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Donor-Side Determinants of Disaggregated Foreign Assistance: A Sur Approach to Understanding U.S. Economic, Military, and Food Aid Commitments

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DONOR-SIDE DETERMINANTS OF DISAGGREGATED FOREIGN ASSISTANCE: A SUR APPROACH TO UNDERSTANDING U.S. ECONOMIC, MILITARY, AND FOOD AID COMMITMENTS

by

Stephanie Hugie

A Plan B paper submitted in partial fulfillment
of the requirements for the degree

of

MASTER OF SCIENCE

in

Economics

Approved:

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Logan, UT

2011

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ABSTRACT

Donor-Side Determinants of Disaggregated Foreign Assistance: A SUR Approach to Understanding U.S. Economic, Military, and Food Aid Commitments

by

Stephanie Hugie, Master of Science

Utah State University, 2011

Major Professor: Dr. John Gilbert
Department: Economics and Finance

This study addresses whether the absolute and relative impact of economic, political, and humanitarian variables that restrain or boost U.S. foreign assistance varies for different types of aid, from a strictly domestic decision-making framework. Using a SUR analysis for U.S. economic, military, and food aid obligations, the various aid budgets indeed behave differently with respect to the explanatory variables. GDP growth, the military budget, and Congressional orientation are more suitable predictors for economic assistance than for food or military assistance. Food aid is less likely to be correlated with the ideological orientation of the Congress and President, and is not significantly related with the military budget and GDP growth. It is, however, positively related with U.S. agricultural subsidies, and is the only variable with any significant (albeit weakly) relationship with U.S. FDI. Military assistance budgets prove to be more difficult to model in contrast to food and economic aid. Domestic poverty appears to enhance economic and food aid budgets, while restricting military assistance granted to strategic U.S. allies. In the aggregate, natural disasters, the ideological orientation of the President, and commercial interests embodied via trade-to-GDP do not appear to significantly influence any of the aid budgets.

(52)

PUBLIC ABSTRACT

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This study addresses whether the absolute and relative impact of economic, political, and humanitarian variables that restrain or boost U.S. foreign assistance differs for economic, military, and food aid budgets. With considerable constraints on the foreign aid budget, an understanding of historic foreign aid decision-making trends may inform vested interests, if not the ultimate beneficiaries. Moreover, an understanding of decision-making determinants for different types of foreign assistance may likewise enlighten policy debates.

GDP growth, the military budget, and Congressional orientation are more suitable predictors for economic assistance than for food or military aid. Food aid is less likely to be correlated with the ideological orientation of the Congress and President, and is not significantly related with the military budget and GDP growth. It is, however, positively related with U.S. agricultural subsidies, and is the only variable with any significant (albeit weakly) relationship with U.S. FDI. Military assistance budgets prove to be more difficult to model in contrast to food and economic aid. Domestic poverty appears to enhance economic and food aid budgets, while restricting military assistance granted to strategic U.S. allies. In the aggregate, natural disasters, the ideological orientation of the President, and commercial interests embodied via trade-to-GDP do not appear to significantly influence any of the aid budgets

ACKNOWLEDGMENTS

I thank Dr. John Gilbert for being a true mentor, supporting and pushing my personal research from the beginning with much patience; Dr. Shannon Peterson and Dr. Diana Thomas for being powerful role models, always providing advice, support, and encouragement; Dr. Sue Schram for being the most wonderful boss and enabling me jump in on the policy world of foreign aid; Larry Nowels for sharing his expertise and insights; and Dr. Robert Fleck and Dr. Christopher Kilby for sharing their data, whose research served as the foundation for this paper.

Stephanie Hugie

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INTRODUCTION

Blue and white tents blossom in the humid, warm countryside, like flowers in a field. These temporary shelters are not foreign to urban habitats either, for similar tents crowd street corners and road medians, even taking root outside destroyed government buildings. Logos emblazoned upon the shelters declare their origin: some claim USAID, others UNICEF. Initially embraced out of necessity and fear of tumbling rubble, Haitian landowners, politicians, and citizens seeking dignity amidst such humble conditions now perceive these tent cities as weeds. But in the aftermath of the disastrous 2010 earthquake, not only Haitians question the pace of recovery as exemplified by the presence of tent cities. After visiting Haiti for a mere 5 hours, U.S. Congressman Jason Chaffetz (R-UT) declared:

> Our country is so giving in responding to a true humanitarian crisis, and it is embarrassing to get down there and not see more results... I worry there are millions of dollars that are unaccounted for, and the progress is slow and depressing (*The Salt Lake Tribune* April 2011).

Nearly 1500 miles away, a group gathers in a bright conference room with sweeping, sparkling views of the National Mall, a far different world than the harsher environments reached by U.S. foreign aid. The alliance, a diverse set of NGOs and faith-based organizations, strategizes on how to protect funding for the U.S. foreign aid and international affairs budget. Perhaps unbeknownst to the very beneficiaries of foreign aid hundreds and thousands of miles away, the group convenes like many interests across Washington D.C. to resist seemingly inevitable budget cuts. The participants brand moral, political, and economic messages to target lawmakers and the public: the number of lives saved, children nourished, cases of disease reduced, and livelihoods improved through U.S. foreign assistance, or the ways in which aid supports strategic allies and promotes American jobs.

Yet the sentiments echoed by Congressman Chaffetz reflect the oft-embattled case for foreign aid, particularly acute with serious domestic constraints like high unemployment, listless GDP growth, seemingly constant budget crises, hostile House Republicans, and a decline in military engagements abroad that typically correlate with larger foreign assistance budgets. Many question how effective aid is, why countries with corrupt leaders receive it, or what motives donor countries have in providing it: no wonder that policymakers often target foreign assistance when attempting to trim the U.S. budget. Misperceptions haunting foreign aid do not help its case, either: according to a World Public Opinion

survey conducted in 2010, Americans believe that foreign aid constitutes 27% of government spending, in contrast to the actual humble figure of 0.6% (*The Washington Post* December 2010). In 2010 net bilateral official development assistance (ODA) equaled 0.21% of U.S. Gross National Income (GNI), totaling $25 billion (OECD IDS 2011). As a stark comparison, Americans spent $48.5 billion on their pets in the same year (American Pet Products Association 2011).

With considerable constraints on the foreign aid budget, an understanding of historic foreign aid decision-making trends may inform vested interests, if not the ultimate beneficiaries. Moreover, an understanding of decision-making determinants for different types of foreign assistance may likewise enlighten policy debates.

LITERATURE REVIEW

Two general branches define the academic literature of official foreign aid:[1] one addresses whether foreign aid is effective at promoting economic growth and welfare, whereas the other studies the determinants of its allocation and budget volume. The latter branch specifically inquires as to who receives foreign aid (demand-side, recipient characteristics), why (supply-side donor intent and recipient characteristics), and how donor countries determine total aid volume. While many treat these two realms as mutually exclusive, a critical school of development now probes whether donor intent as embodied by its disbursement methodology ties to aid's effectiveness (Easterly 2006).

Foreign aid's perceived potential and actual track record in promoting economic growth has been mixed.[2] One side of the contentious literature declares that foreign aid stimulates neither investment nor growth, instead supporting public consumption and crowding out private saving (Boone 1994; Boone 1996; Moyo 2009). The other side of the argument expresses great faith in the ability of foreign aid to eradicate poverty, complimented by multilaterally-supported aid expenditure targets and a concerted effort to achieve the ambitious Millennium Challenge goals (Sachs 2005; UN 2011). Several policymakers crown foreign assistance as a critical, though not necessarily sufficient, tool to trigger strong economic growth, citing compelling case studies as examples. USAID Administrator Rajiv Shah recently highlighted the shining example of South Korea: once poorer than the majority of countries in sub-Saharan Africa, extensive U.S. aid supported South Korea's

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[1] Emerging donors, such as China and India, resist the labels of "aid" and "donor," preferring to call foreign assistance as "partnerships" based on mutual benefit in the spirit of South-to-South cooperation (Davies 2008). The notion of aid as being development cooperation based on partnerships is becoming increasingly popular in traditional donor countries as well, evinced by the terminology used by the OECD in preparation for the Fourth High Level Forum on Aid Effectiveness. Disillusionment with the term "aid," with its subtle enforcement/endorsement of the distribution of global power, even if well-intentioned, perhaps reflects the leveling playing field spurred by globalization and the emerging power of developing countries. The remainder of this proposal uses the terms "aid" and "assistance," but with due recognition (and frankly support) of the qualms for such simplistic designations.

[2] Note that most econometric studies measure aid effectiveness by its impact on GDP growth; however, several prominent development economists do not gauge economic output as the sole contributor to welfare and development, and neither does the work of USAID focus exclusively on promoting economic growth. For example, Nobel laureate Amartya Sen views development "as a process of expanding the real freedoms that people enjoy," including non-economic freedoms such as education, health care, and political and civil rights, just as USAID promotes global health, democracy, and governance as main practice areas (Sen 1999). Regardless, from a donor perspective, focusing on development results exclusively–whatever those may be–may not sufficiently gauge the complete success or failure of foreign aid, given additional political and economic intentions that often accompany foreign assistance.

agricultural and industrial sectors to help it achieve "aggressive growth," such that South Korea today is an official net donor of Official Development Assistance (ODA) and major U.S. trading partner, epitomized by the recently signed Free Trade Agreement with the United States (Shah 2011).

But perhaps a qualified answer is more appropriate: an influential study by Burnside and Dollar (2000) claims that aid is given in vain if to countries with poor institutions and policies, but effective if granted to those with sound institutions.[3] A case-study based report recently released by the Overseas Development Institute (2011) likewise determines that in addition to smart partnerships with donor countries, the combination of smart leadership, policies, and institutions within a developing country results in development progress, using a broader definition for welfare than GDP growth.[4]

Dating to Maizels and Nissanke (1984), the study of the determinants of who receives aid and why has focused largely on donor strategic intent. Many econometric studies employ cross-country panels that utilize both donor-interest and recipient characteristics, using donor-interest variables such as "UN voting measures of alliances, military links, arm imports, aid from rival donors [and] colonial ties" in the influential fashion of Alesina and Dollar (2000) (Fleck and Kilby 2009). Berthélemy (2006) further argues that commercial interests may play just as large a role as geopolitical motives for some donors. Poverty rates, population size, institutional variables, and other development indicators traditionally define recipient country conditions, and others have studied the influence of natural disasters and media coverage.[5]

The results of these studies verify the particularly political nature of U.S. aid, for it has traditionally been bestowed to those that promote U.S. interests (such as Israel and Egypt [6]) rather than just the most impoverished (Alesina and Dollar 2000; Berthélemy and Tichit 2002). The inherent political nature of aid has prompted the study of whether corrupt governments receive aid, or even if it

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[3] See Easterly (2003) and Easterly, Levine, and Roodman (2003) for rebuttals.

[4] Additional variables included improvements to agriculture, education, governance, health, social protection, the environment, and water and sanitation.

[5] See Drury et al. (2005) and Stromberg (2007).

[6] Note that events of the Arab Spring will most likely change the relationship between the United States and Egypt with regards to foreign assistance.

leads to corruption. Alesina and Weder (2002) determine that aid is not any more likely to support corrupt governments, though differences vary by donor. Meanwhile, Tavares (2003) claims that aid in fact decreases corruption.

Other studies exclusively focus on supply-side conditions in donor countries that inhibit or promote aid budget resources, focusing on political and economic explanatory variables such as GDP growth, ideological orientation and size of the governments, military engagements, generosity as measured through a country's Gini coefficient or domestic transfers, and characteristics of the Congressional districts of decision-makers. An analysis by Chong and Gradstein (2008) of DAC donors finds richer, more egalitarian countries grant more in aid. Round and Odedokun (2004) determine that progressivity in aid exists, wherein richer countries grant larger proportions of their income to aid than poorer ones. They further find that while political polarization, fractionalization, aid effort by "peers," and size of governments positively impact aid budgets, fiscal balance does not. For U.S. aid, Fleck and Kilby (2009) find that GDP growth, military budgets, the War on Terror, and left-leaning legislative and executive branches correlate with higher budgets. However, Goldstein and Moss (2005) show that the "conventional wisdom" about generous liberals and penny-pinching conservatives does not hold when analyzing aid to Africa: a split party configuration between the President and Congress negatively impacts aid resources devoted to Africa, regardless.

HISTORICAL AND CONTEMPORARY TRENDS AND CONTEXT

Since World War II, foreign aid has served as an important tool for the U.S. government to promote its political interests, first to prevent the spread of communism and later terrorism. Even in the period between the Cold War and the War on Terror, aid supported U.S. interests, such as to prevent the trafficking of narcotics and to promote Middle East peace and democracy. September 11, 2001 profoundly impacted the use and purpose of U.S. foreign aid, as it was quickly elevated alongside diplomacy and defense as the third pillar of U.S. national security to combat terrorism (Nowels et al. 2006). In addition, the Bush administration promoted global health through the U.S. President's Emergency Plan for AIDS Relief (PEPFAR) and initiated the Millennium Challenge Corporation (MCC) as an innovative, depoliticized vehicle to administer aid. These two initiatives, plus reconstruction in Iraq, propelled the foreign aid budget to its highest levels in three decades in 2004, and it has continued to climb. Nevertheless, foreign aid spending as a percentage of GDP has been in decline for several decades (Nowels 2006). The Obama administration continues to vigorously endorse aid as an important soft power tool, evinced by the commission of the first ever Presidential Policy Directive on Development, and has supported additional initiatives to address climate change and food security. Figure 1 in the appendix documents total U.S. foreign aid obligations from USAID's *Greenbook* since 1955, with economic and military assistance obligations combined.

Despite the heavy political undertones to U.S. foreign aid, economic interests underpinning U.S. assistance have become increasingly visible; for example, USAID just celebrated the tenth year anniversary of the Global Development Alliance, a development program based on public-private partnerships that combines "the energy and resources" of the U.S. government, NGOs, and private companies to "deepen development impact through aligned private capital" (USAID 2011). Since its inception, more than 1000 partnerships with more than 3000 partners have taken place. Companies benefit from public-private partnerships through access to new markets, customers, suppliers, inputs, market intelligence, opportunities for employee engagement, workforce development, and reduced

risk for investment. The formation of the United States Global Leadership Coalition in 1995, a coalition of 400 businesses, NGOs, policy experts, and leaders to defend the international affairs budget, also testifies to the stake that business has in foreign assistance, and how business has united (with oft-competing factions) to defend foreign aid budgets.

Just as the political and economic context for foreign aid in the United States has varied, so has the international "aid scape" and the very nature of global challenges that aid addresses. Additional actors–including NGOs, corporations, and "emerging" official donors like China–increasingly provide extra resources to alleviate poverty, yet threaten aid efficiency with fragmentation and duplicative efforts that lack donor coordination. Meanwhile, the poorest are increasingly located in fragile states, framed by global challenges like disease, climate change, and economic downturns that do not recognize national borders. Intensifying demands for aid effectiveness and transparency by constituents in both donor and recipient countries also require more of aid in the twenty-first century (Kharas et al. 2011).

PROPOSED MODEL

This study intends to build upon a simple time series analysis of the total volume of the U.S. foreign aid budget by Fleck and Kilby (2009), intending to capture the decision-making process of the United States as a donor. Following the manner of Round and Odedokun (2004), Chong and Gradstein (2008), and Goldstein and Moss (2005), I extend and modify the algebraic expression of Fleck and Kilby's model:

$$y = \beta_1 year + \beta_2 mil_budget + \beta_3 growth + \beta_4 president + \beta_5 congress + \beta_6 inter_war + \beta_7 war_terror + \varepsilon$$

The authors regress gross U.S. bilateral aid obligations upon a trend term, the military budget as a percentage of GDP, GDP growth, the ideological orientation of the Congress and President, a time dummy for the period between the Cold War and the War on Terror, and a time dummy for the War on Terror.[7] This model follows the literature closely with its focus on domestic political factors and the incorporation of a budget constraint via GDP growth (Fleck and Kilby 2009).

In expanding Fleck and Kilby's model, I pursue two questions: first, do specific types of foreign assistance associate with different determinants than those traditionally affiliated with overall economic assistance or official development assistance (ODA)? Or do they all remain closely affiliated with particular donor-interest and political partisan variables? Aside from the study of humanitarian assistance, many in the literature fail to distinguish between specific types of foreign aid. As a result, many may assume that the same determinants correlate with all foreign aid. But as foreign aid comes under greater scrutiny, tarnished by doubters as ineffective or driven by self-interested political motivation, it would perhaps be flawed to classify all foreign aid as equally determined, for it may only be explained as such at an aggregate level.

Second, are there additional exogenous variables that can explain the U.S. aid budget? This study further contributes to the literature by including data through 2009, comparing the use of

[7] Since 2009 the Obama administration has used the term "Overseas Contingency Operation" rather than the "Global War on Terror." I use the term "War on Terror" to stay consistent with the Fleck and Kilby's terminology.

different types of aid as soft power tools in the Cold War and War on Terror, seeking to more accurately reflect decision-making by lagging explanatory variables by one year (unless otherwise noted), and employing different econometric techniques.

ENDOGENOUS VARIABLES: To answer the first question, I regress the gross obligations for U.S. food, economic, and military foreign assistance as endogenous variables in 2009 constant dollars, employing data from the USAID *Greenbook* (2011) like Fleck and Kilby (2009). Figure 2 in the appendix portrays the comparative historical behavior of all three from 1955-2009. USAID's data follows the federal fiscal year, which begins on October 1st.[8] In contrast to disbursements or outlays, U.S. budget authority or commitments for food, economic, and military assistance are most preferable since they most accurately reflect donor decision-making; however, constraints in data availability for U.S. budget authority instead supports the use of USAID's data on gross obligations, which is "conceptually closest in commitments in OECD DAC data" (Fleck and Kilby 2009).[9] [10] For stakeholders within the agricultural, development, and defense communities, an understanding of budget decision-making may assist in strategy planning, particularly in unpredictable budget environments.

With reference to food aid, though the deleterious effects and inefficiencies of food aid and monetization practices have been explored and condemned, little work has been pursued on the determinants of food aid budgets.[11] The USDA and USAID administer food aid under five separate programs (some currently inactive), funded by annual discretionary appropriations to the international

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[8] Prior to 1976, the federal fiscal year began in July. Like Fleck and Kilby (2009), I account for the 1976 transition quarter by combining it with FY 1976 with appropriate weights. The same procedure was applied for all variables following the federal fiscal year.

[9] Budget authority (closest to commitments or obligations) is the law authorizing what the federal government can spend, whereas the outlays (disbursements) are what the federal government actually spends (OMB 2002). Thus, budget authority would align closer with original donor intent. Despite this important distinction, many supply-side models of foreign assistance use official development assistance (ODA) disbursements, such as Goldstein and Moss (2005), Round and Odedokun (2004), and Chong and Gradstein (2008).

[10] The Pearson correlation coefficient for USAID's total economic assistance obligations and OECD's ODA commitments (since 1966) is .84; the correlation for USAID's combined economic and military aid obligations and the total budget authority of the international affairs 150 account (since 1976) is .60.

[11] See the GAO April 2007 Report "Foreign Assistance: Various Challenges Impede the Efficiency and Effectiveness of Food Aid" for a critique of the U.S. food aid program.

affairs "150 account" (coupled with foreign economic assistance) and the agriculture "350 account," with policy determined by omnibus farm bills that occur approximately every five years (USDA FAS 2011). Specific interest in food aid stems from its particularly precarious and contentious existence in the present harsh budget environment.[12]

Military assistance, on the other hand, enables strategic U.S. partners to access defense training and equipment. Following the Cold War, budget resources and the number of countries receiving military assistance declined significantly, as indicated in Figure 2. As with economic assistance, the War on Terror prompted a quick escalation of military assistance, though as Nowels (2006) notes, beginning in 2005 the Department of Defense funded the training for Afghani and Iraqi forces; thus military assistance figures, as accounted for in USAID's *Greenbook*, may not reflect complete expenditures on military aid. Figure 3 in the appendix documents the respective shares of the total aid budget for economic and military assistance, with military's share generally increasing during periods of active military engagement abroad.

EXPLANATORY POLITICAL VARIABLES: In response to the second question, I test the political, economic, and humanitarian explanatory variables listed in Table 1 in the appendix, with accompanying rationales and hypotheses for all variables listed below. Table 2 in the appendix summarizes descriptive statistics for all variables.

Just as Fleck and Kilby (2009) and many in the literature have verified, I expect that the military budget as a percentage of GDP will be positively and strongly correlated with food, economic, and military foreign assistance, reflecting the "link between the aid budget and geopolitical concerns" (Fleck and Kilby 2009). I choose not to lag this variable to reflect concurrent decision-making of the military and foreign assistance budgets.

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[12] Food aid is contentious because "relatively easy" policy changes to well-known inefficient practices are in fact very difficult to achieve politically. For example, eliminating the cargo preference mandates for U.S. food aid would save an estimated $140 to $200 million per year, yet the current policy is supported vigorously by the U.S. shipping industry (Nowels 2011; Norris and Veillette 2011).

While I expect food and economic assistance to be associated with left-leaning executive and legislative branches, I expect an effect less-pronounced than Fleck and Kilby (2009) find after appropriately lagging the variables for Congress and the President to reflect that gross obligations in a given fiscal year are approved by the previous year's government. I expect that the magnitude and strength of the correlation will be weaker particularly for the President, given that the largest increases in aid budgets have in fact occurred under Ronald Reagan and George W. Bush, two conservative presidents (Nowels 2011). In contrast, I posit that right-leaning governments support increased military assistance budgets. I impose time dummies for the Cold War and the War on Terror (instead of the interwar period) to specifically compare the behavior of the various types of aid used during these respective conflicts, and do suspect differences in the magnitude by which aid has been utilized in each given Figures 1 and 2.[13]

EXPLANATORY ECONOMIC VARIABLES: I suspect GDP growth, serving as a budget constraint, will be positively correlated with the dependent variables, albeit marginally significant knowing that aid budgets have been determined somewhat independently of the U.S. business cycle, even spared in recent years of the Great Recession.

To capture the extent of U.S. private economic interests abroad, I treat both trade and FDI as a percentage of GDP as exogenous variables. I posit that a positive relationship will exist between both variables and aid to purport a relationship between U.S. economic and political interests with development abroad.

The relationship between aid and trade is a tricky one to vigorously defend; for while this model contends that aid and trade occur simultaneously as complements, in which the latter affects the magnitude of the former, one can argue that aid in fact creates trade with donor countries (particularly if the aid is tied), or that trade eventually becomes a substitute for aid. These arguments are

[13] Note that this study only extends back to 1960, and thus does not cover the complete duration of the Cold War. Thus, any conclusions about the Cold War variable should be treated with caution.

consistently offered by decision-makers; such reasoning justified the passage of NAFTA and the Andean Trade Preference Act (United States Senate Hearing 1993). USAID Administrator Rajiv Shah also recently affirmed that the objective of U.S. aid is to eventually "graduate" it with increased trade with development partners, supported by the fact that eleven of the fifteen largest markets for U.S. exports were once aid recipients (Shah 2011; O'Neill 2011). The World Trade Organization (WTO) even offers aid specifically designed to build the capacities of developing countries to "implement and benefit from WTO agreements and to expand... trade" (WTO 2011). Despite the justification used by policymakers, a relative lack of research challenges the notion that aid consistently leads to trade. Among European donors to Africa, Lloyd et al. (2000) and Osei et al. (2004) find that aid does not create trade; rather, the presence of trade influences aid allocation, though little formal work has been conducted for the U.S. as a donor. Berthélemy (2006) notes that the use of aid commitments rather than disbursements can address a simultaneity bias because disbursements are more likely to be directly related with trade rather than commitments. Thus, informed by Lloyd et al. (2000), Osei et al. (2004), and the lack of extensive empirical evidence that U.S. aid leads to trade, I contend that economic interests, as embodied by trade, influence the size of aid budgets.

Likewise, endogeneity threatens the purported relationship between aid and FDI, as increases in FDI may reflect less-risky, investment-friendly environments that were enabled by foreign assistance. Kimura and Todo (2007) even estimate equations by which foreign aid impacts FDI through infrastructure, rent-seeking, and vanguard effects, though they find no significant relationship. The Methodology section addresses how endogeneity was treated in this particular study. Data availability restricts the observations on this variable to 1970-2009.

To study if additional domestic factors inhibit or promote the U.S. aid budget, I include the percentage of people in the United States living below the poverty level as a variable. One could argue that higher poverty would negatively affect the ability of a nation to give foreign assistance. Alternately, a positive relationship could exist. The documented positive relationship between military spending and poverty rates that supports the notion of "military Keynesianism" could very well apply

to foreign assistance spending, for foreign aid spending correlates strongly with the military budget and it often promotes U.S. NGOs and businesses through procurement of goods and services of U.S. experts and management personnel.[14] Current Secretary of State Hilary Clinton essentially made the same argument, asserting that the foreign policy tools of diplomacy and development "must be a force for economic renewal here at home." She further argued that:

> [There is] the security argument that successful development helps to stabilize society, [reducing] the risk of future conflict. But I believe the economic case is just as compelling. The growth of the developing world presents a major economic opportunity for American business today and a thousand opportunities tomorrow on behalf of foreign assistance (Department of State 2011).

Though exact current figures are unavailable, a Congressional Research Service report in 2004 noted that, "Most U.S. foreign aid is used for procurement of U.S. goods and services." In 2004 87% of military assistance financing was spent on the procurement of U.S-produced equipment and training, and at that time all food aid was purchased from U.S. farms (Tarnoff and Nowels 2004).[15] Moreover, legislation mandates that 75% of food aid be shipped on U.S.-flagged vessels.

As a unique explanatory variable to food aid obligations, I test how direct government payments to U.S. farmers are related with food aid budgets. I posit that a positive relationship exists as policymakers channel agricultural output surplus resulting from agricultural subsidies into programs such as food aid.[16] Direct payments are "based on historical cropping patterns on a fixed number of enrolled acres and not linked to the operator's current decisions on what to produce and when to market farm output" (USDA ERS 2011). Direct payments are not the only form of agricultural subsidies; other forms include countercyclical payments contingent on market prices, loan deficiency payments, milk support programs, and other programs. I use direct payments due to data availability, seeing direct payments as a sufficient proxy for overall agricultural subsidies. For FY 2009, total

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[14] See EA Henderson (1998) for an in-depth analysis of the link between military spending and poverty.

[15] Note that USAID *Forward*, the agency's current reform agenda, proposes to adjust implementation and procurement policy changes to engage more local partners rather than U.S. citizens, businesses, or organizations; moreover, the 2008 Farm Bill initiated Section 416(b), a pilot program for local and regional procurement. However, USAID continues to escalate work with the private sector to benefit the U.S. economy, such as through public-private partnerships as noted previously.

[16] Note that the use of direct payments as a variable does not take into account policy changes to the administration of direct payments or overall agricultural subsidies that may have rendered the surplus link between direct payments and food aid to be weaker, as intended by the Federal Agriculture Improvement and Reform Act of 1996.

outlays devoted to farm income stabilization (including direct payments) were over $17 billion; as a comparison, gross bilateral ODA disbursements for the same year were just shy of $26 billion (OMB 2011; OECD 2011). Omnibus farm bills shape both food aid and agricultural subsidization policies, though both are subject to annual appropriations. I choose not to lag this variable to reflect concurrent budget decision-making with respect to agricultural subsidies (including direct payments) and food aid.

EXPLANATORY HUMANITARIAN VARIABLE: To control for the impact of humanitarian crises abroad upon foreign assistance budgets, I include a variable denoting the natural log of the economic impact of natural disasters each year, excluding disasters in the United States and its territories. This data originates from the World Health Organization supported EM-DAT data set that contains information on the impact of over 18,000 disasters that have occurred since 1900.[17]

The monetary value of humanitarian assistance in response to international natural disasters has often been quite significant; disaster relief totaled nearly $3 billion in FY 2006, considerable with respect to the $27 billion in total foreign economic assistance obligations that year. Congress typically approves original budget requests for disaster relief programs and agencies. However, in particularly devastating years, expenditures may exceed original appropriations, for the President has the authority to borrow up to $50 billion from other aid agencies (which are later reimbursed by Congress) or request supplementary funding for disaster relief (Margesson 2007). For example, the President requested an additional $2.8 billion for Haiti in FY 2010 (CRS 2010). Though humanitarian assistance spending has been quite erratic over time, funding levels have generally grown since the mid-1980's (Nowels 2006). I choose not to lag this variable because most international disaster and famine assistance is delivered in the year that the natural disaster occurs, and is accounted for in the aid

[17] EM-DAT counts droughts, earthquakes, epidemics, extreme temperatures, floods, insect infestations, mass movements of dry or wet masses, storms, and volcanic eruptions as natural disasters if ten or more people were reported killed, 100 people or more were affected, a declaration of state of emergency occurred, or a call for international assistance was made (CRED EM-DAT 2011).

budget for that year. It is likely that assistance remains inflated in the years following severe natural disasters, and reimbursements to aid agencies may be distributed in the next fiscal year if the disaster occurred during the appropriations process (Margesson 2007). I would argue, however, that humanitarian or development assistance in subsequent years is not as great as the assistance initially distributed and accounted for in the year that the natural disaster occurred. As a limitation to this variable, the economic impact of disasters may not accurately reflect the gravity of disasters occurring in less-developed countries, where the toll is registered largely in human lives rather than damage to infrastructure. Moreover, the use of natural disasters does not capture the equally ravaging effects of man-made disasters like war and conflict that may also influence aid budgets.

Of theoretical models used to analyze U.S. foreign policy, this model follows a largely comprehensive rational decision-making format, with some allowance for human behavior through the ideological orientation of Congress and the President (Brewer and Teitelbaum 1996).

METHODOLOGY

The algebraic representation of the model I intend to test is:

$$\boldsymbol{Y} = \beta_1 year + \beta_2 mil_budget + \beta_3 growth_{t-1} + \beta_4 president_{t-1} + \beta_5 congress_{t-1} + \beta_6 cold_war_{t-1}$$

$$+\beta_7 war_terror_{t-1} + \beta_8 u.s.pov_{t-1} + \beta_9 fdi_gdp_{t-1} + \beta_{10} trade_gdp_{t-1} + \beta_{11} econ_disaster + \varepsilon$$

where $\boldsymbol{Y}$ is a vector of dependent variables to be tested:

$$\boldsymbol{Y} = \begin{pmatrix} \textit{Food Aid} \\ \textit{Economic Assistance} \\ \textit{Military Assistance} \end{pmatrix}$$

and $\beta_{12} direct_payments$ will be an additional, unique explanatory variable for food aid.

I use 49 observations of annual data covering 1960-2009 to conduct these simple time series analyses, using a seemingly unrelated regression (SUR) model. With the rejection of the null hypotheses for the Durbin-Watson test for autocorrelation and the Breusch-Pagan test for heteroscedasticity, I estimate standard errors for the SUR equations via bootstrapping, as suggested by Messemer and Parks (2004). In order to maximize the number of observations to estimate the equations given the small sample size, I include a few explanatory variables in all equations and test the proposed additional variables one at a time like Round and Odedokun (2004). I conduct five SUR regressions: one with the original variables of Fleck and Kilby (2009) and direct payments for food aid (substituting the Cold War for the interwar period), and the remaining four testing the *u.s.pov*, *fdi_gdp*,[18] *trade_gdp*, and *econ_disaster* variables individually.

[18] I attempted to test for endogeneity by instrumenting FDI with industrial R&D expenditures on the basis that U.S. foreign aid does not strongly influence complete industrial R&D investment. With data from the National Science Foundation, I could not find strong evidence in support of endogeneity, though the instrument itself was not particularly robust. See the Areas for Additional Inquiry section for proposed solutions with respect to this issue.

EMPIRICAL RESULTS

Tables 3, 4, and 5 in the appendix couple the results according to each dependent variable, rather than each SUR model employed.[19] Table 3 contains the estimated equations for food aid. Of note is the statistically significant negative time trend, reflecting the declined support for food assistance for the years in this time series. This could reflect the overall decrease in support for international agricultural development initiatives that food aid complements: while 25% of U.S. foreign aid was devoted to agricultural development in the 1980's, last year only 1% was (Thompson 2011). Despite this negative trend over time, the War on Terror remains a positive determinant of the food aid budget, suggesting that food aid itself may not be immune to use as a soft power wartime tool. However, food aid is not correlated with the overall military budget overtime, suggesting that food aid has been used in this conflict uniquely (whether as a soft power tool or due to the nature of post-conflict recovery), or because alternate explanations exist. Further research is necessary to determine whether the disbursements of food aid have been targeted towards Iraq, Afghanistan, or other strategic allies to tease out the extent to which food aid has served as a soft power political tool. An emphasis on global hunger, as evinced by President Obama's Feed the Future initiative, and the food price crisis of 2008 could also explain the spike in food assistance in recent years. Moreover, that official development assistance (ODA) overall is being channeled to increasingly fragile states could explain why food aid has been utilized as of late if fragile states demand more food assistance (Chandy and Gertz 2011). Of interest is the statistically significant negative relationship with the Cold War, suggesting that food aid was less likely to be used over the course of that conflict while utilized more extensively (perhaps coincidentally, as noted) during the War on Terror. The political orientation of the Congress and President are not strong predictors of food aid budgets. GDP growth also proved to be an unpredictable, if not extremely small, determinant as evinced by the switching signs for the

[19] The equations all pass tests for co-integration, with augmented Dickey-Fuller tests rejecting the null hypothesis of a unit root for all equations.

coefficients across equations.

As suspected, a positive significant relationship exists between direct payments to U.S. farmers and foreign food assistance budgets. A 10% increase in direct payments to U.S. farmers results in approximately $60 million more in food aid budgets. Moreover, every 1% increase in foreign direct investment as a percentage of GDP corresponds with a $483 million increase in food assistance, *ceteris paribus*, suggesting a link between private economics interests and food aid, though trade was not a significant determinant. And while a 20% increase of the economic impact of disasters (quite a disastrous year) results in $8 million more in food assistance (most likely not enough to combat such calamities), the relationship was not found to be statistically significant. Like economic assistance also demonstrates in Table 4, the food aid budget was found to have a positive relationship with the U.S. poverty rate, in which every percent increase in the U.S. poverty rate associates with a $118 million increase in foreign food assistance. See the following section for discussion pertaining to this finding.

Table 4 depicts the supply-side equation results for economic assistance, which largely reflect Fleck and Kilby's original findings with the exception of results for the President variable. The War on Terror and military spending are more strongly correlated with the economic assistance budget than food aid and even military assistance, reflecting the particularly strategic role of economic development assistance. The political variable for the Congress was more likely to predict economic assistance budgets than food and military aid; as Fleck and Kilby assert, a left-leaning Congress (signified by the negative coefficients) correlates with higher economic aid budgets. Left-leaning presidents are also more likely to associate with increased economic assistance, though only at marginally significant levels in contrast to the authors' original findings. Like food aid, a higher U.S. poverty rate corresponds with higher U.S. development assistance pledged abroad; a 1% increase in the U.S. poverty rate relates with a $672 million increase in foreign economic assistance. Foreign direct investment and trade in the aggregate were not found to be significant determinants of economic assistance budgets over time, though coefficients were positive as hypothesized. Neither was the economic impact of natural disasters significant, most likely because the majority of economic

assistance funds are development rather than humanitarian in nature. GDP growth positively influences aid budgets: a 2.9% increase in the real GDP growth rate relates with $1 billion more in foreign economic assistance, *ceteris paribus*. While this relationship is marginally significant, the coefficient signs were consistently positive across equations and more likely to be significant than either military or food assistance budgets, suggesting that economic assistance is more likely to be subject to GDP growth than the other variables.

Table 5 documents the relationship between the military assistance budget and the political, economic, and humanitarian explanatory variables. Surprisingly, the explanatory variables of interest do not explain foreign military assistance as well as the food aid and economic assistance budgets, suggesting that the specified model omits variables pertinent to the military assistance budget. I find no statistically significant relationship with the ideological orientation of the Congress and President, though the coefficients are more likely to be positive to reflect conservative support of higher military assistance budgets. The only variable that consistently correlates with military assistance across the equations is the War on Terror. Using Fleck and Kilby's original model (but using a time dummy for the Cold War instead of the interwar period), the War on Terror associates with $5.4 billion above trend for military assistance abroad, a significant amount given that the average military assistance granted over the complete time period is $10 billion. As expected, a positive relationship exists between foreign military assistance and the military budget as a percentage of GDP, wherein a 3% increase in the military budget as a percentage of GDP results in $2 billion more in military assistance financing. But even that relationship was not as statistically strong as that between the military budget and economic assistance. Moreover, relative to average economic and military assistance budgets, an increase in the military budget results in a 6% increase in military aid but a 9% increase in economic assistance. No statistically significant relationship exists between the economic variables of foreign direct investment and trade with military assistance for the selected time period; the trade variable in fact offered a negative sign contrary to the hypothesis. GDP growth was found to be positively correlated with military assistance, albeit weakly significant in one of the equations; however, for each

percent increase in the poverty rate, the military assistance budget decreases by an average of $762 million, *ceteris paribus*, suggesting that domestic poverty serves as a constraint to military assistance granted abroad in contrast to the other two variables. The negative (albeit insignificant) relationship between disasters abroad and military assistance, in contrast to economic or food aid, may imply that disasters do draw on funds dedicated to military assistance.

Comparing the relative impact of the exogenous variables across dependent variables is difficult given the varying significance of the explanatory factors. In particular, judging the respective use of the different types of aid as tools in the Cold War and War on Terror proved to be difficult with varying significance of the Cold War variable. However, some interesting trends emerge that indicate varying behavior of the different types of U.S. foreign assistance.

While the War on Terror has an absolutely greater impact on economic assistance (an average of $15.76 billion more pledged relative to Cold War levels), it has a relatively larger impact on military and food assistance with respect to their average levels. Relative to Cold War budgets, the conflict associates with $3.6 billion and $5.1 billion more in food and military aid budgets respectively, an approximately 94% increase in contrast to their averages over the whole time period. In contrast, for economic assistance the War on Terror correlates with an 80% increase in economic aid in comparison to its 50 year average.[20]

The U.S. military budget also affects the different types of aid at varying magnitudes as well: it has no statistical impact upon food aid, but it has a larger absolute and relative impact upon the economic assistance budget than military aid (9% more in economic assistance in contrast to a 6% increase in military aid compared to their average levels). Moreover, a statistically stronger relationship exists between the military budget and economic assistance in comparison to the other types of foreign aid. GDP growth does not significantly impact food aid, while it has a relatively larger impact on military assistance rather than economic assistance. However, as alluded to earlier, its

[20] Note that the coefficients for the Cold War variable for economic and military assistance are not statistically significant, weakening the calculated statistics.

impact on military assistance is weakly significant, undermining this claim. GDP growth is more consistently correlated with the economic assistance budget, suggesting that food and military aid budgets are more likely determined independently of the growth cycle.

ECONOMIC AND POLITICAL INTERPRETATION AND DISCUSSION

For the military assistance budget, a dummy denoting the post-Camp David Accords could potentially explain the military aid budget better than the other political variables. The training of Afghani and Iraqi soldiers using Department of Defense funds and other unknown accounting decisions may also explain why the coefficients for the War on Terror and many of the other variables were not more statistically significant.

That the log of the economic impact of disasters is not statistically significant for any of the variables overtime verifies the largely development (whether motivated by politics, economics, or moral obligation) rather than humanitarian nature of U.S. foreign aid. Likewise, lack of statistical significance can be attributed to the fact that most of disaster assistance is budgeted for in a given year sufficiently (with exceptions granted in supplementals), or that incomplete data dates to 1955 for the disaster variable.

That FDI and trade-to-GDP are not significant for economic and military aid indicates that economic interests–as they are defined here–have not played a significant role in those budgets in the aggregate for the past fifty years. Either this is true, or this may be attributed to the model's specification of the relationship between aid and trade and FDI. Perhaps in forthcoming years, if economic prowess determines the distribution of power in an increasingly global economy, trade and FDI will be stronger determinants of aid budgets in the aggregate. Note that Berthélemy (2006) and Osei et al. (2004) do find significance for trade (in some donors) with disaggregated data broken down to country-recipient relationships. That FDI is marginally significant with regards to food aid indicates that business interests may play a role with respect to that budget (not surprising given footnote 12).

But despite the notion that private economic interests, narrowly defined as trade and FDI, have not influenced aid budgets over the given time period, a rather interesting relationship exists between U.S. poverty rates and both food aid and economic assistance granted abroad. A few theories may explain the statistically significant, positive relationship. The hypothesis of this paper promulgated

that a positive relationship could exist in that foreign assistance supports U.S. businesses and NGOs; thus, one could contend that a sort of "foreign aid Keynesianism" policy has been in operation since 1960, whether by design or complete coincidence.

Or a more indirect relationship could exist: given that U.S. foreign aid directly correlates with military budgets over time, and that military spending and poverty rates trend together positively over time, it is possible that foreign aid and poverty are only linked indirectly through military spending. What undermines this notion is that military assistance itself is not positively related with U.S. poverty rates, but instead negatively related at a statistically significant level, suggesting that domestic poverty serves as a constraint for military assistance budgets. That military assistance is negatively related with domestic poverty also undermines the overarching notion of foreign aid Keynesianism. However, as contended previously, this may just demonstrate that different types of aid are determined differently; thus the overarching hypothesis that economic interests equally promote aid budgets should have taken into account that economic, military, and food aid behave in dissimilar manners.

Foreign aid critics may contend that the causal relationship may be reversed, in which foreign assistance spending itself fuels domestic poverty. This would, however, imply endogeneity of the U.S. poverty variable that would result in biased estimates of the coefficient, thereby challenging the veracity of the original relationship. The argument that higher foreign aid spending causes domestic poverty relies on a "guns and butter" logic pertaining to resource allocation: one either spends domestically (with the assumption that government spending reduces domestic poverty) or one invests abroad with development assistance. This claim only stands on one of two underlying theories: first, that there is no relationship between economic development abroad (assuming that aid results in development) and U.S. economic health, with mutually exclusive results of resource allocation; or second, that development assistance granted abroad has no impact on international economic growth, and thereby allocating resources abroad drains productive domestic resources into non-productive aid projects. The first theory assumes that government spending has the capability of alleviating poverty domestically or abroad in a zero-sum manner, whereas the latter purports that government spending

positively impacts domestic economies but not foreign ones. Regardless of the underlying assumptions, given the small size of the foreign assistance budget in comparison to domestic welfare government expenditures, it is not likely that the slight resources siphoned into foreign aid have any drastic impact on U.S. poverty rates. Moreover, according to standard economic theory, improving the lot of economies (assuming foreign aid is effective) results in benefits that are not mutually exclusive or zero-sum in nature, particularly in a global economy.

The last potential argument to support the relationship between U.S. poverty and foreign aid spending would be that there is more compassion for poverty abroad given tough economic circumstances domestically, resulting in larger foreign aid budgets.

In contrast to the oft-vocalized national security and moral arguments that justify U.S. foreign aid, the economic argument is the one that "Americans are least likely to hear" (Jarrett 2011). However, amidst dire domestic economic woes, Obama administration officials cite it increasingly in hopes of appealing to a skeptical Congress bent on slashing foreign assistance (Shah 2011; Department of State 2011). Not only does foreign aid immediately and directly support U.S. businesses and NGOs through procurement of services; as Valerie Jarrett, Senior Advisor to the President, noted, "When we do good around the world, we do well here in America," seeing development as an investment that paves the way to "opening up new markets in the long term" (Jarrett 2011). For example, as Secretary of State Hilary Clinton stated, "We spent about [$110 billion in current dollars] on the Marshall Plan to help rebuild Europe... we now export $240 billion in goods to the EU every single year" (Department of State 2011). Though the economic argument on behalf of foreign assistance has only been vigorously used lately in the context of the Great Recession, it is interesting to note this sustained, long-term relationship between U.S. poverty and foreign aid, whatever its explanation may be.

As for direct payments to U.S. farmers, the positive relationship may exist as the hypothesis contends, in which surplus food production resulting from subsidies has been purposefully channeled into U.S. foreign aid. Alternatively, overall generosity towards U.S agriculture may result in the

positive coefficient.

SHORTCOMINGS

Like all models that seek to quantify a process ultimately determined by human beings, this model does not control for all potentially important explanatory factors. It does not account for the political, if not personal, internal workings of aid budget decision-making, such as the influence of particular legislators and committee members or compromise that can result in higher aid budgets in a divided government (Round and Odedokun 2004). By design a comprehensive rational decision-making model, it does not fully account for incremental processes and human or organizational behavior that can influence U.S. foreign policy (Brewer and Teitelbaum 1996).

Moreover, it does not control for the significantly influential power of particular lobbying groups, such as the pro-Israel lobby AIPAC and other lobbying efforts of recipient countries (Nowels 2011). Additionally, the brevity of the time period qualifies any conclusions to only be applied for the fifty years that the time series covers, and it renders the interpretation of the magnitude of impact of the exogenous variables difficult with the sensitivity of the results with additional observations.

This model also does not account for the degree of interaction and potential multicollinearity between (and among) the variables, such as the relationship between trade and GDP growth, or between the ideological orientation of the Congress and President with the military budget.

Underlying this particular analysis, I implicitly attribute importance to quantity of aid rather than quality. In the past sheer magnitude may have mattered most, a time when development projects were not vigorously monitored and evaluated, with resources channeled in part with U.S. interests. Yet today, energized by expenditure-weary lawmakers, aid effectiveness and its quality pervade foreign assistance conversations in policy circles, rather than just its quantity. From an international perspective, the OECD has regularly convened meetings addressing aid effectiveness for the past decade, focusing on recipient country ownership and donor practices. The 2005 Paris Declaration on Aid Effectiveness called on donor countries to align with developing country objectives and systems, coordinate with other donors, track results, engage in mutual accountability, and support developing

country-led ownership for poverty reduction.[21] At the national level, USAID *Forward*, an initiative to empower and reform USAID, also proactively addresses aid effectiveness. Lawmakers are in the game by proposing the Foreign Aid Transparency and Accountability Act of 2012 and reform to the U.S. Foreign Assistance Act of 1961 to demand aid quality, empowered by the conversation at many think tanks and lobbying groups alike. Perhaps the conversation is short-lived: the effort to maximize the impact of taxpayer-funded development dollars may only seem urgent as a means to save its mere quantity. Projected deficits, debts, lethargic economic recovery in the United States, and increasing recipient country demands, however, undermine any notion that the focus on aid effectiveness will be short-lived.

And lastly, in gauging U.S. generosity only with government-granted aid, I ignore the large role that the U.S. private sector plays in granting foreign assistance. In contrast to the 1960's, when net official development assistance (ODA) constituted 70% of U.S. economic engagement with developing countries, the private sector–including private philanthropy, remittances, and capital flows–now dominates with an 87% share of total interaction (Runde 2011). While U.S. net ODA totaled $28.8 billion, combined private flows amounted to $197.4 billion in 2009. U.S. private philanthropy–including aid granted by foundations, corporations, universities, NGOs, and religious organizations–alone contributed $37.5 billion in 2009, outstripping ODA by $8.7 billion (Hudson Institute 2011).

[21] Implementation of the Paris principles has been another matter; only one of 13 designated targets was achieved by 2010 (OECD 2011). The Fourth High Level Forum is to be held in November and December of 2011.

AREAS FOR ADDITIONAL INQUIRY

This study can be expanded to a cross-country comparison, in which researchers can understand the different political, economic, and humanitarian determinants of different types of aid between donor countries to understand various donor intentions. Of particular interest is the behavior of the "emerging" donors such as China and India.

Moreover, surely the link between foreign aid and U.S. poverty should be pursued more thoroughly. The simple time series covering 1960 to 2009 may perhaps mask the finer points pertaining to this link, as the relationship is assuredly far more complicated. An in-depth analysis such as the one conducted by EA Henderson (1998) with regards to military spending and poverty would likely suffice. Alternatively, one could analyze the composition of foreign aid over time, such as the degree to which tied aid correlates with poverty to tease out whether "foreign aid Keynesianism" has indeed existed. Additional research can also seek to define a more nuanced relationship between aid and trade as well, both for the United States and in other donor countries.

Finding a stronger instrument for FDI, such as the corporate foreign income tax credit or foreign investment/financing support from the U.S. government, could be pursued to address endogeneity. Likewise, equations for FDI such as those designed by Kimura and Todo (2007) could be employed for a simultaneous system of equations.

As stated in section two, the literature on foreign aid addresses whether it is effective and where/how it is allocated or determined by donor governments. The link between donor intent–whether political, economic, or altruistic–and the aid's effectiveness has not been thoroughly pursued. Indeed, amidst the contentious debate about aid effectiveness, it may be a worthy cause to consider if differently determined/motivated aid (and disaggregated as this research does) impacts its effectiveness, probing if donor intentions matter.

CONCLUSION

To address the inquiry on whether donor-side determinants vary for different types of foreign assistance over time, the results indicate that they indeed do. In contrast to the other aid variables, GDP growth, the military budget, and Congressional orientation more strongly predict economic assistance. Food aid is less likely to be correlated with the ideological orientation of the Congress and President, and is not significantly related with the military budget and GDP growth. While this may suggest that food aid is less driven by U.S. political and economic factors, a positive post-9/11 relationship undermines such a claim, though alternative explanations exist to justify recent support for food aid. Moreover, food aid is positively related with U.S. agricultural subsidies, and is the only variable with any significant (albeit weakly) relationship with U.S. FDI. Calculations for the impact of the Cold War and War on Terror on food aid are the most robust given the significance of those time dummy variables.

Military assistance budgets prove to be the most difficult to model, likely due to administration accounting decisions or model misspecification. Domestic poverty appears to enhance economic and food aid budgets to potentially suggest "foreign aid Keynesianism," though domestic poverty restricts military assistance granted to strategic U.S. allies. In the aggregate, natural disasters, the ideological orientation of the President, and commercial interests embodied via trade-to-GDP do not appear to significantly influence any of the aid budgets.

The chosen political, economic, and humanitarian explanatory variables not only capture what restrains or boosts foreign aid, but what U.S. intentions are, interesting to note given varying rhetoric over time that has justified U.S. foreign aid. Of course, measuring intentions such as moral consideration are more difficult, particularly in the confines of an econometric model. But as this study indicates, different factors explain different types of aid– implying that different intentions underscore each. Like Lucius Annaeus Seneca who purported that "a gift consists not in what is done or given, but in the intentions of the doer," the policymaker or normative observer who contends that

aid should be driven by particular intentions may find such information as instructive.

Some may argue that donor intent may not matter for the ultimate beneficiary-- from the hurricane victim sheltered by a USAID tarp to the famine victim nourished by food aid in the Horn of Africa. But indeed, in formulating foreign aid budgets, the economic, political, and humanitarian factors that ultimately cause foreign assistance to diminish or grow impact both peoples abroad and U.S. interests served.

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APPENDIX

Figure 1: Total U.S. Foreign Aid Obligations, in 2009 Billion Dollars (USAID 2011)

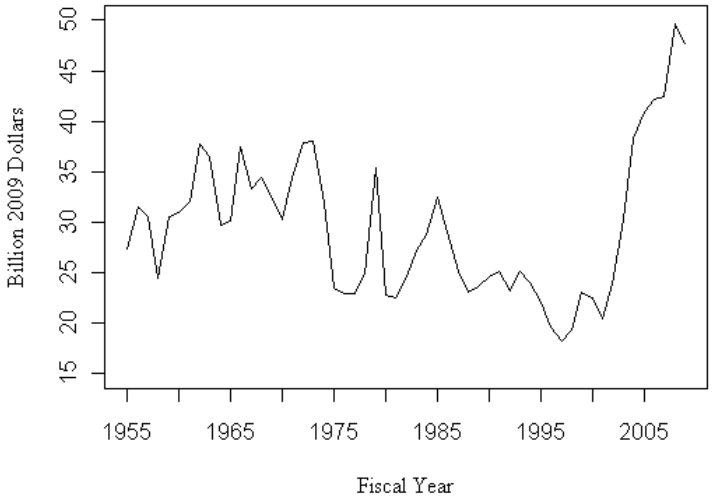

Figure 2: U.S. Economic, Military, and Food Aid Obligations, in 2009 Billion Dollars (USAID 2011)

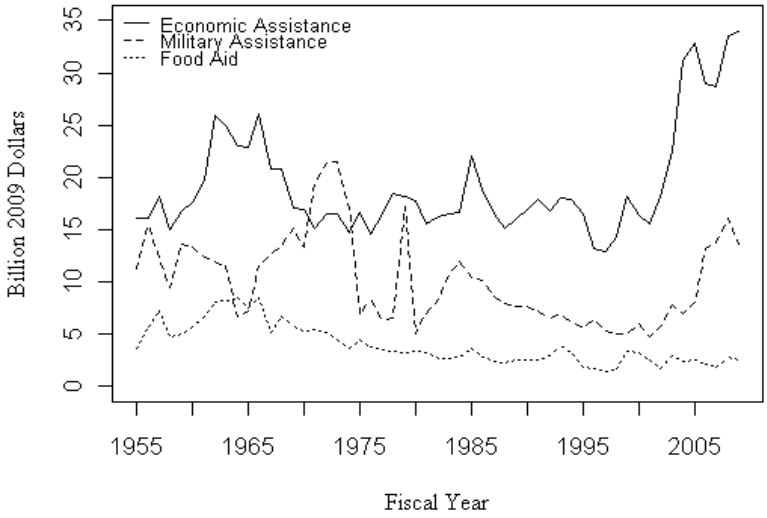

Figure 3: U.S. Economic and Military Assistance as a Proportion of Total Foreign Aid Obligations (USAID 2011)

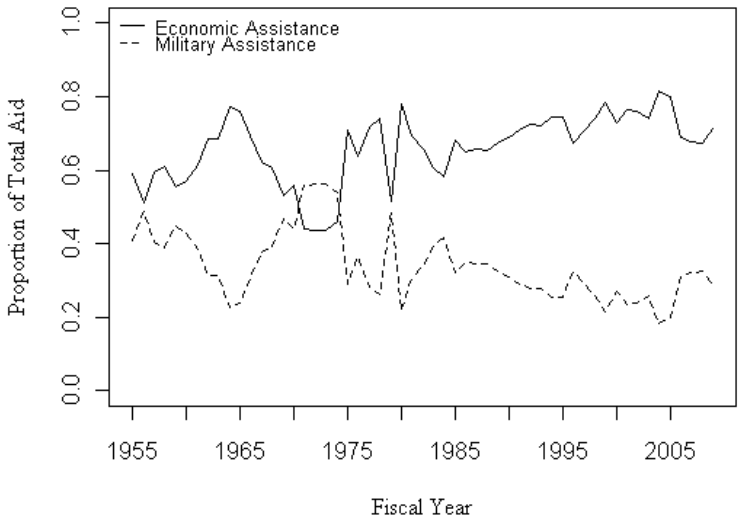

Table 1: Description of Variables

Variable	Description	Source	Years
Endogenous			
food_aid	Total food aid in 2009 constant dollars, gross obligations	USAID's *Greenbook* (2011)	1960-2009
econ_aid	Total economic assistance in 2009 constant dollars, gross obligations	USAID's *Greenbook* (2011)	1960-2009
mil_aid	Total military assistance in 2009 constant dollars, gross obligations	USAID's *Greenbook* (2011)	1960-2009
Exogenous			
Political			
mil_budget	Military budget (% of GDP)	Fleck and Kilby; World Bank	1960-2009
president	Liberal-conservative scale rating of the President based on Poole's common space data	Poole (2011)	1960-2009
congress	Liberal-conservative scale rating of the Congress based on Poole's common space data	Fleck and Kilby; Poole (2011)	1960-2009
cold_war	Time dummy for Cold War	N/A	N/A
war_terror	Time dummy for War on Terror	N/A	N/A
Economic			
growth	GDP percent change based on chained 2005 dollars	U.S. BEA	1960-2009
u.s.pov	Percent of U.S. individuals living below the poverty threshold	U.S. Census Bureau	1960-2009
fdi_gdp	Total foreign direct investment, net outflows (% of GDP)	World Bank (2011)	1970-2009
trade_gdp	Trade (% of GDP)	UNCTAD (2011)	1960-2009
direct_payments	The log of direct government payments to U.S. farmers (2005 constant dollars)	USDA ERS (2011)	1960-2009
Humanitarian			
econ_disaster	The log of the economic impact of natural disasters in the world, excluding the U.S. and its territories (2005 constant dollars)	EM-DAT (2011)	1960-2009

Table 2: Descriptive Statistics

Variable	Mean	Std. Dev	Min	Max	Unit/Scale
food_aid	3.848	1.934	1.387	8.481	Billions
econ_aid	19.580	5.393	12.960	33.950	Billions
mil_aid	9.994	4.401	4.789	21.459	Billions
mil_budget	5.552	1.513	3.300	8.600	% of GDP
president	0.123	0.467	-0.538	0.577	Index
congress	-0.022	0.048	-0.099	0.053	Index
cold_war	0.600	0.495	0.000	1.000	Indicator
war_terror	0.160	0.370	0.000	1.000	Indicator
growth	3.128	2.242	-3.500	7.200	Percentage
u.s.pov	13.880	2.648	11.100	22.200	Percentage
fdi_gdp	1.031	0.717	-0.030	2.959	% of GDP
trade_gdp	18.400	5.976	9.310	30.600	% of GDP
direct_payments	2.351	0.667	0.531	3.266	Logarithmic
econ_disaster	3.064	1.148	-0.955	5.167	Logarithmic

Table 3: Estimated Food Aid Equations

Dependent Variable: Food Aid Obligations in 2009 Constant Dollars, Billions										
intercept	376.911		338.548		290.777		423.407		386.034	
	(70.348)	***	(66.115)	***	(64.111)	***	(112.633)	**	(85.384)	***
trend	-0.188		-0.17		-0.145		-0.213		-0.193	
	(0.035)	***	(0.033)	***	(0.032)	***	(0.057)	**	(0.043)	***
growth	0.001		-0.001		-0.016		0.026		0.002	
	(0.065)		(0.068)		(0.066)		(0.068)		(0.067)	.
president	-0.541		-0.449		0.112		-0.449		-0.528	
	(0.294)	.	(0.287)		(0.307)		(0.331)		(0.299)	
congress	-0.114		-3.047		-4.263		0.477		0.254	
	(5.388)		(5.218)		(4.256)		(5.651)		(5.595)	
mil_budget	0.019		-0.097		-0.033		0.092		0.022	
	(0.276)		(0.283)		(0.306)		(0.268)		(0.272)	
cold_war	-1.573		-1.218		-0.989		-1.734		-1.594	
	(0.434)	***	(0.460)		(0.416)	*	(0.490)	***	(0.462)	***
war_terror	2.026		1.99		1.071		1.958		2.051	
	(0.416)	***	(0.408)	**	(0.426)	*	(0.415)	***	(0.461)	**
direct_payments	0.626		0.626		0.535		0.583		0.624	
	(0.250)	*	(0.245)	*	(0.248)	.	(0.297)	.	(0.244)	*
u.s.pov			0.118							
			(0.064)	.						
fdi_gdp					0.483					
					(0.225)	.				
trade_gdp							0.064			
							(0.100)			
econ_disaster									0.044	
									(0.195)	

Significance levels for SUR results are based on bootstrapped confidence intervals.
. Significant at the 10% level
* Significant at the 5% level
** Significant at the 1% level
*** Significant at the 0.1% level

Table 4: Estimated Economic Assistance Equations

Dependent Variable: Economic Assistance Obligations in 2009 Constant Dollars, Billions										
intercept	-146.314		-364.142		-544.229		298.928		-80.361	
	(249.163)		(218.831)		(262.335)	.	(346.269)		(319.337)	
trend	0.077		0.183		0.276		-0.153		0.043	
	(0.123)		(0.108)		(0.130)	*	(0.177)		(0.160)	
growth	0.340		0.327		0.273		0.522		0.342	
	(0.211)		(0.176)	.	(0.241)		(0.257)	*	(0.214)	
president	-1.845		-1.321		-0.450		-1.043		-1.755	
	(1.060)	.	(0.820)		(1.377)		(1.094)		(1.056)	
congress	-9.854		-26.507		-27.761		-7.206		-7.321	
	(14.090)		(12.266)	*	(12.663)	*	(14.509)		(15.813)	
mil_budget	1.869		1.210		2.055		2.278		1.888	
	(0.786)	*	(0.623)	.	(1.252)		(0.865)	*	(0.779)	*
cold_war	-1.280		0.733		0.763		-2.558		-1.427	
	(1.196)		(1.235)		(1.517)		(1.241)	.	(1.265)	
war_terror	14.480		14.276		11.562		14.149		14.670	
	(2.028)	***	(1.925)	***	(2.304)	***	(1.953)	***	(2.133)	***
u.s.pov			0.672							
			(0.176)	***						
fdi_gdp					1.063					
					(1.013)					
trade_gdp							0.559			
							(0.399)			
econ_disaster									0.313	
									(0.607)	

Significance levels for SUR results are based on bootstrapped confidence intervals.
. Significant at the 10% level
* Significant at the 5% level
** Significant at the 1% level
*** Significant at the 0.1% level

Table 5: Estimated Military Assistance Equations

Dependent Variable: Military Assistance Obligations in 2009 Constant Dollars, Billions										
intercept	306.54		553.832		822.665		152.142		75.478	
	(370.620)		(370.881)		(379.411)	*	(487.707)		(403.834)	
trend	-0.152		-0.273		-0.419		-0.072		-0.034	
	(0.184)		(0.184)		(0.189)	*	(0.250)		(0.202)	
growth	0.279		0.293		0.584		0.216		0.272	
	(0.297)		(0.279)		(0.324)	.	(0.345)		(0.287)	
president	2.73		2.135		-0.550		2.452		2.413	
	(1.935)		(1.590)		(2.529)		(1.887)		(1.928)	
congress	3.946		22.852		33.146		3.028		-4.925	
	(19.303)		(20.280)		(24.432)		(19.414)		(21.945)	
mil_budget	0.654		1.402		3.714		0.512		0.586	
	(1.106)		(1.058)		(1.749)	*	(1.434)		(1.109)	
cold_war	0.278		-2.007		-4.635		0.721		0.794	
	(1.983)		(2.192)		(2.656)	.	(2.239)		(2.049)	
war_terror	5.356		5.588		7.739		5.471		4.692	
	(2.230)	*	(2.139)	*	(2.949)	*	(2.878)	.	(2.180)	*
u.s.pov			-0.762							
			(0.290)	*						
fdi_gdp					1.756					
					(1.794)					
trade_gdp							-0.194			
							(0.668)			
econ_disaster									-1.095	
									(1.117)	

Significance levels for SUR results are based on bootstrapped confidence intervals.
. Significant at the 10% level
* Significant at the 5% level
** Significant at the 1% level
*** Significant at the 0.1% level

Table 6: Correlation of Dependent Variables

	food_aid	econ_aid	mil_aid
food_aid	1.000		
econ_aid	0.164	1.000	
mil_aid	0.326	0.183	1.000

Table 7: Contemporaneous Correlation of Explanatory Variables

	year	growth	pres.	cong.	mil budget	cold war	war terror	direct payments	u.s. pov	fdi gdp	trade gdp	econ disaster
year	1.00											
growth	-0.18	1.00										
president	-0.02	-0.10	1.00									
congress	0.81	-0.01	0.09	1.00								
mil_budget	-0.80	-0.01	0.37	-0.67	1.00							
cold_war	-0.87	0.16	0.17	-0.69	0.79	1.00						
war_terror	0.69	-0.30	0.25	0.48	-0.41	-0.50	1.00					
direct_payments	0.50	0.24	0.22	0.57	-0.18	-0.41	0.22	1.00				
u.s.pov	0.16	-0.18	0.12	0.17	0.13	-0.14	-0.09	0.17	1.00			
fdi_gdp	0.73	-0.14	-0.21	0.52	-0.65	-0.69	0.60	0.25	-0.18	1.00		
trade_gdp	0.94	-0.20	-0.13	0.75	-0.85	-0.80	0.63	0.27	0.08	0.72	1.00	
econ_disaster	0.72	-0.11	-0.22	0.60	-0.69	-0.70	0.34	0.23	0.27	0.52	0.77	1.00