In Search of the "Burnside-Dollar Effect": an examination of foreign aid flows from 1985-2005 and changes in their "selectivity" towards recipients with good economic policies

by

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Abstract

In the late 1990s, World Bank economists Craig Burnside and David Dollar produced a new study in which they found a postive relationship between foreign aid and economic growth in countries with "good" economic policies. As a result, their findings were invoked by aid agencies and experts as evidence of aid effectiveness and by the Millenium Development campaign to increase global aid flows. Many have reacted (both negatively and positively) to this movement and to the focus that the aid community has since given to making aid more "selective" towards recipients with good economic policies. The purpose of this analysis is to evaluate whether foreign aid flows actually did become more selective in this regard after 2000. I identify any stuctural break after 2000 as the "Burnside-Dollar effect". My results suggest that, while global aid flows remained highly influenced by other factors after 2000, there is evidence of the "Burnside-Dollar effect". In looking at four donor countries specifically, the UK, the US and Canada all revealed the same pattern, while the Netherlands did not. Overall, however, the Nethlands and the UK appeared to have foreign aid commitments that were most sensitive to developmental criteria over the whole period.

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1 Introduction

In looking at the trend of global foreign aid disbursement over time - whether measured in total real flows or as percentage Gross Domestic Product (GDP) - we see some waxing and waning over the period from 1980 to 2005. Notably, aid-to-GDP reached a peak in the period around 1982, consistently declined throughout the 1990s, hit an all-time low around 2000 and then bounced back to mid-1990s levels by 2004 (Figure 1)[1]. Since this measure controls for income, it is generally considered to be a better depiction of any change in dispositions towards giving aid. What might explain these fluctuations?

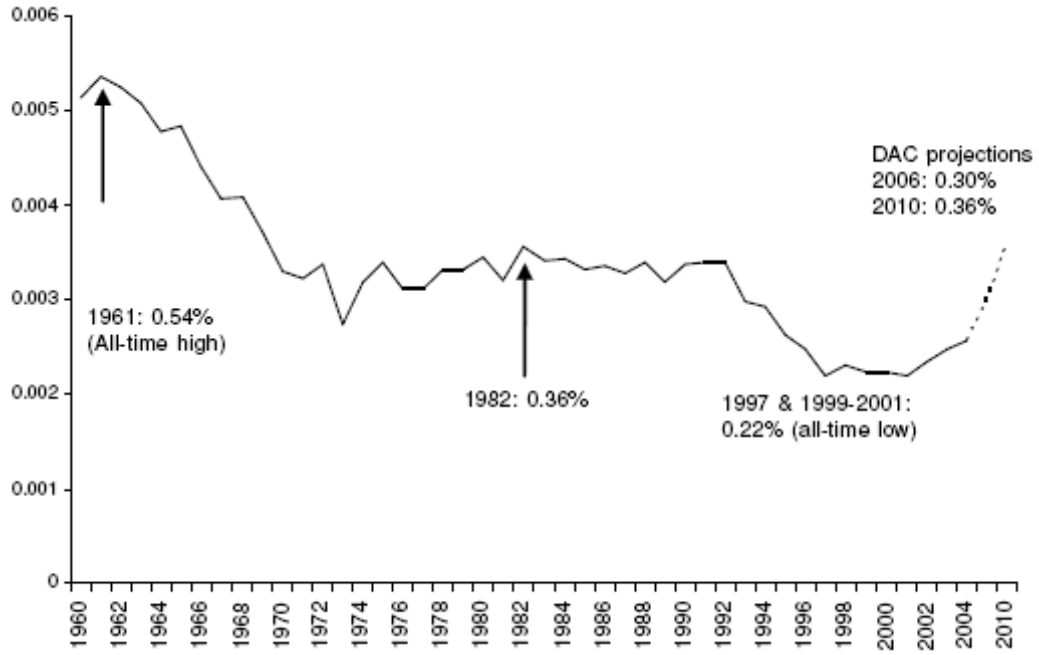

Figure 1: Official Development Assistance as Percentage Total OECD GDP

The pattern here appears to reflect general attitudes in the donor community, including the institutions that provide foreign aid, based on perceived foreign aid ef-

[1]Graph provided by OECD-DAC website.

fectiveness[2]. These attitudes, moreover, can be associated with the findings of several significant studies which look at the relationship between foreign aid and economic growth in recipient countries.

In the mid-1990s, dismay due to the general ineffectiveness of foreign aid over previous decades was fueled by empirical findings which suggested that foreign aid raised government consumption, rather than investment and growth, in recipient countries [Boone (1994, 1996)]. In contrast, the decade came to a close with the burgeoning of the Millennium Development Goals and - at the Monterrey Conference in 2002 - a commitment by all OECD countries to raise yearly Official Development Assistance (ODA)[3]to 0.7 percent of GDP. Apparently, a new-found optimism inspired the donor community to support a campaign for increasing foreign aid.

One factor in this change of attitude, according to some, was the finding by World Bank economists Craig Burnside and David Dollar that foreign aid has effectively facilitated growth in countries with "good" economic policies: "in the 1970-93 period...where aid happened to coincide with good policies, it had a strong positive effect on growth. Otherwise, it seems to have been dissipated in unproductive government consumption." (Burnside and Dollar, 1997, 2). Citing these results, the World Bank called for the world to double foreign aid flows [Wolfensohn (2001)], and President George Bush initiated the Millennium Challenge Account (MCA) for foreign aid in 2002. William Easterly, a former World Bank economist and foreign aid expert, suggests that at the Monterrey conference "...there a was major debate about whether to increase foreign aid - and in particular about what the United States, with the lowest aid-to-GDP ratio of any rich country, should do. The Burnside and

[2]These attitudes are conveyed in statements made by the institutions during the 1980s and 1990s.

[3]ODA is the definition of foreign aid flows used by the Development Action Committee of the Organization of Economic Cooperation and Development. These flows must be "administered with the promotion of economic development and welfare of developing countries as the main objective, and which are concessional in character with a grant element of at least 25 percent" [OECD-DAC (2008a)]. ODA can include bilateral and/or multilateral flows.

Dollar (2000)[4] paper was often invoked, either explicitly or implicitly, in this debate." (Easterly, 2003, 2).

Based on their conclusions, Burnside and Dollar (1997) argued that "donors have not sufficiently exploited the relationship between good policies and effective aid...(they) should place greater weight on economic policies of recipients" (Burnside and Dollar, 1997, 4). Many economists have since re-examined this relationship, some failing to reproduce the results from Burnside and Dollar. As a result, considerable criticism - chiefly from Easterly - has been directed towards the confidence invested in Burnside and Dollar's findings.

The main purpose of this paper is to determine whether Burnside and Dollar's findings have had an impact on the distribution of the foreign aid since 2000. Aid agencies have emphasized the importance of economic policies for growth in developing countries since the 1960s with, up until the 1990s, little impact in actual aid allocations [Easterly (2003)][5]. If foreign aid allocations were no more "selective" towards countries with good economic policies after the Burnside and Dollar findings, then the concerns raised by critics like Easterly are hardly compelling. However, there are reasons to believe that selectivity towards good policies has increased since 2000; if this is the case, then the discussion over the impact of foreign aid in a good policy environment becomes much more interesting and pertinent.

In this paper, I primarily look at aggregate aid flows from all donors, both bilateral and multilateral, that are members of the OECD DAC. However, I also look in

[4]Bunside and Dollar first released their findings in a 1997 working paper; these were particularly influencial inside the World Bank and the foreign aid establishment. The authors actually published their paper in 2000, at which time it made a larger impact in the media.

[5]Aid agencies are often criticized as being fragmented and inert: Too many recommendations are made for how to improve foreign aid, while other non-developmental criteria take precedent; as a result, progress is slow. Moreover, people have suggested that ideas are often lost in a sea of bureaucracy [Easterly, (2007)].

greater detail at specific bilateral commitments from four donors: the United States, the United Kingdom, Canada and the Netherlands. These countries were chosen for several reasons; first, together they represent a range of economic and political power, and differing attitudes towards foreign aid; second, all four have indicated, through speeches and publications, that aid allocations should be sensitive to the quality of policies in recipient countries; in fact, all four countries have invoked Burnside and Dollar's findings explicitly in foreign aid statements.

Though several other studies have already examined the issue of selectivity towards good policies, my contribution is different in several ways. First, I include data from 1984 up to as recently as 2005; most other studies either go only up to the 1990s or fail to compare recent years to as far back as the 1980s[6]. Second, I specifically look for a structural break in selectivity towards good policies after 2000, when Burnside and Dollar published their findings; as such, I single out a "Burnside-Dollar effect". Third, unlike many other papers that look at selectivity, I purposefully separate good economic policies [as defined by Burnside and Dollar (2000)] from institutions and democracy, and include several exogenous variables in the aid regression that are often left out in other studies.

The paper is organized in the following way: in the first part of the literature review, I consider a brief overview of previous studies which evaluate the aid-growth relationship, followed by a more in-depth description of "Aid, Policies and Growth" by Burnside and Dollar (2000). I then look at the fallout from this paper. In the second part of the literature review, I provide an overview of the factors that are believed to influence foreign aid allocations. Since I am looking at an aid equation

[6]It is desirable to include the 1980s for two reasons. First, there was a precipitous decline in global ODA-to-GDP from the end of the 1980s to the early 2000s, so the change throughout this entire period is something that should be included in the data set. Second, the end of the Cold War is often depicted as a time when foreign aid lost its "strategic" purpose and was able to be allocated on more developmental criteria. For these reasons, it is useful to look at the evolution of foreign aid flows from the 1980s to as recently as possible.

(and not a growth equation), this literature is of more direct significance to this study. Next, I describe the data, and a brief theoretical model which describes the potential effect of Burnside and Dollar's (2000) paper on actual foreign aid flows. This is followed a by results section, which describes the empirical exercise and results (tables with the actual results are included at the end of the document), and a conclusion. The Appendix includes a discussion of the differences, theoretically and empirically, between policies and institutions in the context of this study.

2 Literature Review

Generally, economists have mostly looked at foreign aid in one of two ways: many have explored the motives behind foreign aid allocation from the donor's perspective; others have looked at the effect that foreign aid has had on economic growth in recipient countries. Burnside and Dollar (2000) primarily focus on the latter of these two, so I begin by reviewing the literature on the aid-growth relationship.

It is this relationship which ultimately sparks any interest in selectivity towards good economics policies. If we are confident that foreign aid enhances economic growth, particularly in countries with good economic policies, then there is good reason to encourage more selectivity in this regard. However, if there appears to be no robust relationship here, then there might be less reason to do so, and even reason to discourage it.

2.1 Aid and Growth

The debate around the relationship between foreign aid and growth has been lively since the inception of foreign aid in the post-WW2 period. There are a number of cases in which foreign aid appears to have had a significantly positive impact on growth. The Marshall Plan is the most famous example; more recently, South Korea in the 1960s and 1970s, China in the 1980s, and Uganda and Vietnam in the 1990s are good examples [Dollar and Levin (2004)]. Also, several studies describe project-level evidence of a positive impact [Isham and Kaufmann (1995)]. However, there has also been what is often described as a "micro-macro paradox": although there have always been anecdotal examples of successful foreign aid projects, the overall picture (in aggregate) is not as promising. Many have pointed out that aid is "fungible" (see below), and that simply looking at a successful aid projects is hardly proof of aid effectiveness. Moreover, during the 1970s and 1980s several papers empirically tested the relationship between foreign aid and growth with mixed conclusions; among these were Griffin (1970), Chenery and Syrquin (1975), Mosley *et al* (1987) and Levy (1988).

Boone's findings (1994, 1996) were considered to be particularly significant because he addressed the issue of endogeneity in the aid term. As Burnside and Dollar note, "In the case of aid, it is very possible that the negative correlation between aid and growth reflects the endogenous response of aid donors to countries hit by unexpected shocks or crises...(also) all of the institutional quality variables are essentially subjective, and there is a danger of a "halo effect" in which fast-growing countries are rated to have good institutions...By using instrumental variables we hope to deal with this issue"(Burnside and Dollar, 2000, 14). Based on both OLS and IV regressions using data from 1970-90, they found that aid generally did not accompany increased investment or growth in recipients, but did accompany increased government consumption instead. This trend was also invariant to the type of political regime. He suggested that his findings reveal the "fungiblity" of aid - on average, some 40 percent of aid was

directed to investment projects in the recipient countries he looked at, so aid could only fail to raise investment above previous levels if it were, indeed, fungible and did crowd-out other forms of investment (Boone, 2006, 10). Boone's findings provided fairly clear evidence confirming the general dismay over the failures of various mutations in foreign aid philosophy since the 1960s[7]. He not only confirmed what people had already expected but further showed that this trend was true across all regimes, from the most liberal to the most repressive. This called into question the wisdom of the new emphasis in the 1990s on the importance of institutions for aid effectiveness[8].

Boone's findings were also consistent with some classic criticisms which questioned the theoretical foundations of foreign aid altogether.

First, the positive impact of foreign aid relies on two theoretical assumptions: capital market imperfections and a prohibitively high marginal propensity to consume (MPC) in the poorest countries (prohibitive for investment and growth)[9]. However, the capital market concern is highly debatable - international flows were growing yearly in the era from the 1970s to the 1990s. Moreover, the richest twenty percent of people in developing countries earned over fifty percent of the wealth in the late-1980s, so the impact of high MPC seems somewhat implausible [Boone (1996)]. As Boone points out succinctly, "Why does the high-income elite choose to invest in some countries

[7]In the 1960s and 1970s, foreign aid was largely focused on providing finance for physical inputs for industrial capital formation and infrastructure [Easterly (2007)]. The failure of many industrial projects was attributed to the insensitivity of foreign aid allocations to demand in recipient countries. As a result, there was a general change in emphasis towards the importance of incentives for the private sector, facilitation of free trade and elimination of price distortions. In addition, global debt and inflation crises in the 1970s induced a greater emphasis on the importance of macroeconomic stability in achieving economic progress for developing countries. In the culmination of these changes, structural adjustment lending was introduced by the IMF and World Bank in 1979-1980; this made loans to developing countries conditional on economic policies that were sensitive to these considerations. Due to the general failure that this strategy had in producing steady growth in recipients, the emphasis shifted again in the 1990s (albeit in not such a stark fashion) towards the importance in quality of institutions such as corruption control and democracy [Easterly (2007)].

[8]Since the early 1990s, democracy, civil liberties and property rights have been increasingly described as institutions that are important for aid effectiveness and growth.

[9]In their neoclassical outline, Burnside and Dollar (2000) assume imperfect capital markets.

while in others they don't?".

Another way that aid has been proposed to increase investment (and eventually growth) is through its indirect effect on fiscal policy [Barro (1991)]. Where a recipient country uses distortionary taxes to fund public spending, foreign aid can relieve this burden and leave more funds for investment in both the private and public sectors. However, Boone (1996) found that the impact of aid on investment was invariably insignificant across regime-types, failing to support Barro's theory. In fact, foreign aid can have a negative distortionary effect in itself - foreign aid bureaucracies in recipient countries (which often account for over 20 percent of annual GNP) draw skilled workers away from productive alternative employment. Moreover, some have argued that foreign aid can worsen the conditions in recipient countries by encouraging corruption and the concentration of power to a narrow political elite (rent capture) [Bauer (1971), Friedman (1958)].

Although their "Aid, Policies and Growth" paper was finally published in 2000, Burnside and Dollar first produced their findings in 1997. Thus, the implications of their findings were received in the same context as those suggested from Boone (1994, 1996).

2.2 Aid, Policies and Growth

In their influential paper, Burnside and Dollar attempted to synthesize the findings that economic policies affect growth in developing countries [Sachs and Warner (1995), Easterly and Rebelo (1993)] with the finding that foreign aid has not generally raised growth rates in poor countries [Boone (1994)]. To investigate this, the authors proposed a contingent relationship: foreign aid does produce economic growth in the

presence of "good" economic policies; on the other hand, it produces no positive growth in countries that have "bad" economic policies. To estimate the relationship, the authors used panel data from the World Bank for 56 aid-receiving countries. They averaged observations over four-years to produce six periods[10].

In their main equation, growth in a particular country is proposed to depend on several factors: real per capita GDP (y_{it}), aid-to-GDP received in the period (a_{it}), a policy index for the country (P_{it}), a vector of exogenous institutional variables (X_{it})[11] and an interactive aid*policy term ($a_{it} * P_{it}$). They also included total foreign aid (a_t) and average growth rate across all countries at t (g_t) to control for fixed effects (notably business cycles):

$$g_t = \beta_{go} + \beta_{gy} y_{it} + \beta_{ga} a_{it} + \beta_{gP} P_{it} + \beta_{gPa} a_{it} * P_{it} + \beta_{gX} X_{it} + \beta_a a_t + \beta_g g_t + \epsilon_{git} \quad (1)$$

The policy index for each country was made up of three variables: the first is a dummy variable created by Sachs and Warner (1995) to indicate "openness" (SW)[12]; the second is inflation to indicate monetary policy (INF) - this is based on Fisher (1993); the third is (budget surplus)-to-GDP to indicate of fiscal discipline (BS)

[10]The authors presumably base these intervals on Boone's (1996) explanation of eliminating business cycles and measurement error. However, Boone uses 5-year and decade averaged data.

[11]The exogenous institutions vector (X_{it}) consisted of an institutional quality index developed by Knack and Keefer (1995) that captures security of property rights and the government bureaucracy's efficiency, an ethnolinguistic fractionalization indicator developed by Easterly and Levine (1997), an assassinations variable to capture civil unrest, an interactive (assassinations)*(ethnolinguistic fractionalization) variable, M2-to-GDP lagged to proxy for financial depth (this is lagged to avoid endogeneity. An education variable [Barro and Lee (1993)] was also considered but was found to have little explanatory power and reduced the sample size significantly.), and finally regional dummy variables for sub-Saharan Africa and East Asia (these two variables are included to control for environmental effects.

[12]A closed economy, by this measure, is one where either 1) average tariffs on machinery and materials are above 40 percent 2) black market premium is above 20 percent or 3) the government controls key tradables 4) the economic system is "socialist" (as defined by Kornai (1992)) or 5) the state has a monopoly on major exports. A country that is not closed receives a score of 1

based on suggestions from Easterly and Rebelo (1993)[13]. The authors weighted these policies in the index according to their impact on growth: this was determined using OLS estimates from a growth regression equivalent to the growth equation above without all the aid regressors. Combining the constant, and the product of each policy variable with its respective cefficient, the policy index became:

$$P_{it} = 1.28 + 6.85(BS) - 1.4 * (INF) + 2.16 * (SW)$$

The main growth equation was also estimated treating aid as endogenous (see below).

Their main results would provide the influencial evidence on which the case for stronger "selectivity" would rely. In running the growth regression without the policy index they found the coefficient on aid-to-GDP to be insignificant (aid treated as either exogenous and endogenous yielded this result), reaffirming Boone's (1994, 1996) findings. When the policy index was included, in addition to the interactive term - $(a_{it} * P_{it})$ – the regression yielded a significant positive coefficient[14]. Moreover, by increasing the policy score by one standard deviation, the growth rate of the sample rose significantly. When outliers and middle income countries were excluded from the regression, the interactive $(a_{it} * P_{it})$ term was found to be positive and significant. These results, the authors suggested, confirm the robustness of the relationship.

While it is these main findings that appear to have made the largest impact in the World Bank's policy reports (and in the development community's discussions), this paper was also seminal in its look at the "selectivity" of foreign aid in the past. As their first stage regression (in treating aid as endogenous), Burnside and Dollar estimated an equation where a_{it} was the regressand; they included as regressors initial

[13]A government spending variable was also initially included but was later taken out. Since budget surplus tended to be more significant in the growth regression, they kept it.

[14]In the OLS regressions, these coefficients were significant. The 2SLS regression yielded similar signs and magnitudes on these terms, although they were not significant. The authors argue, based on other regressions in their analysis, that they do believe aid to be exogenous and that certain aspects of the 2SLS regression methodology produced these insignificant values.

income, population, several variables to capture strategic interest[15] and the policy index from the growth equation. Since all of these RHS variables were believed to be exogenous, this regression used simple OLS, yielding similar results as previous papers had: initial GDP and population produced significant coefficients (positive and negative); the dummy variable for Egypt produced a significantly positive coefficient which the authors attribute to its alliance with the USA; the policy term was found to be positive but insignificant. This suggests that donors did not, in general, reward good policies (as defined here) over the period from 1974-1993. The authors suggest that "this finding, combined with a separate finding that bilateral aid is strongly positively correlated with government consumption, may help explain why the impact of foreign aid on growth is not more broadly positive." (Burnside and Dollar, 2000, 32).

They also estimated a policy equation and included aid as a regressor to test the success of conditionality over the period[16] - they found that aid was not significant in the policy index for these countries, indicating that conditionality was unsuccessful in changing policies in these countries.

In concluding, Burnside and Dollar consider their results: "in the 1970-93 period ... foreign aid had no systematic impact on the economic policies that affect growth. However, where aid happened to coincide with good policies, it had a strong positive effect on growth. Otherwise, it seems to have been dissipated in unproductive government consumption. In allocating assistance, donors have not sufficiently exploited the relationship between good policies and effective aid, probably because donors are pursuing a range of interests that are not necessarily consistent. If they want to have a large impact on growth and poverty reduction, then they should place greater

[15]These included dummy variables for sub-Saharan Africa, the Franc Zone, Egypt and Central America, arms imports relative to total imports (lagged one period)

[16]Conditionality is an approach used in Structural Adjustment Programs (SAPs) initiated by the World Bank and IMF. The purpose is to improve the economic policies in aid and loan recipients by making these flows conditional on commitment to policy change. [IMF (2008a)]

weight on economic policies of recipients."(Burnside and Dollar, 2000, 4).

2.3 The Fallout

The easiest way to assess the impact of Burnside and Dollar (1997, 2000) is to examine some of the publications from development institutions and speeches given about foreign aid after the paper was released, and to consider testimonials from observers about the overall reception of its findings. By doing this, we can assess superficially whether or not a "Burnside-Dollar effect" is likely to exist.

In 1998, *Assessing Aid* was released by the World Bank. The report urged that foreign aid be dispersed based on the findings of Burnside, Dollar and Collier[17], highlighting that "financial aid works in a good policy environment" and "financial assistance must be targeted more effectively to low-income countries with sound economic management" (World Bank, 1998, 17). The section entitled "Defining Sound Management: Good Policies and Institutions" referred to the same index of economic policies that was used in Burnside and Dollar. The measure of institutional quality used includes rule of law, quality of public bureaucracy, and the pervasiveness of corruption. The report went on to describe all of the findings in Burnside and Dollar to buttress its assertion of the significance of sound policies in determining aid effectiveness. *Assessing Aid* also sited other studies, looking at South America and Africa, which defined bad policies as those which engender large fiscal deficits and high inflation (World Bank, 1998, 49). The report also suggested that "good" institutional environment (measured as described above) should be assessed by donors when deciding where to allocate foreign aid. For other criteria, like civil liberties, the report

[17]Collier and Dollar also produced findings that espoused the most "efficient" dispersion of foreign aid based on Burnside and Dollar's (2000) findings and "high-poverty" countries. See the Beyond the 1980s section of this paper for more

stressed the potential for foreign aid to act as a midwife for developing institutions. It also suggested that good policies "crowd-in" private investment. Overall, this report proposed that there have been many lessons learned over the course of the failed development techniques of the past, and that the positive relationship between good policies, aid and growth - for which it draws evidence almost entirely from Burnside and Dollar (1997) - is a stable one that should influence donors.

William Easterly, a renowned foreign aid critic, presents an extensive list of publications that mention (directly or indirectly) the relationship construed from Burnside and Dollar (2000). This list includes publications from the British Department of International Development [DFID (2000)], the Canadian International Development Agency [CIDA (2001)], *The Economist* (2002), *The New Yorker* (2002), *The Washington Post* (2002) and *The Financial Times* (2002).

Burnside and Dollar (2000) appears to have had a remarkable influence in the months surrounding the 2002 United Nations International Conference on Financing for Development in Monterrey. At the conference, World Bank President James Wolfensohn suggested that corruption, bad policies and weak governance make aid ineffective, and that donors have become better at directing aid to "good" countries. In addition, he proposed doubling aid flows to developing countries (Easterly, 2003, 5). President George W. Bush announced a fifty percent increase in foreign aid, noting that donors need to reward nations that have open markets and sustainable budget policies. Easterly suggests that prior to the conference "...there a was major debate about whether to increase foreign aid - and in particular about what the United States, with the lowest aid-to-GDP ratio of any rich country, should do. The Burnside and Dollar (2000) paper was often invoked, either explicitly or implicitly, in this debate." (Easterly, 2003, 4). Eventually, this conference amounted to the Monterrey Consensus, which included a commitment by all OECD countries to increase annual foreign aid

disbursements to 0.7 percent ODA-to-GDP[18].

There are also others who have emphasized the impact of Burnside and Dollar (2000). Guillamont and Chauvet, two economists who co-authored an influential paper that re-examined the Burnside and Dollar (2000) findings, echo this sentiment in suggesting that "the Millennium Challenge Account initiative launched by the US administration in 2002 is directly inspired from the debate on the selectivity criteria, and advocates that within the framework of the MCA, US aid increases should in priority be directed towards countries with sound economic policies."(Guillamont and Chauvet, 2001, 2). The MCA website mentions 16 indicators of country performance to be used for the guidance of foreign aid; three are measures of the Burnside and Dollar (2000) indicators [Unattributed (2002c)]. Shortly after the paper was published, Ian Vasquez of the CATO institute suggested that "The failure of past foreign aid programs has given rise to a new consensus on how to make foreign aid effective...Disbursing aid to countries that have good policies contrasts with the traditional practice of providing aid to countries irrespective of quality of their policies or providing aid to promote policy reforms." (Vasquez, 3, 2003). Economist Ross Levine describes his recollection of the impact: "It gave a reason for foreign aid and a strategy for giving it out...People grabbed this like I've never seen any other academic article grabbed before...it's nice to have evidence that suggests the money is linked to growth and hence the alleviation of poverty. Prior to the Burnside-Dollar finding, it was difficult to make that claim."(Eviatar, 2002, 4).

From the 2001 OECD DAC's Experts' Seminar on Aid Effectiveness, Selectivity, and Poor Performers, the general report suggested that there was "broad agreement that aid works better where government performance is better. The relevant measure of performance is generally agreed to include economic policies, other anti-poverty

[18]This was an substantial increase for most OECD countries. A handful (including the Netherlands) had already surpassed 0.7 percent ODA-to-GNP.

policies, and the quality of governance and institutional capacity, even though the early debate in the literature is based on measures of economic policy alone."(OECD, 2001,1). At the ensuing seminar in 2003, Mark McGillivray of WIDER[19] asserted that: "All agree with the fundamental thrust...that aid is effective in promoting growth and, by implication, poverty reduction...the well-known macro-micro paradox is dead and buried...there is acceptance among researchers that better policies, however defined, should in all probability result in more effective aid" (OECD, 2003, 10). McGillivray particularly sites Burnside and Dollar (2000) as significant in showing this relationship, asserting that on the basis of this finding donor countries face "increasing international pressure to base inter-country aid allocation on the perceived quality of recipient country policy regimes" (OECD, 2003, 12)[20].

In 2005, over one hundred officials representing multilateral aid organizations, donors and recipient countries (including all OECD countries) signed the Paris Declaration on Aid Effectiveness. The broad purpose of the declaration is to make aid more effective by "harmonization, alignment and managing aid for results with a set of monitorable actions and indicators"[OECD-DAC (2008c)]. The declaration includes twelve indicators of progress and several targets: one indicator is the "number of partner countries (recipients) that have procurement and public financial management systems that either (a) adhere to broadly accepted good practices or (b) have a reform program in place to achieve these"; the criteria for targets is to have half of partner countries move up at least one measure on the CPIA scale of performance and/or have one-third of partner countries move up at least one measure on the four-point scale (of the CPIA)[21]. At least four of the sixteen targets address directly the

[19]World Institute for Development Economics Research

[20]McGillivray also sites more factors and considerations in selectivity besides good policies. He nevertheless invests great confidence in the basic relationship.

[21]The Country Policy Institutional Assessment (CPIA) is an index, created by the World Bank, that evaluates policies and institutions in countries. Although the Bank does not release the scores, it provides the criteria for scoring which includes all three elements of the Burnside and Dollar (2000) policy index [World Bank (2004)].

goals of aligning aid with "broadly accepted good practices" (as measured by the CPIA) or "good public financial management systems"[OECD-DAC (2008c)].

Based on these examples, it seems as though Burnside and Dollar (2000) has provided for a new emphasis on "selectivity" in the foreign aid community and a marked change from the previous regime of influencing policies in developing countries through conditional loans. This trend is a welcome change in the eyes of those who have confidence in the conclusions drawn in the paper. However, others are critical of the movement. Some are critical of international development agencies in general; these people often argue that agencies are unrepresentative of the people in recipient countries, and that they give too much consideration to the interests of donor countries and international finance[22]. However, even among those who support the mandate of these agencies, there are critics that argue with the assumptions made in Burnside and Dollar (2000)[23]; moreover, several economists have retested the relationship between aid, policies and growth with different results[24].

[22]This is a gross oversimplification of that which has been called the "anti-globalization movement". However, I suspect that people from this camp will not be content with the basic premise of Burnside and Dollar's suggestions; countries with good policies are often more developed overall. By favoring these countries, agencies will be neglecting some of the more needy of developing countries.

[23]Some economists have questioned the theoretical and empirical connections of Burnside and Dollar's (2000) policy indicators to growth. For several theoretical criticisms of their model, see Easterly (2003, 2005). Many have disputed the role of openness in enhancing growth; see Rodrik and Rodriguez (2000), Rajan and Subramanian (2005) and Stiglitz (2004). In Fisher (1993), Easterly and Rebelo (1993) and Sachs and Warner (2005), the authors consistently mention caveats where these variables are necessary but not sufficient in producing modern economic growth and must be accompanied by other growth-enhancing institutions and good circumstances. As Easterly describes, "Although extremely bad policy can probably destroy any chance of growth, it does not follow that good macroeconomic or trade policy alone can create the conditions for high steady state growth" (Easterly, 3, 2003). The Sachs and Warner openness index consists of very similar components to those that make up Williamson's notorious "Washington Consensus" [see Easterly (2005), Williamson (1993)]; the Washington Consensus has been criticized as simplistic in its description of "good" policies for growth and is often associated with "neoliberalism".

[24]Several studies have failed to replicate Burnside and Dollar (2000)'s findings after altering the definition of aid (total ODA, etc), policies (trade-to-GDP ratio, standard deviation of inflation, black market premium, etc.) or growth (10-year averages, etc), or by including other RHS variables (Human Development Index, debt, secondary school enrollment, etc.); see Easterly (2003), Dalgaard and Hansen (2001), Hansen and Tarp (2000), Rajan and Subramanian (2005) and Lensink and White (2001). In Easterly, Levine and Roodman (2004), the authors used the same definitions and Burnside and Dollar (2000) but extended the data to 1997 and failed to produce a significant aid*policy term. Several others, while reproducing the interactive aid*policy significance, also emphasize the

For these reasons, it is interesting to investigate whether or not agencies, both bilateral and multilateral, have become more discerning towards recipient countries with good economic policies since Burnside and Dollar (2000). If they have, then discussion of the relationship between aid, policy and growth is especially worth-while. The evidence above suggests that this paper made a noticeable impact on aid agencies, at least superficially. What is left to be determined is whether these agencies have taken the advice of Burnside and Dollar (2000) one step further, beyond rheotic, by actually making aid allocations more sensitive to the policy index. If there is no noticable impact, then we might consider why agencies continually emphasize the importance of policies in their rhetoric without consideration in actual aid allocations. In order to assess this properly, it is best to first look at what previous papers have uncovered about which factors are considered by donors when making aid allocation decisions.

2.4 Explaining Foreign Aid

Among the first economists to study empirically the motives behind foreign aid (from the donor's perspective) were McKinley and Little (1979) and Maizels and Nissanke (1984). These authors focused on bilateral aid, attempting to measure whether recipient needs (R-N) or donor interests (D-I) were key factors motivating aid flows. As measures of donor interests, they included proxies for military importance and former colonies. To measure needs, they included quality of life indicators and income per capita. Maizels and Nissanke (1984) found that multilateral aid fitted fairly well with an R-N model, while bilateral aid fitted better with a D-I model. Both studies

importance of selectivity towards other criteria (poorest countries, export price shocks, economic vulnerability, post-conflict, etc); see Collier and Dollar (2001), Collier and Dehn (2001), Guillamont and Chauvet (2001), and Collier and Hoeffler (2004). Finally, Roodman (2007) attempted to reconcile this variety by including all these variables and testing the relationships across everything. He found that the regressions failed to produce a significant aid*policy term in over half of the cases.

broadly concluded that aid flows primarily reflected donor's interest rather than recipient needs. Between countries, they found that the United States was primarily motivated by military and strategic factors, whereas France and Britain focused aid to former colonies. Overall, all major donors focused chiefly on non-humanitarian interests. Frey and Schneider (1986) and Trumball and Wall (1994) produced findings that suggested similar conclusions: political/strategic interests were generally more significant than humanitarian or economic interests.

These models are a good starting point, but for a few reasons they are problematic. By estimating R-N and D-I models separately, both will be biased if variables from both R-N and D-I are significant (correlation across equations and omitted variable bias). Since most studies have found that aid can be explained by both R-N and D-I variables, a good way to address this concern is to put both R-N and D-I measures into a single model (McGillivray, 2003). In addition, these two categories (R-N and D-I) are likely too broad and vague to envelop some more ambiguous factors that are significant in the aid equation (e.g. cultural similarity). A more recent econometric study by Schraeder, Hook and Taylor (1998) (which addresses these concerns) explored foreign aid from major donors to Africa over the 1980s. The authors proposed several foreign aid philosophies that donors have traditionally been found to subscribe to: a *realist* paradigm - chiefly driven by political and strategic interests, an *idealist* paradigm - considerate of humanitarian goals and provision of basic needs in recipient countries, and an *historical*-type paradigm - driven by the maintenance of former-colonial relations. Using pooled cross-sectional data they included six categories of "motivations" in a single regression: strategic importance, economic potential, humanitarian needs, cultural similarity, ideological stance and regional dummies variables[25]. Overall, the authors found that most donors were mo-

[25]Here, strategic importance variables include dummy for security alliance between the donor and recipient, military spending as a percentage of GNP in the recipient country, and percentage of the recipient's population in the military; economic potential variables include the recipient country's GNP per capita and imports from the donor (as percentage of total imports); humanitarian needs

tivated by a variety of the factors: humanitarianism was not a chief consideration for any of the donors, while ideological similarity[26] and trade considerations proved remarkably significant across the board. Political motivations were not particularly strong in some countries but strong in others, and GNP per capita generally showed a negative relationship with foreign aid over the period.

Others have attempted to construe political economy models for foreign aid allocation. In one of the first papers to do so, Dudley and Montmarquette (1976) constructed a model in which aid is consumed indirectly by citizens in the donor country, and supply of foreign aid is explained by this indirect demand; that is, supply is ultimately determined by citizens in the donor country. The authors made note of several factors that they considered significant in this relationship, including strategic interests, colonial history, and the "small country effect" where donors tend to give more aid per capita to small countries. They suggested that demand for foreign aid is determined by the expected utility gained by the donors as a result of the aid. This utility can be the result of favorable political or economic ties with the aid recipient, or a perceived improvement in the quality of life in the recipient country. In their model, GNP and population in the recipient country are considered primary variables in the aid equation. Auxiliary variables included political ties (dummies for former colonies), economic ties (lagged exports from donor to recipient) and a "bandwagon effect"(total ODA from other OECD countries). Based on OLS regressions using gross ODA commitments[27] in 1970 from fifteen OECD donors, the authors found

variables include average life expectancy and daily caloric intake in the recipient country; cultural similarity consists of dummy variables for former-colonies; ideological stances are self-proclaimed: African-Marxist, African-Socialist, or African-Capitalist. Regional variables consist of dummy variables for North Africa, East Africa, Southern Africa, Central Africa, and West Africa.

[26]The significance of this factor could explain the finding by several studies that aid is selective towards "open" countries by the Sachs and Warner index. Since this index defines "socialist" countries as closed, many OECD donors likely allocated aid to open countries on these grounds alone.

[27]The authors argue that commitments provide a better proxy for aid demand than disbursements which are more likely to represent the results of a compromise between the aid demand of recipient countries and the aid supply of donor countries (Dudley and Montmarquette, 8, 1976).

that economic and political ties were significant, whereas the bandwagon effect was less so[28]. This is an interesting model, but it neglects the importance of the donor country government in the foreign aid process; while it is true that all OECD donor countries are democracies, it is reasonable to speculate that information failure, interest groups and government agendas all affect the end result of aid allocations. In reality, it is probably true that the supply of foreign aid is not solely determined by the indirect demand of citizens in the donor country.

Mosley (1986) provided a model in which demand and supply dually determine the quantity of foreign aid. Based on past studies and surveys of citizens in OECD countries, he proposed the following demand equation: considering desired quantity of aid by donor country i in year t ($a'_{i,t}$), level of per capita income in country i in year t relative to the average of other OECD countries $[(\frac{Y_i}{Y_w})_t]$ and an index of aid quality from country i in year t ($Q_{i,t}$)[29], then:

$$a'_{i,t} = \beta_o + \beta_1[(\frac{Y_i}{Y_w})_t] + \beta_2 Q_{i,t} \tag{2}$$

The supply function of foreign aid was as follows: considering supply of foreign aid at t from country i ($a_{i,t}$), the unemployment rate in i at t ($u_{i,t}$), budget deficit in i at t ($b_{i,t}$), the sum of allocations from all other donors in $t-1$ [$A_{w,t-1}$], then:

$$a_{i,t} = \beta_3 a_{i,t-1} + \beta_4 u_{i,t} + \beta_5 b_{i,t} + \beta_6 A_{w,t-1} + \beta_7(a'_{i,t-1} - a_{i,t-1}) \tag{3}$$

By substitution, Mosley rearranged these into a single equation:

$$a_{i,t} = \beta_c + \beta_4 u_{i,t} + \beta_5 b_{i,t} + \beta_6 A_{w,t-1} + \beta_{10} a_{i,t-1} + \beta_8[(\frac{Y_i}{Y_w})_{t-1}] + \beta_9 Q_{i,t-1} \tag{4}$$

In this last equation, a significant β_9 finding reflects two things: that demand is responsive to aid quality in the donor country and that the government is responsive

[28]The authors suggest that the negative bias of aid with respect to population is due to specification error. When all of these variables are included, this bias disappears.

[29]Mosley proposes the following effectiveness index: value of aid quality ($Q_{i,t}$) = [(proportion of aid given to Least Developed Countries) + (proportion donated to agricultural and social infrastructure) + (proportion of aid that is untied) + (grant element)]/4

to this change in public demand. Based on OLS regressions using data from nine OECD countries from 1961-1979, Mosley found that aid in the previous period (β_{10}), aid from other donors in the previous period (β_6), and relative income level of the donor country (β_8) were all consistently significant while the "state of the economy" variables (β_4, β_5) were not. As for the lagged aid effectiveness index (β_9), the results were mixed: the Netherlands, Norway, US and UK all showed responsive signs to aid quality (by increasing aid quantity); in Sweden, Canada, France and West Germany, the response was insignificant or negative. The author found evidence, however, that in some of these cases governments changed quality of aid ($Q_{i,t}$) rather than quantity. In concluding, Mosley suggested that the common perception - that governments do not respond to public pressure by altering the pattern of aid but rather by trying to persuade the electorate to accept the pattern that they intend to adopt - was found to be observable in some cases, but that this exists together with other patterns in which governments responded to pressure from citizens by changing quantity and/or quality.

While Mosley's (1986) aid effectiveness index does not consider the role of the recipient governments in enhancing (or reducing) aid effectiveness, it is easy to see how this consideration could be included. Specifically, if a "quality of recipient government economic policies" component were included in the index, then this model provides for a manner in which such criteria could affect the distribution of foreign aid. If voters believe that the quality of economic policies in recipient countries is important doe aid effectiveness, they will want more aid that is considerate of recipient policies, and the government will respond to these demands. I do include this to explain selectivity towards good policies in the Model section of this paper.

Overall, however, most of the studies done in the 1970s and 1980s concluded that donor country interests - political, economic or strategic - rather than humanitarian concerns provided explanation for foreign aid allocations (McGillivray, 2003, 4);

many attributed this to the role that aid (and developing countries in general) had in the Cold War. Moreover, while in the 1980s donors began to recognize the role that recipient country governments had in maximizing aid effectiveness (as reflected in Structural Adjustment Programs), there was little mention in economic analysis of guiding foreign aid towards countries with good economic policies and institutions.

2.5 Beyond the 1980s: the Birth of Selectivity

Since the 1980s (or even since the 1960s) aid agencies have identified problem areas in aid allocation and emphasized more and more the need to make foreign aid more selective towards developmental criteria (Easterly, 2007, 2). McGillivray suggests that, "A simple inspection of aid statistics (since the 1980s) reveals a slight upward trend, over recent years, in shares of total and DAC ODA going to the least developed, low income and sub-Saharan Africa countries. Although weak evidence, this is consistent with the merging view that since the end of the Cold War there has been a shift in allocative behavior, away from non-developmental criteria." (McGillivray, 2003, 7). Burnside and Dollar (2000) were among the first economists to test (in addition to providing an empirical argument) for increased selectivity. As mentioned earlier, the OLS aid-regression that they ran yielded a positive but insignificant coefficient on the policy index, suggesting that donors did not, in general, reward good policies over the period from 1974-1993. Overall, the authors suggested that their findings, where overall aid was not selective over this period, could help to explain the failure of foreign aid had in facilitating widespread growth in recipient countries over this period.

In another very significant paper, Collier and Dollar (2001) reaffirmed the positive relationship between aid, policies and growth proposed by Burnside and Dollar and

brought poverty reduction into the scenario[30]. Based on the three-way relationship where foreign aid (in a good policy environment) enhances growth and growth reduces poverty, Collier and Dollar established the "poverty efficient" allocation of worldwide foreign aid and compared it with the actual distribution in 1996. They found that the actual distribution, which lifted around 16 million people out of poverty per year, was not optimally allocated (based on the goal of poverty reduction). Rather, if this amount of worldwide ODA were redistributed to meet the poverty-efficient allocation, the impact would have been approximately doubled to 30 million per year lifted out of poverty[31].

Together, these papers have had a significant impact on the policy discussion within international development institutions. Important releases by the World Bank [*Assessing Aid* (1998)] and the OECD-DAC [Experts' Seminars (2001,2003), Paris Declaration (2005)] have made explicit reference to their findings and guidance. At the bilateral level, surveys conducted by the DFID have found that donors are giving increased emphasis to selectivity as defined by Collier and Dollar and beyond[32]; the UK, the Netherlands and the United States (through the Millennium Challenge Account) scored particularly high. At the multilateral level, the IDA and ADF determine aid allocations using "enhanced performance-based allocation frameworks" with input from the Burnside-Dollar-Collier relationships (McGillivray, 2003,9).

Again, my primary interest for this paper is to analyze the extent to which donor

[30]Rather than using the same variables from Burnside and Dollar (2000), these authors used the World Bank's CPIA index over the period from 1974-1997

[31]In the efficient allocation, aid should increase with a higher level of policy for a fixed level of poverty; in the actual allocation, aid had a negative correlation with policy (controlling for poverty).

[32]Governance, program implementation and absorptive capacity are other considerations mentioned here. In addition, as more findings have emerged, the OECD has also pointed to the need for selectivity towards other factors like post-conflict areas and to countries that have endured trade shocks; there is a noticeable expansion of priorities even in the span of two years in OECD documents [Experts' Seminars (2001, 2003)]. In addition, since the 1980s there has been emphasis on the need to coordinate donors, decrease the proportion of tied aid, food aid and technical assistance [Easterly (2007)].

countries have augmented consideration for good *policies* [as defined by Burnside and Dollar (2000)] since the 1980s and 2000. Consideration for *poverty* criteria is certainly something that should be greatly encouraged and studied as well, but this would require another paper altogether. I also want to point out that I am looking at *policies* as distinct from *institutions*. Although economists often blur the line between the two - as we see with Collier and Dollar's (2001) use of the CPIA (which measures both policies *and* institutions) - I will try to distinguish between the concepts as much as possible for several reasons. First, Burnside and Dollar (2000) endorsed, and provided evidence for, *policy* selectivity in particular, so the extent to which there is a "Burnside-Dollar effect" should be most accurately measured using policies. Second, there is evidence that the difference between the two, as far a growth is concerned, is significant [Easterly (2005)]. Third, the difference is significant from the political economy side of the issue: good policies are likely more controversial than good institutions. Based on these second and third points, I expect that selectivity towards institutions will be stronger than selectivity towards policies; however, if Burnside and Dollar (2000) had as much of an impact on actual aid flows as it appears to have had in the foreign aid discussion after 1997, then we should expect there to be a "Burnside-Dollar effect" where selectivity towards *policies* has been stronger than that towards *institutions*. For more details about the institutions-policies distinction, refer to the Appendix.

There are several other more recent papers that examine selectivity towards policies, institutions and poverty that are worth mentioning for this analysis.

Dollar and Alesina (2000) looked at bilateral aid flows from twelve donors over five-year periods from 1970-74 to 1990-94. Like some previous papers, they assessed how allocations relate to various indicators like strategic interest, recipient country poverty, institutions and economic policies. As regressors, they included trade open-

ness [Sachs and Warner (1995)], democracy (Freedom House), civil liberties (Freedom House), rule of law (Political Risk Services), colonial status (number of years in 20th century a recipient was a colony), FDI-to-GNP, real (PPP) per capita income, population, a "UN Friend" variable, and dummies for religion (Muslim, Roman Catholic, Other), Egypt and Israel. Initially, the authors considered all these variables to be exogenous. Using aggregate aid, their OLS regression yielded significant coefficients on income per capita and population [both of these entered in as linear (positive relationship) and quadratic (negative relationship)], openness, democracy, colonial past, Japan UN friend, Egypt and Israel (these last two were interpreted as capturing the "United States friend" component). All the rest of the UN friend variables and religion variables were insignificant. Interestingly, when civil liberties and rule of law were included, the former was found to be insignificant while the latter significant, and the importance of democracy dropped out[33].

When countries were looked at individually by Dollar and Alesina, there was some variability among donors. With respect to the countries looked at in this analysis (United States, United Kingdom, the Netherlands and Canada), some interesting patterns emerged $vis-a-vis$ policies and institutions. In the Netherlands, the paper revealed a strong negative relationship between foreign aid and income; this is not surprising given the Dutch reputation for humanitarianism (*idealistic* paradigm). Canada and the United Kingdom also had negative coefficients on income variables, but they were not as strong. With respect to openness, the U.S. and the U.K. both revealed strong positive correlations with aid (t-statistics above 2.4), and the Netherlands also produced a significantly positive coefficient. Canada yielded a positive, but

[33] Although these results are somewhat promising, the authors provided a word of caution regarding the relative importance of these variables. The former colony and strategic interests variables were much more significant than the openness and democracy/rule of law variables. As they put it rather starkly, "An inefficient, economically closed, mismanaged non-democratic former colony (that is) politically friendly to its former colonizer, received more foreign aid than another country with similar level of poverty, a superior policy stance, but without a past as a colony." (Dollar and Alesina, 2000, 1).

insignificant coefficient. For democracy, there were strong coefficients from all these countries. Strategic interests (U.N. friend and former colony) were significant for all countries (where they applied), especially the larger donors (U.S., U.K.). The Egypt and Israel dummies were remarkably strong for U.S. aid. The authors concluded that the "allocations of bilateral aid across recipient countries provides evidence as to why it is not more effective at promoting growth and poverty reduction. Factors such as colonial past and voting patterns in the United Nations explain more of the distribution of aid than the political institutions or economic policies of recipients." (Dollar and Alesina, 2000, 23)[34].

Birdsall *et al* (2002) investigated selectivity towards good policies of net transfers to 37 Sub-Saharan African countries from 1978 to 1998. The authors used the CPIA as an index for policies and institutions; for robustness, they considered the same policy index as Burnside and Dollar (2000). Overall, their findings confirmed that policies mattered little in determining aid transfers over the period. They attributed this to debt cycles: for highly indebted countries, aid was negatively associated with policies over the period, whereas in low debt countries there was some selectivity towards good policies. In general, transfers to countries with good policies were overwhelmingly foregone to supply indebted countries instead. McGillivray (2003) suggested that the apparent shift towards developmental criteria since the 1980s might be overstated; this is partly because donors were, in fact, selective towards poorer countries during the Cold War[35], and partly because in most instances, non-developmental criteria (like strategic interest) remain a high priority after the Cold War: "One should note the results of studies which have tested for specific relationships in the allocation of aid. Based on these studies, there is mixed evidence regarding whether donors

[34]To test whether aid fosters democracy and openness, the authors looked at episodes where aid increased by at least a standard deviation inside a 3-year period. For both variables, there was no systematic positive relationship here (and even a slight negative one). Moreover, they found that there was no strong tendency for economic liberalizers to be boosted (with aid).

[35]He makes note of econometric flaws in earlier papers to explain this oversight.

reward countries for their observance of civil and political liberties or for having low levels of corruption, some evidence of a bias in per capita aid against larger countries, no evidence that donors base allocation decisions on trade shocks, little evidence that the qualities of recipient policies matter for the allocation among African countries, and evidence that donors have responded appropriately to post-conflict situations in the allocation of aid among countries." (McGillivray, 2003, 21)

Dollar and Levin (2004) examined the selectivity of foreign aid using two indexes inspired by the Collier and Dollar "poverty efficient" allocations. The first is a policy selectivity index measuring the extent to which donors target countries with sound policies and institutions. For this index, the authors used the CPIA[36]. The second is a poverty selectivity index measuring the extent to which donors target poor countries. For this index, the authors used the logarithm of per capita GDP. They looked at foreign aid flows from 40 bilateral and multilateral institutions across all developing countries from 1999-2002. As regressors in their OLS regression, they included population, per capita GDP, and the CPIA index (all logarithms). While they acknowledged that many studies include other exogenous variables, Dollar and Levin suggest that looking at the coefficients across donors on the policy/poverty index indicates their relative selectivity (that is; omitted variable bias is not a problem). From their results, multilateral assistance showed a stronger relationship with the CPIA index (significant elasticity of 2.25) than did bilateral assistance (insignificant elasticity of about 0.6). For overall aid, the policy index was significant over all four years and increasingly so with each year.

Among the bilateral donors that Dollar and Levin (2004) considered, the Netherlands and the U.K. were the most selective based on the policy index, while U.S.

[36] As growth-enhancing institutions, the authors offer such examples as property rights, legal rules, and a well-functioning civil service. For corresponding policies that enhance growth, they point to macroeconomic stability and relatively open trade regime as policies that are conducive to growth and investment. (Dollar and Levin, 2004, 6).

was least so; Canada was in the middle of the pack. As for the poverty index (GNP per capita), the multilateral programs again showed the strongest selectivity. The most-selective bilateral donors were the Netherlands and the U.K.; the U.S was the least sensitive to this criteria[37]. Finally, the authors divided periods into three six-year intervals from 1984-89 to 1995-99 in order to see if the selectivity of aid had changed over the years. They ran these regressions with GDP per capita, rule of law and democracy indexes, population and included dummy variables to indicate the different time periods. The authors found that both bilateral and multilateral aid showed no significant relationship with institutional quality during the 1980s, whereas both types had a significant positive relationship by 1995-99 (although multilateral showed a stronger one). Although Dollar and Levin did not look at this explicitly, we can compare selectivity based on the CPIA over two time periods - 1995-1999 and 1999-2002 - based on thier output. This should indicate some idea of whether or not a "Burnside-Dollar effect" exists (recall that Burnside and Dollar first published their results in 1997, so assuming it took some time for this to have an impact on aid flows, we might expect that selectivity towards "good" policies was stronger from 1999-2002 than from 1995-1999). In looking here, we notice that the policy elasticity of total aid increased (0.9 to 1.5) over the two periods; interestingly the bilateral elasticity actually declined. For bilateral donors, this goes against our hypothesis based on the "Burnside-Dollar effect"[38].

Burnside and Dollar (2004) also looked at the increasing selectivity of aid towards good institutions from the 1980s to the 1990s. The authors regressed the annual average net aid receipts of each recipient in the 1980s on per capita income (and

[37]As an alternative, the authors looked at the ICRG rule of law index and the Freedom House democracy index over the period from 1995 to 1999 and compared these results with CPIA results over the same period. In general, the results were similar. Using the Freedom House measure, overall bilateral donors did, however, improve (becoming significant) compared to the CPIA index. The best performers here were Netherlands, United Kingdom and Canada.

[38]However, we might not read too much into this since, as mentioned above, the specific effect that I am exploring is the change in selectivity towards good *policies*, whereas the CPIA is considered to be a measure of policies *and* institutions.

squared), population (and squared), and the averages of the ICRG rule of law index and the Freedom House democracy index. Using aggregate ODA across all donors, they found that the relationship between aid and institutional quality was stronger in the 1990s than in the 1980s. Whereas aid showed no significant relationship with democracy and even an slight negative relationship with rule of law in the 1980s, in the 1990s these relationship improved to a significant positive one for democracy and an insignificant but positive one for rule of law.

Easterly (2007) looked at selectivity towards good policies and institutions (separately) going back to the 1960s. He suggests, based on historical waves in development theory and the attitudes in development banks, that a shift in selectivity towards countries with good economic policies should have taken place in the 1980s, whereas an increased selectivity for better institutions should be have occurred in the 1990s[39]. He ran regressions using data from 1960 to 2003, again with total ODA as the dependent variable, including as RHS variables population and per capita income; he ran separate regressions: one with the Sachs-Warner openness index and another with a dummy for inflation over 40 percent to proxy for policies. He found that the openness indicator was never significant, whereas the inflation dummy variable was significant overall but showed no marked change after 1980. In testing for the significance of institutions, Easterly used the Polity IV index of democracy and data on corruption from the ICRG (only available since 1984). In general, Easterly found that aid did respond positively to democracy and negatively to corruption, but no more so after the Cold War[40].

[39]Easterly sites the introduction of the World Bank's KKZ index of "good governance" in the 1990s as evidence of the increased awareness of institutions.

[40]For robustness, he tested aid allocations over this period from the five major donors (this includes IDA, US, UK, France and Japan) using 5-year averages again with period dummies. Based on these regressions, the UK and Japan tended to be responsive to openness (although not more so after 1980) while the other countries generally did not. As for the inflation variable, while the tendency towards selectivity was sporadic in all cases, the post-1980 variable was significant for the UK. Using bilateral aid from the five largest donors and alterations in the definition of democracy, there did tend to be a sensitivity - both in generally and particularly after 1990 - in the UK. Overall, however, these trends could not be generalized for all donors and all forms of aid. Easterly also tested selectivity

As I mentioned earlier, selectivity is particularly interesting in contrast to the Structural Adjustment Loans (SALs) which began in the 1980s. SALs have been unpopular for several reasons. They have been criticized, *prima facie*, for their constraining effect on recipient country governments. In practice, they have generally failed to generate long-run economic growth, especially in South America and sub-Saharan Africa; moreover, they have been perceived to exacerbate debt crises [Sachs (2002)]. In truth, these conditions had little success in actually changing the macroeconomic policies of recipient government and donor countries typically approved the loans regardless of this [Dollar and Svenson (2000), Easterly (2005), Przeworski and Vreeland (2000)]. Burnside and Dollar (2000) concluded that there was no systematic effect of aid on policies from 1973-1993 (i.e. the conditions that accompanied aid over this period were not actually met). Some have suggested that there is little true difference between selectivity towards good policies and conditionality on improving policies: "The new selectivity is supposed to be about rewarding countries that reform on their own, in contrast to structural adjustment that is now alleged to have imposed reforms on countries. In both cases, aid and concessional loans are selectively available to countries that meet conditions, so if any practical difference exists, it is extremely subtle" (Easterly, 2007, 25). Despite this argument, the wisdom behind selectivity can be supported by empirical evidence [Burnside and Dollar (2000)]; moreover, if the donor community has maintained faith in the ability of these policies (from SALs) to facilitate stable growth, then selectivity provides a way to avoid the problem conditionality has had in actually improving policies (since with selectivity, the policies are already in place). For these reasons, and if the statements from aid agencies are more than just rhetoric, I expect that the selectivity of foreign

towards poverty (GDP per capita) and several other factors. With respect to poverty (GDP per capita) from 1960 to 2003, he found the coefficient on a time trend to be significant (indicating improvement in selectivity towards the poorest countries), but he further found that this change was largely attributable to a general policy shift in the development field during the mid-1970s. Interestingly, he found no evidence for any significant change when the Cold War ended.

aid towards "good" policies has increased since Burnside and Dollar (2000).

I am also interested in looking for any changes in selectivity that occured after the Cold War. Based on Burnside and Dollar (2004) we should expect that selectivity increased after 1990 towards democratic and rule of law indicators; moreover, McGillivray (2003) suggests the same pattern for good policies and insitutions. However, Easterly (2007) generally failed to find any change here. These inconsistencies could be due to the different choices for indicators and RHS variables that these authors made. I attempt to reconcile these differences by including separate indicators for good policies, institutions and democracy, as well as various combinations of exogenous RHS variables.

3 Data

I look at the period from 1984-2005. I begin in 1984 partly because of data limitations. Since my aim is to look at changes since the Cold War and since Burnside and Dollar (2000), covering some of the 1980s and all of the period since its conclusion is a sufficient time span.

I am concerned with both total aid flows (bilateral and multilateral together) and the bilateral flows from a few donors specifically: United States, United Kingdom, Canada and the Netherlands.

The United States is of particular interest because it is the highest gross donor of bilateral ODA in the OECD (and the world). Moreover, this country is often considered to have the prototype of a foreign aid program driven by geopolitical/strategic interests (the *realist* paradigm), especially during the Cold War [Schraeder, Hook and

Taylor (1998)]. For these reasons, the extent to which the "Burnside-Dollar effect" has replaced the influence of strategic interests in the US aid equation might drive this replacement in aggregate flows from all donors. The World Bank's recommendations in *Assessing Aid* (1998) appear to have had considerable influence in US foreign aid policy, as depicted by the launching of the Millennium Challenge Account (MCA) in 2002.

The United Kingdom is of interest for several reasons. For one, this country has a significant imperial legacy which has made it a leading representative of the *historical*-type approach to foreign aid (where former colonies and legacy strongly influence aid commitments) [Schraeder, Hook and Taylor (1998)]; the extent to which selectivity towards good policies has taken influence away from these considerations can, in part, be measured based on bilateral commitments from the UK. Beyond this, the the UK's development program is often considered to be amongst the best of the OECD (especially since 2000) [41] and has made specific reference to Burnside and Dollar in calling for aid to be directed towards countries with good policies [DFID (2000)].

The Netherlands is considered to be, along with the UK, among the top development programs in the OECD and has shown endorsement for allocating aid towards countries with good economic policies[42]. At the same time, the Netherlands is distinct

[41] There are several instances where the UK's development program has been recognized for its recognition of developmental criteria. The Easterly (2007) index of foreign aid programs found the UK to be the best of all bilateral donors; Dollar and Levin (2004) found the country to be among the most selective based on policy and poverty; at the DAC's Experts' Seminar on Effectiveness in 2003, the UK was singled out as a country which is particular responsive to selectivity when it was one of two countries (the other being the Netherlands) that made a presentation in the conference [OECD (2003)]; finally, a White Paper from the British Department of International Development (2000) invoked the findings of Burnside and Dollar in arguing that aid can contribute to poverty reduction in countries that pursue sound policies (Easterly, 2005, 3).

[42] The Netherlands has been recognized for its commitment to developmental criteria. Based on the Roodman index (2006), which rates aid programs (multilateral and bilateral) based on an overall effectiveness, the Netherlands has been evaluated as the best bilateral program since 2005; as mentioned above, the country made a specific contribution at the DAC's Experts' Seminar on Effectiveness in 2003.

from the UK in its "traditional" grouping: this country has typically been considered in the group of altruistic/*idealistic* donors (with the Nordic countries and Denmark) [Schraeder, Hook and Taylor (1998)][43].

Finally, Canada does not fit comfortably into any of these "traditional" categories, and can be considered a representative member of the OECD; like most other OECD countries, this country has committed to the Millennium Development Goals and the Paris Declaration. One top of this, though, the CIDA (Canadian International Development Agency) mentions explicitly of the relationship between effective ODA and sound economic policies in recipient countries[44].

Together, the four countries I look at span all "traditional" categories [Schraeder, Hook and Taylor (1998)] and include a more representative country too, so it will be interesting to see if selectivity towards good policies has gained influence in any (or all) of these countries. Each country mimic the global trend of increased ODA-to-GDP since 2000 (Figure 2)[45]; moreover, all four of these countries have, since 2000, described [often with specific reference to Burnside and Dollar] the importance of economic policies in recipient countries for enhancing aid effectiveness. What I intend to examine from these flows and total aggregate flows is the depth of Burnside and Dollar's (2000) influence; that is, the extent to which the endorsement of selectivity towards good policies extends beyond rhetoric to actual ODA commitments

[43]The Scandinavian countries, Denmark and Sweden have led the OECD since the 1970s in foreign aid commitments (measured as ODA-to-GNP); moreover, these countries have typically been found to consider poverty and need more than strategic and historical interests in their allocations.

[44]The CIDA's "Policy Statement on Strengthening Aid Effectiveness" (2001) mentions specifically *Assessing Aid* (1998) as "compelling evidence that good governance and sound policy environment are the most important determinants of aid effectiveness and the development process" (CIDA, 2001). In 2005, the Canadian Prime Minister made a commitment to increase foreign aid by 8 percent a year over multiple years and announced a 5-year 3.4 billion dollar increase in foreign aid and debt relief over five years.

[45]In the US, UK, and Canada, ODA-to-GDP was higher from 2000-2005 than from 1995-2000. In the Netherlands, the level was fairly steady throughout this time, but this country's commitments are among the highest in the world and it is considered a leading proponent of increasing global ODA.

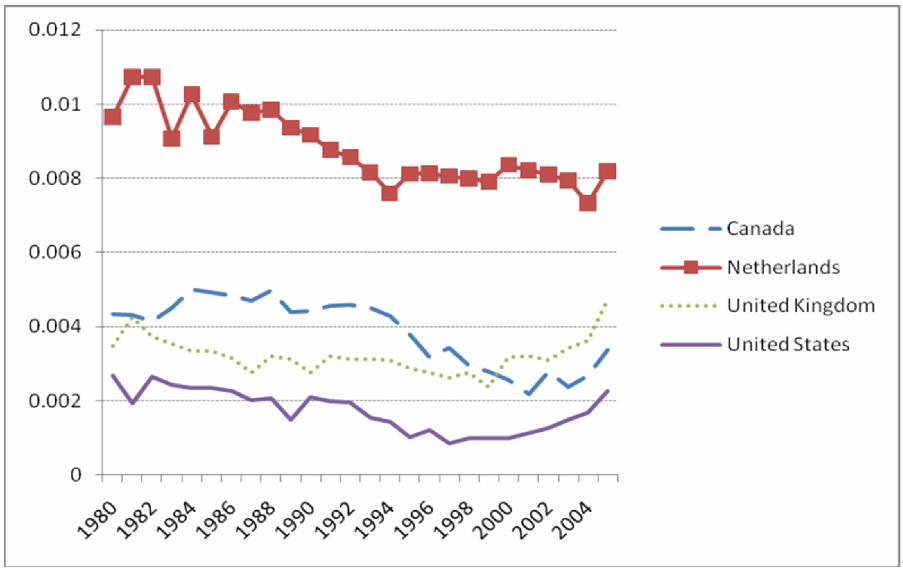

Figure 2: Official Development Assistance as Percentage GDP from 1980 to 2005

and disbursements. The foreign aid establishment (the World Bank and IMF) has emphasized the importance of economic policies and institutions for growth in developing countries since the 1960s [Easterly (2007)]. However, from the 1960s to the 1990s there has been little or no perceptible change in selectivity based on these criteria [Dollar and Alesina (2000)]. In this regression analysis, my primary aim is to assess whether or not this has changed since 2000. I will also retest for any changes since 1990, when the Cold War ended. Previous studies have found mixed results here.

I have tried to include data that make the results from this analysis as broad as possible. Moreover, in consideration of previous studies and some criticisms, I use definitions that, in my view, most appropriately and fairly capture the phenomena of interest. I also make a point of separating policies, institutions and democracy indicators; while some studies include these in a single index, there are also reasons to believe they indicate distinct phenomena. For descriptions of the data sources, definitions, and summaries of all the variables used, refer to Tables 1 and 3 in the Appendix.

AID: I use the ratio Official Development Assistance (ODA) to GDP as a measure of foreign aid. Some studies use the logarithm of ODA instead, but since this analysis is concerned with controlling for the size of different economies, ODA-to-GNP is decidedly a better measure to use[46]. The issue of whether to use commitments or disbursements is not a trivial one. Most studies I looked at use disbursements, although some argued that commitments are a better measure of intentions in the donor country [Dudley and Montmarquette (1976)]. Since I am looking for the "true" impact of policies, I use disbursements (in constant 2005 U.S dollars) for total ODA

[46]I did run the regressions with the logarithm of ODA as the regressand and report the results from one of these (regression 17) in the Appendix. With respect to policy and institutional indicators, there is little difference in the conclusions that would be drawn from using one over the other. However, some coefficients on other variables do change. The most noticeable example here is population. When the logarithm of ODA was used, the coefficient on population was usually positive and significant, whereas when ODA-to-GNP was used the sign was negative, indicating the noted "small country bias".

over the period. For this study, I tried to discriminate as little as possible between recipients by including all countries for which there is dependable data over the period; for some countries, definitional issues and/or insecurity made data undependable, so in several cases I excluded these recipients altogether. See Table 2 in the Appendix for a list of the recipients. For the aggregate regressions, I included aid from all bilateral and multilateral institutions that are members of OECD Development Assistance Committee (DAC). Partly due to the unavailability of bilateral disbursement data in 1980s, I used commitments for bilateral regressions from the US, UK, Canada and the Netherlands over the same period.

POLICIES: I tried to include policy variables that accurately reflect the indicators used in Burnside and Dollar (2000). I was able to include the same indicator of inflation [logarithm of (1 + (inflation rate)/100)][47] and budget surplus (budget surplus-to-GDP) as the original paper. For openness, I chose not to use the Sachs-Warner (1995) dummy variable for several reasons: first, it is only available up to 2001; moreover, it has been criticized as being overly subjective and opaque[48]. Instead, I used the logarithm of the Fraser Institutes's Index of Economic Freedom of the World[49] as an indicator of trade openness. I consider these three indicators

[47] In Easterly (2007), rather than using this measure of inflation, a dummy variable interacted with inflation over 40 percent is used. In the interest of remaining close to the Bunside and Dollar (2000) definition, I chose [logarithm of (1 + (inflation rate)/100)].

[48] Among the criteria used to define a country as "closed" is simply the label "socialist" from Kornai (1992). Kornai includes all countries in this category that are "self-proclaimed" socialist. As a result, this measure could be capturing more of an ideological factor than attitudes towards trade. Moreover, with so much criteria conveyed in a two-dimensional dummy variable, a great majority of countries end up being considered "closed" all for different reasons.

[49] I used the trade component of this index including taxes on international trade (tariffs), non-tariff barriers and compliance costs, the size of the trade sector relative to expected, and black-market exchange rate. The Fraser Institute also includes international capital controls in the index but, since the Sachs-Warner index ignores this I excluded it from the index that I use here.

individually and also created an index which weights them equally[50]:

$$POLICY = \frac{1}{3}OPEN - \frac{1}{3}INF + \frac{1}{3}BS$$

INSTITUTIONS: The indicator that I used for institutions is the International Country Risk Guide (ICRG) reported from Roodman's (2007) data set. The index, originally reported by the Political Risk Services Group, considers Corruption, Bureaucratic Quality and Rule of Law; although some other studies use different indexes for institutions, this one was clearly the best option for the purposes of this project[51]. Unfortunately, the data is only available up to 2001. I assume (as Easterly *et al* (2004) did originally) that economic institutions, which are fairly static by definition, did not significantly change in recipient countries from 2001 to 2004; I simply used the 2001 values to represent the whole period from 2001-2004.

OTHER VARIABLES: As control variables, I included (some regressions do not in-

[50]This choice of weights is arbitrary. Burnside and Dollar (2000) weigh openness by 6.85, budget surplus by 2.16 and inflation by -1.4, based on their importance in the growth regression. Since my study uses a different openness indicator than Burnside and Dollar (2000), it is probably not appropriate to use the same weights. To look at some alternative measures of trade - which is perhaps the most subjective measure here - I looked at changes in selectivity using (as indicators for openness) the Sachs and Warner (1995) index and the ratio of (Imports + Exports)-to-GDP. With Sachs and Warner's index, the results were drastically different depending on whether ODA-to-GDP or logarithm of ODA was used. Looking at (Imports + Exports)-to-GDP, the same was true although in both cases there was no change between post-1990 and post-2000 samples. I infer that the evidence from using the Fraser institute index possibly indicates a pattern beyond any simple flows of trade or the depiction of socialist used by Sachs and Warner (1995). As such, it appears to be a better indicator of "openness". I do not use logarithms, but all three variables are consistently below 1, so I do not anticipate contamination from the weights.

[51]Two other indexes that are often used are the CPIA and the KKZ institutions index. The CPIA was overlooked primarily because it measures both policies and institutions; moreover, the the World Bank (which produces the index) does not release it to the public. The KKZ index would be very good for our purposes since it measures institutions exclusively: it includes Voice and Accountability, Regulatory Quality, Political Stability, Government Effectiveness and Rule of Law components. However, this index is only available (that I could find) after 1996, and the United States purports to use KKZ scores specifically when deciding where to allocate aid. As a result, in the interest of time period and remaining objective, the ICRG is a better option.

clude all of these) logarithm of GDP per capita[52] in the recipient countries ($ODAGDP$), logarithm of population in recipient countries (POP), and rating of the recipient from a democracy index created by Freedom House[53] (DEM). I also consider several strategic interest variables that have been used in previous studies: Israel ($ISRL$) and Egypt ($EGPT$) dummy variables (these are often found to be significant, especially for US ODA), arms transfers per capita in the recipient country[54] ($ARMS$) and number of years that the recipient country was a colony of the the donor[55] (COL). Based on the findings of some recent studies, I also included several other variables: debt-to-GDP ratio ($DEBT$) [Birdsall *et al* (2004)], negative price shocks ($NEGSHK$) [Collier and Dehn (2001)] and post-conflict scenarios ($PSTCON$) [Collier and Hoeffler (2004)][56]. Finally, I included lagged ODA ($ODALAGGED$) [Mosley (1986)] in several later regressions (this choice was made after obdserving the results from the first group of regressions).

4 The Model

The series of regressions I run are inspired by an amalgam of Mosley's (1986) foreign aid model with consideration for the evidence from some more notable empirical papers that have looked at the aid equation since then. By factoring the quality of

[52]This is used as a poverty indicator. Although I was considering a better indicator, like percentage of population below the poverty line, most studies use GDP per capita instead; moreover, I am not primarily interested in poverty elasticity but policy elasticity.

[53]Freedom House reports separate scores (from 0 to 1) for Civil Liberties and Political Rights. I weighed these evenly (by 1/2) to create the index.

[54]This measures aggregates transfers in each year. As such, for bilateral flows it will not indicate a "special" relationship between donor and recipient, but rather the military/strategic importance of the recipient country in the context of all aid-receiving countries.

[55]For aggregate ODA, the value used for COL was the number of years that the recipient was a colony of any OECD country.

[56]$NEGSHK$ and $PSTCON$ are mentioned by McGillivray (2003) as factors that should attract foreign aid. To the extent that his views and points made to the OECD DAC Experts' Seminars reflect or influences selectivity, there might be some selectivity towards these variables after 2000 (or perhaps even before). They are included more as control variables since their omission could result in bias.

economic policies in the recipient country (as perceived by members of the donor country) into the foreign aid allocation of a donor country, I develop a simple basis in how the "Burnside-Dollar effect" can be captured through regression analysis.

I expect that several variables along the R-N and D-I spectrum are significant in the aid equation. Moreover, like Mosley (1986), I base demand and supply on Breton's (1974) aid model.

The demand function for foreign aid expresses indirect demand by citizens in the donor country, where aid is treated basically like a public good; however, since consumption is indirect, quantity for foreign aid from donor i to recipient j in period t ($ODAGDP_{ij,t}$) is not determined by market behavior but through political action. Based on observed patterns of altruism, reactions to perceived aid effectiveness and ignorance about the actual price of aid from donor countries [Mosley (1986)], I propose the following basic demand function: considering demand for foreign aid from donor i to recipient j at t ($ODAGDP'_{ij,t}$) and an index of perceived effectiveness of aid from country i to country j ($Q_{ij,t}$):

$$ODAGDP'_{ij,t} = \beta_d + Q_{ij,t} + \epsilon_{ij,t}{}^{57}$$

I propose the following index for $Q_{ij,t}$, combining recipient needs with other criteria that is considered to enhance aid effectiveness: the population ($POP_{j,t}$), the income per capita ($GDPCAP_{j,t}$), the quality of democratic rights and freedoms ($DEM_{j,t}$), the quality of institutions ($ICRG_{j,t}$) and the quality of policy ($POLICY_{j,t}$), a consideration for negative price shock ($NEGSHK_{j,t}$) and post-conflict scenario ($PSTCON_{j,t}$) in recipient country j at t, and separate weights:

$$Q_{ij,t} = \beta_p POP_{j,t} + \beta_g GDPCAP_{j,t} + \beta_i ICRG_{j,t} + \beta_d DEM_{j,t} + \beta_v POLICY_{j,t} +$$

$$\beta_n NEGSHK_{j,t} + \beta_g PSTCON_{j,t}$$

[57] Mosley (1986) included relative income of the donor country in the OECD, but this was found to be insignificant in his regression so I dropped it.

I consider a basic aid supply function, with supply of foreign aid from country i to country j at $t-1$ ($ODAGDP_{ij,t-1}$), a vector of strategic purposes for aid ($DI_{ij,t}$) and the difference between demand and supply in the previous period ($ODAGDP'_{ij,t-1}$ - $ODAGDP_{ij,t-1}$):

$$ODAGDP_{ij,t} = \beta_d + \beta_3 ODAGDP_{ij,t-1} + DI_{ij,t} + \beta_5 (ODAGDP'_{ij,t-1} - ODAGDP_{ij,t-1})$$

Here, the DI vector consists of the following: dummy variables for Israel ($ISRL_i$) and Egypt ($EGPT_i$), an indicator of military power ($ARMS_{ij,t}$) and colonial history (COL_{ij}):

$$DI_{ij,t} = \beta_s ISRL_i + \beta_t EGPT_i + \beta_a ARMS_{ij,t} + \beta_c COL_{ij}$$

By substitution, I get the combined equation:

$$ODAGDP_{ij,t} = \beta_0 + \beta_1 ODAGDP_{ij,t-1} + Q_{ij,t} + DI_{ij,t}$$

Mosley (1986) found evidence that governments respond to a difference between supply and demand in three ways: by changing aid quantity, changing aid quality, and/or changing neither but trying to convince the citizenry of to accept an "executive decision". As he attests to, moreover, citizens in donor countries are fairly ignorant about the ultimate cost and efficiency of foreign aid, and rely on information from government announcements, international development institutions and other experts in their evaluation of aid effectiveness. I suspect that, in practice, the stimulus to increase aid selectivity towards good economic policies since 2000, if this has increased, was largely initiated by the international development institutions [especially the World Bank with *AssessingAid* (1998)]. However, since these agencies have a direct liaison with the government, the movement could be more of a top-down decision than a bottom-up one (or both). In fact, the model outlined above could easily be adapted to include $POLICY$ and $ICRG$ in the DI vector[58]. Either way, there is

[58]Some have been critical of the bond between the international development institutions, governments and the international financial community (especially in the US). If governments have an

evidence to suggest that aid flows will ultimately respond to the impetus of a change in either supply or demand [Mosley (1986)]. Moreover, we can say for certain that total foreign aid flows increased after Burnside and Dollar (2000), indicating change through one of the channels that Mosley describes. I expect to see a higher β_v and β_i accompanying this increase since 2000.

Again, all regressions are based on 5-year averages from 1984 to 2004 inclusive[59]. To signal a structural break in elasticity, I included interactive terms for all of the development indicators (when included), including for $POLICY$, $ICRG$, DEM, $OPEN$, INF, BS, $GDPCAP$, $NEGSHK$ and $PSTCON$. When one of these variables has a 90 at the end (e.g. $POLICY90$), this indicates that the original variable is interacted with a dummy variable that is equal to 1 for years after 1989; when a variable has a 00 at the end (e.g. $POLICY00$), this indicates that the original variable is interacted with a dummy variable that is equal to 1 for years after 1999. Although I am primarily interested in those variables that indicate changes after 2000, I include interactive terms for after 1989 to see if the end of the Cold War produced any breaks.

My first regression set - equations 5 through 10 - tests the relationship between aid, policies and institutions along the same lines as Easterly (2007). He argues, as do Dollar and Levin (2004), that when looking strictly at changing selectivity over time, all exogenous variables need not be included in the aid regression:

$$ODAGDP = \beta_{ot} + \beta_{pt}POP + \beta_{gt}GDPCAP + \beta_{tt}OPEN + \beta_{tt90}OPEN90 + \beta_{tt00}OPEN00 + \epsilon_t \quad (5)$$

interest in promoting international finance interests, and if selectivity towards good institutions and policies does just this, then these variables could show up in the DI vector.

[59]Based on the model, all regressors are lagged by one period behind ODA, as are the 5-year averages; as such, data for ODA is from 1985 to 2005. Data for the $OPEN$ variables is only available for every five years from 1980 to 2000. I took the average of the two for each five-year set of the other variables calculated. Since trade openness does not typically oscillate in a five-year span, it is assumed that this average is very close to the actual average when all five values are included.

$$ODAGDP = \beta_{of} + \beta_{pf}POP + \beta_{gf}GDPCAP + \beta_{ff}INF + \beta_{ff90}INF90 + \beta_{ff00}INF00 + \epsilon_f \quad (6)$$

$$ODAGDP = \beta_{os} + \beta_{ps}POP + \beta_{gs}GDPCAP + \beta_{ss}BS + \beta_{ss90}BS90 + \beta_{ss00}BS00 + \epsilon_s \quad (7)$$

$$ODAGDP = \beta_{oi} + \beta_{pi}POP + \beta_{gi}GDPCAP + \beta_{ii}ICRG + \beta_{ii90}ICRG90 + \beta_{ii00}ICRG00 + \epsilon_i \quad (8)$$

Equations 9 and 10 test the same for democracy and poverty selectivity:

$$ODAGDP = \beta_{ov} + \beta_{pv}POP + \beta_{gv}GDPCAP + \beta_{vv}DEM + \beta_{vv90}DEM90 + \beta_{vv00}DEM00 + \epsilon_v \quad (9)$$

$$ODAGDP = \beta_{og} + \beta_{pg}POP + \beta_{gg}GDPCAP + \beta_{gg90}GDPCAP90 + \beta_{gg00}GDPCAP00 + \epsilon_g \quad (10)$$

Equation 11 includes only exogenous variables[60]:

$$[ODAGDP = \beta_{oe} + \beta_{pe}POP + \beta_{ge}GDPCAP + \beta_{se}ISRL + \beta_{te}EGPT + \beta_{ae}ARMS][+\beta_{de}DEBT + \beta_{ce}COL + \epsilon_e] \quad (11)$$

Equation 12 includes all of the indicators, still disintegrated, but in the same regression:

$$\begin{aligned} ODAGDP = {} & \beta_{od} + \beta_{pd}POP + \beta_{gd}GDPCAP + \beta_{gd90}GDPCAP90 \\ & + \beta_{gd00}GDPCAP00 + \beta_{td}OPEN + \beta_{td90}OPEN90 + \beta_{td00}OPEN00 \\ & + \beta_{fd}INF + \beta_{fd90}INF90 + \beta_{fd00}INF00 + \beta_{sd}BS + \beta_{sd90}BS90 + \beta_{sd00}BS00 \\ & + \beta_{id}ICRG + \beta_{id90}ICRG90 + \beta_{id00}ICRG00 + \beta_{vd}DEM + \beta_{vd90}DEM90 \\ & + \beta_{vd00}DEM00 + \beta_{kd}NEGSHK + \beta_{kd90}NEGSHK90 + \beta_{kd00}NEGSHK00 \\ & + \beta_{wd}PSTCON + \beta_{wd90}PSTCON + \beta_{wd00}PSTCON + \epsilon_d \end{aligned} \quad (12)$$

[60]Equation 11 includes the exogenous variables alone. This is simply done as an exercise to consider how significant each is in the regression. I include in a general regressions, without institutions or policies, $DEBT$, $ARMS$, COL, $EGPT$ and $ISRL$. From this regression using aggregate ODA, debt-to-GDP yields the highest t-statistic followed by arms transfers. Both dummies are dropped out.

Equation 13 considers, as several past analyses have, these variables with other exogenous variables included.

$$\begin{aligned} ODAGDP = \beta_{oa} + \beta_{pa}POP + \beta_{ga}GDPCAP + \beta_{ga90}GDPCAP90 \\ +\beta_{ga00}GDPCAP00 + \beta_{ta}OPEN + \beta_{ta90}OPEN90 + \beta_{ta00}OPEN00 \\ +\beta_{fa}INF + \beta_{fa90}INF90 + \beta_{fa00}INF00 + \beta_{sa}BS + \beta_{sa90}BS90 + \beta_{sa00}BS00 \\ +\beta_{ia}ICRG + \beta_{ia90}ICRG90 + \beta_{ia00}ICRG00 + \beta_{va}DEM + \beta_{va90}DEM90 \\ +\beta_{va00}DEM00 + \beta_{la}ISRL + \beta_{ea}EGPT + \beta_{aa}ARMS + \beta_{ba}DEBT \\ +\beta_{ca}COL + \beta_{ka}NEGSHK + \beta_{ka90}NEGSHK90 + \beta_{ka00}NEGSHK00 \\ +\beta_{wd}PSTCON + \beta_{wa90}PSTCON90 + \beta_{wa00}PSTCON00 + \epsilon_a \end{aligned} \quad (13)$$

Equation 14 is the same except that policy indicators, rather than being included individually, are combined into the policy index. The ICRG is already an index of institutional quality while the democracy indicator is also an index[61].

$$\begin{aligned} ODAGDP = \beta_{or} + \beta_{pr}POP + \beta_{gr}GDPCAP + \beta_{gr90}GDPCAP90 \\ +\beta_{gr00}GDPCAP00 + \beta_{ir}ICRG + \beta_{ir90}ICRG90 + \beta_{ir00}ICRG00 + \beta_{vr}DEM \\ +\beta_{vr90}DEM90 + \beta_{vr00}DEM00 + \beta_{lr}ISRL + \beta_{er}EGPT + \beta_{ar}ARMS \\ +\beta_{br}DEBT + \beta_{cr}COL + \beta_{nr}POLICY + \beta_{nr90}POLICY90 \\ +\beta_{nr00}POLICY00 + \beta_{kr}NEGSHK + \beta_{kr90}NEGSHK90 \\ +\beta_{kr00}NEGSHK00 + \beta_{wr}PSTCON + \beta_{wr90}PSTCON90 \\ +\beta_{wr00}PSTCON00 + \epsilon_r \end{aligned} \quad (14)$$

Finally, I include the lagged ODA term in two regressions Mosley (1986) found this variable to be significant. Also, the results from the first group of regressions in this

[61]Some institutional indexes include democracy indicators. I have tried to avoid doing this to differentiate between selectivity towards these two variables.

analysis suggested that this would help explain the trends:

$$\begin{aligned} ODAGDP = \beta_{ol} + \beta_{pl}POP + \beta_{gl}GDPCAP + \beta_{gl90}GDPCAP90 \\ +\beta_{gl00}GDPCAP00 + \beta_{tl}OPEN + \beta_{tl90}OPEN90 + \beta_{tl00}OPEN00 + \beta_{fl}INF \\ +\beta_{fl90}INF90 + \beta_{fl00}INF00 + \beta_{sl}BS + \beta_{sl90}BS90 + \beta_{sl00}BS00 + \beta_{il}ICRG \\ +\beta_{il90}ICRG90 + \beta_{il00}ICRG00 + \beta_{vl}DEM + \beta_{vl90}DEM90 + \beta_{vl00}DEM00 \\ +\beta_{ll}ISRL + \beta_{el}EGPT + \beta_{al}ARMS + \beta_{bl}DEBT + \beta_{cl}COL + \beta_{kl}NEGSHK \\ +\beta_{kl90}NEGSHK90 + \beta_{kl00}NEGSHK00 + \beta_{wl}PSTCON \\ +\beta_{wl90}PSTCON90 + \beta_{wl00}PSTCON00 + \beta_{ll}ODALAGGED + \epsilon_l \end{aligned} \tag{15}$$

$$\begin{aligned} ODAGDP = \beta_{oz} + \beta_{pz}POP + \beta_{gz}GDPCAP + \beta_{gz90}GDPCAP90 \\ +\beta_{gz00}GDPCAP00 + \beta_{iz}ICRG + \beta_{iz90}ICRG90 + \beta_{iz00}ICRG00 + \beta_{vz}DEM \\ +\beta_{vz90}DEM90 + \beta_{vz00}DEM00 + \beta_{lz}ISRL + \beta_{ez}EGPT + \beta_{az}ARMS \\ +\beta_{bz}DEBT + \beta_{cz}COL + \beta_{nz}POLICY + \beta_{nz90}POLICY90 \\ +\beta_{nz00}POLICY00 + \beta_{kz}NEGSHK + \beta_{kz90}NEGSHK90 \\ +\beta_{kz00}NEGSHK00 + \beta_{wz}PSTCON + \beta_{wz90}PSTCON90 \\ +\beta_{wz00}PSTCON00 + \beta_{lz}ODALAGGED + \epsilon_r \end{aligned} \tag{16}$$

Again, for descriptions, definitions and summaries of each variable included in these regressions, refer to Tables 1 and 3 in the Appendix. For results from the regresions, refer to Tables 4 thorough 8.

5 Results

My primary interest is to determine the strength of the "Burnside-Dollar effect"; this should be indicated by the coefficients (and t-statistics) on interactive terms between

the policy indicators and the years after 2000 (when Burnside and Dollar (2000) was published); that is, $\beta_{n00}POLICY00$, $\beta_{t00}OPEN00$, $\beta_{f00}INF00$ and $\beta_{s00}BS00$[62]. I suspect that these coefficients will be positive (although not necessarily significant), indicating a structural break in the general trend after 2000. I base this hypothesis on the general rise in total ODA-to-GDP since 2000, and impact of the "selectivity" campaign in the logic of the theoretical model. Since other exogenous factors have been thought to be largely influential, development-oriented variables (like policy selectivity) still might not be that significant. At the bilateral level, I expect - given their rhetoric - that all four countries will have enhanced selectivity. The corresponding null hypotheses for all cases is that there is no change in selectivity, or a change in the opposite direction. Comparatively, I expect - given the increase in their foreign aid flows - that the UK and US will have the most significant change here since 2000.

A secondary hypothesis is that the significance of institutions in the aid equation also increased since 2000; that is, a positive sign on $\beta_{i00}ICRG00$. In the model, a higher change in institutional selectivity relative to policies might imply several things: either the government has more confidence in the importance of institutions to meet their chosen ends, or the citizenry/aid agencies has more faith in the wisdom of institutions and has influenced the process to favor institutions. Neither of these scenarios would be surprising and could explain a positive difference in selectivity towards institutions relative to policies. Given the rhetoric from multilateral and bilateral institutions alike, there is reason to believe that this indicator will follow a similar pattern as policy elasticity[63]. However, there is friction between this hypothesis and the policy one. Since I have defined the "Burnside-Dollar effect" as an increase

[62]I will make this judgment based mainly on the $\beta_{n00}POLICY00$ variable. The others are of interest to qualify the results from this index, since the weights are arbitrary.

[63]From the previous analyses of selectivity, there is some reasons to be optimistic about these hypotheses [Dollar and Levin (2004), Burnside and Dollar (2004), Dollar and Alesina (2000)]. At the bilateral level, most analyses I studied suggest that the Netherlands and the UK should produce the strongest coefficients and the US the weakest (over the whole period). However, there is also reason to expect little confirmation of these hypotheses [McGillivray (2003), Birdsall *et al*, Easterly (2007)].

in policy elasticity specifically and distinctly from institutional elasticity, if there is a positive difference between the strength of $\beta_{n00}POLICY00$ and $\beta_{i00}ICRG00$, this will be evidence in favor of the first hypothesis. However, I also suspect that institutional selectivity did improve over this period, and there is reason to believe it did even more so than policy selectivity.

To the extent that Burnside and Dollar's (2000) findings can be considered robust, some have argued that selectivity should be enhanced [Collier and Dollar (2001), World Bank (1998)]. However, others have argued that these findings are not robust and/or such findings give little guidance for the practical choices facing recipient government decisions and aid allocation (Easterly (2003), Rodrik (2004)]; moreover, others suggest that the findings are robust, but must be considered *in tandem* with other robust findings and priorities [McGillivray (2003)]. My goal is to determine if there has been a measured effect from he Burnside and Dollar paper, not whether any effect is a good or bad thing.

5.1 Selectivity

I initially rely on the results from the regressions when the policy index is included (equations 14 and 16 from Table 4)): the evidence shows there was improvement in selectivity after 1990 towards good institutions and democracy, but there was the opposite - a worsening of selectivity - towards good policies after 1990 (regression 14). After 2000, the trend reverses in both cases. I interpret this as evidence in favor of the "Burnside-Dollar effect": selectivity towards good policies improved after 2000, whereas that towards democracy and institutions worsened substantially. When the policy and institutions indicators are disintegrated and included in individual regres-

sions[64], so that all components are included individually without weights (equations 5 through 10), a similar pattern as indicated by the institutions index emerges; that is, there was an increase in selectivity after 1990, and then a slight decrease from that change after 2000. This pattern is shown for all indicators except for $OPEN$, which seemingly improved after 1990 and again after 2000.

In considering general worldwide patterns over this time, we might consider a point mentioned by Easterly (2007). While there is an apparent improvement in selectivity after 1990, this might reflect not a change in donor allocation but a change in the quality of democracy, policies and institutions in countries that continually received aid throughout the transition. Indeed, if we consider that the developing world largely liberalized and democratized after 1990 and then slightly reversed after some financial crises in during the 1990s, we would expect to see this trend even if donors left their selectivity unchanged. To account for this concern, I included lagged ODA in regressions 15 and 16 (Tables 4 through 8)[65].

By observation, the concern seems justified. While the change in selectivity appeared dramatic from the 1980s to the 1990s when lagged ODA was left out, when I included it the change is often negligible (as indicated by the dropped on POLICY90 in regression 16 from tables 4 through 8). In addition, an interesting trend emerged: for the policy index, change in selectivity was poor over the entire period - suggesting that, when new aid allocations were made, it was still with little regard for developmental criteria. However, there was improvement in all policy indicators from the aggregate aid regression, individually and in the index, after 2000. This suggests that selectivity towards good policies did improve to a positive level after Burnside and Dollar (2000). In contrast, there was improvement over the entire period in selec-

[64]This is how Easterly (2007) checks for selectivity.

[65]Mosley (1986) also includes lagged ODA in the aid regression. There is reason to be concerned about endogeneity once this is included, but I will address this issue in the conclusion.

tivity towards better institutions and especially towards more democratic countries, and a reversal of this, to countries with less democracy and (when the indexes were included) lower institutional quality after 2000. Overall, the evidence in favor the "Burnside-Dollar effect" is reasonably strong for aggregate ODA.

Bilateral ODA shows the same trend in three of the four cases (Tables 5 through 8). In the United States regressions, while over the entire period aid was significantly selective towards good institutions and democracy (indicated by regression 16), this selectivity declined in the 1990s and 2000s. In contrast, selectivity towards good policies was poor throughout the whole period but improved after 2000[66]. In the United Kingdom and Canada, the same trend was revealed. In the Netherlands, from regression 16 we see that the previous trend of selectivity is partially broken. The institutional and democracy trends continue, but selectivity towards good policies dropped after 2000[67].

In looking at the policy indicators individually (equation 15), selectivity towards more open countries seemed to improve most often after 2000 while that towards countries with good inflation control the least often (the exception here is the US which showed the opposite trend). If I had weighed openness more than inflation, as Burnside and Dollar (2000) did, then perhaps the selectivity in the Netherlands would have improved after 2000 (although it could have dissipated in the US case). For aggregate aid, there was improvement for all policy indicators so weighting is not so much of a concern for overall aid selectivity. Selectivity with respect to democracy worsened after 2000 in every case of regressions 15 and 16. In several cases, democ-

[66]When I describe selectivity over the entire period, I am referring to the un-interacted terms in the aid regression when $ODALAGGED$ is included. I assume that past ODA ws allocated on criteria that is not developmental, so the initial selectivity of ODA is controlled for. In contrast, when considering the influence that developmental criteria had in allocations in general, I refer to the regressions when $ODALAGGED$ is not included.

[67]Although the selectivity worsens here, the overall selectivity from 1984 to 2005 towards good policies is better for the Netherlands than in any other countries or than in the aggregate case.

racy elasticity was actually significant and positive over the entire period (once lagged ODA was controlled for) but worsened substantially after 2000[68]. If we consider the marginal changes here, it appears as though - controlling for overall allocations - the strongest improvement in selectivity towards good policies after 2000 came from the US and Canada, followed by the UK and the Netherlands.

If we ignore the "Burnside-Dollar effect" and look simply at policy selectivity over the entire period from 1984-2000, we see from regression 16 that overall change in selectivity was best for the Netherlands, followed by the UK, the US and Canada. For the latter two countries, bad policies were actually significant in the aid regression. For all countries, and the aggregate aid case, there is a negative sign on overall selectivity for policies. In addition, when considering total allocations (elasticity without controlling for lagged ODA), the UK fared the best, followed by the Netherlands, Canada and the US. When policy indicators were considered individually, it appears as though inflation elasticity produced the highest t-statistic; once lagged ODA was controlled for, selectivity towards open countries produced the lowest t-statistic; when it's not controlled for, it's unclear whether selectivity for openness or budget surplus was worse. For institutions, selectivity improvement over the entire period was best for the US, followed by Canada, the Netherlands and UK. However, considering overall allocations (regression 14), the UK performed the best followed by the Netherlands, Canada and the US. As for democracy, the pattern changes considerably: while in the aggregate case initial allocations (regression 14) were not progressive on this criteria, the bilateral flows were much more elastic towards democratic countries overall. Here, Canada had the highest elasticity, followed by the US, the UK and the Netherlands. In addition, even once lagged ODA was controlled more, the strongest improvement appeared to be from the US, followed by the Netherlands, the UK and Canada[69].

[68]Interestingly, the country that does not strongly follow this trend is Canada. Here, the worsening of selectivity after 2000 is only marginal.

[69]This could be a reflection of other criteria that strongly influence the ODA allocations in the multilateral cases. Perhaps once everything is controlled for, democracy is not a fundamentally

It appears as though separating democracy from good institutions made a difference here.

To sum up, the evidence offers most support for the first hypothesis: when it comes considerations for economic policies in recipient countries, it appears as though donor actions matched rhetoric for aggregate aid, and bilateral aid from the US, UK and Canada, where these flows were more "selective" towards good policies after Burnside and Dollar (2000). This supports the "Burnside-Dollar effect". As for institutions and democracy, it appears as though selectivity towards the latter generally improved over the entire period from 1984 to 2005, while there was evidence of a positive break after 1990 in selectivity towards the former. Overall, the UK and the Netherlands appeared to show most consideration for policies over the entire period, but the "Burnside-Dollar effect" was strongest in the US and Canada.

5.2 Other Trends

When considering poverty selectivity, the results were basically as expected. From both regressions 14 and 16, we see that the Netherlands and the UK fared the best overall - both with t-statistics close to the aggregate case - whereas Canada did not do as well and the US does significantly worse. Moreover, once lagged ODA was controlled for, there was no change over the entire period in selectivity - this provides evidence for McGillivray's point that poverty selectivity was relatively strong throughout the 1980s.

The Israel dummy had no significance in any of the regressions, and the Egypt dummy

relevant factor for selectivity.

dropped out of many including the aggregate one[70]. The only country for which $EGPT$ was a considerably strong positive variable was the United States. Similarly, the ARMS variable appears to have been a significantly positive factor in the United States regressions[71]. COL was much more important in the UK and aggregate regression than in the Netherlands one. Moreover, once lagged aid was controlled for, this significance dissipated.

The $DEBT$ variable was positive and very significant in almost every regression where it was included. When lagged ODA was not included in the regression, debt was most significant in the Canada regression, followed by the Netherlands, the aggregate regression, the UK and the US. However, when lagged ODA was included, while the aggregate ODA significance did not change significantly, the US produced the highest bilateral t-statistic, followed by Netherlands, UK and Canada. The $NEGSHK$ variable was significant in the aggregate aid case (regression 16), but selectivity did not improve over the course of the 1990s and 2000s. For bilateral donors, the Netherlands and US were most selective on this criteria, followed by UK and Canada[72]. While never very significant, in nearly all cases the selectivity towards the $PSTCON$ variable saw improvement in the 1990s and/or 2000s.

When it was included, $ODALAGGED$ was by far the most significant variable in the regression. Although it was strongly significant in all cases, it was the least impor-

[70]This could reflect the time span selected here. Perhaps these countries had more strategic relevance, and received more aid, in the 1970s and 1980s.

[71]Since many aid recipients did not receive arms exports throughout this period, including the arms variable often truncated the regression and lowered the number of observations substantially. As such, there was often a trade-off between including $ARMS$ and lowering the observations, and not including it and risking omitted variable bias. Since it was not significant in most regressions, I often chose to leave it out. In US regressions, there was not a dramatic change in the policy and institutional indicators when it was included so I opted to report the results for the regressions when $ARMS$ was left out.

[72]Since there is not change in selectivity based on this criteria, it appears as though the focus given by McGillivray (2003) has not resulted in more selectivity. In contrast, there was marginal improvement in ODA going to post-conflict countries.

tant in the US case (which was actually lower than in the aggregate case). Canada's regressions produced the highest t-statistic followed by the Netherlands and the UK.

6 Conclusions

The clearest result from the tests conducted here is the overall appearance of a "Burnside-Dollar effect". Initially, it appeared as though – for institutions and for some policy variables – there was a trend of improvement in selectivity after 1990 and then a slight reversion after 2000. However, once lagged ODA was controlled for a "Burnside-Dollar effect" did emerge, where selectivity for the policy index increased after 2000, in the aggregate case and also in all bilateral cases (matching the rhetoric). Although the choice of weights in the policy index was arbitrary, the fact that there was an improvement in aggregate selectivity after 2000 for all policy indicators when policies were disintegrated suggests that this result would have probably emerged in the aggregate case for any weights used in the index. Moreover, despite the reversion after 2000 when lagged ODA was not included, there remained a positive value on the post-2000 policy index and in most cases; in some cases, there was no reversion even when lagged ODA was excluded from the regression. As such, the evidence in favor of the "Burnside-Dollar effect" is quite strong overall.

What to make of this finding? I am hesitant to suggest that the Burnside and Dollar (2000) paper made a sole impact here. More likely, the suggestions from the paper reflected and supported the general line of thinking within aid agencies and/or the donor governments. The attention given to the paper probably reflects this more than anything. However, it is still interesting that the donor community appears to have finally matched its rhetoric with actions after decades of failing to do so.

There is also evidence that, when it comes to selectivity, there is a distinction to be made between policies, institutions and democracy. In many cases, once lagged ODA was controlled for, selectivity towards good institutions and democracy was good overall but worsened after 2000. In contrast, selectivity towards good policies was poor overall but improved after 2000, indicating the existence specifically of an apparent "Burnside-Dollar effect"[73]. Had I included policy and institutions in the same index, this evidence suggests that the two effects would wash each other out and the overall effect would be relatively small. In general, it appears as though the wave of improvement towards "good" policies lagged behind that towards "good" institutions and democracy. For several cases, there is evidence that ODA was quite elastic towards democracy over the entire period including the 1980s, while there was an improvement towards institutional elasticity in the 1990s and finally and improvements towards good policies after 2000. Moreover, even when lagged ODA was controlled for, there was generally a greater change in selectivity towards good institutions and democracy after 1990 in contrast to a later change towards good policies after 2000.

There also appeared to be a diminishing marginal selectivity effect: in several cases where selectivity was relatively bad in initial allocations, the selectivity of new allocations (when $ODALAGGED$ was controlled for) was relatively good; moreover, when the selectivity of new allocations was relatively bad in earlier periods, the improvement after 2000 was often relatively good. As mentioned, this provided a distinction between democracy, institutions and policies: in regression 16, democracy and institutions were often significant over the entire period and dropped out after 2000; in contrast, policies were insignificant (or the wrong sign) but improved after 2000. Moreover, for institutions and democracy, countries that were good initially (the UK

[73]If selectivity had improved towards better policies and institutions alike, then the improvement might be attributed to the emphasis on both policies *and* institutions.

and the Netherlands) showed relatively poor improvement after 2000[74]. Moreover, while countries were relatively selective towards the inflation variable over the entire period and significantly less so towards openness, this trend shifted after 2000: openness became the more significant and inflation the less so. This might reveal that, with a scarcity of developing countries with good policies and institutions, once donors are fairly selective on these criteria it becomes difficult to find more recipients that perform well in this way. In contrast, for a donor that disregarded policies and institutions during the 1980s and 1990s, it is easier to make significant improvements on developmental grounds once selectivity becomes a priority.

Regressions 5 through 9 did broadly exhibit the same trends as regression 15 and 16, so there is no refutation here of the Easterly (2007) and Dollar and Levin (2004) assumptions that the exclusion of exogenous variables would not contaminate a study looking exclusively at selectivity[75]. However, it is clear in all cases that the $DEBT$ and $ODALAGGED$ variables do belong in the regression and the inclusion of exogenous variables does affect the overall significance of the variables of interest. It should be noted that, progress aside, this study suggests (as prior ones have) that the overall picture remains fairly bleak: Over the entire period - from 1984 to 2004 - none of the indicators for policies, institutions or democracy produced the "right" sign to suggest selectivity in the aggregate regression. Poverty, however, was more positively important over the whole period.

One of most interesting contrasts was from the importance the $ODALAGGED$ variable. While it was most influential in all cases, it was significantly less so in the US regressions. In this country, $ARMS$ appeared to have around the same explanatory

[74] An exception here was for democracy, where the US and Canada were quite selective overall and had the best marginal change after lagged ODA was controlled for.

[75] Although these results did not disprove this assumption, this study did not attempt to look at this issue. Others who directly challenge the assumption [Birdsall *et al* (2004)] did find that the exclusion of exogenous variables affected the conclusions about aid effectiveness.

power as $ODALAGGED$, which is exceptional. In a certain light, this is a good sign given the overall poor showing (on developmental criteria) that the US results produced. It suggests that US ODA was more inclined to change and less inert. In contrast, Canadian ODA - which fared rather poorly on developmental criteria as well - produced the most significant $ODALAGGED$ coefficient (a bad sign).

Generally, it appears that prior reputations - on developmental criteria - were confirmed in several cases. The United States is exceptional in several ways (aside from those mentioned above). Based on total allocations over the whole period, the US fared the best on democratic grounds, but the worst on policy, poverty and institutional grounds. Once $ODALAGGED$ was included in the regression, changes in selectivity revealed exceptional progress on institutional and democratic grounds over the entire period, but notably poor progress on poverty and policy criteria. Canada faired poorly on most criteria, and the fact that $ODALAGGED$ was so influential in its aid regression suggests that little progress was made.

Overall, I conclude that – while total multilateral and bilateral aid flows continued to be mostly influenced by non-developmental criteria – there is evidence that new flows were more selective towards recipient countries with "good" economic policies after 2000. It appears as though, after several decades of rhetoric, actual flows are now actually sensitive to this criteria. With respect to bilateral flows, the overall picture confirms prior reputations, where the Netherlands and the UK were most sensitive to developmental criteria, and the US was much less so.

7 Appendix

7.1 Policies vs. Institutions

Although the line between them inevitably becomes blurred at a certain point, that policies and institutions are conceptually different is generally accepted. *Policies* are typically considered to be more-readily adaptable. Although it is not always clear how, it is widely believed that the behavior of a particular government - through the economic policies it chooses - can positively or negatively affect economic outcomes. Examples of policies in this regard include fiscal policy, monetary policy and attitudes towards trade. Some indicators that are typically used include fiscal deficit, inflation and black market premium. *Insitutions* are more deep-seated - the extent to which a single government can alter or overcome institutions is widely debated. Easterly suggests that institutions "reflect deep-seated social arrangements like property rights, rule of law, legal traditions, trust between individuals, democratic accountability and human rights. Although governments can slowly reform institutions, they are not "stroke of the pen" reforms like changes in the macroeconomic policies listed above." (Easterly, 2005, 19). Some commonly-used indicators of institutions include financial depth (M2-to-GDP) or rule of law, corruption, property rights and democracy measures/indexes.

All three policy variables from Burnside and Dollar (2000) are generally accepted as reflecting policies rather than institutions. Accordingly the authors specifically argue, based on the evidence from their findings in the paper, that aid enhances growth in countries with good *policies*.

In contrast, the CPIA index - which is used as a measure in Dollar and Levin (2004) - includes both policies and institutions. The index is comprised of four main categories including several indicators of policy - like fiscal policy, management of external debt,

trade policy, foreign exchange regime, and pro-poor targeting - and also indicators of institutions - like macroeconomic management capacity, financial depth, property rights, and safety nets (World Bank, 2004).

The most widely used *institutions* index - that is, index which exclusively measures institutions and not policies - is the KKZ (1999) index; it includes measures of voice and accountability, political instability and violence, government effectiveness (quality of public service delivery, civil service), regulatory burden, rule of law, and corruption [Kaufmann *et al* (1999)].

Some economists - like Burnside, Dollar and Collier - appeal to the findings in Burnside and Dollar (2000) as evidence of the relationship between aid and growth in the presence of good policies *and* institutions. To the extent that there should be a distinction made between policies and institutions, this is an example of when it should be. Burnside and Dollar (2000) makes no mention, and does no testing, of institutions.

Why do they do this? Easterly identifies two schools of thought here: "The *institutions* view holds that geographic and historical conditions produce long-lasting differences in institutions...(it) argues that economic development mainly depends on institutions that reflect deep-seated historical factors [North (1990)]...In contrast, the *policy* view - which is really a collection of many different approaches - questions the importance of history and geography in shaping economic development today. This view is embedded in the approach of multilateral development institutions...(and) holds that economic policies and institutions reflect current knowledge and political forces. Thus, changes in either knowledge about which policies and institutions are best for development or changes in political incentives will produce rapid changes in institutions and economic policies. According to the policy view, while history and geography may have influenced production and institutions, understanding them is

not crucial to understanding economic development" (Easterly, 2005, 40).

By these definitions, it appears as though Alesina, Collier, Dollar and Levin subscribe to the latter view. Perhaps the more important issue to be addressed is whether or not this distinction is worthwhile the context of foreign aid effectiveness.

Easterly and Levine (2003) shines some light on these potential differences. The authors estimated an economic growth equation and made a point to separate vectors of macroeconomic policies - inflation, trade policies, and impediments to international transactions (reflected in real exchange rates overvaluation) - and institutions - the KKZ (1999) institutions index. They also included a vector of exogenous variables consisting of ethnolinguistic diversity, religion and a dummy for French legal origin. Using data from 72 former colonies from 1960-1995, the authors tested whether policies can account for economic growth after institutions are accounted for. At first, they treated policy as exogenous. Here, the institutions index entered in the regression significantly, while the policy indicators did not enter in below the ten percent level. When included together, the F-test did not reject the null that all three policy variables had no significance. However, as the authors suggest, "Simultaneity may bias the results towards finding a significant statistical relationship between policies and development if economic success tends to produce better policies." (Easterly and Levine, 2002, 25). Accordingly, they treated policy as endogenous in a second test using ethnolinguistic diversity, settler mortality and latitude as instruments. The IV regression produced similar results as OLS; moreover, in the first-stage regressions institutions explained a significant amount of variation in openness and real exchange rate overvaluation. The authors suggest this could mean that policies were, in fact, proxying for institutions in many of the regressions that find policies significant in growth (Easterly and Levine, 2002, 40).

From this evidence, we might wonder whether institutions were are the root of the aid-policies-growth relationship found in Burnside and Dollar (2000). Interestingly, Burnside and Dollar (2004) - while intending to reassess their original findings using a new data-set from the 1990s - actually more fittingly tested this issue. Instead of using the same policy indicators as in the original paper, the authors used the a the KKZ (1999) institutions index (they claim this measures institutions and policies. Yet another example of using policies and institutions interchangeably.). As outlined above, the KKZ index measures institutions in particular; if there is a distinction to be made between policies and institutions, this index surely measures the latter. In fact, Burnside and Dollar point out that "...the KKZ measures and averages other institutional quality indexes, such as ICRG rule of law measure and the Freedom House democracy measure...the KKZ measure basically combines the information from those sources." (Burnside and Dollar, 2004, 12). By most accounts, rule of law and democracy are associated with institutions, as opposed to policies.

Using OLS, the authors ran a regression with institutions, initial income and aid. They found that the coefficients on initial income and aid alone were negative and significant at the ten percent level, while the institutions were significant and positive; that is, after controlling for institutions and initial income, the effect of aid on growth was actually strongly negative. When the interactive aid*institutions variable was included, the results from OLS suggested a positive but insignificant coefficient on this variable (Burnside and Dollar, 2004, 30). When outliers were excluded, the coefficient became significant at the 10 percent level. When an IV regression was done, the results from the basic all-inclusive regression had the interactive term significant at the 10 percent level. Moreover, with outliers excluded, the coefficient became significant at the 5 percent level.

In concluding, the authors argued that their findings suggest further evidence sup-

porting their hypothesis: that aid is effective in producing growth in countries with good institutions and policies. In a cautionary note, the authors suggested the following: "...because all cross-country statistical results are fragile, we cannot completely reject the hypothesis that aid never works anywhere. Like most economists we believe that institutions and policies matter for growth, but it is possible to find specifications in which the institutional quality variable is not significant..." (Burnside and Dollar, 2004, 19).

From my perspective, Burnside and Dollar (2004) offers some support for the idea that institutions enhance growth in countries with good policies. However, they did not control for policies in this regression, so institutions could just as well be proxying for policies.

Table 1: **Data Sources**

VARIABLE	CODE	DATA SOURCE	NOTES
			All variables, unless otherwise stated, are taken in 5-year averages over four periods from 1985-1989 to 2000-2004
Constant	CONS		
Gross Overseas Development Assistance	ODA	OECD DAC (2008)	Averages taken in four sets from 1986-1990 to 2001-2005. For aggregate aid regression, disbursements are used whereas in the bilateral regressions commitments are used.
Gross Domestic Product	GDP	The World Bank Group (2008)	Reported in current $US
Overseas Development Assistance per dollar	ODAGDP		Calculated using ODA from donor to recipient and GDP in recipient at a given time
The logarithm of ODA	LNODA		
The logarithm of Population	POP	IMF World Economic Outlook (2008)	Reported for recipient countries
Gross Domestic Product per capita	GDPCAP	IMF World Economic Outlook (2008)	Measured at Purchasing Power Parity in domestic dollars of recipient country, current prices.
GDPCAP*(dummy variable for years after 1990)	GDPCAP90		
GDPCAP*(dummy variable for years after 2000)	GDPCAP00		
Trade Openness	TRADE	Fraser Institute (2006)	Component 4 of Economic Freedom of the World index
TRADE*(dummy variable for years after 1990)	OPEN90		
TRADE*(dummy variable for years after 2000)	OPEN00		
The logarithm of [1 + (inflation rate)/100]	INF	The World Bank Group (2008)	Inflation taken as annual %
INF*(dummy variable for years after 1990)	INF90		

INF*(dummy variable for years after 2000)	INF00		
Budget Surplus	BS	The World Bank Group (2008)	Cash surplus as % of GDP
BS*(dummy variable for years after 1990)	BS90		
BS*(dummy variable for years after 2000)	BS00		
Institutional Quality	ICRG	Political Risk Services	Taken from Roodman's (2007) dataset. This index consists of three components: Corruption, Bureaucratic Quality and Rule of Law. Data is only available up to 2001, so 2001 values are used for periods thereafter.
ICRG*(dummy variable for years after 1990)	ICRG90		
ICRG*(dummy variable for years after 2000)	ICRG00		
Democracy	DEM	Freedom House (2008)	The index is a even weight (0.5) of two components: Civil Liberties and Political Rights.
DEM*(dummy variable for years after 1990)	DEM90		
DEM*(dummy variable for years after 2000)	DEM00		
Israel dummy variable	ISRL		
Egypt dummy variable	EGPT		
Arms Transfers per capita	ARMS	Stockholm International Peace Research Institute	Trend indicator values measured in $US. Values indicate total value received by aid recipient.
Debt/GDP	DEBT	The World Bank Group (2008)	External debt of recipient country, in current $US

Proportion of 20th century as a colony	COL	Wikipedia.org (2008)	Only applies to recipients of bilateral aid from the Netherlands and United Kingston. For aggregate aid, values are for proportion of 20th century as a colony of any OECD country.
Negative Price Shock	NEGSHK	Dehn (2000)	Taken From Roodman's (2007) dataset. Shocks are % price index changes, where the shock threshold is country specific. The data is available up to 2001; thereafter, the 2001 values are used.
NEGSHK*(dummy variable for years after 1990)	NEGSHK90		
NEGSHK*(dummy variable for years after 2000)	NEGSHK00		
Dummy variable for end of civil conflict in previous period	PSTCON	Collier and Hoeffler (2004)	Taken from Roodman's (2007) dataset. Data is reported up to 2001, and 2001 variables are used thereafter.
PSTCON*(dummy variable for years after 1990)	PSTCON90		
PSTCON*(dummy variable for years after 2000)	PSTCON00		
Policy Index	POLICY		Calculated using even weights (1/3) of three variables: OPEN, INF and BS.
POLICY*(dummy variable for years after 1990)	POLICY90		
POLICY*(dummy variable for years after 2000)	POLICY00		
Lagged ODA	ODALAGGED		The lagged valued are of the five-year average value.

Table 2: **Recipient Countries**

RECIPIENT[76]			
Albania	Algeria	Angola	Anitgua and Barbuda
Argentina	Armenia	Azerbaijan	Bahamas
Bahrain	Bangladesh	Belarus	Belize
Benin	Bhutan	Bolivia	Bosnia-Herzegovina
Botswana	Brazil	Brunei	Burkina Faso
Burundi	Cambodia	Cameroon	Cape Verde
Central African Republic	Chad	Chile	China
Columbia	Cosmoros	Congo, Democratic Republic	Congo, Republic of
Costa Rica	Cote D'Ivoire	Croatia	Cyprus
Djibouti	Dominica	Dominican Republic	Ecuador
Egypt	El Salvador	Equatorial Guinea	Eritrea
Ethiopia	Fiji	Gabon	Gambia
Georgia	Ghana	Grenada	Guatemala
Guinea	Guinea-Bissau	Guyana	Haiti
Honduras	Hong Kong	India	Indonesia
Iran	Israel	Jamaica	Jordan
Kazakhstan	Kenya	Kiribati	Korea, Republic
Kuwait	Kyrgystan	Laos	Lebanon
Lesotho	Liberia	Libya	Madagascar
Malawi	Malaysia	Maldives	Mali
Malta	Mauritania	Mauritius	Mexico
Macedonia	Moldova	Mongolia	Morocco
Mozambique	Myanmar	Namibia	Nepal
Nicaragua	Niger	Nigeria	Oman

[76]*some aid recipients were excluded due to insecurity and/or changes in borders during the period from 1985-2005: these include Afghanistan, Iraq, Palestine, Montenegro and Serbia.

Pakistan	Panama	Papua New Guinea	Paraguay
Peru	Philippines	Qatar	Rwanda
Samoa	Sao Tome and Principe	Saudi Arabia	Senegal
Seychelles	Sierra Leone	Singapore	Slovenia
Soloman Islands	South Africa	Sri Lanka	St. Kitts-Nevis
St. Lucia	St. Vincent and Grenadines	Sudan	Suriname
Swaziland	Syria	Tajikistan	Tanzania
Thailand	Timor-Leste	Togo	Tonga
Trinidad and Tobago	Tunisia	Turkey	
Turkmenistan	Uganda	Ukraine	United Arab Republic
Uruguay	Uzbekistan	Vanuatu	Venezuela
Vietnam	Yemen	Zambia	Zimbabwe

Table 3: **Variable summaries**

Variable	Obs	Mean	Std. Dev	Min	Max
ODA	482	.112	.146	0	1.062
POP	546	15.345	2.02	10.59	20.97
GDPCAP	538	7.856	1.147	5.26	10.98
OPEN	353	1.59	.42	-.994	2.28
INF	545	.2457	.557	-.06	4.257
BS	399	-.268	1.41	-11.63	16.42
ICRG	391	4.61	1.42	0	8.56
DEM	549	1.315	.516	0	1.945
ARMS	269	221.1004	462	0	3789
COL	572	.3944	.315	0	1
NEGSHK	568	.046	.159	0	.78
PSTCON	566	.031	.175	1	
POLICY	308	.51	.377	-1.8	1.94
DEBT	461	.7924	.817	.012	7.79
LNODA	490	18.7173	1.45	11.84	20.71
Canada ODAGDP	547	.001	.004	0	.043
Netherlands ODAGDP	547	.003	.011	0	.04
US ODAGDP	547	.012	.04	0	.74
UK ODAGDP	547	.004	.011	0	.13
Canada ARMS	17	.72	.98	0	2.64
Netherlands ARMS	25	2.08	4.01	0	14.86
US ARMS	121	11.65	28.57	0	175
UK ARMS	59	5.559	14.83497	0	72.1673
Netherlands COL	572	.012	.08	0	.75
UK COL	572	.215	.312	0	.97
Canada LNODA	477	14.45	2.22	9.21	18.97
Netherlands LNODA	450	14.42	2.70	9.21	19.48
US LNODA	477	16.54	1.99	9.21	21.59
UK LNODA	425	14.98	2.38	9.21	20.23

[77]

Table 4: **Overall Results**

	ODAGDP									
	5)		6)		7)		8)		9)	
CONS	0.72	**8.57**	0.69	**10.17**	0.417	**6.51**	0.844	**10.01**	0.66	**9.89**
POP	-0.02	**-4.33**	-0.03	**-7.51**	-0.014	**-4.44**	-0.02	**-6.05**	-0.03	**-8.29**
GDPCAP	-0.02	**-3.62**	-0.02	**-4.27**	-0.02	**-3.05**	-0.022	**-4.11**	-0.02	**-3.66**
GDPCAP90										
GDPCAP00										
OPEN	-0.13	**-6.19**								
OPEN90	0.01	**0.71**								
OPEN00	0.01	**1.24**								
INF			0.03	**1.4**						
INF90			-0.035	**-1.43**						
INF00			-0.06	**-0.75**						
BS					-0.95	**-5.92**				
BS90					0.62	**2.77**				
BS00					0.33	**1.84**				
ICRG							-0.14	**-6.88**		
ICRG90							0.003	**0.32**		
ICRG00							-0.015	**-1.66**		
DEM									0.07	**4.38**
DEM90									-0.03	**-2.16**
DEM00									0	**-0.04**
ISRL										
EGPT										
ARMS										
DEBT										
COL										
NEGSHK										
NEGSHK90										
NEGSHK00										
PSTCON										
PSTCON90										
PSTCON00										
POLICY										
POLICY90										
POLICY00										
ODALAGGED										

[77]*Unbolded numbers indicate coefficients, bolded numbers indicate t-statistics.

	10)		11)		12)		13)	
CONS	0.66	**9.93**	0.552	**4.57**	0.64	**6.53**	0.69	**4.13**
POP	-0.03	**-7.54**	-0.03	**-4.81**	-0.02	**-4.89**	-0.03	**-3.71**
GDPCAP	-0.02	**-2.99**	-0.006	**-0.76**	-0.01	**-2.56**	-0.01	**-0.78**
GDPCAP90	-0.005	**-2.24**			0.01	**1.22**	0	**-0.39**
GDPCAP00	dropped				dropped		dropped	
OPEN					-0.09	**-2.37**	-0.11	**-2.28**
OPEN90					0.08	**2.01**	0.1	**1.67**
OPEN00					0.04	**-0.83**	0.01	**-0.13**
INF					0.01	**0.39**	-0.02	**-1.5**
INF90					0.01	**-0.23**	0.03	**1.15**
INF00					0.03	**-0.12**	0.18	**0.74**
BS					-0.64	**-3.15**	-0.8	**-2.52**
BS90					0.28	**0.96**	0.69	**1.47**
BS00					0.36	**1.67**	0.11	**0.31**
ICRG					-0.05	**-1.5**	0.02	**-0.43**
ICRG90					-0.05	**-1.05**	-0.03	**-0.49**
ICRG00					0.04	**0.69**	-0.01	**-0.07**
DEM					0.06	**2.26**	0.05	**0.93**
DEM90					-0.03	**-1.13**	-0.06	**-1.38**
DEM00					0.01	**0.45**	0.01	**0.19**
ISRL			dropped				dropped	
EGPT			dropped				dropped	
ARMS			0.002	**2.77**			0.001	**1.07**
DEBT			0.06	**5.81**			0.06	**3.01**
COL			0.05	**1.95**			0.05	**1.32**
NEGSHK							-0.16	**-2.64**
NEGSHK90							dropped	
NEGSHK00							0.36	**2.97**
PSTCON							-0.02	**-0.32**
PSTCON90							0.04	**0.35**
PSTCON00							dropped	
POLICY								
POLICY90								
POLICY00								
ODALAGGED								

							LNODA	
	14)		15)		16)		17)	
CONS	0.2	**2.17**	0.43	**4.11**	0.1	**1.32**	16.01	**9.08**
POP	-0.004	**-1.09**	-0.02	**-3.38**	0	**0**	0.05	**0.37**
GDPCAP	-0.01	**-1.92**	-0.01	**-1.01**	-0.01	**-1.32**	0.16	**1.33**
GDPCAP90	dropped		0.02	**0.7**	dropped		-0.26	**-2.28**
GDPCAP00	dropped		dropped		dropped		dropped	
OPEN	-0.015	**-0.82**					0.09	**0.19**
OPEN90	dropped						0.773	**1.35**
OPEN00	-0.01	**-0.17**					1.3	**1.65**
INF	0	**0.45**					0.14	**0.75**
INF90	dropped						-0.26	**-0.97**
INF00	0	**-0.02**					-0.29	**-0.12**
BS	-0.1	**-0.65**					0.72	**0.24**
BS90	dropped						-1.89	**-0.41**
BS00	0.1	**0.65**					1.24	**0.35**
ICRG	-0.02	**-0.94**	-0.02	**-2.29**	0	**0.05**	-0.52	**-1.16**
ICRG90	dropped		0.02	**0.69**	-0.02	**-0.37**	0.42	**0.71**
ICRG00	0.01	**0.25**	-0.03	**-1.34**	-0.01	**-0.73**	-1.52	**-1.66**
DEM	-0.01	**-0.28**	0.1	**1.84**	-0.01	**-0.89**	0.85	**2.33**
DEM90	dropped		-0.1	**-2.31**	dropped		-0.2	**-0.48**
DEM00	0	**0.25**	0.02	**0.7**	0.01	**0.56**	-0.32	**-0.7**
ISRL	dropped		dropped		dropped		dropped	
EGPT	dropped		dropped		dropped		dropped	
ARMS	0	**0.57**					-0.03	**-0.54**
DEBT	0.03	**2.38**	0.1	**7.28**	0.04	**5.83**	0.08	**0.65**
COL	-0.02	**-0.84**	0.1	**2.32**	0	**0.31**	0.14	**0.41**
NEGSHK			-0.1	**-1.88**	0.2	**2.23**	-1.24	**-1.94**
NEGSHK90			0.46	**2.96**	dropped		dropped	
NEGSHK00			0.44	**3.94**	dropped		0.12	**0.1**
PSTCON			-0.02	**-0.42**	-0.01	**-0.61**	-0.01	**-0.02**
PSTCON90			0.03	**0.39**	dropped		0.45	**0.42**
PSTCON00			-0.01	**-0.14**	0.01	**0.27**	dropped	
POLICY			-0.03	**-0.52**	-0.04	**-1.41**		
POLICY90			-0.03	**-0.53**	dropped			
POLICY00			0.03	**0.82**	0.02	**0.65**		
ODALAGGED	0.58	**9.13**			0.61	**10.61**		

Table 5: **Results Canada**

	ODAGDP									
	5)		**6)**		**7)**		**8)**		**9)**	
CONS	0.01	**2.7**	0	**2.32**	0	**0.81**	0.01	**4.25**	0	**1.77**
POP	0	**-2.07**	0	**-2.2**	0	**-2.14**	0	**-2.69**	0	**-1.99**
GDPCAP	0	**1.7**	0	**0.33**	0	**1.91**	0	**0.25**	0	**0.83**
GDPCAP90										
GDPCAP00										
OPEN	0	**-3.43**								
OPEN90	0	**-1.07**								
OPEN00	0	**1.1**								
INF			0	**1.23**						
INF90			0	**-1.59**						
INF00			0	**0.29**						
BS					-0.04	**-8.03**				
BS90					0.03	**4.18**				
BS00					0.01	**2.11**				
ICRG							0	**-4.52**		
ICRG90							0	**-1.14**		
ICRG00							0	**-0.82**		
DEM									0	**2.2**
DEM90									0	**-2.96**
DEM00									0	**0.09**
ISRL										
EGPT										
ARMS										
DEBT										
COL										
NEGSHK										
NEGSHK90										
NEGSHK00										
PSTCON										
PSTCON90										
PSTCON00										
POLICY										
POLICY90										
POLICY00										
ODALAGGED										

	10)		11)		13)		14)	
CONS	0	**1.76**	0.01	**2.12**	0.01	**1.47**	0	**1.51**
POP	0	**-2.01**	0	**-2.33**	0	**-0.78**	0	**0.43**
GDPCAP	0	**2.05**	0	**2.12**	0	**1.08**	0	**0.43**
GDPCAP90	0	**-4.2**			0	**0.29**	dropped	
GDPCAP00	dropped				dropped		dropped	
OPEN					0	**0.03**	0	**-2.41**
OPEN90					0	**-1.24**	dropped	
OPEN00					0	**0.9**	0	**1.59**
INF					0	**-4.08**	0	**-1.02**
INF90					0	**1.48**	dropped	
INF00					0	**-0.52**	0	**1.21**
BS					-0.05	**-6.87**	0.01	**1.31**
BS90					0.03	**3.23**		
BS00					0	**1.83**	-0.01	**-1.32**
ICRG					0	**-2.76**	0	**-2.24**
ICRG90					0	**0.91**	dropped	
ICRG00					0	**-1.37**	0	**-1.43**
DEM					0	**-1.21**	0	**-0.17**
DEM90					0	**-0.12**	dropped	
DEM00					0	**1.03**	0	**-0.57**
ISRL			dropped		dropped		dropped	
EGPT			dropped		0	**-0.41**	0	**-0.03**
ARMS			-0.01	**-2.05**				
DEBT			0	**1.32**	0	**6.53**	0	**2.04**
COL								
NEGSHK					0	**-1.83**	0	**-0.8**
NEGSHK90					0.01	**1.52**	dropped	
NEGSHK00					-0.01	**-2.4**	dropped	
PSTCON					0	**-0.63**	0	**-0.49**
PSTCON90					0	**0.16**	dropped	
PSTCON00					0	**-0.08**	0	**-0.23**
POLICY								
POLICY90								
POLICY00								
ODALAGGED							0.56	**17.58**

					LNODA	
	15)		**16)**		**17)**	
CONS	0	**0.51**	0	**2**	6.79	**2.94**
POP	0	**-0.54**	0	**0.48**	0.63	**2.33**
GDPCAP	0	**1.57**	0	**0.7**	0.08	**0.42**
GDPCAP90	0	**0.78**	dropped		0.09	**0.48**
GDPCAP00	dropped		dropped		dropped	
OPEN					0.65	**1.07**
OPEN90					-0.08	**-0.1**
OPEN00					0.06	**0.06**
INF					-0.112	**-0.34**
INF90					-0.238	**-0.58**
INF00					-0.314	**-0.18**
BS					-4.21	**-1.07**
BS90					-4.54	**-0.75**
BS00					8.74	**1.91**
ICRG	0	**-1.89**	0	**2.32**	-0.89	**-1.44**
ICRG90	0	**0.7**	-0.01	**-3.37**	-0.03	**-0.04**
ICRG00	0	**-2.47**	0	**-1.18**	-0.52	**-0.49**
DEM	0	**-2.33**	0	**-0.38**	0.57	**0.98**
DEM90	0	**0.01**	dropped		-0.93	**-1.47**
DEM00	0	**2.61**	0	**-0.23**	0.28	**0.047**
ISRL	dropped		dropped		dropped	
EGPT	0	**-0.37**	0	**0.09**	1.47	**1.71**
ARMS						
DEBT	0	**8.75**	0	**2.41**	-0.1	-0.61
COL						
NEGSHK	0	**-1.95**	0	**-0.8**	-0.35	**-0.31**
NEGSHK90	0.01	**1.84**	dropped		2.21	**0.66**
NEGSHK00	0	**-0.96**	dropped		-4.59	**-1.88**
PSTCON	0	**0.03**	0	**-0.44**	-1.19	**-1.15**
PSTCON90	0	**0.06**		**0**	1.65	**1.27**
PSTCON00	0	**-1.95**	0	**-0.14**	-0.41	**-0.32**
POLICY	0	**-2.33**	0	**-3.17**		
POLICY90	0	**0.01**	dropped			
POLICY00	0	**2.61**	0	**2.6**		
ODALAGGED			0.53	**18.19**		

Table 6: **Results Netherlands**

	ODAGDP									
	5)		**6)**		**7)**		**8)**		**9)**	
CONS	0.01	**3.35**	0.02	**3.58**	0	**0.95**	0.05	**5.44**	0.02	**3.18**
POP	0	**-1.25**	0	**-2.18**	0	**0.05**	0	**0**	0	**-2.03**
GDPCAP	0	**-0.52**	0	**-2.27**	0	**-0.69**	0	**-2.38**	0	**-1.99**
GDPCAP90										
GDPCAP00										
OPEN	0	**-4.41**								
OPEN90	0	**0.81**								
OPEN00	0	**1.43**								
INF			0	**0.53**						
INF90			0	**0.44**						
INF00			0.01	**0.99**						
BS					-0.04	**-5.42**				
BS90					0.03	**2.87**				
BS00					0.01	**1.35**				
ICRG							0	**-3.15**		
ICRG90							0	**1.16**		
ICRG00							0	**-0.51**		
DEM									0	**0.83**
DEM90									0	**0.47**
DEM00									0	**-0.48**
ISRL										
EGPT										
ARMS										
DEBT										
COL										
NEGSHK										
NEGSHK90										
NEGSHK00										
PSTCON										
PSTCON90										
PSTCON00										
POLICY										
POLICY90										
POLICY00										
ODALAGGED										

	10)		11)		13)		14)	
CONS	0.02	**3.32**	-0.004	**-1.77**	0.01	**1.08**	0	**0.55**
POP	0	**-1.75**	0	**2.09**	0	**-0.36**	0	**1.56**
GDPCAP	0	**-2.2**	0	**-0.05**	0	**-0.68**	0	**-2.62**
GDPCAP90	0	**0.66**			0	**0.03**	dropped	
GDPCAP00	dropped				dropped		dropped	
OPEN					0	**-1.72**	0	**-1.9**
OPEN90					0	**0.87**	dropped	
OPEN00					0	**0.38**	0	**0.35**
INF					0	**-0.39**	0	**2.17**
INF90					0	**0.46**	dropped	
INF00					0.01	**1.21**	0.01	**3.28**
BS					-0.01	**-1.23**	0.01	**2.12**
BS90					0.01	**1.04**	dropped	
BS00					0	**-0.31**	-0.01	**-2.19**
ICRG					0	**-0.33**	0	**1.49**
ICRG90					0	**0.6**	dropped	
ICRG00					0	**-0.87**	0	**-0.96**
DEM					0	**1**	0	**-2.07**
DEM90					0	**-2.04**	dropped	
DEM00					0	**0.88**	0	**1.15**
ISRL			dropped		dropped		dropped	
EGPT			dropped		0	**0.88**	0	**-0.37**
ARMS			0	**0.44**				
DEBT			0	**0.85**	0	**5.58**	0	**5.61**
COL			0	**1.11**			0	**-1**
NEGSHK					0	**-1.2**	0.01	**1.53**
NEGSHK90					0.02	**2.38**	dropped	
NEGSHK00					0.02	**3.83**	dropped	
PSTCON					0	**0.09**	0	**-1.84**
PSTCON90					0	**-0.16**	dropped	
PSTCON00					0	**-0.26**	0	**1.1**
POLICY								
POLICY90								
POLICY00								
ODALAGGED							0.678	**14.39**

					LODA	
	15)		16)		17)	
CONS	0	**0.8**	0	**0.18**	14.92	**4.98**
POP	0	**0.29**	0	**2.05**	1.38	**7.06**
GDPCAP	0	**-0.97**	0	**-1.86**	0.53	**2**
GDPCAP90	0	**0.38**	dropped		-0.4	**-1.69**
GDPCAP00	dropped		dropped		dropped	
OPEN					1.22	**1.4**
OPEN90					0.52	**0.47**
OPEN00					-0.14	**-0.11**
INF					0.23	**0.54**
INF90					-0.4	**-0.75**
INF00					0.95	**0.43**
BS					-1.76	**-0.32**
BS90					-14.9	**-1.77**
BS00					16.33	**2.57**
ICRG	0	**-1.53**	0	**0.84**	-2.45	**-2.48**
ICRG90	0	**1.12**	0	**-0.93**	2.85	**2.29**
ICRG00	0	**-1.18**	0	**-1.01**	-0.88	**-0.63**
DEM	0	**0.94**	0	**-2.79**	0.8	**0.9**
DEM90	0	**-2.42**	dropped		-1.83	**-1.95**
DEM00	0	**1.67**	0	**2.21**	0.76	**0.94**
ISRL	dropped		dropped		dropped	
EGPT	0	**-0.34**	0	**-0.23**	2	**1.8**
ARMS						
DEBT	0	**6.91**	0	**6.04**	-1.14	**-5.02**
COL	0	**-0.42**	0	**-1.04**		
NEGSHK	0	**-0.88**	0.01	**1.58**	-0.32	**-0.19**
NEGSHK90	0.02	**2.27**	dropped		5.27	**1.2**
NEGSHK00	0.02	**3.98**	dropped		1.07	**0.33**
PSTCON	0	**-0.26**	0	**-1.71**	-1.16	**-0.84**
PSTCON90	0	**0.07**	dropped		0.94	**0.56**
PSTCON00	0	**-0.25**	0	**0.86**	1.61	**0.95**
POLICY	0	**-0.7**	0	**-0.18**		
POLICY90	0	**0.23**	dropped			
POLICY00	0	**-0.16**	0	**-0.7**		
ODALAGGED			0.6434	**12.75**		

Table 7: **Results US**

	ODAGDP									
	5)		**6)**		**7)**		**8)**		**9)**	
CONS	0.04	**3.69**	0.08	**3.99**	0.1	**3.82**	0.06	**5.64**	0.08	**4.04**
POP	0	**-2.63**	0	**-4.26**	0	**-4**	0	**-3.83**	0	**-4.01**
GDPCAP	0	**0.86**	0	**-0.32**	0	**-0.54**	0	**0.26**	0	**-0.52**
GDPCAP90										
GDPCAP00										
OPEN	-0.01	**-3.13**								
OPEN90	0	**-1.6**								
OPEN00	0	**2.3**								
INF			0	**0.35**						
INF90			0	**-0.37**						
INF00			0.02	**1.13**						
BS					0	**0.05**				
BS90					0.07	**0.8**				
BS00					-0.07	**-1.06**				
ICRG							-0.01	**-6.15**		
ICRG90							0	**-0.29**		
ICRG00							0	**0.02**		
DEM									0	**-0.3**
DEM90									0	**0.36**
DEM00									0.01	**1.91**
ISRL										
EGPT										
ARMS										
DEBT										
COL										
NEGSHK										
NEGSHK90										
NEGSHK00										
PSTCON										
PSTCON90										
PSTCON00										
POLICY										
POLICY90										
POLICY00										
ODALAGGED										

	10)		11)		13)		14)	
CONS	0.07	**3.9**	0.0257	**1.49**	0.007	**0.35**	-0.02	**-1.12**
POP	0	**-4.13**	0	**-3.37**	0	**-1.25**	0	**0.91**
GDPCAP	0	**-0.54**	0	**1.57**	0.01	**4.74**	0	**0.89**
GDPCAP90	0	**0.8**			0.01	**-4.4**	dropped	
GDPCAP00	dropped				dropped		dropped	
OPEN					-0.01	**-1.41**	0	**-0.17**
OPEN90					0.01	**1.33**	dropped	
OPEN00					0	**0.06**	0	**-0.18**
INF					0	**-2.55**	0	**-0.33**
INF90					0.01	**1.62**	dropped	
INF00					-0.03	**-1.29**	-0.02	**-1.09**
BS					-0.01	**-0.23**	0.04	**1.09**
BS90					0.03	**0.58**	dropped	
BS00					0.02	**-0.51**	0.04	**-1.08**
ICRG					-0.02	**-4.04**	0	**0.25**
ICRG90					0.01	**1.8**	dropped	
ICRG00					0	**-0.12**	0	**-0.13**
DEM					-0.01	**-0.93**	0	**-0.53**
DEM90					0.01	**0.9**	dropped	
DEM00					0.01	**0.97**	0.01	**1.78**
ISRL			dropped		dropped		dropped	
EGPT			0.02	**2.61**	0.01	**2.88**	-0.01	**-1.2**
ARMS			0	**2.71**	0	**3.79**	0	**4.74**
DEBT			0	**2.93**	0.02	**3.41**	0.01	**2.53**
COL								
NEGSHK					-0.02	**-1.64**		
NEGSHK90					dropped			
NEGSHK00					0.02	**1.28**		
PSTCON					-0.01	**-0.71**		
PSTCON90					0	**0.43**		
PSTCON00					0	**0.22**		
POLICY								
POLICY90								
POLICY00								
ODALAGGED							0.5	**3.73**

					LNODA	
	15)		**16)**		**17)**	
CONS	0.01	**0.61**	0.01	**0.77**	13.47	**6.47**
POP	0	**-1.59**	0	**-0.12**	0.363	**2.76**
GDPCAP	0.01	**5.03**	0	**1.27**	0.557	**3.31**
GDPCAP90	-0.01	**-0.62**	dropped		-0.313	**-1.94**
GDPCAP00	dropped		dropped		dropped	
OPEN					-0.1	**-0.18**
OPEN90					-0.3	**-0.42**
OPEN00					1.22	**1.44**
INF					0.03	**0.1**
INF90					-0.4	**-1.08**
INF00					0.6	**0.41**
BS					2.08	**0.6**
BS90					-5.77	**-1.1**
BS00					3.54	**0.89**
ICRG	-0.02	**-3.59**	0.01	**2.92**	-1.57	**-2.64**
ICRG90	0.01	**2.02**	-0.03	**-2.78**	1.55	**1.99**
ICRG00	0	**-0.6**	-0.01	**-3.44**	-1.94	**-2.07**
DEM	-0.01	**-1.78**	0	**-1.98**	-0.4	**-0.68**
DEM90	0.01	**1.65**	dropped		0.03	**0.05**
DEM00	0	**0.85**	0.01	**3.79**	0.38	**0.72**
ISRL	dropped		dropped		dropped	
EGPT	0.02	**3.29**	0.01	**1.77**	3.12	**4.14**
ARMS	0	**3.97**				
DEBT	0.01	**3.44**	0.01	**7.48**	-0.144	**-0.91**
COL						
NEGSHK	-0.02	**-1.59**	0.04	**1.92**	0.272	**0.25**
NEGSHK90	dropped		dropped		1.67	**0.64**
NEGSHK00	0.02	**1.34**	dropped		-1.56	**-0.74**
PSTCON	0	**0.23**	-0.01	**-1.11**	-0.5	**-0.48**
PSTCON90	0	**-0.02**	dropped		1.28	**1.05**
PSTCON00	0	**-0.21**	0.01	**1.08**	0.34	**0.31**
POLICY	-0.02	**-3.45**	-0.01	**-2.16**		
POLICY90	0	**2.31**	dropped			
POLICY00	0	**0.54**	0.01	**1.59**		
ODALAGGED			0.3	**4.97**		

Table 8: **Results UK**

	ODAGDP									
	5)		**6)**		**7)**		**8)**		**9)**	
CONS	0.02	**1.91**	0.01	**2.06**	0.01	**2.25**	0.02	**2.45**	0.01	**2.05**
POP	0	**-1.27**	0	**-1.68**	0	**-2.21**	0	**-1.45**	0	**-1.16**
GDPCAP	0	**0.23**	0	**-0.06**	0	**-0.22**	0	**-0.72**	0	**-0.2**
GDPCAP90										
GDPCAP00										
OPEN	0	**-2.17**								
OPEN90	0	**1.13**								
OPEN00	0	**0.51**								
INF			0	**-0.19**						
INF90			0	**-0.14**						
INF00			0.01	**1.29**						
BS					-0.02	**-1.46**				
BS90					-0.01	**-0.36**				
BS00					0.03	**1.77**				
ICRG							0	**0.71**		
ICRG90							0	**-0.15**		
ICRG00							0	**2.45**		
DEM									0	**0.21**
DEM90									0	**0.65**
DEM00									0	**2.05**
ISRL										
EGPT										
ARMS										
DEBT										
COL										
NEGSHK										
NEGSHK90										
NEGSHK00										
PSTCON										
PSTCON90										
PSTCON00										
POLICY										
POLICY90										
POLICY00										
ODALAGGED										

	10)		11)		13)		14)	
CONS	0.01	**1.97**	0.01	**0.77**	0.03	**1.7**	0.02	**1.29**
POP	0	**-1.58**	0	**-0.95**	0	**-0.52**	0	**-0.44**
GDPCAP	0	**-0.14**	0	**-0.29**	0	**-1.2**	0	**-0.49**
GDPCAP90	0	**0.36**			0	**0.88**	dropped	
GDPCAP00	dropped				dropped		dropped	
OPEN					0	**-0.57**	0	**-1.26**
OPEN90					0	**-0.61**	dropped	
OPEN00					-0.01	**-1.47**	0	**-0.1**
INF					0	**-1.25**	0	**-0.92**
INF90					0	**-0.19**	dropped	
INF00					0.02	**1.29**	0.01	**1.08**
BS					-0.01	**-0.21**	-0.03	**-1.02**
BS90					-0.04	**0.26**	dropped	
BS00					0.05	**0.74**	0.03	**1.02**
ICRG					0	**-0.21**	0	**0.46**
ICRG90					0	**0.26**	dropped	
ICRG00					0.01	**0.74**	0	**-0.45**
DEM					0	**-0.31**	-0.01	**-1.96**
DEM90					0	**-0.87**	dropped	
DEM00					0.01	**1.99**	0	**1.15**
ISRL			dropped		dropped		dropped	
EGPT			0	**-0.72**	0	**-0.55**	0	**0.28**
ARMS			0	**-0.63**				
DEBT			0	**0.54**	0.006	**3.73**	0	**2.11**
COL			0.01	**4.32**	0.02	**5.09**	0	**-0.02**
NEGSHK					-0.01	**-0.94**	0	**0.17**
NEGSHK90					0.01	**0.37**	dropped	
NEGSHK00					-0.01	**-0.39**	dropped	
PSTCON					0	**0.07**	0	**0.08**
PSTCON90					0	**-0.17**		
PSTCON00					0	**0.37**	0	**0.12**
POLICY								
POLICY90								
POLICY00								
ODALAGGED							1.05	**12.37**

					LNODA	
	15)		**16)**		**17)**	
CONS	0.02	**1.45**	0.02	**1.13**	17.3	**5.92**
POP	0	**-0.96**	0	**-0.42**	1.48	**8.01**
GDPCAP	0	**-0.98**	0	**-0.42**	-0.117	**-0.48**
GDPCAP90	0	**0.4**	dropped		-0.02	**0.12**
GDPCAP00	dropped		dropped		dropped	
OPEN					1.38	**1.77**
OPEN90					-0.09	**-0.09**
OPEN00					-0.01	**-0.01**
INF					-0.02	**-0.05**
INF90					-0.25	**-0.5**
INF00					2.94	**1.4**
BS					-11.68	**-2.44**
BS90					-5.37	**-0.78**
BS00					16.91	**3.13**
ICRG	0	**-0.26**	0	**0.64**	0.14	**0.17**
ICRG90	0	**0.43**	-0.01	**-0.55**	0.89	**0.85**
ICRG00	-0.01	**-1.68**	-0.01	**-1.77**	-0.914	**-0.68**
DEM	0	**-0.31**	0	**-1.74**	-0.1	**-0.12**
DEM90	0	**-0.64**	dropped		-0.86	**-1.03**
DEM00	0.01	**1.5**	0	**0.87**	0.51	**0.69**
ISRL	dropped		dropped		dropped	
EGPT	0.02	**-0.57**	0	**0.32**	-0.16	**-0.16**
ARMS						
DEBT	0.01	**4.48**	0	**2.64**	-1.21	**-5.48**
COL	0.02	**5.41**	0	**0.27**		
NEGSHK	0	**-0.42**	0.01	**0.34**	2.54	**1.49**
NEGSHK90	0.01	**0.59**	dropped		-6.25	**-1.58**
NEGSHK00	0	**-0.27**	dropped		-9.25	**-2.87**
PSTCON	0	**0.02**	0	**-0.07**	-2.11	**-1.48**
PSTCON90	0	**-0.29**	dropped		2.57	**1.53**
PSTCON00	0	**0.35**	0	**0.02**	1.79	**1.07**
POLICY	0	**-0.51**	0.01	**-1.43**		
POLICY90	0	**-0.35**	dropped			
POLICY00	0	**0.54**	0.01	**1.32**		
ODALAGGED			1.06	**11.03**		

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