AID, GROWTH, AND POVERTY REDUCTION

A Thesis
submitted to the Faculty of the
Graduate School of Arts and Sciences
of Georgetown University
in partial fulfillment of the requirements for the
degree of
Master of Public Policy

By

Marita Lamb, B.A.

Washington, D.C.
April 13, 2010
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Marita I. Lamb, B.A.

Thesis Advisor: Luis Brunstein

ABSTRACT

This paper combines frameworks from the groundbreaking study of Burnside and Dollar (2000) and the lesser known study presented by Moriera and Bayraktar (2008) to determine whether, conditional on the fiscal policy environment, foreign aid significantly impacts economic growth and poverty reduction in the Dominican Republic. Using a database spanning 1970-2007, this paper examines the relationship between foreign aid and economic growth, poverty reduction and pre-existing fiscal policies of the middle-income nation of the Dominican Republic. The findings of this study fail to indicate a significant relationship between foreign aid and economic growth or pre-existing. The relationship between and foreign aid poverty reduction is negative.
I would like to thank Luís Brunstien, an excellent and very patient thesis advisor, for all of his guidance and support throughout each stage of my thesis journey. I would also like to acknowledge the assistance and overall good spirits of Adedayo Bolaji-Adio, Igor Kheyfets, Karas Lamb, Sofia Mussa, Ebonne Ruffins, Julia Vlajic, and Juliette Wilson whose assistance, in the 25th hour, proved invaluable. This thesis is dedicated to everyone who provided some form of support or encouragement during this process.

A thousand thanks,

Marita
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I. INTRODUCTION

Guaranteeing the proper allocation of aid is a difficult task further complicated when donors are commissioned to design those programs or initiatives meant to inspire economic growth or reduce poverty within economies considered neither extremely wealthy nor impoverished (Cassen 1985, Schulz 2009). Traditionally, analyses of the relationship between foreign aid and economic growth or poverty reduction have been performed on the multi-country level. Findings were then used to generalize the impact of aid in developing countries, typically with little to no emphasis on the how this relationship varied from across nations, regions or economies (Krauss 1983, Cassen 1985). Still widely used as a method of analysis of foreign aid and economic growth or poverty reduction, cross-country analysis is not considered by all to be the most effective manner in which future analyses might be realized; the rationale being that single-country studies create a better understanding of the linkages between foreign aid and economic growth and poverty reduction. A variety of researchers have called for further investigation of the aid-growth/poverty relationship on the country-level (Ayers 1990, Easterly, Levine and Roodman 2003). Along those lines, this study believes that the comprehension of the dynamics of aid effects on growth and income equality might provide a clearer guidance as to how donors might shape policy to more efficiently allocate aid funds toward economic growth and poverty reduction.

Country-level analyses evaluating the impact of foreign aid on economic growth and poverty reduction are popularly conducted on aid recipients from the most impoverished nations as well as those receiving the largest portion of the aid pie, this has left a vacancy in this arena for analysis of middle income nations receiving moderate to low aid allotments.
Considered the largest economy in the Caribbean, the Dominican Republic (DR) recently transitioned from a lower-middle-income economy to an upper-middle-income economy (World Bank 2008). Despite this snapshot of socio-economic progression and self-sustainability, the DR remains an annual recipient of foreign assistance. Heavily reliant on foreign investment, this island’s economy continues to be extremely vulnerable to economic shocks (Young 2001). This is attributable, in part, to geographic positioning and reliance on the global market. These and other factors have resulted in the annual infusion of economic assistance in the form of Official Development Assistance (ODA) or foreign aid into the Dominican economy (Despradel 2005). These factors coupled with other socio-economic indicators such as Gross Domestic Product (GDP) growth rates and the GINI Index illuminate a Dominican reality where economic growth has not yet translated into substantial reductions in poverty in an era when aid flows are generally declining (World Bank 2008). Much like the theories gauging the relationship between foreign aid and economic growth, these indicators require further analysis to determine whether a relationship between foreign aid and economic growth and poverty reduction exists in the Dominican Republic, and if so, how future policies might more efficiently channel aid dollars to areas sustaining both economic growth and poverty reduction.

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1 The Organisation for Economic Co-Operation and Development defines ODA as grants or loans to developing countries which are: (a) undertaken by the official sector; (b) with promotion of economic development and welfare as the main objective; (c) at concessional financial terms [if a loan, having a Grant Element (q.v.) of at least 25 per cent]. In addition to financial flows, Technical Co-operation (q.v.) is included in aid. Grants, Loans and credits for military purposes are excluded. For the treatment of the forgiveness of Loans originally extended for military purposes, see Notes on Definitions and Measurement below. Transfer payments to private individuals (e.g. pensions, reparations or insurance payouts) are in general not counted.
II. BACKGROUND

Initially provided in small quantities in the aftermath of a dictatorship spanning over thirty years, ODA has come to play a long-lasting role within the DR economy; nearly $130 million in ODA was received 2007 (World Bank 2008). Funds have historically been allocated to those programs designed to address pressing social, economic, governance, and humanitarian needs (Despradel 2005). Official ODA allocations began in 1960, in the aftermath of three decades of dictatorship by military strongman Rafael Trujillo (Haggerty 1991). While in power Trujillo used State revenue, mainly amassed through the cultivation and refinement of sugar, to enrich himself and his political allies. Information pertaining to the economy, its growth, or the economic disparities between the society’s wealthiest and most impoverished groups was unavailable to those outside of the Trujillo regime due to a of the lack of transparency or the failure to collect data (Despradel 2005). With the assassination of Trujillo came the infusion of ODA into the Dominican economy, primarily by the United States, to offset political and economic stability threatening the State.

In the post-Trujillo era, the stabilization of the Dominican economy was due, in large part, to the creation and implementation of policies, both political and economic, meant to diversify and distribute State revenues; these changes represented an adoption of egalitarian principles (Storrs 2004). Commissions and laws such as the National Planning Council, the Promotion of Export Free Zones (or Law No. 8-90) and Industrial Incentive Law respectively

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2 Reference Appendix A
3 Though limited, data indicates that Trujillo not only stabilized but grew the economy during his period of rule. In the period of his rule until 1984, the Dominican exchange rate was one to one with the United States (Betances 1995).
4 Appendix B
insured that the economy, once reliant only upon sugar, diversified into industries such as tourism, mining, construction, and manufacturing in Free Trade Zones (FTZ) while investing heavily in improvements in the national infrastructure (Young 2001, Grullón 2009). Increased access to employment and investment opportunities resulted in annual growth rates close to 8% annually (OECD 2004, World Bank 2008). Throughout this period, ODA allotments to the Dominican State increased annually.

During the period spanning the 1980s and 1990s, the Dominican state experienced a variety of economic shocks and rebounds that resulted in the receipt of increased levels of aid. Aid went from approximately $44 million in 1980 to more than $140 million in 1989 (World Bank 2002). ODA rose in response to diminishing sugar prices worldwide, the increased cost of oil, natural disasters, as well as the mismanagement of State-operated industries and policies providing large tax exemptions to domestic and international companies operating within the DR (Betances 1995, Storrs 2004). The once debt-free economy quickly amassed a large internal deficit and external debt (Kryzanek and Wiarda 1988). However when compared with regional neighbors, the DR was and still is considered a growing economy with growth rates as high as 10% annually at points in the 1990s (Young 2001). By 1999, ODA levels had reached nearly $190 million dollars, still GINI Index data showed that, generally only half of the population had sufficient means to care for themselves and their families (World Bank 2008).

Although ODA levels have decreased since the 1990s, the DR continues to receive assistance funds. An economic crisis in 2003 forced the international community to infuse large

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5 Foreign policy officials from sending and receiving nations of foreign assistance suggest that aid is as much a tool of foreign policy as it is a tool of assistance or development.
amounts of ODA into the Dominican economy. This analysis seeks to understand how relatively small portions of aid, when compared to other recipients, impact the ability of relatively well-functioning developing nation economies to increase growth and reduce poverty.

III. LITERATURE REVIEW

To date, decades of study have failed to produce conclusive evidence of a direct relationship between foreign aid and economic growth or poverty reduction. There are those who attribute this inability to reach a consensus to selected methods of research, among other factors. The reliance on cross-country analysis over country-level case studies as well as the failure of economists to pay sufficient attention to the issue of foreign aid as a means, not only of economic growth but poverty reduction are cited as factors contributing to the ongoing debate (Cassen 1986, Ayers 1999, Burnside and Dollar 2000, Moreira and Bayraktar 2008). Several economists studying the impact of foreign aid on economic growth or poverty reduction conclude their studies by calling for further analysis in this area in order to gain a better understanding or eliminate persisting ambiguity surrounding the topic (Barro 1991, 2000, Durbarr, Gemmell and Greenaway 1998, Hansen and Tarp 2001, Veiderpass 2001, Easterly, Levine and Roodman 2003). This highly contentious discussion of the aid-growth relationship was intensified by the publishing of Craig Burnside and David Dollar’s “Aid, Growth, and Policies” in 2000.

Positive Aid-Growth Relationship

Using a neoclassical growth model to examine fifty-six countries over six time periods spanning from 1970-1993, Burnside and Dollar concluded that foreign aid’s impact on growth
was positive and statistically significant when interacted with a variable accounting for the recipient nation’s fiscal policy index. This led to their assertion that those nations with “good” fiscal, monetary, and trade policy are most capable of translating foreign aid into economic growth (Burnside and Dollar 2000). While this assertion was met with equal levels of praise and critique, the impact of Burnside and Dollar’s 2000 study is undoubtedly seen in the number of subsequent studies using this analysis as the basis for further empirical investigation (Hansen and Tarp 2001, Easterly 2003, Easterly, Levine and Roodman 2003, Burnside and Dollar 2004, Dollar and Levine 2004, Chatterjee and Turnovsky 2007, Doucouliagos and Paldam 2007, Eris 2008). The continued relevance of this study has served as the foundation of this investigation.

Subsequent studies finding a positive relationship between aid and economic growth generally report residual effects of aid allocation to developing country economies. A study performed in the latter part of the 1990s found that while data from the mid-1980s typically yielded insignificant results, newer data showed strengths in aid effects on economic growth (Durbarry, Gemmell and Greenaway 1998). This study’s results were applicable to nations, dissimilar to the DR, where aid represented more than 13% of their GDP. In nations where aid was equal to or below 13% the impact of aid in growth was found to be negative. This claim was corroborated by a study’s findings that rich or poor economies are negatively impacted by this infusion of foreign aid (Bornschier, Chase-Dunn and Rubinson 1978). A 2008 country-study of Niger provides insight into the relationship between economic growth and poverty reduction with foreign aid. This analysis showed the positive impacts of foreign aid on economic growth but failed to produce similar findings between aid and poverty reduction. Emphasis was given by the study’s authors to public investment in increasing the long and short term ability of
developing nations to positively impact economic growth while reducing poverty rates (Moreira and Bayraktar 2008). A study investigating the effect of foreign aid on economic freedom and growth concluded that aid does not significantly increase economic freedom overall, however it does contribute toward policy formation and institutional environment favorable to growth (Heckelman and Knack 2008). Another study investigating the types of economic growth supported by foreign aid also affirmed the positive relationship between aid and sector-specific economic growth; the significance of aid was lost when interacted with the fiscal policy index variable created under the 2000 Burnside and Dollar study (Feeny and Outtara 2009). These authors made the point to note that while growth does benefit the poor it does not automatically translate into poverty reduction; while some sectors of the economy are booming others might be in recession.

Negative Aid-Growth Relationship

Unlike the aforementioned studies, this section focuses on those studies that found aid to negatively impact recipient nation economies, typically through the creation or promulgation of dependency or corruption (Papanek 1972, Lockwood 1990, Brautigam and Knack 2004, Duc 2006, Malik 2008). A heavily referenced publication from 1972 concluded that the relationship between economic growth, via savings, and aid inflows is relatively weak and negatively correlated once additional economic factors are introduced (Papanek 1972). Later studies merely examined the effects of aid on economic growth and found distinctions between the economic long and short-term. Similar to their empirical critics, theorists believing aid negatively impacted economic growth often cede that economic growth occurs, if at all, in the short-run. It was noted, however, that long-run negative impacts greatly overshadow most

Theorists emphasize the importance of other determinants of economic growth as well as issues relating to aid providing systems such as aid dependency, bad economic management, corruption, poor coordination, as well as donor cooperation. A 2004 study argued that aid created perverse and institutionally weakening incentives to recipients (Brautigam and Knack 2004). These incentives often lead to increased levels of corruption and fragmentation, which translate into decreased government efficiency and economic growth; a pressing issue in the DR. A study analyzing the role played by elite classes in aid effectiveness of recipient nations found that historical factors of nations, especially those which fostered the elevation of one group over another, were linked to the successful use or misuse of aid dollars (Angeles and Neanidis 2009). A study analyzing the interchangeability of foreign aid among designated sectors in the Dominican Republic corroborated the claim that aid leads to little to no growth when funds are shifted away from development expenditures (Pack and Pack 1993). This paper concluded by illuminating the importance of case studies over cross-country studies in the determination of aid fungibility.

No Aid-Growth Relationship

The final set of findings follows those theorists claiming that the relationship between foreign aid and economic growth is non-existent. An evaluation of the impact of aid on economic growth, via the implementation of “bad” economic policies, found no significant results to affirm either a positive or negative relationship between aid and economic growth (Schwalbenberg 1998). In the period following the publication of Burnside and Dollar’s 2000
analysis, a number of studies were put forth by William Easterly, both alone and in collaboration with other authors, to refute the finding that aid positively impacted growth in policy environments where there are “good” fiscal policies (Easterly and Levine 2001, Easterly 2003, Easterly, Levine and Roodman 2003). Expanded versions of the Burnside and Dollar dataset were used to arrive at their conclusions. These studies placed culpability on both the lender and the recipient. Recipient nations are responsible for creating a political and economic environment conducive to economic growth but aid organizations must ensure that the contractual obligations of aid are met before any future funds are given.

Further study of the aid-growth relationship produces results that negate the claim that aid impacts the growth of a recipient’s economy. One of the first studies to conclude that aid had no impact on economic growth was published by Peter Boone in 1996. His analysis of the politics and effectiveness of foreign aid found that while aid was responsible for increasing the size of government, it has no impact on investment, growth, or human development indicators (Boone 1996). A study comparing the impact of Non-Governmental Organization (NGO) and ODA aid on poverty reduction concluded that while NGO aid had a positive and statistically significant relationship with poverty reduction, ODA did not (Masud and Yontcheva 2005). Proposed reasoning behind these results was based largely in the speed and flexibility of NGOs in addressing on-the-ground issues surrounding poverty reduction. A 2001 study analyzing the impact of aid on growth concluded that once outliers are removed from the population cohort, aid has no impact upon economic growth (Dalgaard and Hansen 2001). A follow-up study performed three years later added a variable to account for the geographic location of developing countries. Their results concluded that the relationship between aid and growth in
nations situated in the tropics was non-existent (Dalgaard, Hansen and Tarp 2004). A study analyzing the impact of emergency and humanitarian aid on growth found no relationship between aid and growth (Clemens, Radelet, and Bhavnani 2004). Studies investigating the impact of aid on growth within the context of a recipient’s economic and political efficiency also negated the presence of an aid-growth relationship; their results presented future policy implications to institutions lending money with the goal of improving efficiency standards (Veiderpass 2001, Eris 2008, Furuoka 2008). To some, the absence of a relationship between aid and economic growth or poverty reduction does not negate the possibility of its existence. This assertion is based in the belief that reformation of lending and receiving institutions and practices has the ability to foster a positive aid-growth relationship (Barro 1991, 2000).

**Literary Contribution**

The discourse surrounding the relationship between foreign aid and economic growth and poverty reduction has been highly contentious. Numerous empirical evaluations have been unable to yield definitive results as to whether or not foreign aid significantly impacts growth or poverty and to what extent. This study will contribute to the literature by performing a case study to evaluate how aid has impacted economic growth and poverty reduction policies in a developing nation recently elevated from a lower-middle-income to an upper-middle-income economy. Evaluating not only the impact of aid on economic growth of the Dominican Republic but also poverty reduction will provide important policy implications for sending nations, as well as the Dominican Republic, in this era of aid and pro-poor policies. While these results may not be applicable to all developing nations, this study may serve as a guide to other nations
within the Caribbean region and those nations with similar economic characteristics to the
Dominican Republic.

IV. CONCEPTUAL FRAMEWORK

The conceptual framework of this study is based heavily in the theories established by
Burnside and Dollar’s 2000 and 2004 studies evaluating the impact of foreign aid on policy and
economic growth and Moreira and Bayraktar’s 2008 study evaluating the impact of foreign aid
on poverty reduction. The merging of these studies will provide an appropriate framework
through which we may best understand how the foreign aid might be most efficiently utilized
in the progression of the Dominican economy while ensuring that disparities between the
wealthy and impoverished decrease.

The literature review presented three different views on the relationship between
foreign aid and economic growth. This study posits that the impact of aid on fiscal policy,
economic growth, and poverty reduction is positive, conditional on “good” policy
environments. According to Burnside and Dollar, the positive impact of aid on economic
growth is greatest when it is interacted with policy. From this assumption, I gather that
economic growth is a function of foreign aid and the quality of the recipient nation’s institutions
and policies. The impact of foreign aid might directly impact economies if funds are allocated
properly and utilized as originally stipulated without interruption (Feeny and Outtara 2009,
Pack and Pack 1993). The impact of aid could also have an indirect impact on the economy by
increasing the recipient nation’s ability to stimulate their own economy, through increased
national savings, investment, budget surplus, consumption, openness, and/or lower inflation
(OECD 2004).
The analysis of aid’s impact on poverty reduction might lead us to suppose that the infusion of aid into those sectors of the economy that invest in pro-poor policies will increase the reduction of poverty within a nation (Feeny and Outtara 2009). This model also supposes that the reduction of poverty is greatly influenced not only by policy but also by the institutions carrying out those policies; therefore we find that poverty reduction is a function of fiscal policy, institutional quality, aid, and economic growth (Moreira and Bayraktar 2008).

Studies, spanning the aid-growth gamut, acknowledge that the receipt of aid is not exclusively tied to economics, the historical use of aid as a political tool has made capturing the empirical impact of recipient’s economic situation at the time of request/donation difficult (Cohen 1995, Easterly and Levine 2001, Brautigam and Knack 2004). This study, however, will attempt to capture the impact of the recipient’s socio-economic conditions on aid. Therefore this study hopes to prove that economic growth and poverty reduction are a function of aid as well as fiscal policy and institutional quality.

**Hypotheses:**

The following questions will test the assumptions asserted in the above text

1. What impact does foreign aid have on economic growth?
2. What impact does foreign aid have on poverty reduction?
3. How is aid allocation impacted by pre-existing socio-economic conditions?

The first two questions are the primary interest of this paper. As indicated in the literature review, this topic has been covered by various researchers, primarily through cross-country research. However, the disagreement over the results and the absence of a single country study for the DR motivated this analysis.
The analytical framework applied in this paper will follow closely that used by Burnside and Dollar (2000) and Moriera and Bayraktar (2008). As the framework for many of the studies analyzed following its publication, the Burnside and Dollar paper identifies those factors most vital to economic growth. Like the Burnside and Dollar analysis, the Moriera and Bayraktar paper provides a foundation through which foreign aid might be analyzed in the context of poverty reduction. The Ordinary Least Squares (OLS) and robust OLS estimation technique will be used to examine the relationship between economic growth and poverty reduction with foreign aid. The expectation is that economic growth and poverty reduction is positively correlated with foreign aid, conditional of the fiscal policy and institutional quality of the recipient nation. Therefore large quantities of aid will translate into increased economic growth and reduced poverty.

The secondary hypothesis -the third question posed- will apply a similar empirical framework to the comparison of policy’s impact on the receipt of foreign aid presented in the Burnside and Dollar analysis. This analysis will attempt to identify the effect of preexisting policy on foreign aid. The expectation is that the receipt of aid is positively correlated with the pre-existing fiscal policy of the recipient nation, thus standard deviation shifts or increases in the fiscal policy index will translate into higher quantities of aid received by the DR.
V. DATA

This paper assesses data accessed from the World Bank, International Monetary Fund, University of Pennsylvania, Freedom House and the Stockholm International Peace Research Institute. This newly configured dataset records the macroeconomic trends of the Dominican Republic in the 1970s, following Trujillo’s assassination, to 2007. Table 1 categorizes the data by organization, database name, description, number of variables and observations.

<table>
<thead>
<tr>
<th>Organization</th>
<th>Database Name</th>
<th>Data Description</th>
<th>Variables</th>
<th>Observations</th>
</tr>
</thead>
<tbody>
<tr>
<td>World Bank</td>
<td>World Development Indicators (WDI)</td>
<td>National Economic Indicators (Annual)</td>
<td>7</td>
<td>244</td>
</tr>
<tr>
<td>International Monetary Fund</td>
<td>International Financial Statistics (IFS)</td>
<td>Economic Indicators (Quarterly)</td>
<td>1</td>
<td>35</td>
</tr>
<tr>
<td>University of Pennsylvania</td>
<td>Penn World Table 6.3 (PWT)</td>
<td>Trade Indicators (Annual)</td>
<td>2</td>
<td>76</td>
</tr>
<tr>
<td>Freedom House</td>
<td>Freedom In The World (FH)</td>
<td>Socio-demographic Characteristics of State (Annual)</td>
<td>2</td>
<td>66</td>
</tr>
<tr>
<td>Stockholm International Peace Research Institute</td>
<td>Arms Transfer Trend Indicator Values (TIV)</td>
<td>National Arms Expenditures (Annual)</td>
<td>1</td>
<td>38</td>
</tr>
<tr>
<td>American Economic Association</td>
<td>Burnside and Dollar (BD)</td>
<td>Fiscal Policy</td>
<td>2</td>
<td>70</td>
</tr>
</tbody>
</table>

The data from each of the identified databases is publicly accessible and covers a range of economic, health, demographic and socio-political factors impacting the nation’s economic growth and ability to reduce poverty. Of the six databases, the WDI is designed to measure in monetary and non-monetary data; the IFS, PWT, and TIV to measure monetary data; and the FH and BD measurements are in non-monetary terms. The range of observations for each of
these fifteen variables ranges from 16 to 38. Missing variables at various points throughout our set leave our sample size at 529.⁶

Analysis Plan

1. What impact does foreign aid have on economic growth?

Regression Model

\[ \text{Economic Growth} = \beta_0 + \beta_1 \text{Aid} + \beta_2 \text{Policy} + \beta_3 \text{Institutional Quality} + \beta_4 \text{Aid} \times \text{Policy} + \epsilon \]

Dependent Variable

The outcome variable in this instance is the continuous GDP growth per capita. The GDP growth rate is driven by retail expenditures, government spending, exports and inventory levels. Rises in imports will negatively affect GDP growth. The GDP growth rate is the most important indicator of economic health (World Bank 2008). If GDP is growing, so will business, jobs and personal income. If GDP is slowing down, then businesses will hold off investing in new purchases and hiring new employees, waiting to see if the economy will improve. This, in turn, can easily further depress GDP and consumers have less money to spend on purchases.

Independent Variables

The variables of interest explored? are foreign aid, policy and institutional quality. In this study, aid is represented by the annual receipt of ODA divided by the mid-year population estimate divided by GDP per capita. The policy variable is the weighted average of the trade openness measure, the inflation rate, and the budget surplus (Burnside and Dollar 2000). The index is measured in terms of standard deviation shifts. The purpose of this variable is to assist

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⁶This dataset was created and will be analyzed empirically using the statistical operating system STATA, version 11.
in the discussion of the effectiveness of aid in "good" and "bad" policy environments, where "good" and "bad" would have a precise meaning. Thus, the key feature of the policy index is that it weights the policy variables according to their correlation with growth. The variables representing institutional quality are the represented by the Civil Liberties and Political Rights Indexes. Each index rating represents the total number of points awarded to the political rights and civil liberties checklists. This case aspires to investigate whether, on average, foreign aid, or in this case ODA, has a positive or negative effect on the macroeconomic growth of the Dominican Republic. The hypothesis is that, holding all other factors constant, aid has no significant effect on economic growth until it is interacted with the variable representing policy and institutional quality.

Additional independent variables included will act as controls for the analysis. These variables include economic indicators such as initial GDP, liquidity or money available, budget surplus/deficit, inflation rates, and trade openness. The initial GDP per capita is gross domestic product lagged. It provides a snapshot of the economic standing of the nation in question. Money and quasi money (M2) comprises the sum of currency outside banks, demand deposits other than those of the central government, and the time, savings, and foreign currency deposits of resident sectors other than the central government. This variable aids in the understanding of the money circulating within society, thus the consumption prospects of the nation within a given year. The budget surplus/deficit represents the current and capital revenue and official grants received, less total expenditure and lending minus repayments reported in the fourth

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7 The index is based on a scale of 1 to 7, with 1 representing the most free and 7 the least free. Appendix C has the definitions for each index value.
quarter of the fiscal year. This variable shows how positive or negative national accounts might help or hinder a government’s provision of social benefits, such as education and healthcare, or invest in new and old industries. Openness represents exports plus imports divided by GDP and it is the total trade as a percentage of GDP. Empirical evidence from previous studies cites a positive relationship between trade openness and economic growth, thus this variable is included to illustrate the DR’s ability to attract and profit from foreign investment (Vedovato 1986, OECD 2004, Grullón 2009). Finally inflation is included on the analysis. It is measured by the consumer price index which reflects the annual percentage change in the cost to the average consumer of acquiring a fixed basket of goods and services that may be fixed or changed at specified interval, typically yearly. For the purposes of this analysis, the inflation variable is logged. The inclusion of this variable on the left side of this equation can be attributed to the negative effect that inflation has on the value of money and the impact that these monetary changes have on the economic health of a country (World Bank 2008).

2. What impact does foreign aid have on poverty reduction?

**Regression Model**

\[
\text{Poverty Reduction} = \beta_0 + \beta_1 \text{Aid} + \beta_2 \text{Policy} + \beta_3 \text{Institutional Quality} + \beta_4 \text{Aid} \times \text{Policy} + \epsilon
\]

**Dependent Variable**

The dependent variable in this case is the continuous variable Life Expectancy, a health indicator used, in this case to measure the healthcare inequalities in nation. Used by organizations such as the OECD measure poverty (OECD 2004, 2005, 2008). In 2007, the

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8 Poverty reduction is often measured using the GINI Index of income inequality or infant mortality rates, if health indicators are used. The availability of only 8 recordings of the GINI Index from 1970-2007
Dominican Republic ranked 78 out of 176 countries with a life expectancy at birth of 72.3 years (World Bank 2002, 2008). This internationally recognized estimator of income inequality/poverty was used by Moriera and Bayraktar in their analysis of aid impact on economic growth and poverty reduction in Niger.

**Independent Variables**

Again, the primary variables of interest are foreign aid, policy and institutional quality. This case aspires to investigate whether, on average, foreign aid, or in this case ODA, has a positive or negative effect on the poverty reduction of the Dominican Republic. The hypothesis, holding all other factors constant, argues aid has no significant effect on poverty reduction. Interacting aid with policy and institutional quality variables may once again yield a statistically significant impact. Additional independent variables acting as controls for this case include internal economic indicators such as initial GDP and liquidity or money available.

3. **How is aid allocation impacted by pre-existing socio-economic conditions?**

**Regression Model**

\[ \text{Aid} = \beta_0 + \beta_1 \text{Economic Growth} + \beta_2 \text{Policy} + \beta_3 \text{Institutional Quality} + e \]

**Dependent Variable**

The outcome variable in this instance is the continuous variable ODA, this variable reports the actual amount of aid received in a given year per capita over GDP per capita. As one the best documented source of international giving, ODA will provide the most accurate assistance information.

and the highly collinear relationship between infant mortality rates and foreign aid made the use of these variables highly undesirable.

9 According to the Human Development Indicator in 2007 identified life expectancy at birth to be Japan at 82.7 years and Afghanistan to be the lowest at 43.6 years at birth.
Independent Variables

The variables of interest in this instance are the initial GDP, policy, population and arms imports. This case aspires to analyze whether, on average, these variables have a positive or negative effect on the receipt of aid. The hypothesis is that, holding all other factors constant, policy has significant effect a significant effect on the receipt of ODA. The variable representing population is the log of the midyear population. It is assumed that that the size of a population as well as its GDP, are very good predictors of aid receipts.\(^{10}\) The arms imports variable represents the strategic interests of donors (Burnside and Dollar 2000).

Data Limitations

The data collected from each of the six databases used is considered of high quality; however there are a number of concerns raised regarding the limited number of observations available for this study and multicollinearity and omitted variable bias.\(^{11}\) The span of this study is thirty-eight years, which is not particularly long when analyzing factors impacting the socioeconomic evolution of any nation. The relatively small period of study coupled with relatively high annual GDP growth fluctuation might create a situation where statistical significance is estimated incorrectly. This study attempts to acknowledge and correct for issues surrounding this possibility, such as multicollinearity and heteroskedasticity, through analysis of correlation matrices, variable indicator factor and robust models.\(^{12}\) Matrices show higher

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\(^{10}\) According to Burnside and Dollar’s 2000 study smaller and poorer countries are more likely to receive foreign assistance.

\(^{11}\) Alongside the numerous macroeconomic and basic demographic indicators, the range of foreign aid data found on the WDI makes the selection of this site and this particular data best suited for the evaluation of foreign aid’s impacts on economic growth and poverty reduction in the Dominican Republic.

\(^{12}\) Correlation matrices for hypotheses are located in Appendix D.
levels of collinearity among variables with pre-established linkages; therefore it is easily understood how a variable such as aid/GDP per capita or trade openness, represented as a percentage of GDP, are strongly correlated to GDP per capita. The aid and policy variables are particularly high, in some areas, but for the purposes of this study couldn’t be removed or altered.

VI. RESULTS and ANALYSIS

Descriptive Statistics

As can be seen in Appendix E, aid receipts from 1970-2007 represented, on average 1.15% of the annual GDP per capita. At its highest levels, aid represented 3.41% of the annual GDP per capita while at its lowest point aid presented -0.02%. Figures measuring GDP growth indicate a considerable amount of positive and negative fluctuation over the thirty-eight year period of this study. While average growth during this period stood at 4.23%, percentages rose as high as 14.84% and dropped as low as -7.26% annually. The life expectancy of the Dominican during this period averages 67.12 years at birth (4.20 in log years); the minimum life expectancy, reported in 1970, was 58.64 years (4.07 log years) while maximum life expectancy at birth, reported in 2007, is 72.30 years (4.28 log years).

Empirical Results

Impact of Foreign Aid on Economic Growth

Outcome Variable: GDP per capita Annual Growth

The results analyzing the impact of foreign aid on economic growth are partially consistent with those found in the Burnside and Dollar study (2000). Burnside and Dollar suggest that the impact of aid on economic growth is in fact conditional on the policy
environment in which that aid is received. The results from Column 1 of Table 2 show the non-statistically significant relationship between foreign aid and economic growth in the Dominican Republic. These results remain unchanged when the policy and aid and policy interaction term variables are included into the equation, as seen in Table 3. The direction of the relationship between aid and growth suggests that the aid effects on economic growth are positive until interacted with fiscal policy; the inclusion of the policy variable increases the explanatory power, albeit insignificant, of economic growth. Burnside and Dollar assert that the impact of policy is most important and effective in lower income countries receiving aid. Though it is outside the scope of this study to affirm or deny that assertion, the results found in Column 1 and 2 of Table 3 do show DR’s economic growth to be unconnected to the foreign aid or its fiscal policy environment.

The significant variables identified in Table 2 remained significant across OLS and robust regressions and following the inclusion of the aid/GDP per capita variable; the results from this table identified no significance between aid and economic growth. Based on the table, when all other factors are held constant, results indicate a 2.20-3.46 % decrease in economic growth for every percent increase in log inflation of consumer prices. The statistical significance of trade openness denotes that a one-percent increase in the trade openness of the DR economy results in a 3.55-3.74% increase in the annual percentage of GDP growth. These results illuminate the importance of trade and trade openness to the DR economy.

---

13 Unit changes in policy can be interpreted as a one standard deviation improvement in policy increases GDP annual growth by [coefficient value] percent.
In 1968, Law No. 8-90, or the Promotion of Export Free Zones became ratified. This marked the opening of the DR to what would become the nation’s most profitable industry, FTZs (Betances 1995, Grullón 2009). Increased investment by way of increased FTZ presence on the island creates substantial yearly growth when exist uninterrupted by increased inflation or other internal and external shocks generally associated with the depreciation in local currency. Further insight into the impact of trade openness and inflation on annual GDP growth is provided in Appendix B. The graph in this Appendix illustrates the volatility of GDP growth in the DR from year to year in the period spanning 1970-2007. Initial GDP per capita has a small yet significant impact on economic growth; a dollar increase in the GDP per capita has a 0.0017-0.0020% increase on annual growth. The justification for these results is linked to the data which shows a relatively uninterrupted increase in the GDP per capita. Increased GDP per capita signifies the increased access to capital, which means increased opportunity to engage in those activities likely to stimulate economic growth, such as investment and improvements to infrastructure (OECD 2004). The variables in this model account for approximately 47.77-48.52% of the explanation surrounding determinants of economic growth vis-à-vis GDP per capita annual growth. This explanatory power decreases substantially when the budget surplus/deficit, inflation and trade openness variables are removed and the weighted variable representing fiscal policy is inserted; the explanatory power of the model on determinants of economic growth plummets to approximately 13.34-13.37%.

Though void of statistical power, those variables classified as insignificant are able to provide explanatory insights; analyses of the direction of coefficient estimates indicate whether

14 Reference Appendix B
or not insignificant have the potential to positively or negatively affect economic growth. When analyzed under the regression excluding the fiscal policy variable, the interpretation of the relationship between political rights and civil liberties with economic growth is negative, even though the coefficient values would suggest the reverse. Because the indices values become worse as the numeric value increases the regression indicate that unit increase in either index results in a worsening of conditions around political rights and civil liberties.

The economic growth of the 1970’s was due in large part to the suppression of political rights and civil liberties amongst civilians at the hands of the government. Though considered a democracy, the Dominican Republic was only nine years old, prior rule to the form of a dictatorship, which lasted thirty years. The governmental approach to the provision of political rights and civil liberties has improved throughout the decades but factors such as corruption continue to impact economic growth (OECD 2004). The coefficient sign of civil liberties in Table 3 indicate that increased index rating negatively impacts economic growth.

The remaining insignificant variables provide insight into the circulation of monetary resources and national consumption. The variable m2 representing the national monetary supply currently in circulation as a percentage of GDP is negatively correlated with economic growth as is the variable representing budget surplus and deficit. Monetary supply, in this instance, is linked to individual consumption and savings (World Bank 2008). Increased consumption at the household level does little to predict the growth or strength of national economic structure. The DR economic structure is comprised of capitalist, workers and small proprietors (Grullón 2009). Workers and small proprietors are generally associated with the poorest half of the population receiving less than 20% of the national income. Conversely,
capitalists are linked to the top 10% of the population who are in receipt of over 40% of the national income (OECD 2005, Grullón, 2009). Previous study indicates that while workers and proprietors are more likely to consume locally produced goods capitalist generally tend to consume foreign goods. If we assume that monetary gains of economic growth, within the DR, are generally captured by the wealthier class than we might also assume that the consumption preferences of this segment of the population tend to favor foreign goods to those produced domestically. Undoubtedly, these consumption preferences would negatively impact the national income of the DR and contribute to the increased frequency of budget deficits over surpluses.
Table 2
Impact of Foreign Aid on Economic Growth Results
Policy Variable Excluded

<table>
<thead>
<tr>
<th>Estimation Method</th>
<th>1</th>
<th></th>
<th>2</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td>Robust</td>
<td>OLS</td>
<td>Robust</td>
</tr>
<tr>
<td>Initial GDP</td>
<td>0.0017</td>
<td>0.0017</td>
<td>0.0020</td>
<td>0.0020</td>
</tr>
<tr>
<td></td>
<td>(0.191)†</td>
<td>(0.111)†</td>
<td>(0.164)†</td>
<td>(0.079)***</td>
</tr>
<tr>
<td>Political Rights</td>
<td>0.0610</td>
<td>0.0610</td>
<td>0.4464</td>
<td>0.4464</td>
</tr>
<tr>
<td></td>
<td>(0.920)</td>
<td>(0.910)</td>
<td>(0.630)</td>
<td>(0.571)</td>
</tr>
<tr>
<td>Civil Liberties</td>
<td>0.8829</td>
<td>0.8829</td>
<td>0.6555</td>
<td>0.6555</td>
</tr>
<tr>
<td></td>
<td>(0.515)</td>
<td>(0.465)</td>
<td>(0.648)</td>
<td>(0.594)</td>
</tr>
<tr>
<td>M2/GDP</td>
<td>-0.1912</td>
<td>-0.1912</td>
<td>-0.2581</td>
<td>-0.2581</td>
</tr>
<tr>
<td></td>
<td>(0.448)</td>
<td>(0.416)</td>
<td>(0.363)</td>
<td>(0.361)</td>
</tr>
<tr>
<td>Budget Surplus/Deficit</td>
<td>-0.7222</td>
<td>-0.7222</td>
<td>-0.5778</td>
<td>-0.5778</td>
</tr>
<tr>
<td></td>
<td>(0.444)</td>
<td>(0.407)</td>
<td>(0.560)</td>
<td>(0.471)</td>
</tr>
<tr>
<td></td>
<td>(0.002)*</td>
<td>(0.002)*</td>
<td>(0.003)*</td>
<td>(0.002)*</td>
</tr>
<tr>
<td>Openness</td>
<td>3.741</td>
<td>3.741</td>
<td>3.5051</td>
<td>3.5051</td>
</tr>
<tr>
<td></td>
<td>(0.050)**</td>
<td>(0.044)**</td>
<td>(0.076)***</td>
<td>(0.081)***</td>
</tr>
<tr>
<td>Aid/GDP</td>
<td>1.1434</td>
<td>1.1434</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.578)</td>
<td>(0.492)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>7.2271</td>
<td>7.2271</td>
<td>7.7076</td>
<td>7.7076</td>
</tr>
<tr>
<td></td>
<td>(0.448)</td>
<td>(0.386)</td>
<td>(0.427)</td>
<td>(0.382)</td>
</tr>
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<td>Observations</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>31</td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.4777</td>
<td>0.4777</td>
<td>0.4852</td>
<td>0.4852</td>
</tr>
</tbody>
</table>

Notes:
The dependent variable is annual GDP per capita growth
P-value of t-statistics are in parentheses
*Significant at 1% level; **Significant at 5% level;
***Significant at 10% level; †Significant at 20% level
### Table 3
Impact of Foreign Aid on Economic Growth Results Policy Variable Included

<table>
<thead>
<tr>
<th>Estimation Method</th>
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<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OLS</td>
<td>Robust</td>
<td>OLS</td>
<td>Robust</td>
<td>OLS</td>
<td>Robust</td>
</tr>
<tr>
<td>Initial GDP</td>
<td>0.0001</td>
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<td>0.0001</td>
<td>0.0001</td>
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<td></td>
</tr>
<tr>
<td></td>
<td>(0.929)</td>
<td>(0.919)</td>
<td>(0.930)</td>
<td>(0.919)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Political Rights</td>
<td>0.2783</td>
<td>0.2783</td>
<td>0.2523</td>
<td>0.2523</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.791)</td>
<td>(0.733)</td>
<td>(0.820)</td>
<td>(0.776)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Civil Liberties</td>
<td>-0.3406</td>
<td>-0.3406</td>
<td>-0.3866</td>
<td>-0.3866</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.837)</td>
<td>(0.815)</td>
<td>(0.827)</td>
<td>(0.801)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>M2/GDP</td>
<td>-0.0338</td>
<td>-0.0338</td>
<td>-0.0239</td>
<td>-0.0239</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.917)</td>
<td>(0.932)</td>
<td>(0.945)</td>
<td>(0.952)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Policy</td>
<td>-0.1610</td>
<td>-0.1610</td>
<td>-0.1285</td>
<td>-0.1285</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.367)</td>
<td>(0.262)</td>
<td>(0.740)</td>
<td>(0.660)</td>
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<td></td>
</tr>
<tr>
<td>Aid/GDP</td>
<td>-1.2917</td>
<td>-1.2917</td>
<td>-1.4693</td>
<td>-1.4693</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.551)</td>
<td>(0.485)</td>
<td>(0.613)</td>
<td>(0.541)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aid/GDP*Policy</td>
<td>-0.0270</td>
<td>-0.0270</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.924)</td>
<td>(0.900)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Constant</td>
<td>4.5074</td>
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<td>4.6581</td>
<td>4.6581</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(0.667)</td>
<td>(0.710)</td>
<td>(0.669)</td>
<td>(0.711)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Observations</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td>31</td>
<td></td>
<td></td>
</tr>
<tr>
<td>R-Squared</td>
<td>0.1338</td>
<td>0.1334</td>
<td>0.1337</td>
<td>0.1337</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Notes:**
The dependent variable is GDP per capita growth.
P-value of t-statistics are in parentheses.

---

**Impact of Foreign Aid on Poverty Reduction**

**Outcome Variable: Log life Expectancy**

OLS and robust findings indicate that the relationship between foreign aid and institutional quality with poverty reduction are statistically significant. The impact of this relationship remains statistically significant following the inclusion of the aid and policy interaction variable which was found to be insignificant.
Column 1 and 2 of Table 4 show the results of OLS and robust regressions run with and without the interaction variable of aid and policy. Based on the results located in both columns, I note that when holding all other factors constant a one percent change in the amount of aid per capita to GDP per capita received by the Dominican Republic in the period spanning 1970-2007 resulted in a decrease to the log life expectancy of the population by 9.69%. Reductions to the log life expectancy of the population also occurred at 3.11% level when the index of Political Rights increased by one unit. Conversely, a one unit increase in the index measuring Civil Liberties increased the log of life expectancy by 4.93%. These findings raise a variety of questions that present data is unable to answer, such as: where was aid concentrated, in what type of programs, how did political changes impact the receipt and in-country allocation of foreign aid funds toward initiatives focused on reducing poverty? Additionally, it is important to note the objective of donors during this period. Recent shifts in aid effectiveness policies indicate the belief by donors that foreign aid should focus on initiatives that reduce poverty over those designed to increase a country’s economic growth (Itzigsohn 2000). Programs designed to improve economic conditions, especially those of the 1980s which were heavily influenced by the Washington Consensus, overlooked those factors relating to economic development such as improvements to infrastructure, education and health (Kryzanek and Wiarda 1988). Deficiencies in any of these areas could negatively impact the knowledge and ability of rural and urban Dominicans alike to prevent and/or treat many medical ailments which would undoubtedly have negative consequences for the life expectancy of the population.
Insignificant variables within the model include not only the interaction between aid and policy but variables representing GDP growth, monetary circulation and fiscal policy. The coefficient sign on each of these variables save the interaction of aid and policy are negative. In Columns 1 to 2 there is a visible increase in the levels of insignificance. The negative coefficient values associated with poverty reduction and GDP growth, monetary circulation and fiscal policy raise once again call into question how economic growth impacts and or was distributed throughout the Dominican Republic. GINI indices, published seven times between 1970 and 2007, produced a mean coefficient of 50.32 with a minimum of 47.78 reported in 1986 and maximum reported in 52.11 reported in 2001; the latest index reported 49.97 in 2006. Although indicators, such as GINI, fail to tell the entire story surrounding a nation’s poverty, they provide researchers and policy-makers with insights into the distribution of national resources, both material and monetary. From these indicators, one might better understand, in this particular climate, how effective, or in this case ineffective, aid has been at reducing poverty through increased access to a level of healthcare and education which might prolong the life expectancy of citizens at birth.
## Table 4

### Impact of Foreign Aid on Poverty Reduction Results

<table>
<thead>
<tr>
<th>Estimation Method</th>
<th>1 OLS</th>
<th>1 Robust</th>
<th>2 OLS</th>
<th>2 Robust</th>
</tr>
</thead>
<tbody>
<tr>
<td>GDP Growth</td>
<td>-0.0009</td>
<td>-0.0009</td>
<td>-0.0007</td>
<td>-0.0007</td>
</tr>
<tr>
<td></td>
<td>(0.683)</td>
<td>(0.546)</td>
<td>(0.761)</td>
<td>(0.628)</td>
</tr>
<tr>
<td>Political Rights</td>
<td>-0.0311</td>
<td>-0.0311</td>
<td>-0.0300</td>
<td>-0.0300</td>
</tr>
<tr>
<td></td>
<td>(0.022)*</td>
<td>(0.070)**</td>
<td>(0.044)**</td>
<td>(0.112)**</td>
</tr>
<tr>
<td>Civil Liberties</td>
<td>0.0493</td>
<td>0.0493</td>
<td>0.5278</td>
<td>0.5278</td>
</tr>
<tr>
<td></td>
<td>(0.044)**</td>
<td>(0.042)**</td>
<td>(0.063)**</td>
<td>(0.097)**</td>
</tr>
<tr>
<td>M2/GDP</td>
<td>-0.0019</td>
<td>-0.0019</td>
<td>0.0011</td>
<td>0.0011</td>
</tr>
<tr>
<td></td>
<td>(0.650)</td>
<td>(0.650)</td>
<td>(0.818)</td>
<td>(0.815)</td>
</tr>
<tr>
<td>Aid/GDP</td>
<td>-0.0969</td>
<td>-0.0969</td>
<td>-0.0820</td>
<td>-0.0820</td>
</tr>
<tr>
<td></td>
<td>(0.001)*</td>
<td>(0.000)*</td>
<td>(0.075)**</td>
<td>(0.066)**</td>
</tr>
<tr>
<td>Policy</td>
<td>-0.0016</td>
<td>-0.0016</td>
<td>-0.0031</td>
<td>-0.0031</td>
</tr>
<tr>
<td></td>
<td>(0.449)</td>
<td>(0.331)</td>
<td>(0.459)</td>
<td>(0.495)</td>
</tr>
<tr>
<td>Aid/GDP*Policy</td>
<td>0.0017</td>
<td>0.0017</td>
<td>0.0017</td>
<td>0.0017</td>
</tr>
<tr>
<td></td>
<td>(0.659)</td>
<td>(0.633)</td>
<td>(0.659)</td>
<td>(0.633)</td>
</tr>
<tr>
<td>Constant</td>
<td>4.2135</td>
<td>4.2135</td>
<td>4.2055</td>
<td>4.2055</td>
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<tr>
<td></td>
<td>(0.000)*</td>
<td>(0.000)*</td>
<td>(0.000)*</td>
<td>(0.000)*</td>
</tr>
</tbody>
</table>

**Observations**: 13  13  13  13

**R-Squared**: 0.8671  0.8671  0.8727  0.8727

**Notes:**

The dependent variable is Life Expectancy in log years
P-value of t-statistics are in parentheses
*Significant at 1% level; **Significant at 2% level; ***Significant at 5% level

### Impact of Pre-existing Policy on Aid Receipt

**Outcome Variable: Foreign Aid per capita/GDP per capita**

Results from this model, located in Table 5, are consistent with its predecessor in respect to coefficient sign; in the matter of statistical significance this paper's results differ greatly from those of Burnside and Dollar. As indicated in the model study, the coefficients for GDP and population are negative. Though statistically significant at the 20-percent level, the magnitude
of GDP per capita is quite small. An explanation for this small impact is attributable to the size
of the DR economy. Because it is classified as a middle-income economy, the DR is less likely to
receive larger aid amounts similar to counties classified as lower-income economies.

Considered a relatively small population, the population size of fewer than 10 million
inhabitants causes the coefficient value of log population to be large, albeit insignificant.

When tested under the robust model, results indicate a statistically significant
relationship between aid allocation and strategic interests, which in this case is represented by
the variable arms imports. Burnside and Dollar suggest the aid-strategic interest relationship to
be particularly strong amongst middle income countries, like the DR. This result illuminates
the importance of historical, migratory, and investment linkages shared by the DR and major
donor nations such as Spain, their former colonizer, and the United States, a former occupier
and home for the majority of Dominicans living abroad (OECD 2009). They affirm that these
bilateral relations play a larger factor in the receipt of aid over the “environment” established by
fiscal policy. The policy effects on aid allocation are negative and insignificant. The intuitive
argument behind this relationship, albeit insignificant, is that as policy improves so too does
economic growth; as economic growth continues the need for foreign assistance declines
(Burnside and Dollar 2000).
Table 5

<table>
<thead>
<tr>
<th>Estimation Method</th>
<th>OLS</th>
<th>Robust</th>
</tr>
</thead>
<tbody>
<tr>
<td>Initial GDP</td>
<td>-0.0005</td>
<td>-0.0005</td>
</tr>
<tr>
<td></td>
<td>(0.151)*</td>
<td>(0.427)*</td>
</tr>
<tr>
<td>Population</td>
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<td>-0.6221</td>
</tr>
<tr>
<td></td>
<td>(0.607)</td>
<td>(0.689)</td>
</tr>
<tr>
<td>Policy</td>
<td>-0.0066</td>
<td>-0.0066</td>
</tr>
<tr>
<td></td>
<td>(0.815)</td>
<td>(0.804)</td>
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<tr>
<td>Arms</td>
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<td>0.0090</td>
</tr>
<tr>
<td></td>
<td>(0.559)</td>
<td>(0.423)</td>
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<tr>
<td>Constant</td>
<td>11.5461</td>
<td>11.5461</td>
</tr>
<tr>
<td></td>
<td>(0.538)</td>
<td>(0.633)</td>
</tr>
</tbody>
</table>

Observations: 31 31

R-Squared: 0.4071 0.4071

Notes:
The dependent variable is GDP per capita growth
P-value of t-statistics are in parentheses
*Significant at 20% level

VII. DISCUSSION

Policy Implications

What do the results of this paper have to do with the formation of aid effectiveness policy? How might they impact the affectivity and efficiency of aid allocation? A secondary analysis examining the impact of pre-existing policy on the receipt of foreign aid found that aid receipt, in the DR, is in the strategic interests of donors and will continue as long as it is in the interest of donor nations to do so. Therefore it is in the best interest of both the donor and the Dominican Republic that the present relationship between foreign aid and economic growth or poverty reduction is improved. Those subscribing to the belief that under allocation of aid leads to a negative relationship between aid and growth and or poverty reduction might
suggest that increased aid allotments would improve the impact of aid on in this middle income economy (Durbarry, Gemmell, and Greenway 1998). The truth remains, however, that with international economic crises and poorer countries in need of more monetary resources and attention, it is not likely that the increased allocation of aid to the DR can be realized. So what must be done to improve aid effectiveness in the Dominican Republic going forward?

The results of this study have come at a time when many donors and aid recipients are actively seeking ways in which to improve aid effectiveness. Multilateral organizations such as the United Nations and the Organisation for Economic Co-operation and Development are creating and implementing a number of poverty reducing and or economy growing policies designed to reconfigure how donors appropriate and disperse foreign aid throughout the developing world. Worldwide programs and initiatives such as the Millennium Development Goals (MDG) and the Paris Declaration (PD) seek to increase recipient participation in the plenary stages of aid designation; increased collaboration amongst bilateral and multilateral donors is also encourage to decrease aid overlap and or saturation of aid in one area at the detriment of another. These advances, from a theory-based perspective, on how aid might be more effectively utilized by recipients, are promising. But as this study suggests, it will take more effort on the part of the DR and donors for aid to create a positive impact in the DR.

The improvement of inconsistent giving in the Dominican Republic has the potential to improve the efficiency and effectiveness of aid received by the DR, both in the short and long-run. Though not unique to the DR, it is often the case that amount of aid promised is not often the amount of aid received (FRIDE 2009). This means that anticipate funds that are often allocated to designated particular programs and initiatives that are generally pro-poor receive
less funds. The underfunding of programs, especially those with implementation periods spanning many years, may hinder the goal of poverty reduction or economic growth. Of course it should be noted that the DR’s receipt of aid is not considered substantial when compared to other aid recipients around the world or when aid receipt is measured against other sources of income in the economy. The truth remains however that the loss of millions of dollars to initiatives designed to stimulate growth or reduce poverty does have an impact. What if unforeseen circumstances, such as a global economic crisis and or an internal crisis impede donors’ ability to provide the funds originally appropriated?

Increased coordination among donors, and the DR might also be an inexpensive mechanism used by donors to improve the relationship between aid and the Dominican Republic’s economic growth and poverty reduction. Each year the Dominican Republic receives ODA from numerous countries and multilateral organizations. The range of these receipts range from the tens of thousands of dollars (US) to as high as hundreds of millions (US) annually (World Bank 2008). Donors’ priorities are often unaligned thus creating an environment where aid is once again over allocated to some areas and absent from others.

The MDG and PD, implemented in 2001 and 2005 respectively, seek to improve the harmonization of aid allocation amongst donors under the larger goal of reducing poverty. This study serves as an affirmation that this must occur in the DR for the relationship between aid and Dominican growth and poverty to change, significantly. Working alongside donors, the DR government has the opportunity to better prioritize, establish plans of action, and channel aid dollars to confront pressing specific development challenges that impede both the growth of the economy and the reduction of poverty in this small Caribbean nation.
Suggestions for Future Research

The analysis performed in this paper was at the recommendation of previous multi-country studies analyzing the impact of aid effectiveness in developing economies. This paper’s analysis of the Dominican Republic illustrates how results from multi-country studies are not always applicable to individual countries. Further case studies of developing nations receiving large, moderate, and small quantities of foreign aid should be performed so that both host countries and donors have a better idea of the shortfalls and the best practices of aid receipt and allocation in receiving nations. The periodic evaluation of aid effectiveness has the ability to assist policy-makers on both the sending and receiving end funnel aid dollars into those areas where it has the greatest impact.

Further studies on the Dominican Republic should also be considered as policymakers on both sides continue to work to reduce poverty and positively impact economic growth. The primary reason this paper suggests further country-level studies from the DR is that newer studies have the advantage of a wider pool of data. Improved data collection and publication provide prospective researchers with the ability to execute more comprehensive studies. Future studies analyzing how aid dollars are utilized within regions and across sectors will serve as an empirical check for policy-makers working in the area of aid effectiveness and pro-poor policy.
Appendix A

Annual Official Development Assistance per capita

Foreign Aid Recipients in Latin America in 2007

World Bank 2008
Appendix B

Gross Domestic Product per capita

Annual Gross Domestic Product Growth per capita

16 World Bank 2008
Appendix C
General Characteristics Of Each Political Rights And Civil Liberties Rating
The information provided below was retrieved directly from the Freedom House website. ([http://www.freedomhouse.org](http://www.freedomhouse.org))

Overall Ratings
The Political Rights and Civil Liberties Ratings represent the total number of points awarded to the political rights and civil liberties checklists determines the political rights and civil liberties ratings. Each rating of 1 through 7, with 1 representing the highest and 7 the lowest level of freedom corresponds to a range of total points.\(^1\)

<table>
<thead>
<tr>
<th>Political Rights (PR)</th>
<th>Civil Liberties (CL)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total Scores</strong></td>
<td><strong>PR Rating</strong></td>
</tr>
<tr>
<td>36-40</td>
<td>1</td>
</tr>
<tr>
<td>30-35</td>
<td>2</td>
</tr>
<tr>
<td>24-29</td>
<td>3</td>
</tr>
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<td>18-23</td>
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<tr>
<td>12-17</td>
<td>5</td>
</tr>
<tr>
<td>6-11</td>
<td>6</td>
</tr>
<tr>
<td>0-5</td>
<td>7</td>
</tr>
</tbody>
</table>

Political Rights
Rating of 1 – Countries and territories that receive a rating of 1 for political rights come closest to ensuring the freedoms embodied in the checklist questions, beginning with free and fair elections. Those who are elected rule, there are competitive parties or other political groupings, and the opposition play an important role and have actual power. Minority groups have reasonable self-government or can participate in the government through informal consensus.

Rating of 2 – Countries and territories rated 2 in political rights are less free than those rated 1. Such factors as political corruption, violence, political discrimination against minorities, and foreign or military influence on politics may be present and weaken the quality of freedom.

Ratings of 3, 4, 5 – The same conditions that undermine freedom in countries and territories with a rating of 2 may also weaken political rights in those with a rating of 3, 4, or 5. Other damaging elements can include civil war, heavy military involvement in politics, lingering royal power, unfair elections, and one-party dominance. However, states and territories in these categories may still enjoy some elements of political rights, including the freedom to organize quasi-political groups, reasonably free referendums, or other significant means of popular influence on government.

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\(^{1}\) Ratings for the Dominican Republic are located in the Appendix C, the Descriptive Statistics table
Appendix C Continued

Rating of 6 – Countries and territories with political rights rated 6 have systems ruled by military juntas, one-party dictatorships, religious hierarchies, or autocrats. These regimes may allow only a minimal manifestation of political rights, such as some degree of representation or autonomy for minorities. A few states are traditional monarchies that mitigate their relative lack of political rights through the use of consultation with their subjects, tolerance of political discussion, and acceptance of public petitions.

Rating of 7 – For countries and territories with a rating of 7, political rights are absent or virtually nonexistent as a result of the extremely oppressive nature of the regime or severe oppression in combination with civil war. States and territories in this group may also be marked by extreme violence or warlord rule that dominates political power in the absence of an authoritative, functioning central government.

Civil Liberties
Rating of 1 – Countries and territories that receive a rating of 1 come closest to ensuring the freedoms expressed in the civil liberties checklist, including freedom of expression, assembly, association, education, and religion. They are distinguished by an established and generally equitable system of rule of law. Countries and territories with this rating enjoy free economic activity and tend to strive for equality of opportunity.

Rating of 2 – States and territories with a rating of 2 have deficiencies in a few aspects of civil liberties, but are still relatively free.

Ratings of 3, 4, 5 – Countries and territories that have received a rating of 3, 4, or 5 range from those that are in at least partial compliance with virtually all checklist standards to those with a combination of high or medium scores for some questions and low or very low scores on other questions. The level of oppression increases at each successive rating level, including in the areas of censorship, political terror, and the prevention of free association. There are also many cases in which groups opposed to the state engage in political terror that undermines other freedoms.

Rating of 6 – People in countries and territories with a rating of 6 experience severely restricted rights of expression and association, and there are almost always political prisoners and other manifestations of political terror. These countries may be characterized by a few partial rights, such as some religious and social freedoms, some highly restricted private business activity, and relatively free private discussion.

Rating of 7 – States and territories with a rating of 7 have virtually no freedom. An overwhelming and justified fear of repression characterizes these societies.
Appendix D
Correlation Matrices

Foreign Aid’s impact on Economic Growth, without the inclusion of the fiscal policy index

<table>
<thead>
<tr>
<th>GDP Growth</th>
<th>Initial</th>
<th>Budget</th>
<th>Trade</th>
<th>Political</th>
<th>Civil</th>
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<tr>
<td>Initial GDP</td>
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<td>1.0000</td>
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<td></td>
</tr>
<tr>
<td>M2/GDP</td>
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<td>-0.4134</td>
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<td>Budget Surplus</td>
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<td>-0.0407</td>
<td>-0.1094</td>
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<td>Inflation</td>
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Foreign Aid’s impact on Economic Growth, without the inclusion of the fiscal policy index

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</tr>
<tr>
<td>M2/GDP</td>
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<td>-0.4134</td>
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Appendix D continued
Correlation Matrices

Foreign Aid’s Impact on Poverty Reduction

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<th>M2</th>
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<th>Policy</th>
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<td>Aid*Policy</td>
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<td>-0.2177</td>
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<td>0.6287</td>
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Pre-Existing Policy’s Impact on Foreign Aid Receipt

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### Appendix E

**Descriptive Statistics**

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<th>Standard Deviation</th>
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<th>Max</th>
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<td>Population</td>
<td>Log Population</td>
<td>WDI</td>
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<tr>
<td>Arms Imports</td>
<td>U.S. Dollars</td>
<td>SIPRI</td>
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<td><strong>National Balance Indicators</strong></td>
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<td>GDP per capita</td>
<td>U.S. Dollars</td>
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<td>(Surplus/Deficit)</td>
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<tr>
<td>Openness</td>
<td>% of GDP</td>
<td>Penn World Table 6.3</td>
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<td>Policy</td>
<td>$ \sum (1.28+6.85 \text{Surplus/Deficit-1.40Inflation+2.16Openness})$</td>
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<td>35</td>
<td>-5.029377</td>
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REFERENCES


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