Ertha Pascal Trouillo	4/1990 to 2/1991	10 months
8	President Jean-Bertrand Aristide	2/1991 to 9/1991	7 months in Haiti
9	President Joseph C. Nérette	10/1991 to 5/1992	7 months
10	No president		
12	President Emile Jonassaint	6/1994 to 9/1994	3 months
13	President Jean-Bertrand Aristide	10/1994 to 2/1996	16 months
14	President René Préval	2/1996 to 2/2001	5 years
15	President Jean-Bertrand Aristide	2/2001 to 2/2004	3 years
16	President Boniface Alexandre	2/2004 to 5/2006	2 years
17	President René Préval	5/2006 to 5/2011	5 years
18	President Michel Martelly	5/2011 to 2/2016	5 years

Sources: World Bank and international media

Drivers of Violence

Patterns of unequal distribution of resources have historically fed grievances in Haiti. From the early days of independence until the end of the nineteenth century, almost all of Haiti's heads of state granted land to the military and to high-profile civil servants, stripping peasants of their land rights (Dubois, 2013). As a result of this history, conflicts over land redistribution have repeatedly undermined peace and stability. Many observers agree that Haitians perceive political and economic disputes as a zero sum game with only winners and losers, with each group having very long memories.

Distributional conflicts arguably have inhibited the development of social capital and hampered the building of trust within Haitian society, further harming social cohesion at the national level. Disenfranchised and without effective channels to voice needs, citizens have taken to the streets in protest, sometimes violently. The World Bank's 1998 Poverty Report noted "the absence of a culture of democratic decision making and peaceful consensus building ... has generated tensions...and hampered Haiti's rehabilitation effort."

In Haiti's early history, violent airing of grievances generally took place in the rural areas. But contemporary unrest tends to break out in the cities, reflecting the country's demographic evolution and urbanization over the years. Data on politically violent events recorded by ACLED between 2000 and 2006 show that urban arrondissements have by far the largest number of conflict

events per capita (Figure 2).¹⁰ Data on crimes collected by the MINUSTAH mainly on the basis of Haiti National Police reports show similar patterns. Covering the period 2010 to September 2014, these data are not strictly comparable with the conflict events data, as they include a broad variety of criminal activities such as robberies, thefts, homicides, rapes, and illegal possession of firearms. But they also show that criminal activities are concentrated in urban centers (Figure 3).

Lack of economic opportunities seems to be driving violence and instability within Haiti. In an accompanying paper, the spatial differences in conflict intensity across Haiti's territory were examined to shed empirical light on drivers of conflict.¹¹ The results suggest that economic shocks matter a great deal in explaining patterns of conflict in Haiti. In particular, increases in remittances appear to reduce conflict intensity, consistent with the idea that by raising incomes, remittances raise the opportunity cost of participating in violent activities. Similarly, the study finds that an increase in agricultural and textile exports appears to reduce violence in departments which employ many people in these sectors.

Although the Haitian countryside has historically been relatively safe, the country's homicide rate doubled between 2007 and 2012 from 5.1 homicides to 10.2 per 100,000 inhabitants.¹² Criminal activity has been especially widespread near the industrial areas of Port-au-Prince and in urban slums, forcing businesses to absorb high security costs and periodically shut down or move their operations. Growing urban crime has hampered investment and growth. Violence is felt most deeply by the most vulnerable members of the population. Residents of poor, marginalized neighborhoods are 40 times more likely to be murdered than other urban dwellers.¹³

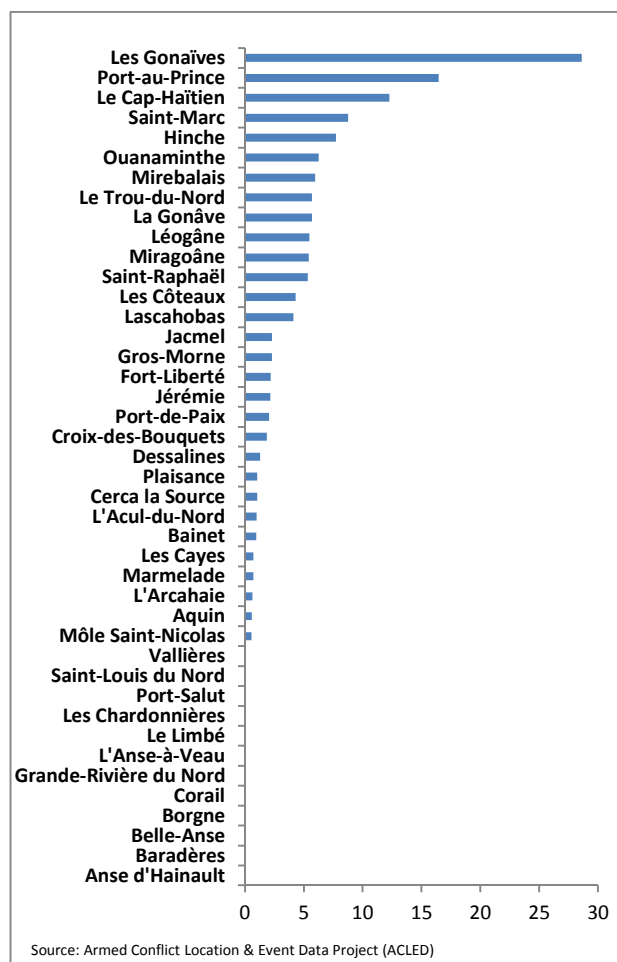
¹⁰ ACLED (Armed Conflict Location and Event Data Project) is the most comprehensive public collection of political violence data for developing economies. This data and analysis project produces information on the specific dates and locations of political violence, the types of events, the groups involved, fatalities, and changes in territorial control. Information is recorded on battles, killings, riots, and recruitment activities of rebels, governments, militias, armed groups, protesters, and civilians.

¹¹ Cali et al. (2014).

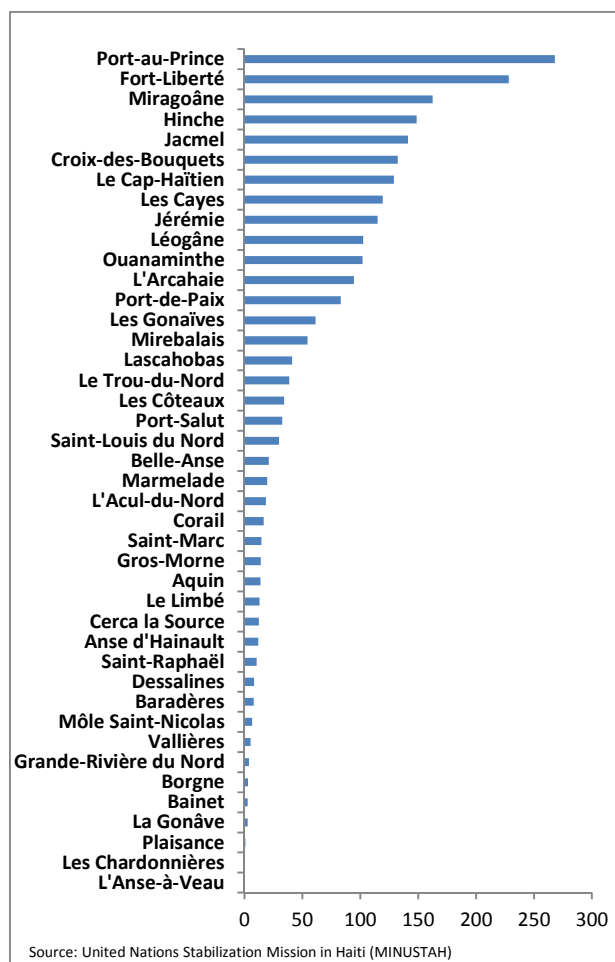
¹² UNODC Homicide data. Compared to other countries of the region, however, Haiti's rates are relatively low. In 2012, Honduras had 90.4 homicides per 100,000 inhabitants and El Salvador 41.2, for example.

¹³ The main state penitentiary collapsed following the earthquake, allowing most of its inmates to escape. Combined with a still weak system of law enforcement and justice, this enabled criminal gangs to grow, as well as political assassinations, car-jackings, and kidnappings to continue.

**Figure 2 : Political Violence, 2003-2006
(per 100,000 Inhabitants)**



**Figure 3 : Criminal Activity, 2010-2014
(per 100,000 Inhabitants)**



Toward More Inclusiveness

Haiti has long suffered very low fiscal revenue mobilization, seriously constraining its ability to carry out needed developmental spending in such fields as infrastructure, health, and education. Even the modest resources the country has generated have not been distributed in an inclusive manner. Growth that is inclusive requires additional mechanisms such as a pro-poor fiscal regime and targeted social programs and expenditures. This would help ensure that the less well-off are an integral part of the process and that opportunities improve for all.¹⁴

The World Bank's 1998 Poverty Report noted that "Haiti has never had a tradition of governance aimed at providing services to the population or creating an environment conducive to sustainable

¹⁴ For a discussion of the policies needed for greater inclusion, see, for instance, Narayan et al. (2013).

growth.” Many Haitian and international observers agree that the Haitian state remains ineffective and delivers little to its population. “Haitian institutions have never provided justice, education or healthcare to the majority of the population” (Lockhart and Forman, 2013). Instead, a small economic elite has dominated a state that makes only negligible investments in human resources and basic infrastructure (World Bank, 1998). “Governance and state capacity to effectively formulate and implement sound policies, and to deliver core public services to the population, are weak. Furthermore, the state is present largely in the major urban centers and has been unable to provide basic services or infrastructure to large portions of the population” (Buss, 2013).

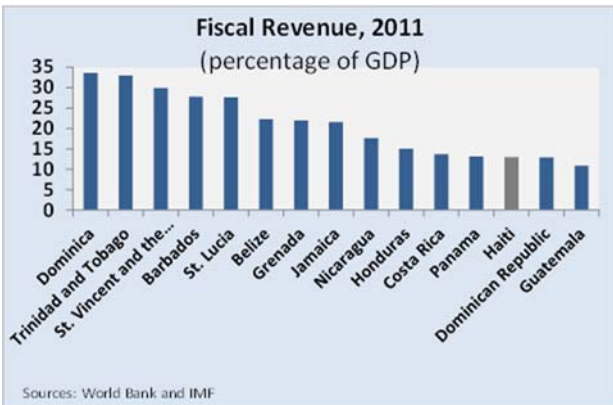
Greater political stability and in particular the drastic needs of the period following the 2010 earthquake brought a surge of international money to Haiti. External grants increased from just 2 percent of GDP in 2004 to a peak of 12.1 percent in 2010, before declining to a still substantial 8.1 percent in 2013 (World Bank, 2015). In addition to benefiting from the HIPC and the MDRI debt reduction initiatives, Haiti received additional debt cancellation in the aftermath of the earthquake. Its total external debt declined to 8.9 percent of GDP in 2011, providing borrowing space that the country used for concessional financing from the República Bolivariana de Venezuela.

These resources allowed an expansion in capital spending, a substantial shift in the country’s priorities. Public investment’s share of this spending rose from a third in 2005 to more than half in 2014. These additional resources seem to have flowed to social sectors, consistent with the decline in poverty and improvements in human development indicators (such as in education) observed over the same period (World Bank, 2015).

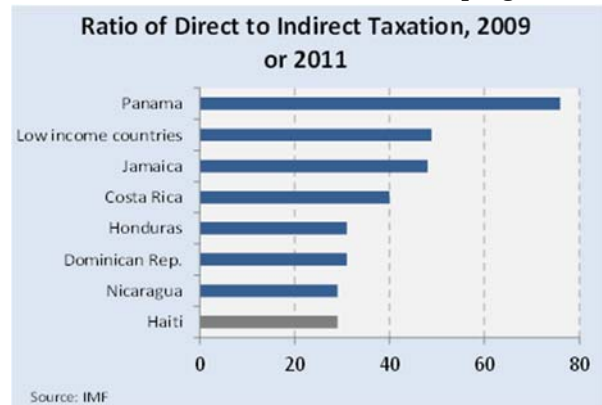
But overall, social spending remains nevertheless limited and the delivery of basic services highly inequitable (Figure 4). Public spending in health, education, and social protection amounts to 5 percent of GDP, below comparator countries, limiting the government’s ability to offer equal opportunities to its citizens. At the same time, many large spending programs such as fuel subsidies clearly favor the rich. In the absence of government reach, basic services such as health and education are mainly provided by non-government actors. Seventy to eighty percent of primary school students attend non-public schools, placing a substantial financial burden on households and making educational achievements closely linked to household income. Outcomes are equally unfavorable to the poor in the health sector and only a small share of them benefit from basic safety nets.

Figure 4: Inclusiveness

Fiscal revenues are low ...

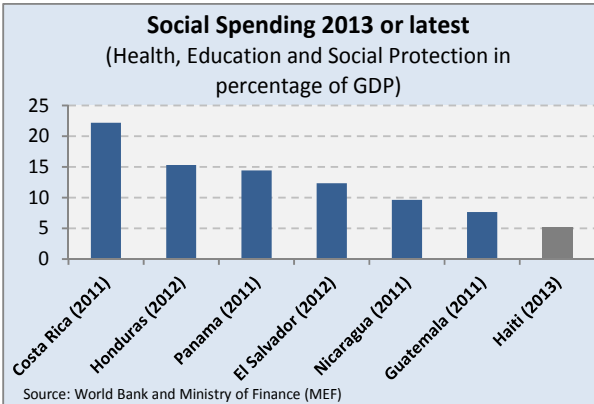


...and taxation could be more progressive.

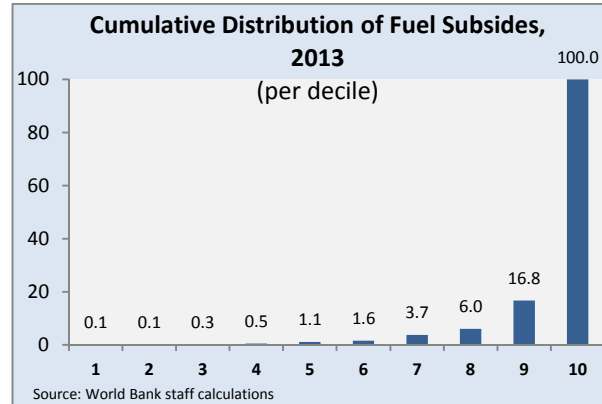


Social

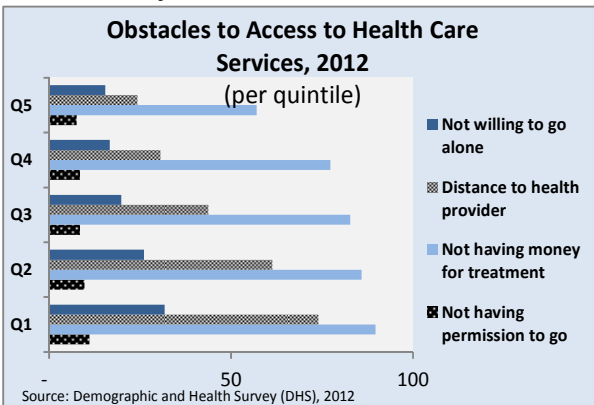
spending remains limited...



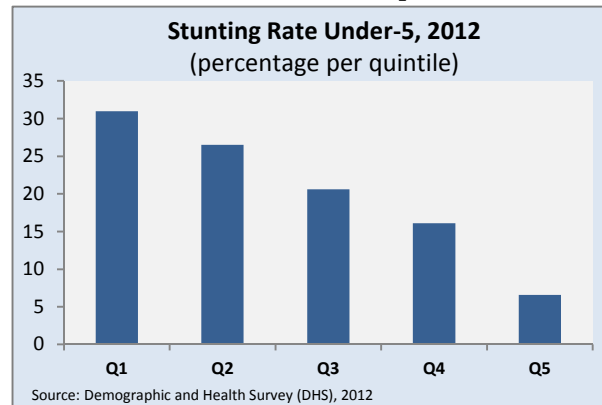
...and some major expenses favor the richer households.



Money remains the main obstacle to access to many basic services such as health care...



...leading income groups to experience differences in health and other human development indicators.



Adjusting to Tighter Budget Constraints

In 2014, donor assistance and concessional financing made up more than 70 percent of Haiti's public capital spending. Social sectors including health, education, and social protection relied on donor assistance for 45 percent of their financing in 2012 (World Bank, 2015). This reliance has made these spending programs particularly vulnerable as the foreign aid environment changes and international oil prices decline, which reduces the availability of concessional loans from the República Bolivariana de Venezuela.

Meanwhile, the United Nations has decided to scale down the MINUSTAH. Following decades of coups and counter-coups, and competition between security forces and agencies, the regular Haitian Army, Navy, and Air Force were abolished in 1995. The current UN peacekeeping force began operating in Haiti in 2004 with a mandate to restore a secure and stable environment, to promote the political process, to strengthen Haiti's government institutions and rule of law, and promote and protect human rights. The gradual withdrawal of the UN forces has fostered a discussion in Haiti on whether the national budget should expand its spending on security and whether the armed forces should be reinstated.¹⁵

These tighter constraints and pressure for increased military spending could jeopardize the recent progress in human development. This would make the country's balancing act between developmental needs and fiscal sustainability even more challenging, as well as opening the door to grievances and conflict. Against this backdrop, is there anything to learn from the experience of other countries? Can lessons be drawn from this evidence for Haiti, especially concerning how some types of public spending might reduce grievances and conflict?

III. Data and Methodology

This paper builds on Singh et al. (2014), but provides a number of extensions. First, it estimates a model with military and welfare spending treated jointly and hence provides a sense of their relative contribution to reducing conflict risk. Second, a number of additional robustness tests are run, and finally simulations for the case of Haiti are provided. Our dependent variable is the dichotomous indicator for conflict onset. Our empirical estimations are logit models with robust standard errors which include the duration of peace years (or years since independence) and cubic splines to control for time dependence (Beck et al., 1998). To take into account the conditional effect of military spending depending on the importance of oil and gas production, interaction terms are used. Similar to previous work, all time varying variables are lagged one year. Table 2 presents descriptive statistics, as well as the data sources.

¹⁵ In 2011, following his election as president of Haiti, Michel Martelly promised to reestablish the military. The Ministry of Defense was reintroduced in late 2015.

Table 2: Descriptive Statistics

	Number of Observations	Mean	Standard Deviation	Min	Max	Data Sources
Minor Conflict Onset	9,097	0.03	0.18	0	1	PRIO Armed Conflict Dataset
Government Consumption Expenditure	6,485	15.71	6.63	2.04	76.22	World Development Indicators (WDI)
Military Spending per capita	6,695	135.59	342.72	0	7631.69	Correlates of War Project
Military Spending per capita (instrumented)	5,415	123.47	286.6	-15.71	7543.43	
Welfare Spending	2,561	11	7.17	0.76	35.1	WDI, IMF Fiscal Affairs, Kugler et al. (2002), Burgoos (2006)
Welfare Spending (Imputed)	5,129	9.82	6.19	-2.14	35.1	
Ethno-Linguistic Fractionalization	8,450	0.39	0.28	0.001	0.92	Fearon and Laitin (2003)
Religious Frantionalization	8,423	0.37	0.21	0	0.78	Fearon and Laitin (2003)
Political Instability	8,609	0.16	0.37	0	1	Fearon and Laitin (2003)
Noncontiguity	8,423	0.16	0.37	0	1	Fearon and Laitin (2003)
Polity IV (xconst, xtcomp + xropen)	8,329	8.32	3.68	0	14	Marshall and Jaggers (2008)
logged Population	8,317	15.78	1.64	11.59	21	WDI
Logged GDP per capita	7,671	7.61	1.51	3.72	11.87	Penn World tables 7.1.
Ongoing war (minor conflict)	8,918	0.14	0.35	0	1	PRIO Armed Conflict Dataset

Dependent Variable

Several data sources have been used for conflicts, explaining part of the different results found in the literature. There are four major data sets: (1) Armed Conflict Dataset (ACD) from the Uppsala Conflict Data Program PRIO (Gleditsch et al., 2002); (2) Fearon and Laitin (2003); (3) Sambanis (2004); and (4) the Correlates of War, or COW (Sarkees and Wayman, 2010). These competing measures differ in relation to when to code the start, what counts as a war, and how to treat breaks in violence. In addition, the data sets in Fearon and Laitin (2003) and Sambanis (2004) have a narrower time coverage, ending before 2000.

To measure the onset of violent conflict, we use in this paper the Armed Conflict Dataset (ACD) for the years 1960-2009 (Gleditsch et al., 2002, Version 4.1) to generate a dichotomous variable that takes the value of one in years with a new conflict onset and zero otherwise. This data set has become the standard reference for cross-country analyses of conflict determinants. The majority of the recent studies have tended to use this source. Furthermore, only the UCDP/PRIO data set codes minor civil conflicts of at least 25 battle deaths per year, which seems more appropriate to describe Haiti's reality than the threshold of 1,000 battle deaths used in the other data sets. Following Ross (2012), we regard a conflict as a new conflict onset if it occurs two years after the previous conflict.

Key Independent Variables: Public Spending

Military spending: The Correlates of War Project (COW) provides information on total military expenditure that we scale by total population.¹⁶

Welfare spending: This includes total health, social security, and education expenditures. Total health expenditure (public and private) is based on the WDI, complemented with data from the IMF and Kugler et al. (2000). Social security expenditure includes public pensions and

¹⁶ We prefer scaling military spending by total population because the GDP data from sources other than the COW are not in the same metric.

unemployment benefits. We use for this variable the data provided by Kugler et al. (2000) and Burgoon (2006). The education spending variable is the total public expenditure (current and capital) on education expressed as a percentage of GDP in a given year. We use education spending from the IMF to complement the WDI data. Following Burgoon (2006) and Taydas and Peksen (2012), we create a welfare spending variable by combining the health, social security, and education spending indicators to see the impact of aggregate social spending on conflict.

Missing observations in the welfare spending variable, especially in developing countries, are an important issue that may pose difficulties in interpreting results.¹⁷ To address this issue and for the purpose of comparison and replication, we use the same approach as in Taydas and Peksen (2012) and Singh et al. (2014), and use Stata's ICE multiple imputation procedure. The procedure specifically imputes missing observations based on the pattern of the observed values of the non-missing variables in the same row and creates a completed data set. In the new completed data set, the observed values are the same, while the missing observations are filled in with the imputed data.

Control Variables

Along the lines of Fearon and Laitin (2003) and Singh et al. (2014), our model also includes a range of control variables, capturing the variety of factors that possibly explain conflict. All time-varying variables are lagged one year. All models include the following variables:

- The logged income per capita to control for the “state’s overall financial, administrative, police, and military capabilities” (Fearon and Laitin, 2003), a variable that also captures the argument that fewer grievances exist in a society with higher levels of income;
- The log of the country’s population to control for “the number of potential recruits to an insurgency at a given level of income” (Fearon and Laitin, 2003);
- Noncontiguous territory, because if a country has a territorial base separated from the state’s center due to geography, rebel groups could find it easier to take up arms;
- A country’s democracy score, with a more democratic country presumed to be less likely to experience violent conflict because guaranteed political rights and civil liberties make it easier for people to resolve conflict through non-violent means;¹⁸
- Political regime instability, with unstable conditions signaling a weakened state capacity, leading to an increase in the risk of violent challenges to government power;
- Ethnic and religious fractionalization, which captures the notion that civil wars are more frequent in heavily heterogeneous societies;

¹⁷ Education spending, for instance, has significantly more missing values than health and social security spending.

¹⁸ Following Vreeland (2008), we also recode the Polity IV score to avoid possible endogeneity issues.

- A dummy variable for ongoing war, by which if a country is in a violent conflict with a group, other rebel groups may find it easier to challenge the government;¹⁹
- The value of oil and gas production per capita (Ross, 2012), to capture the differences between natural resource-rich and poor countries documented in the literature; and
- An interaction term between public spending and oil and gas production to capture the non-linear nature of this relation.

Econometric Issues

While previous studies have been influential, the cross-country empirics they are based on have not always taken full account of cross-country heterogeneity or the likely endogeneity between conflict and its determinants. The endogeneity bias may arise from measurement errors, omitted variables, or potential reverse causality between the dependent variable, conflict onset, and our variable of interest, public spending. It is possible, for instance, that education enrollment drops as a civil war approaches because people flee their homes in anticipation of fighting. Likewise, expenditures may drop before an insurgency as the government diverts resources from social expenditures to the military in order to defend itself. Studies of conflict onset typically address this problem by lagging the explanatory variables so that conflict onsets in a given year are explained by the values of the explanatory variables in the previous year. However, it is possible that problems with reverse causality appear before $t-1$.

To take account of unmeasured regional effects, all estimations include regional dummies as in Fearon and Laitin (2003) for Asia, the Americas, Africa, and Europe (the Middle East being the reference region). We also use random effects logit models. Since the dependent variable is binary, fixed effects would drop all the countries that do not experience any conflict over the period of study. Yet, at the same time, correlations may differ systematically due to country-specific conditions, even after the inclusion of our control variables. Therefore, as an alternative, we include country-level random effects.

Finally, to test our results for military spending—as shown below, these are our most statistically significant results—we also employ instrumental variable (IV) estimations. It is not hard to imagine that increases in military spending could be driven by high risk of conflict. To mitigate the risk of reverse causality, we use IV estimations in which we first predict military spending with models including instrumental variables that are not clearly determined by the risk of violence.

¹⁹ Income per capita comes from Penn World Tables and World Development Indicators, supplemented with per capita energy consumption. Population size is based on World Bank World Development Indicators. We do not control for recent independence because for some of our specifications data are only available post-1960. Democracy is based on Polity IV (-10 to 10). For political instability, we follow Fearon and Laitin (2003) and use a dummy variable for country-years that had a three or greater change on the Polity IV regime index in any of the three years prior to the country-year in question.

Following Collier and Hoeffler (2007), we use four instrumental variables: neighboring countries' military spending relative to the home country's GDP; a Cold War dummy; current engagement in an international conflict; and time passed since the last international war after World War II.²⁰

Collier and Hoeffler (2004b) suggest that current civil war risk in a country is unlikely to affect the average level of military spending in all neighboring countries, the demise of the Cold War era, the country's decision to wage an international war, or its history of joining international conflict. International rivalry and the risk of international war are key determinants for deciding to spend on the military, as was the Cold War (Fordham and Walker, 2005). We expect therefore that the variables proposed by Collier and Hoeffler (2004b) are good candidates for instruments. These exclusion restrictions may fail, however, given some evidence of civil conflicts spreading into neighboring countries and of their contributions to regional conflict. As a robustness test, therefore, we verify whether our results hold when we exclude the military spending of neighbors and international conflict from our list of instruments.²¹

IV. Results

Table 3 reports our key results. We include military and welfare spending both simultaneously (Model 1) and separately (Models 2 and 3), and we discuss several other specifications as part of our robustness tests. The coefficients on the control variables broadly have the expected signs. The estimated coefficient for states with noncontiguous territory is positive and consistent with Fearon and Laitin (2003); more populous countries face a higher chance of civil conflict. Ethno-linguistic fractionalization (ELF) and political instability also increase the risk of conflicts, while economic development, operationalized as income per capita, generally reduces this risk.

Including military and welfare spending simultaneously in the model does not alter the conclusions reported in Singh et al. (2014). Military spending (Model 1) appears to have a mitigating effect on conflicts. Model 1 reports coefficients from estimations that include the interaction between oil-gas value per capita and military spending per capita. The negative and statistically significant coefficients on the interaction terms show that higher levels of spending on the military are associated with lower risk of civil conflict. These results remain unchanged even when welfare spending is excluded (Model 2), random effects are included (Model 4), or instrumental variables are used (Model 5).

²⁰ We also include neighboring countries' military spending relative to their own GDP and our results do not change. We did not, however, use the country level of democracy as a fifth instrument as in Collier and Hoeffler (2004b), because this variable is included in most models of civil conflict.

²¹ Besides the exogenous instruments, we include the following independent variables in the first stage model: a country's coup history and the years since the last coup, an indicator variable for military regimes, international war duration and one year lagged values for Polity IV, per capita GDP, trade openness, and oil-gas value per capita. To avoid the Wooldridge (2002) forbidden regression, the predicted interaction between military spending and oil wealth comes from a similar model that also includes the interaction of predicted military spending and oil wealth.

Table 3: Spending, Oil, and Conflict Onset

	Model 1	Model 2	Model 3	Model 4	Model 5
	Minor Conflict Onset	Minor conflict onset	Minor conflict onset	Minor Conflict Onset	Minor Conflict Onset
	Pooled Logit	Pooled Logit	Pooled Logit	Random Effects Logit	Instrumental Variables
Oil-Gas Value per capita (1,000 USD)	0.365 (0.2680)	0.20 (0.149)	-0.08 (0.166)	0.33 (0.50)	0.0004 (0.0003)
Military Expenditure per capita	0.00191*** (0.000)	0.0012*** (0.0003)		0.00191*** (0.001)	0.00207*** (0.000)
Military Expenditure*Oil	-0.00118*** (0.0003)	-0.001*** (0.0004)		-0.00120** (0.0006)	-0.00137*** (0.0006)
Welfare Expenditure	-0.120*** (0.0372)		-0.109*** (0.0340)	-0.125*** (0.0378)	-0.0947** (0.0389)
Welfare Expenditure*Oil	-0.0136 (0.0308)		-0.0003 (0.0175)	-0.0118 (0.0613)	-0.0259 (0.0319)
ELF	1.634*** (0.519)	1.508*** (0.435)	1.484*** (0.506)	1.627*** (0.529)	1.782*** (0.614)
Religious Fractionalization	-0.568 (0.539)	-0.23 (0.499)	-0.3 (0.538)	-0.497 (0.608)	-1.161** (0.590)
Political Instability	0.819*** (0.218)	0.741*** (0.171)	0.792*** (0.215)	0.854*** (0.223)	0.528** (0.255)
Non Contiguity	1.393*** (0.280)	1.171*** (0.330)	1.293*** (0.281)	1.421*** (0.376)	1.383*** (0.342)
Polity IV	0.0551* (0.031)	0.0258 (0.023)	0.0529* (0.031)	0.0594* (0.032)	0.0339 (0.037)
Logged Population	0.229*** (0.076)	0.348*** (0.061)	0.219*** (0.074)	0.221*** (0.084)	0.277*** (0.079)
Logged GDP per capita	-0.429*** (0.150)	-0.0915 (0.099)	-0.286* (0.156)	-0.433*** (0.155)	-0.325** (0.148)
Constant	-5.40** (2.10)	-11.61*** (1.300)	-6.015*** (2.107)	-5.545** (2.2210)	-7.122*** (2.1060)
Log pseudolikelihood	-487.21	-692.3	-503.73	-486.95	-389.13
Wald Chi2	230.43***	414.25***	175.81***	113.95***	256.34***
Observations	3,969	5,618	4,108	3,969	3,557

Note: ***p<0.01, **p<0.05, *p<0.1. The estimation method is logistic regression. Welfare spending is imputed using Taydas and Peksen (2012) data. Regional dummies, half decade dummies, peace years, and cubic splines are included in all models. Country clustered standard errors are in parentheses.

Similarly, including welfare spending jointly with military spending does not alter the results obtained in Singh et al. (2014). Higher welfare spending seems also to be associated with lower risk of conflict. Results from Model 1 indicate a negative and statistically significant coefficient for the level of welfare spending. The coefficient of the interaction term with the oil-gas value per capita is, however, not statistically significant. These results remain unchanged even when military spending is excluded (Model 3) and random effects logit models are estimated (Model 4). This would suggest that the reduction in conflict risk associated with higher levels of spending on education, health, and social protection is independent of the oil-gas value.

Robustness Tests

We investigate the robustness of the results by imposing various sample restrictions that previous work suggests may be relevant, changing the combination of instrumental variables, and adding control variables. In all cases, the results reported above remain unchanged.

- A first restriction is to remove from the sample countries that are experiencing another violent conflict;
- We also restrict our sample by only focusing on non-democracies (autocracies and anocracies);²²
- We exclude non-oil producing countries and include only country-year observations that produce more than \$106 per capita of oil and gas (the 75th percentile);
- The sample was restricted to non-Western countries to exclude rich democracies;
- The sample was restricted to the post-Cold War period (1990-2009);
- We used two additional control variables not included in our baseline models: ethnic exclusion (Wimmer et al., 2009: percentage of excluded population relative to total population) and mountainous terrain (Fearon and Laitin, 2003).

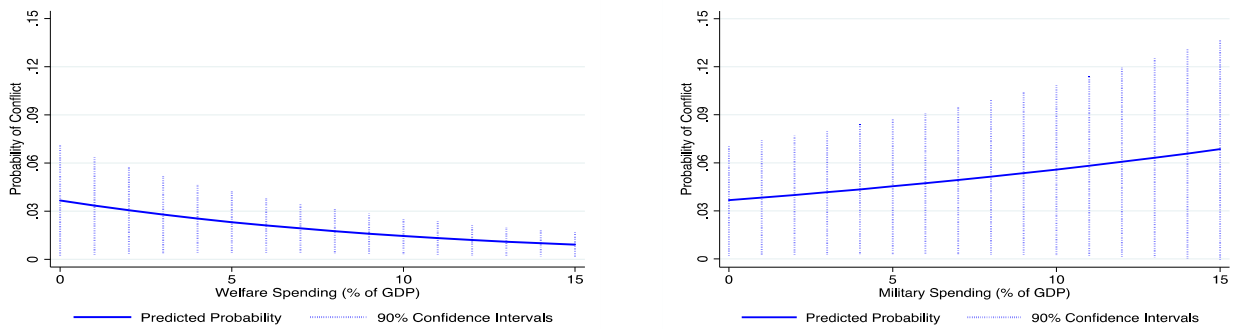
In addition, although our instrumental variables are based on Collier and Hoeffler (2004a), some of the instruments may be affected by the dependent variable. For instance, civil wars in bordering countries may be associated with decisions on the level of military spending (Philipps, 2015). If so, the level of military spending observed in neighboring countries may be influenced by the risk of civil conflict onset in the home country. Likewise, an ongoing international war may encourage rebel groups to take up arms because an international conflict may weaken the state. To check for this problem, we exclude military spending in neighboring countries as well as current engagement in an international war from the list of instrumental variables. This exclusion did not change our results.

Simulations for Haiti

Can the results discussed above shed any light on Haiti's challenges? In order to simulate the effects for Haiti more specifically, the coefficients of the cross-country regression were taken and all variables in the model were set at their average for Haiti. An exception was welfare spending and military spending, which we let vary. Figure 5 below illustrates the effect on the risk on conflict onset associated with higher spending in these two sectors. Both measures are converted to GDP to make them comparable. Interestingly, although the estimators are not the result of a Haiti-specific empirical exercise, the results match rather well the stylized facts described earlier in the paper.

²² We consider countries as autocracies or anocracies if a combined score of *xrconst*, *xrcomp* and *xropen* in Polity IV is no more than 11. (The maximum score is 14.)

Figure 5: Simulation Results for Haiti



Note: For a simulation of welfare spending, military spending is set at 0 and all the other variables are set at the mean of Haiti. Likewise, for a simulation of military spending, welfare spending is set at 0 and the other variables are set at the mean of Haiti.

Consistent with the results described above, increases in military outlays would be associated in Haiti with a higher risk of conflict. When military spending is set at 0 percent of GDP, the risk of conflict is about 3.6 percent. Expanding that budget allocation to 15 percent of GDP raises this risk to about 6.8 percent. With its history of coups and competing security forces and agencies, Haiti illustrates the case where increasing arms spending can provide military opponents of the government with the resources needed to overthrow it. Larger military budgets would not generate efficiency and loyalty, but would result from political leaders bribing the military to keep them from staging a coup. Furthermore, as pointed out in the review of the literature, higher military expenditure could crowd out social spending, economic growth, and investment, feeding citizen grievance and fueling violence.

By contrast, the simulation suggests that higher welfare expenditure in education, health, and social transfers would be associated in Haiti with lower risk of conflict. While the risk of conflict is 3.6 percent when welfare expenditure is set at 0, this risk declines to less than 1 percent if it is increased to 15 percent of GDP. This result seems to fit well with the observation that a lack of economic opportunities seems to be driving violence and instability in Haiti. It shows that government is failing to deliver the type of public expenditure that people want, i.e. a strong redistributive pattern in areas such as health and education. Disenfranchised and without effective channels to voice needs and demands, citizens are taking to the streets in protest. Against this backdrop, social safety nets, transfers, and investment in public goods would show people that the state cares, and would prevent disadvantaged members of society from falling below a certain level of poverty and experiencing absolute desperation.

CONCLUSION

Donor assistance is declining from its exceptional levels following the 2010 earthquake and access to concessional financing is becoming tighter. At the same time, the UN forces, which have provided security in the country for the past decade, are scaling down. Haiti seems to be at a crossroads. How should it use its scarce public resources? Should it replace the military spending that up to now has been covered by the United Nations? Or should it focus on social spending, making its society more inclusive and its government more legitimate in its people's eyes by providing wanted public services?

To draw possible lessons for Haiti, this paper explores the conditions under which public spending could minimize violent conflict. Using the results of an empirical analysis of 148 countries over the 1960–2009 period, the paper provides an illustration of how panel estimations could be used to analyze a particular country in which data are limited. Simulations for Haiti suggest that increases in military spending would be associated with a higher risk of conflict, an observation in line with Haiti's history. Higher welfare expenditure (education, health, social assistance), by contrast, would be associated with lower risk of conflict.

The scaling-down of the MINUSTAH has been discussed in this paper in terms of a possible need for increased budgetary allocations to the military. The UN forces have provided internal security and supported the rule of law. While this paper could frame the discussion about the possible reestablishment of the armed forces in Haiti, one should probably not assume that the results concerning the military would also apply to the police. This point would call for further investigation.

Furthermore, citizens may care more about actual improvements in public service delivery than higher public spending. Promising without delivering actual improved service may backfire and fuel grievance. The possible role of improving education or health in reducing grievance and conflict risk could be a fruitful subject for future research.

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