FOREIGN AID AND PEACE: WHAT IS THE RELATIONSHIP BETWEEN FOREIGN AID AND CIVIL CONFLICT?

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By

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FOREIGN AID AND PEACE: WHAT IS THE RELATIONSHIP BETWEEN FOREIGN AID AND CIVIL CONFLICT?

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ABSTRACT

In 2014, there were 40 ongoing civil conflicts that displaced 18 million people, resulted in 105,000 battle related deaths, and depleted $742 billion in economic resources. The crude cost of civil conflict has prompted debate over a range of policy recommendations on how to reduce the incidence of civil conflict. In particular, foreign aid flows have been gaining credence as a practical conflict prevention policy that can help reduce the risk of civil conflict and secure peace. This thesis examines the degree to which foreign aid flows may have influenced the risk of civil conflict in 156 countries between 1945 and 2000. I contribute to the literature on this topic by disaggregating foreign aid flows into multiple categories - project aid, humanitarian aid, technical aid, and loan aid - and accounting for military assistance and cash assistance, two categories of foreign aid often overlooked in the literature. Using annual country level data from Aid Data and the Uppsala Conflict Data Program (UCDP), I find that technical aid, loan aid, and military aid have small, positive relationships with the incidence of civil conflict. These relationships are more pronounced for countries that are economically dependent on oil exports.
I would like to express my gratitude to Dr. Adam Thomas for all his help and support.

Many thanks,
Samer Nader Said
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INTRODUCTION

The most prevalent form of armed conflict is civil conflict. Between 1945 and 2014, an estimated 10 million battle related deaths occurred in 195 civil conflicts, 40 of which were still ongoing in 2014. These civil conflicts occurred in 105 states, more than half the United Nations system, and had a median duration of seven years (Collier et al., 2004; Doyle & Sambanis, 2014; Fearon & Laitin, 2003). Further, civil conflicts from 1945 to 2014 displaced an estimated 54 million people, nearly 75 percent of who took refuge in neighboring countries (Global Peace Index (GPI), 2016; United Nations High Commissioner for Refugees (UNHCR), 2016; World Bank, 2012; 2016). On average, countries affected by civil conflict face a 50 percent chance of reverting to violence within the first five years of conflict termination (Carter 2010; Collier et al., 2007). In contrast, conventional wars between countries, commonly known as interstate wars, were far less common. Over the same period, 47 interstate wars occurred involving 70 countries and resulted in an estimated 4 million battle related deaths (Gleditsch et al., 2016). The number of countries involved in civil conflict has grown dramatically from 16 countries in 1945 to 89 countries in 2014 (Gleditsch et al., 2016).

Moreover, recent data reveal that the incidence of civil conflict is potentially associated with a variety of problematic development outcomes for the one billion people living in conflict-affected countries. In 2000, all 189 United Nations member countries committed themselves to achieving a set of eight international Millennium Development Goals (MDGs) by the year 2015. Data from 2015 reveal that many of the world’s developed and developing countries have made significant and sustained progress toward achieving these. Among the countries that had not

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1 The number of conflicts, the number of conflict-affected countries, and the number of ongoing conflicts were calculated by the author using data from the 2016 UCDP/PRIO Armed Conflict Dataset. The number of battle related deaths was calculated by the author using data from the 2015 UCDP/PRIO Battle Related Deaths Dataset.
achieved a single MDG by 2015, all had been characterized by civil conflict (World Bank, 2012). On average, civil conflict incidence, over the period from 2000 to 2014, has been associated with a 13.5 percentage point lag in eradicating poverty (Crost et al., 2014; World Bank, 2012). In addition, people in conflict-affected countries are disproportionately less likely to have access to education and clean water. They also tend to face a higher risk of child mortality and undernourishment, when compared to people in developing countries (Crost et al., 2014; World Bank, 2012).

These crude measures illuminate the importance and policy relevance of research designed to understand the correlates of civil conflict. One potential correlate is foreign aid. It is important to study the relationship between foreign aid and civil conflict for two reasons. First, the adoption of effective conflict prevention measures and the reduction of the risk of civil conflict are, in themselves, important. Second, policy makers have devoted increased attention to the necessity of foreign aid for conflict-affected countries. In 2012, the World Bank declared civil violence to be the primary economic development issue of our lifetime. Simultaneously, the 2012 World Development Report, published by the World Bank, identified strengthening the ability of countries to cope with risks through the provision of an exogenous pool of resources as the central recommendation for minimizing the risk of civil conflict. This assertion raises questions about the interplay between foreign aid and civil conflict, in particular: What is the relationship between foreign aid and civil conflict?

This thesis examines the interplay between foreign aid flows and the incidence of civil conflict. The analysis uses country-level panel data from the University of Uppsala’s Oslo Peace Institute and the College of William and Mary’s AidData database to estimate the association between foreign aid flows and the risk of civil conflict. I contribute to the literature by using higher-
quality data than used in earlier analyses, by controlling for country and year fixed effects, and by
adopting the novel step of examining the relationship between conflict and aid only after having
distinguished between different types of aid flows.

The remainder of this thesis is organized as follows. In the next section, I provide
background information on foreign aid and civil conflict. I then review the relevant literature and
describe my conceptual framework, data, methods and descriptive statistics. Lastly, I present my
findings and discuss their implications for foreign aid and civil conflict.
BACKGROUND

Foreign aid is cross border financing that is official, meaning that financing is disbursed from a donor government to the government of a developing country, also known as the recipient. Foreign aid flows are divided into two broad categories: Official Development Assistance (ODA), more commonly known as development assistance, and Other Official Flows (OOF) (IMF, 2003). ODA is a measure of official foreign aid flows that are administered with the sole purpose of promoting economic development and the social welfare of developing countries. ODA comprises 92 percent of all foreign aid flows (IMF, 2003; Tarnoff & Nowels, 2005). OOF are official foreign aid flows between governments that cannot be designated as ODA, because they are not primarily aimed at economic development. OFF comprises 8 percent of foreign aid flows (IMF, 2003).^2^ The total amount of foreign aid disbursed in any given year can be estimated by aggregating those two categories. For example, in 2014, ODA accounted for US$148 billion and OOF accounted for US$14 billion, for a total of US$162 billion in total foreign aid flows (World Bank, 2016).

OOF can be disbursed from donor countries to recipient countries through two instruments: cash assistance and military assistance. (IMF, 2003; Tarnoff & Nowels, 2005). Cash assistance is designated as foreign aid flows from one government to another in the form of cash grants (Tarnoff & Nowels, 2005). Cash assistance differs from every other disbursement instrument in one major way: it always consists of a monetary transfer of cash from a donor government to a recipient government. In comparison, military assistance, the second OOF instrument, consists of non-cash assistance of a military nature, such as the supply of military equipment, investments in military infrastructure projects, or the training of personnel (Tarnoff & Nowels, 2005). Military assistance and cash assistance are classified as OOF, instead of ODA, because they consist of official

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^2^ For a further discussion of the different types of flows that constitute foreign aid, please refer to the Conceptual Framework chapter.
government-to-government foreign aid flows, but are not primarily aimed at economic development.

ODA can be disbursed from donor countries to recipient countries via several different instruments (Hjermoth & White, 2000). For example, project aid is comprised of foreign aid flows used to implement projects in infrastructure, health, and education. Project aid represents 20 percent of all ODA. A second category, technical assistance accounts for 12 percent of all ODA and consists of investments made in institutional reform, governance, and capacity building. Development loans, a third type of aid used primarily for budgetary support, accounts for 61 percent of all ODA. The remaining 7 percent is disbursed through humanitarian foreign aid flows, mainly used for food, medicine, and basic commodity disbursements during disaster relief (Hjermoth & White, 2000; OECD, 2016).

ODA is allocated across a range of countries that have varying levels of development and face different levels of conflict risk. In conflict-affected countries, such as Syria, Iraq, and Afghanistan, ODA constitutes 45 percent, 50 percent, and 53 percent of GDP, respectively (OECD, 2016). ODA to the average sub-Saharan African country accounts for 5 percent of GDP (Ree & Nillsen, 2008). Recipient countries in sub-Saharan Africa account for the largest portion of ODA, a total of $50 billion, or about 33 percent of all ODA, though only one of the top three country recipients is in sub-Saharan Africa (OECD, 2016). The countries receiving the largest amount of ODA are Afghanistan (US$7 billion), Viet Nam (US$5 billion) and Cote d’Ivoire (US$5 billion) (OECD, 2016).

Importantly, ODA is disbursed from a range of countries, with varying levels of contribution. In 2015, the largest ODA donor countries, in absolute terms, were the United States,

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3 All figures calculated by author, using data from AidData 3.0 database
(US$ 31 billion), the United Kingdom (US$19 billion), and Germany (US$18 billion) (OECD, 2016). Nevertheless, all three of those countries fell short of their target to disburse 0.7 percent of gross national income (GNI) in ODA foreign aid flows (OECD, 2016). In the same year, the global average was 0.3 percent and only five countries reached their 0.7 percent GNI target: Denmark, Luxemburg, The Netherlands, Norway, and Sweden (OECD, 2016).

The emphasis on the relationship between foreign aid and violent conflict can be traced back to the Bretton Woods Agreement (World Bank, 2012). In 1944, delegates from 45 countries convened at Bretton Woods to create the International Bank for Reconstruction and Development (IBRD), the institution that has evolved to become the World Bank Group (World Bank, 2012). The Bank founders asserted that foreign aid for the purposes of economic development would encourage political stability and foster peace between countries. The IBRD disbursed its first development loan to France in 1947, designed to speed reconstruction and development, in an effort to nurture political stability. More recently, the World Bank reemphasized the interconnection between security and development with one crucial difference. In 2008, in a speech entitled “Securing Development,” the President of the World Bank called on academics and policy analysts to address the current challenge of disbursing foreign aid to countries in civil conflict.4 This appeal symbolized a change in thinking, a shift from fostering peace between countries to peace within them. The new policy was intended to aid weak governments to break the cycles of civil violence in countries such as Afghanistan, Rwanda, and South Sudan (World Bank, 2012).

In 2012, the World Bank released its World Development Report (WDR): Conflict, Security and Development. For the first time in its history, the Bank prioritized civil conflicts over

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4 A manuscript of the speech can be found in the World Bank (2012) Report.
interstate conflicts and emphasized that civil conflict poses a larger threat to global security than interstate conflict. The Report made practical recommendations on how to minimize the risk of civil conflict and achieve economic development through foreign aid. The 2015 United Nations Report, Improving ODA Allocation for a Post-2015 World, echoed this strategic shift, declaring that foreign aid must be targeted in a manner that benefits the one billion people who live in countries afflicted by civil violence. In addition, the International Institute for Strategic Studies launched an interdisciplinary research program, the seventh in its history, addressing the interconnections among security and development (IISS, 2014). And, in its most recent report, (2016), the Institute for Economics and Peace estimated that a 10 percent decrease in civil violence is associated with the generation of US$1.36 trillion in annual global GDP (GPI, 2016). This figure is 10 times the amount spent on ODA (GPI, 2016).

Acceptance of the idea that foreign aid is an effective conflict mitigation policy is steadily increasing. Multilateral banks, development institutions and think tanks have already made commitments in support of this policy. Despite such forthcoming largesse and commitment, the association between civil conflict and foreign aid has only been incidentally investigated. The results of these studies are the topic of the following literature review.
LITERATURE REVIEW

A small body of literature examines the relationship between the incidence of civil conflict and the overall amount of aid disbursed to a country. Recently, a smaller number of studies have examined the relationship between the risk of civil conflict and different categories of aid. To date, however, the existing evidence is mixed. Much of the prior research also finds that civil conflict is sensitive to shocks in economic conditions, with the risk of civil conflict decreasing as economic stability improves, while increasing during economic shocks.

The relationship between civil conflict and foreign aid: country-year analyses

Collier and Hoeffler (2002) and Ree and Nillesen (2008) use country-year data to investigate the relationship between the risk of civil conflict and foreign aid flows. The former study uses a worldwide sample of countries for the period between 1980 and 1999. The authors estimate a multiple regression model, but fail to find an empirical relationship between aid and civil conflict. The latter study uses a sample of sub-Saharan countries and improves on Collier and Hoeffler’s work in three major ways. First, the authors address the problem of endogenous aid allocation by using donors’ GDP as an instrument for foreign aid flows. Second, instead of using the total value of aid flows, they measure aid flows as a percentage of GDP. Third, they control for unobserved country-specific characteristics by estimating first-differenced models. The authors find a negative relationship between aid and civil conflict. More specifically, they find that increased aid flows tend to decrease civil conflict duration, such that foreign aid has a stabilizing effect. However, they do not find a significant relationship between foreign aid flows and the onset of civil conflict.

Similarly, Nunn and Qian (2014) use country-year panel data for 125 countries from 1971 through 2006, to estimate the effect of US food aid on civil conflict incidence and duration. The
authors successfully exploit exogenous time variation in food aid shipments that are associated with US wheat production, which is primarily driven by changes in US weather conditions. They also exploit cross-sectional variation in countries’ tendencies to receive US food aid. They use both sources of variation together to construct an interaction term that consists of the previous year’s US wheat production levels and the frequency with which a foreign country receives any US food aid. They find that increases in food aid increase the incidence and duration of civil conflict.

The relationship between civil conflict and foreign aid: community-year analyses

In a within-country analysis in Iraq, Berman, Shapiro, and Filter (2011) use district-year panel data on violence against Coalition and Iraqi forces, aid spending, and a set of community characteristics controls to estimate the effect of aid spending on levels of violence across Iraqi districts. They successfully build a minimal model with strong assumptions, leaving generalizations harder to make. The study finds that foreign aid flows targeted at small-scale development projects lead to fewer insurgent attacks. Furthermore, they find no evidence that large-scale infrastructure projects have any pacifying effects. On the contrary, they find the larger the amount of aid, the smaller the pacifying effect.

In a national study in the Philippines, Crost et al. (2014) employ a regression discontinuity design that exploits an arbitrary poverty threshold, which is used to assign eligibility for large-scale development projects. They find that municipalities that are just below the threshold (and are therefore eligible for these projects) experience a large increase in conflict levels, compared to municipalities just above the threshold.
The present study

The previous review has highlighted the importance of accounting for the possibility that different aid categories have different associations with civil conflict. The present study contributes to the literature by disaggregating aid flows into multiple categories. Specifically, I use six categories of aid: development aid, humanitarian aid, technical aid, loan aid, military assistance, and cash assistance.

My analysis draws on a new and extensive worldwide data set. The last study that attempted to estimate the relationship between foreign aid flows and the risk of civil conflict, Collier and Hoeffler (2002), used a multiple regression model and data on 161 countries from 1965 to 1999. The current study uses data for 156 countries from 1945 to 2000, but expands the period of analysis to cover 1945 to 2000. Furthermore, the current study builds on the results of more recent studies to introduce a larger set of robust controls and controls for all unobserved country fixed and year fixed effects.
CONCEPTUAL FRAMEWORK

This thesis examines the relationship between foreign aid flows and the incidence of civil conflict. Based on the findings of my literature review, I hypothesize that foreign aid flows have a positive, but relatively small correlation with the risk of civil conflict. Civil conflict has been found to be associated with a host of economic and demographic conditions that characterize financially and bureaucratically weak governments (Collier & Hoeffler, 1998; Fearon & Laitin, 2003; Hegre, 2002; Savun & Tirone, 2012). These include low per capita income, large populations, political instability, and geographic dispersion (Collier & Hoeffler, 1998; 2002; Fearon & Laitin, 2003; Ree & Nillesen; 2008). Foreign aid flows may therefore influence the risk of civil conflict through the provision of an external pool of economic, financial, and military resources that strengthen weak governments and augment their ability to respond to civil violence or to minimize the risk of civil conflict. As illustrated in Figure 1, my model controls for both economic and demographic conditions.
The primary explanatory variable of interest in my model is foreign aid, which is represented by four continuous variables: project aid, humanitarian aid, technical aid, and loan aid and two categorical variables: military assistance and cash assistance. Earlier studies have examined the relationship of foreign aid and civil conflict by using an aggregate measure of the four continuous variables in this model (i.e. ODA) and without accounting for military and cash assistance (i.e. OOF) (Besley & Pearsson, 2011; Collier & Hoeffler, 2002; Savun & Tirone, 2012; Ree & Nillesen, 2008; Collier & Hoeffler, 2002;). My study incorporates both forms of aid and

\[ \text{Civil Conflict} \]

\[ \text{Foreign Aid:} \]
- Project Aid
- Humanitarian Aid
- Technical Aid
- Loan Aid
- Military Assistance
- Cash Assistance

\[ \text{Demographic:} \]
- Population
- Social Factionalization
- Ethnic Dominance
- Geographic Dispersion
- Policy

\[ \text{Economic:} \]
- GDP per Capita
- Primary Commodity Exports/GDP

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\[ 5 \] ODA and OOF were introduced and discussed in greater detail in the Background Section.
disaggregates among six distinct types, as the influence of different types of aid flows on civil conflict may not be homogenous.

I disaggregate ODA into four encompassing categories: (1) project aid, (2) technical aid, (3) humanitarian aid, and (4) loan aid. Each is considered below:

- Project aid is the aggregate amount of aid used for economic infrastructure projects (e.g. transportation, energy, water, and communication), aid used for social infrastructure (e.g. schools, hospitals, and local government facilities), and aid used for enhancing production sectors (e.g. agriculture, manufacturing, and mining). Project aid also includes financing for various programs, including health programs (e.g. vaccine campaigns), educational programs, (e.g. literacy campaigns), and civic programs (e.g. awareness raising campaigns). Project aid also includes thematic activities, such as youth and women empowerment projects (AidData 2014; 2016; Akramov 2012; Hjertholm & White, 2000; OECD, 2014; Tierney et al., 2016).

- Technical aid includes the provision of donor country personnel such as experts, consultants, teachers, researchers, and volunteers. These individuals work with public and private bodies on institutional, policy, and regulatory reform or provide training and capacity development services. Technical aid includes financing for cultural exchange collaborative research, and scholarships. Administrative costs of delivering or implementing aid projects, humanitarian projects, or auditing activities for loan aid disbursements are all recorded here (AidData 2014; 2016; Akramov 2012; Hjertholm & White, 2000; OECD, 2014; Tierney et al., 2016).

- Humanitarian aid accounts for any effort by the international community to help alleviate hunger or suffering at times of war and natural disaster. Humanitarian aid mainly
consists of food aid and any form of relief assistance, such as shelters and medicine (AidData 2014; 2016; Akramov 2012; Hjertholm & White, 2000; OECD, 2014; Tierney et al., 2016).

- Loan aid constitutes loans that are administered to developing countries for the exclusive purpose of promoting economic development and social welfare. They must be undertaken by the official sector, meaning that the lender must be a government or a multilateral organization, such as the World Bank or the International Monetary Fund (IMF), and the recipient must be a government of a developing country. The loan must have a grant element of at least 25 percent (AidData 2014; 2016; Akramov 2012; Hjertholm & White, 2000; OECD, 2014; Tierney et al., 2016).

As noted previously, the sum of these four categories is equivalent to the total sum of ODA, which accounts for 92 percent all foreign aid flows between countries.\(^6\) In addition to these four ODA variables, I account for two more categories, military assistance and cash assistance. I use categorical variables to reflect whether a country received any amount of foreign aid through these two official (OOF) but non-ODA flows in a given year. Military assistance is official government-to-government foreign aid flows used for the financing of military and policing infrastructure, procurement of equipment, and training of personnel (Tarnoff & Lawson, 2016). It also accounts for flows that are used to finance peace building operations (OECD, 2014). Cash assistance is defined as official government-to-government foreign aid flows in the form of a cash transfer. Unlike ODA flows, they are concessional and non-conditional grants, meaning that recipient governments do not have to repay them, or use them for the purpose of promoting economic

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\(^{6}\) Calculated by author using Data from AidData 3.0 database. The result is similar to figures estimated by the World Bank (2016) and OECD (2014).
development or social wellbeing (Tarnoff & Lawson, 2016). Due to data limitations, I use categorical variables reflecting whether a country receives or does not receive military assistance and cash assistance. These aid variables are discussed in more detail in Table (1) in the data and methods sections of this thesis.

As mentioned previously, I also control for a number of other factors that are plausibly related to both the risk of civil conflict and foreign aid. These include:

**Economic factors**

- **GDP per Capita**: A country’s GDP reflects its financial resources and institutional capability, and, possibly, its ability to resolve and minimize risks through financial, administrative, and military institutions (Fearon & Laitin, 2003; World Bank, 2012). Further, low per capita income may favor the incidence of civil conflict, as the recruitment of men and women as rebels is conceivably easier in the face of bleak economic prospects (Collier & Hoeffler, 2002; Fearon & Laitin, 2003).

- **Primary Commodity Exports/GDP**: Exporting raw or unprocessed natural materials, or those with minimal processing, may be a proxy for weak governance. A resource rich country that is dependent on primary commodity exports as a source of substantial revenue may have less incentive to invest in strong institutions and elaborate bureaucratic systems capable of raising revenue through taxes, satisfying citizen’s needs through the provision of public services, and responding to risk through government and military institutions (Fearon & Laitin, 2003). Simultaneously, the substantial revenues

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7 Country members of the OECD are required to report their official foreign aid financing activities to the OECD’s Creditor Reporting System (CRS) in two forms: 1) Aggregates and 2) ODA project-level data. The aggregates represent total official foreign aid flows; the details of which are limited because of aggregation. The ODA project-level data provide full details on which foreign aid category ODA flows are directed towards.
from primary commodity exports may induce rent seeking behavior among rebels, or provide the unsatisfied citizenry with an incentive to feed instability, by either supporting rebellion or by joining it.

**Demographic factors**

- **Population:** Compared to countries with small populations, large populations add strain on their country’s government resources and make it necessary to add layers of bureaucracy, making them more vulnerable to risk and less capable of responding to it (Fearon & Laitin, 2003).

- **Social Fractionalization:** This term refers to the degree of ethnic, religious, and linguistic homogeneity in a given society. If governments adopt discriminatory policies and pose institutional barriers on upward mobility for vulnerable groups, members of those groups may call for radical action or develop violent agendas to resist discrimination (Fearon & Laitin, 2003; Kaufmann, 1998).

- **Ethnic Dominance:** The ability of one ethnic group to constrain national political influence exclusively among its own members may exacerbate grievances and increase the risk of civil conflict. Horowitz (1985) observes that the incidence of civil conflict is more frequent in countries where one ethnic group dominates national political influence.

- **Geographic Dispersions:** Noncontiguous countries that are territorially separated by other countries or bodies of water may face a higher risk of civil conflict. To function, a government must administer and its military must secure two or more completely separate territories, adding financial burdens and bureaucratic layers that could weaken the central government’s ability to respond to risks of civil violence. Further, such separation may also
favor rebellion, as it may be easier for rebels to take sanctuary and hide from government forces (Fearon & Laitin, 2003).

- **Policy:** Governments that are accountable to citizens are more likely to invest foreign aid funds in a manner that promotes the wellbeing of their citizenry, instead of appropriating them in a way that may promote conflict (Gurr, 2016).
DATA & METHODS

To test my hypothesis, I conduct a country-level analysis using panel data from 156 countries for every year from 1945 to 2000, inclusive. If a given country experienced 25 battle related deaths in a given year, I consider the country to be in a state of civil conflict (Collier & Hoeffler, 2002; Doyle & Sambanis, 2000; Elbadawi & Sambanis, 2003; Fearon & Laitin, 2003; PRIO/Uppsala, 2009, 2015, 2016).

Dependent variable

My dependent variable, civil conflict incidence, is a dichotomous variable that takes a value of one or zero. The data for my dependent variable are drawn from the Armed Conflict Database (PRIO/Uppsala) maintained by Uppsala Conflict Data Program (UCDP) at Uppsala University, and the Center for the Study of Civil Wars at the International Peace Research Institute (PRIO) (Collier, 2003; Fearon & Laitin, 2003; Miguel et.al, 2004; Ree & Nillsen, 2008; Sambanis & Elbadawi, 2003; Savun & Tirone; 2012; Walter, 2004).

Independent variable

My key independent variable is foreign aid, represented by the six main types of foreign aid flows for the years 1945 to 2000. As is discussed in the previous section, four of the six categories of foreign aid are accounted for using continuous variables. Those four categories are: project aid, humanitarian aid, technical aid, and loan aid. When these four categories are aggregated, they account for the total sum of all ODA. Each of these variables measures aid as a percentage GDP, the data for which were drawn from AidData 3.0. The AidData database is maintained by the College of William & Mary, Development Gateway, and Brigham Young

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8Data on civil conflict incidence by country for the years of 1945-2000 were obtained from UCDP/PRIO 4-2016 Armed Conflict Data Set released in 2016. Data on the death toll from a civil conflict by country for the years 1945-2000 were obtained from UCDP 5-2015 Battle-Related Deaths Dataset. The previous version of the dataset, released in 2009, has been widely used and the World Bank is supporting ongoing work to refine the latest release.
University. Information on GDP by country was obtained from the Penn World Table PWT 9.0, released in 2016. The Penn World Table is maintained by the Center for International Data at the University of California Davis.

The remaining two types of foreign aid flows are military assistance and cash assistance. I measure these two types of aid using dichotomous variables that take a value of one or zero. If a country receives military assistance in a given year then that observation is coded one, and zero otherwise. The data tracking military assistance are drawn from three data sets. The Interuniversity Consortium for Political and Social Research (ICPSR) at the University of Michigan maintains two of the three: Arms Transfers to Developing Countries from 1945 to 1986 and International Military Intervention from 1989 to 2005. The remaining data were obtained from Sullivan, Tessman, and Li (2011). If a country receives any sum of cash assistance in a given year, then that observation is coded one and zero otherwise. Data on cash assistance are drawn from the OECD Creditor Reporting System.

As discussed in the previous section, my analyses control for demographic and economic factors that are plausibly related to the incidence of civil conflict and for foreign aid between 1945 and 2000. With the exception of GDP, data on all demographic and economic controls were obtained from Fearon and Laitin (2003). For a full list of control variables, refer to Table 1 below.

To analyze the relationship between foreign aid and civil conflict incidence, I estimated a fixed effects regression model. The use of fixed effects substantially reduces omitted variable bias.

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9 Sullivan, Tessmana and Li constructed a panel data set that includes annual observations for 184 countries between 1980 and 2004.
10 OECD has a complete record on all official flows, including cash assistance transfers, but an incomplete record of the amounts. The OECD is an intergovernmental economic cooperation organization; one of its main responsibilities is to act as the credit agency responsible for the flow of foreign aid from developed countries to developing countries.
11 The control variables included in my analyses are similar to those used by Collier & Hoeffler (2002), Elbadawi & Sambanis (2003), Fearon & Laitin (2003), Miguel et al. (2004), and Ree & Nilsen (2008).
in my estimates (Stock & Watson, 2011). Country fixed effects control for country-specific factors that do not vary over time. This includes unobserved, but enduring institutional differences between countries, such as variations in government capacity, staffing, and resources (Stock & Watson, 2011). Year fixed effects control for factors that change over time, but do not vary across countries. This includes global commodity prices, rain, and drought levels (Stock & Watson, 2011). I estimate the following model, with the country-year as the unit of analysis:

\[
civ\text{-}\text{conf}_{it} = \beta_0 + \beta_1 (\text{pro\text{-}aid})_{it} + \beta_2 (\text{hum\text{-}aid})_{it} + \beta_3 (\text{tecn\text{-}aid})_{it} + \beta_4 (\text{loan\text{-}aid})_{it} + \beta_5 (\text{imilt\text{-}as})_{it} + \beta_6 (\text{i\text{-}cashas})_{it} + \beta_7 (\text{gdp\text{-}pop})_{it} + \beta_8 (\text{exports\_gdp})_{it} + \beta_9 (\text{pop})_{it} + \beta_{10} (\text{soc\text{-}frac})_{it} + \beta_{11} (\text{eth\text{-}dom})_{it} + \beta_{12} (\text{geo\text{-}disp})_{it} + \beta_{13} (\text{policy})_{it} + \alpha_i + \gamma_t + \mu_{it}
\]

Where \((\alpha_i)\) is a vector of country dummies, \((\gamma_t)\) represents dummy variables for each year, \((\mu_{it})\) is the error term, \((i)\) represents the country index, and \((t)\) is the year index. Each continuous aid variable reflects the annual aid a country received in a given year, and the two categorical variables indicate whether a country received some amount of military assistance or cash assistance. To allow for easier interpretation of coefficients, I follow Ree and Nillsen (2008) and construct logs of ODA to GDP ratios (ODA-to-GDP), such that a one percent change in the ODA-to-GDP ratio translates to a percentage point change in the probability of civil conflict. Foreign aid, GDP, primary commodity exports, and other relevant control variables are adjusted for inflation and expressed in 1985 US dollars. Using 1985 dollars is the standard for studies that employ international prices for commodity exports. This is mainly justified by the collapse of the OPEC-administered pricing system for oil in 1985 (Mabro 2006, Ross 2001). Further, by using 1985 US dollars, my results can be compared to other studies that have investigated this relationship, most
notably Collier & Hoeffler (2002) and Fearon & Laitin (2003). The sample size was calculated using data from the United Nations membership record, a dataset the tracks growth in the country membership of the United Nations from 1945 to the present. Over my period of analysis, the United Nations country membership grew from 51 countries to 189 countries.\textsuperscript{12} The sample size was calculated by aggregating the number of countries in every year from 1945 to 2000, resulting in a total of 6,473 country-year observations. Table 1 provides definitions for all variables included in the model.

\textsuperscript{12} For example, in the first year of my analysis (1945), there were 51 UN member countries, thus, for that one year, the maximum number of country observations was 51. In 1946, four additional countries joined, increasing the number of UN country members to 55. Thus, for that one year, the maximum number of observations was 55. This process was iterated for every single year covered in my analysis.
Table 1: Definitions of Dependent Variable, Key Independent Variables and Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Name</th>
<th>Definition</th>
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</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
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<tr>
<td>Civil conflict incidence</td>
<td>civ-conf</td>
<td>A dummy variable that reflects the incidence of civil conflict in a given country in a given year. This variable is assigned a value of one if a country in a given year experiences a conflict that exceeds the threshold of 25-battle related deaths, and zero, otherwise.</td>
</tr>
<tr>
<td><strong>Key Independent Variables</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project aid</td>
<td>pro-aid</td>
<td>A continuous variable that accounts for three distinct types of aid: economic aid, social sector aid, and food aid. Economic aid is assistance committed to projects related to infrastructure, industry, and agriculture. Social sector aid is assistance committed to projects related to health and education. Food aid is assistance that is committed to projects providing food or in-kind transfers. Project aid is measured as a proportion of the GDP of the recipient country, adjusted for inflation and expressed in 1985 USD.</td>
</tr>
<tr>
<td>Humanitarian aid</td>
<td>hum-aid</td>
<td>A continuous variable measuring the average amount of foreign aid committed to projects that provide emergency and disaster relief assistance. Humanitarian aid is measured as a proportion of the GDP of the recipient country, adjusted for inflation and expressed in 1985 USD.</td>
</tr>
<tr>
<td>Technical aid</td>
<td>tecn-aid</td>
<td>A continuous variable measuring the amount of aid committed to projects for the training of government staff and for the provision of human expertise in the areas of policy reform and management. Technical aid is measured as a proportion of the GDP of the recipient country, adjusted for inflation and expressed in 1985 USD.</td>
</tr>
<tr>
<td>Loan aid</td>
<td>loan-aid</td>
<td>A continuous variable measuring the amount of foreign aid provided to projects in the form of loans that are expected to be repaid using concessional terms. Loan aid is measured as a proportion of the GDP of the recipient country, adjusted for inflation and expressed in 1985 USD.</td>
</tr>
<tr>
<td>Military aid</td>
<td>imilt-as</td>
<td>A dichotomous variable that reflects whether a government received military assistance in the form of equipment, infrastructure, or training of military and security personnel.</td>
</tr>
<tr>
<td>Cash assistance</td>
<td>icash-as</td>
<td>A dichotomous variable indicating whether a government received a non-conditional cash grant.</td>
</tr>
</tbody>
</table>

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13 For example, the project aid variable for Egypt in 1985 is measured as the amount of project aid received by Egypt in 1985 divided by the GDP of Egypt in 1985.
<table>
<thead>
<tr>
<th>Variable</th>
<th>Variable Name</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>GDP per Capita</strong></td>
<td><em>gdp_pop</em></td>
<td>A continuous variable representing real Purchasing Power Parity (PPP) per capita. Income data are measured at the end of each year, starting in 1945, and are expressed in 1985 USD.</td>
</tr>
<tr>
<td><strong>Primary Commodity Exports/GDP</strong></td>
<td><em>exp_gdp</em></td>
<td>A continuous variable serving as a proxy for the presence of natural resources. Specifically, the variable is calculated as a ratio of primary commodity exports to GDP. This variable is measured in 1985 USD.</td>
</tr>
<tr>
<td>Demographic Factors</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Population</strong></td>
<td><em>Pop</em></td>
<td>A continuous variable, measuring the total population size of each country. This variable is measured in thousands at the end of each year from 1945 to 2000.</td>
</tr>
<tr>
<td><strong>Social Fractionalization</strong></td>
<td><em>soc-frac</em></td>
<td>A continuous variable measuring the probability that two randomly selected individuals from the same country will: a) speak a different language, b) belong to two different ethnic groups, and c) belong to two different religions.</td>
</tr>
<tr>
<td><strong>Ethnic Dominance</strong></td>
<td><em>eth-dom</em></td>
<td>A dichotomous variable set equal to one if the country contains an ethnic group that constitutes 45-100 percent of its total population and a minority that constitutes less than seven percent of its total population.</td>
</tr>
<tr>
<td><strong>Geographic Dispersion</strong></td>
<td><em>geo-disp</em></td>
<td>A dichotomous variable. A value of zero indicates that the capital city is geographically connected to the rest of the territory. A value of one indicates that the capital city is separated from another territorial base by water or the territory of another country.</td>
</tr>
<tr>
<td>Policy</td>
<td><em>Policy</em></td>
<td>Freedom House annually ranks countries on a twenty-point scale based on a pre-determined checklist. Points are awarded based on government observance of a long list of civil liberties and rule of law. This list includes freedom of the press, religious freedom, and civilian control of the police.</td>
</tr>
</tbody>
</table>
DESCRIPTIVE STATISTICS

Table 2 provides descriptive statistics for my dependent variable (civil conflict incidence), key independent variables (ODA: project aid, technical aid, humanitarian aid, loan aid; and OOF: military assistance and cash assistance), and control variables. I weight my data using a measure of each country’s population size over the period of my analysis (1945-2000). Civil conflicts were ongoing in 900 of the 6,473 country years in my sample, accounting for 14 percent of all observations. Countries such as Burma, India, and Colombia experienced civil conflict in every year from 1945 and 2000. The increased prevalence of civil conflict in more recent years is also reflected in my data. Between 1945 and 1955, 48 incidents of civil conflict were recorded; in contrast, between 1990 and 2000, 314 incidents of civil conflict were recorded.

The average country in my sample receives an amount of ODA equal to five percent of its GDP. This number is substantial, as government spending accounts for 20 percent of GDP among countries in my sample. On average, project aid constitutes three percent of a recipient country’s GDP, the largest ODA category relative to the three other ODA flows in my model. Between 1945

14 Over my period of analysis, the United Nations country membership grew from 51 in countries in 1945 to 189 countries in 2000. The sample size was calculated by aggregating the number of countries in every year from 1945 to 2000, this results in 6,610 country-year observations. Following the sampling procedures of similar studies in the correlates of war literature I only sample UN member countries with a population of 500,000 or more in the year 2000 this result in a total number of 161 countries. (Collier & Hoeffler 1998, 2002; Fearon & Laitin, 2003; Gleditsch et al., 2016). Due to the sampling procedures of AIDData (2016), my sample of countries was further reduced to 156 countries resulting in a total sample of 6,532 country-year observations. Data on civil conflict incidence were available for every country year observation in my sample. Data on foreign aid flows were missing for 48 country year observations. Foreign aid data were not available for three countries: Haiti, North Korea, and Taiwan. Cash assistance, a categorical key independent variable, was missing in 21 observations; the remaining 27 observations were missing for Haiti and North Korea in recent years only. All 48 observations were dropped resulting in a sample size of 6,484.

For the control variable, GDP per capita, I started with the Penn World Table 9.0 for real per capita income, measured in 1985 USD. This series begins in 1950 and ends in 2015, and provides data for 6,198 observations of my 6,484 country-year observations (95 percent of country years). I then used World Bank Development Indicators (WDI) (published by the World Bank annually) to extend these data backwards to 1945 where possible. This added 264 observations (4% of country years). I then used Fearon and Laitin (2003) estimates of GDP per capita, which added another 22 observations. Lastly, there were 11 country year observations that have no GDP, military aid, or commodity exports data. These country years contain five for which I code an incident of civil war: Croatia 1992, Bosnia 1992, Djibouti 1993, Yemen 1994, and Afghanistan 1992. The remaining observations were Afghanistan 1984, 1985, 1986, 1987, 1988. All 11 observations were dropped resulting in a final sample size (n) = 6,473.
and 2000, project aid amounted to $3.72 trillion, an average of $82 billion for every year in my period of study. This finding is expected, as project aid covers infrastructure investments, such as the construction of roads, schools, and hospitals. Technical aid comprises 1.26 percent of a recipient country’s GDP, the second largest ODA flow, and amounts to $1.73 trillion over the period of study. Technical aid and humanitarian aid each form less than one percent of the average recipient country’s GDP. The variation across each of the four ODA categories is noteworthy, indicating that aid allocation varies widely between countries and across time.

Table 2 also presents descriptive statistics for the economic and demographic controls in my model. Average GDP per capita is approximately $3,700 and population figures range from a minimum of 222,000 people in Bahrain in 1971 to a maximum of 1.2 billion people in China in 2000. It is significant to note the difference between primary commodity exports that represent less than one percent of GDP for countries like Burma in 1998 and approximately 210 percent of GDP for countries like Bahrain in 1981. These figures are comparable to estimates reported in other studies using similar data (Collier & Hoeffler, 2002; Fearon & Laitin, 2003; Fearon, 2005; Crost et al., 2014; Gleditsch et al., 2016) and to global averages, as reported by the World Bank (2016), OECD (2014), and the Penn World Table (2016).
Table 2: Descriptive Statistics for Dependent Variable, Key Independent Variables, and Control Variables

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>Standard Deviation</th>
<th>Minimum</th>
<th>Maximum</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Dependent Variable</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil conflict</td>
<td>0.14</td>
<td>0.34</td>
<td>0</td>
<td>1</td>
<td>6,473</td>
</tr>
<tr>
<td><strong>Key Independent Variables</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% Project Aid to GDP</td>
<td>3.33</td>
<td>7.02</td>
<td>0</td>
<td>14.71</td>
<td>6,473</td>
</tr>
<tr>
<td>% Humanitarian Aid to GDP</td>
<td>0.12</td>
<td>0.71</td>
<td>0</td>
<td>2.44</td>
<td>6,473</td>
</tr>
<tr>
<td>% Technical Aid to GDP</td>
<td>1.26</td>
<td>3.89</td>
<td>0</td>
<td>9.99</td>
<td>6,551</td>
</tr>
<tr>
<td>% Loan Aid to GDP</td>
<td>0.25</td>
<td>2.02</td>
<td>0</td>
<td>8.56</td>
<td>6,551</td>
</tr>
<tr>
<td>Military Assistance</td>
<td>0.31</td>
<td>0.46</td>
<td>0</td>
<td>1</td>
<td>6,473</td>
</tr>
<tr>
<td>Cash Assistance</td>
<td>0.26</td>
<td>0.44</td>
<td>0</td>
<td>1</td>
<td>6,473</td>
</tr>
<tr>
<td><strong>Economic Indicators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>GDP/Capita&lt;sup&gt;a&lt;/sup&gt;</td>
<td>3.70</td>
<td>4.52</td>
<td>0.048</td>
<td>66.75</td>
<td>6,473</td>
</tr>
<tr>
<td>Primary Commodity Exports/ GDP&lt;sup&gt;a&lt;/sup&gt;</td>
<td>45.12</td>
<td>28.29</td>
<td>0.66</td>
<td>209.80</td>
<td>6,473</td>
</tr>
<tr>
<td><strong>Demographic Indicators</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Population&lt;sup&gt;b&lt;/sup&gt;</td>
<td>32,180</td>
<td>103,590</td>
<td>222</td>
<td>1,238,599</td>
<td>6,473</td>
</tr>
<tr>
<td>Social Fractionalization</td>
<td>0.65</td>
<td>0.24</td>
<td>0.004</td>
<td>0.99</td>
<td>6,473</td>
</tr>
<tr>
<td>Ethnic Dominance</td>
<td>0.46</td>
<td>0.26</td>
<td>0.002</td>
<td>1</td>
<td>6,473</td>
</tr>
<tr>
<td>Geographic Dispersion</td>
<td>0.17</td>
<td>0.38</td>
<td>0</td>
<td>1</td>
<td>6,473</td>
</tr>
<tr>
<td>Policy</td>
<td>-0.29</td>
<td>7.53</td>
<td>-10</td>
<td>10</td>
<td>6,473</td>
</tr>
</tbody>
</table>

<sup>a</sup> In millions of 1985 $US dollars.

<sup>b</sup> Population, in 1000s
REGRESSION RESULTS

*Primary specifications*

Table 3 presents regression results for an ordinary least square regression and fixed effects regression. Model 1 presents the results of an ordinary least square regression that includes several economic and demographic control variables, but does not include fixed effects. In Model 2, I include country fixed effects to assist in controlling for country characteristics, which are constant over time, but differ across countries. In Model 3, I add year fixed effects to control for factors that change over time, but do not differ across countries. The fixed effects coefficients soak up all the differences across countries and over time, while leaving within group variation, and thus reducing the threat of omitted variable bias. Lastly, Model 4 tests whether the relationship between foreign aid flows and the incidence of civil conflict varies between countries that are dependent on oil exports and countries that are not. Each regression is estimated with robust standard errors clustered at the country level and weighted by country population size over the period of my analysis.

The key independent variables of interest are the six categories of aid: project aid, humanitarian aid, technical aid, and loan aid, which are continuous variables measured in millions of 1985 USD as a proportion to GDP. Military assistance and cash assistance are dichotomous variables that assume a value of one if a country in a given year receives any amount of military assistance or cash assistance. Since I am using an OLS to analyze a binary dependent variable, the coefficients for the aid variables quantify the predicted probability, in terms of percentage point changes, of civil conflict incidence for a country that receives foreign aid flows in a particular year, holding the seven control variables in Table 3 constant.
The results in Table 3 suggest that disaggregated foreign aid has a mixed relationship with civil war incidence. In particular, Table 3 shows that project aid, humanitarian aid, and cash assistance have a small, negative relationship with civil war incidence. Table 3 also shows that technical aid has a small, positive relationship with civil war incidence. The results also suggest that technical aid, loan aid, and military assistance have small and positive relationships with civil war incidence. In Model 1, which excludes country and time fixed effects, the estimated coefficient on technical aid, loan aid, military assistance, and cash assistance are all small and significant. However, my OLS model almost certainly suffers from omitted variables bias as it does not account for individual country factors that are plausibly correlated with foreign aid and civil conflict. To mitigate some of this bias, country fixed effects are added in Model 2. Country fixed effects automatically control for all country-level characteristics that differ across countries, but are fixed over time. This may reduce cross-country variation, but preserve within country variation. Moving from Model 1 to Model 2, the addition of country fixed effects to Model 2 produces smaller estimates for all six of my foreign aid variables, all of which are insignificant.

In Model 3, I add year fixed effects, which capture the influence of unobserved factors that are constant over time, but differ across countries. The coefficients on technical aid, loan, aid, military assistance, and cash assistance are smaller in magnitude, but are more precisely estimated, than in Model 2. The coefficient on humanitarian aid is estimated to be very close to zero and is not significantly different from zero at the ten percent level. The coefficient on technical aid is larger in magnitude, statistically insignificant at conventional levels, and consistently negative. The coefficient on loan aid is smaller in magnitude, more precisely estimated, and statistically at
the five percent level and remains positive.\textsuperscript{15} Lastly, cash assistance is moving to the right on the number line and is statistically significant at the ten percent level and remains small and negative.

These results suggest that a one percent increase in loan aid, relative to $1,000,000 of GDP, is associated with a 0.145 percentage point increase in the probability of civil conflict incidence, holding all the control variables constant. Cash assistance is significant at the one percent level and the results suggest that the average country that receives cash assistance is 0.007 percentage points less likely to experience civil conflict than the average country that does not receive cash assistance. For the average country in my sample, loan aid flows represent about 0.25 percent of a recipient country’s GDP. A one percent increase in load aid relative to GDP would entail a $340 million disbursement to that country in a given year. This disbursement is small, relative to a country’s GDP, accounting for four percent of GDP for the average country in Sub-Saharan Africa, which already receive just under seven percent of aid-to-GDP in my sample. It is also conceivable for a donor country to make such a disbursement in any one given year. However, it is not conceivable that donor countries would be able to make such a commitment to all 40 countries experiencing ongoing civil conflicts in 2014, only to influence the probability of civil conflict incidence by 1 percentage point for that given year.

\textit{Interactions}

Some of the civil conflict literature suggests that there is an association between economic dependence on oil exports and incidence of civil conflict (Basedau & Lay, 2009; Collier & Hoeffler, 2005; Ross, 2004). I seek to understand whether the relationship between foreign aid and civil conflict incidence differs between countries that are dependent on oil exports and countries that have a more diversified economy. I interact my key independent variables with a measure of

\textsuperscript{15} Military assistance has a p-value of 0.12. In other words, it is marginally significant when compared to conventional levels of statistical significance such as the ten percent level.
economic dependence on oil. This measure is assigned a value of one if more than one-third of a country’s exports in a given year are oil and zero otherwise. This coding scheme is similar to those adopted by Collier & Hoeffler (2005), Fearon & Laitin (2003).

In Model 4, development aid is estimated to have a small negative association on civil conflict. According to the results reported in Column 4, the interaction between project aid and oil, as well as technical aid and oil, produces significant results at the five percent level. The results of this Model suggest that the association between project aid and civil conflict is stronger for countries that are economically dependent on oil. For the average country the association between project aid and civil conflict was associated with a 0.0001 decrease in the risk of civil conflict, but, for countries that are dependent on oil, project aid is associated with a 0.027 increase in the risk of civil conflict. This indicates that, among oil-dependent countries, development aid is associated with a significant, but small increase in the risk of civil conflict. In contrast, the results suggest that, for the average country in my sample, technical aid is strongly associated with small increases in the risk of civil conflict. The interaction term exhibits a similar association with countries that are dependent on oil, yet the results suggest that it may be a smaller one.
Table 3. Primary Specification Regression Results

<table>
<thead>
<tr>
<th>Dependent Variable: Civil conflict dummy</th>
<th>(1) OLS</th>
<th>(2) Country Fixed Effects</th>
<th>(3) Country &amp; Year Fixed Effects</th>
<th>(4) Country &amp; Year Fixed Effects Interaction</th>
</tr>
</thead>
</table>

Key Independent Variables

Foreign Aid

<table>
<thead>
<tr>
<th>Project Aid per $1,000,000 GDP</th>
<th>-0.58 (4.28)</th>
<th>-0.96 (1.82)</th>
<th>0.07 (0.76)</th>
<th>-0.11** (0.06)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humanitarian Aid per $1,000,000 GDP</td>
<td>-45.27 (37.29)</td>
<td>-7.9 (6.28)</td>
<td>-6.43 (4.44)</td>
<td>-8.82* (4.85)</td>
</tr>
<tr>
<td>Technical Aid per $1,000,000 GDP</td>
<td>5.03** (2.189)</td>
<td>2.01 (1.37)</td>
<td>1.10 (0.94)</td>
<td>4.20* (1.41)</td>
</tr>
<tr>
<td>Loan Aid per $1,000,000 GDP</td>
<td>27.40* (14.46)</td>
<td>25.3 (19.02)</td>
<td>14.48** (6.27)</td>
<td>19.16** (8.80)</td>
</tr>
<tr>
<td>Military Assistance</td>
<td>12.85*** (3.27)</td>
<td>12.5 (8.34)</td>
<td>12.07 (7.99)</td>
<td>11.4* (6.9)</td>
</tr>
<tr>
<td>Cash Assistance</td>
<td>-2.11** (.639)</td>
<td>-1.3 (0.40)</td>
<td>-0.7* (0.37)</td>
<td>-0.57 (0.36)</td>
</tr>
</tbody>
</table>

Economic Indicators

<table>
<thead>
<tr>
<th>GDP per Capita a</th>
<th>-18.04*** (3.86)</th>
<th>2.58 (2.34)</th>
<th>-4.25** (1.98)</th>
<th>-4.1** (2.07)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary Commodity Exports per $1,000 GDP</td>
<td>-4.01 (4.46)</td>
<td>-1.22* (0.66)</td>
<td>5.46 (9.56)</td>
<td>-9.6*** (14.67)</td>
</tr>
</tbody>
</table>

Demographic Indicators

<table>
<thead>
<tr>
<th>Population b</th>
<th>-0.02 (0.19)</th>
<th>0.44*** (0.10)</th>
<th>0.25 (0.29)</th>
<th>0.26 (0.33)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Social Fractionalization</td>
<td>1.40 (0.30)</td>
<td>-4.18*** (0.19)</td>
<td>-2.62*** (0.87)</td>
<td>-2.55*** (1.12)</td>
</tr>
<tr>
<td>Ethnic Dominance</td>
<td>1.33*** (0.25)</td>
<td>-4.67*** (0.20)</td>
<td>-2.40*** (0.88)</td>
<td>-2.45*** (0.95)</td>
</tr>
<tr>
<td>Geographic Dispersion</td>
<td>0.12*** (0.03)</td>
<td>0.17*** (0.028)</td>
<td>0.17*** (0.014)</td>
<td>0.53 (0.70)</td>
</tr>
<tr>
<td>Policy</td>
<td>0.01*** (0.004)</td>
<td>0.002 (0.008)</td>
<td>-0.02* (0.012)</td>
<td>-0.02* (0.01)</td>
</tr>
<tr>
<td>Interactions</td>
<td>(1) OLS</td>
<td>(2) Country &amp; Year Fixed Effects</td>
<td>(3) Country &amp; Year Fixed Effects</td>
<td>(4) Country &amp; Year Fixed Effects Interaction</td>
</tr>
<tr>
<td>--------------</td>
<td>--------</td>
<td>---------------------------------</td>
<td>---------------------------------</td>
<td>------------------------------------------</td>
</tr>
<tr>
<td><strong>Foreign Aid * Oil</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Development Aid per $1,000,000 GDP *Oil</td>
<td></td>
<td>2.70** (0.90)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Humanitarian Aid per $1,000,000 GDP *Oil</td>
<td></td>
<td>0.07 (0.06)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Technical Aid per $1,000,000 GDP *Oil</td>
<td></td>
<td>2.06** (0.01)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Loan Aid per $1,000,000 GDP *Oil</td>
<td></td>
<td>1.07** (0.51)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Military Assistance *Oil</td>
<td></td>
<td></td>
<td>-0.16 (1.5)</td>
<td></td>
</tr>
<tr>
<td>Cash Assistance * Oil</td>
<td></td>
<td></td>
<td>-6.44 (9.36)</td>
<td></td>
</tr>
<tr>
<td><strong>Constant</strong></td>
<td>-1.25*** (0.28)</td>
<td>4.98*** (0.16)</td>
<td>2.77*** (1.05)</td>
<td>3.19*** (0.92)</td>
</tr>
<tr>
<td><strong>Country FE</strong></td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>Year FE</strong></td>
<td>No</td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td><strong>F – Statistics &amp; (p-values of joint hypotheses)</strong></td>
<td></td>
<td></td>
<td></td>
<td>F-statistics (p-value)</td>
</tr>
<tr>
<td>Development Aid per $1,000,000 GDP* Oil</td>
<td></td>
<td></td>
<td></td>
<td>8.93** (0.00)</td>
</tr>
<tr>
<td>Humanitarian Aid per $1,000,000 GDP* Oil</td>
<td></td>
<td></td>
<td></td>
<td>1.47 (0.23)</td>
</tr>
<tr>
<td>Technical Aid per $1,000,000 GDP* Oil</td>
<td></td>
<td></td>
<td></td>
<td>5.60** (0.02)</td>
</tr>
<tr>
<td>Loan Aid per $1,000,000 GDP* Oil</td>
<td></td>
<td></td>
<td></td>
<td>0.00 (0.63)</td>
</tr>
<tr>
<td>Military Assistance* Oil</td>
<td></td>
<td></td>
<td></td>
<td>0.01 (0.92)</td>
</tr>
<tr>
<td>Cash Assistance* Oil</td>
<td></td>
<td></td>
<td></td>
<td>0.47 (0.49)</td>
</tr>
<tr>
<td><strong>Adjusted R-squared</strong></td>
<td>0.16</td>
<td>0.45</td>
<td>0.45</td>
<td>0.49</td>
</tr>
<tr>
<td><strong>Observations</strong></td>
<td>6,473</td>
<td>6,473</td>
<td>6,473</td>
<td>6,473</td>
</tr>
</tbody>
</table>

Robust standard errors are reported in parentheses under coefficients. P-values are reported in parenthesis under F statistics.

*** p<0.01. **p>0.05 *p<0.1.

a In 1985 dollars.
b In millions.
DISCUSSION

This study was motivated by the argument that foreign aid flows to developing countries can be an effective conflict prevention policy. Such an argument posits that, by providing an exogenous pool of resources, foreign aid can decrease the pressure on the recipient government to cut spending, thereby minimizing the risk of civil conflict (Crost et al, 2014; Nillesen et al, 2009; World Bank, 2012). However, my regression results, using both multiple regression and state and time fixed effects specifications, provide no evidence of such an effect. To the contrary, my study provides suggestive evidence that increased foreign aid flows are associated with marginal increases in the risk of civil conflict. In particular, I find a small positive and statistically significant relationship between loan aid, technical aid, military assistance and the risk of civil conflict. These results provide suggestive evidence to support for Collier and Hoeffler’s (2007) finding that foreign aid flows facilitate government efforts to develop a strong military due to the fungibility of aid into military expenditure. The results also provide suggestive support to Nillesen’s (2008) finding that foreign aid translates into military expenditure more effectively when a country is experiencing an increased likelihood of civil conflict. It is especially noteworthy that project aid is associated with significant small increases in the risk of civil conflict for countries that are dependent on oil but not for the average country in my sample.

Furthermore, my results suggest that while certain categories of foreign aid are positively associated with civil conflict, project aid and humanitarian aid are negatively associated with civil conflict. This demonstrates the importance of disaggregating aid into multiple categories before assessing the implications of increased aid to countries affected by civil conflict. Additionally, this
finding provides support for the conceptual approach of Nunn et al., (2014) and Crost et al., (2014) who call on future researchers to disaggregate aid flows before examining their efficiency.

Although my results suggest that foreign aid is positively associated with the risk of civil conflict, this analysis has several limitations. First, one would like to examine the relationship between foreign aid and civil conflict incidence using data on foreign aid that are not limited to flows between two governments. Multilateral aid flows account for 40 percent of gross ODA, a large sum that falls under a kaleidoscope of accountability arrangements. Unfortunately, the Organization for Economic Co-operation and Development (OECD), the credit agency responsible for facilitating, tracking, and recording foreign aid disbursements, does not provide information on how to track foreign aid that is received by a multilateral organization, such as the World Bank, African Union, or the Asian Development Bank, and then disbursed through that organization to recipient countries (DAC, 2011). Second, for many government-to-government (bilateral) dealings, there are no public records; emerging economies such as Brazil, China, India, and South Africa refuse to report any of their foreign aid flows to the OECD (DAC, 2011). Third, non-development aid that is requested by governments and provided through private entities at commercial interest rates represents another source of foreign funding that governments can use. Since my study focuses on bilateral aid disbursements between countries, I did not consider these aid flows in my analyses. Further, 17 percent of all foreign aid, appropriately called non-transfer aid, is delivered to recipient governments without making any monetary transfer. (Godfrey et al., 2002).

Non-transfer aid is mainly debt relief, occurring years after a loan has been made (Godfrey et al., 2002). Donor governments expect recipient governments to pay back these loans over long
periods of time; yet even a recipient government is dealing with economic shocks, political risks, and natural disasters, donor governments seldom consider relieving their debt (Weiss, 2011). This debt relief is rare, however, when it does take place, it is normally substantial and coincides with events such as the war on Iraq (Weiss, 2011). The amount of debt relieved is a function of how much debt a government has accumulated over long periods of time, how much it has paid back, and the vulnerability to risk, making it very difficult to investigate the relation between non-transfer aid and other events.

To examine the relationship between military assistance, cash assistance, and civil conflict incidence, researchers may opt to consider both categorical data and continuous data. Unfortunately, there are no public records of the amount of military and cash assistance transfers between governments, and the most accurate records reflect sporadic efforts by researchers who are interested in the topic (Ernizet & Pickering, 2008; GPI, 2016; Security Assistance Monitor, 2016). For these reasons, I was unable to monetize military and cash assistance for all years in the time window encompassed by my analysis. Constructing a data set that collects accurate yearly military and cash assistance data would be a novel way to improve future studies of this topic.

Notably, my study does not consider foreign aid that is received by rebels or non-state actors. In general, studies investigating the effects of foreign aid focus on aid received by the official sector represented by governments and some NGO’s (Collier & Hoeffler, 2002; 2007; Crost et al, 2014; Fearon & Laitin, 2003; Ree et al, 2008). This is to be expected, as governments are the largest recipients of foreign aid (Godfrey et al., 2002). Moreover, there are little data on this type of foreign aid, as governments keep any records of foreign aid to such actors secret, often because it is perceived as illegitimate foreign influence in the domestic affairs of sovereign countries.
(Ernizet & Pickering, 2008). Similarly, my study fails to consider foreign intervention in civil wars, such as the Russian intervention in Syria or the US-enforced no-fly zone in Libya (McKely; 2015, Mazzetti, 2016).

The control variables included in my regression models closely replicate those used by prominent studies of civil conflicts (Collier & Hoeffler, 2002; 2007; Crost et al, 2014; Fearon & Laitin, 2003; Ree et al, 2008). The use of year fixed effects mitigates some omitted variable bias by controlling for global trends, such as the global financial crisis of 2008-9, the fall of the Soviet Union, the end of the Cold War, and the 1973 Oil Crisis, all of which plausibly have generic effects on all countries at any given point in time. Similarly, my use of country fixed effects controls for unobserved time-invariant factors within countries, such as geography, culture and institutional norms. Nonetheless, there are almost certainly unobserved factors varying differentially within countries over time that are not controlled for in my analyses and that are correlated with both aid flows and the risk of civil conflict. For example, there may be imperceptible cultural shifts within a country that are associated with the quality of government performance and bilateral alliances. These factors may influence the type and amount of bilateral aid that a government receives as well as the likelihood of civil conflict. On the one hand, improved government performance may attract increased foreign aid and lower the risk of civil conflict. On the other hand, a country entering into a new bilateral alliance is more likely to receive foreign aid from abroad while facing resistance at home. These factors are not captured by my fixed effects specification, and the omission of these variables may be exerting bias on the foreign aid coefficients in my models.

As the previous example demonstrates, it is conceivable that some omitted factors will bias the coefficients on my dependent and independent variable in the same direction (upward bias).
However, the small positive coefficients on technical aid, loan aid, and military assistance in the Model 3 and Model 4 may reflect omitted variable bias. While it is conceivable that these forms of aid are negatively associated with civil conflict, it is more likely that there are omitted variable bias that are downwardly biasing my foreign aid coefficients. If this is the case this would mean that the true relationship between foreign aid and civil conflict is actually weaker than this study suggests.

Despite these limitations, my study has produced results consistent with those found in several earlier analyses of the relationship between similar measures of foreign aid and civil war incidence. Collier and Hoeffler (2002) find a small association between aid and the onset of civil conflict, though they stress that their results are not causal. Instead, they argue that foreign aid may influence conflict through its effect on national income and primary commodity exports. Similarly, Nillesen et.al (2009) find a small and insignificant relationship between foreign aid and the probability of civil conflict onset.

In sum, my results suggest that foreign aid flows are one of many important tools for policy makers, donor countries, aid agencies and multilateral organizations to consider in their efforts to prevent future conflict. As the public debate surrounding the efficacy of foreign aid continues, these findings suggest that foreign aid should not be considered as a monolith or black box, and that public policy decisions should be based on methodologically sound studies, rigorous quantitative analyses, and solid evidence.
REFERENCES


