

**Instrumental Philanthropy:  
Trade and the Geographical Distribution of Foreign Aid**

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## **Instrumental Philanthropy: Trade and the Geographical Distribution of Foreign Aid**

### **Abstract**

‘Trade, not aid’ has long been a catchphrase in international development discourse. The logic underpinning this slogan is that trade and private investment may serve as substitutes for development assistance and may be preferable to aid both because they are more effective means of promoting development objectives and because they do not siphon off resources from public coffers. Using a dataset that covers development assistance flows from 22 donor countries to 187 aid recipients from 1980 to 2002, this analysis evaluates whether the ‘trade, not aid’ logic has in practice driven bilateral aid allocation decisions. We find that rather than allowing trade or investment to displace foreign aid flows, donor countries have dispersed aid in order to reinforce existing commercial ties with recipient countries. Developing countries that have attracted private resource flows more easily have also been privileged as aid recipients, while countries that are less desirable as commercial partners tend to receive less aid.

## **Introduction**

Industrialized economies represent a major source of capital for developing economies that may have difficulty increasing the size of their domestic capital stock without external support. Capital flows from industrialized to developing countries can come in the public form of Official Development Assistance (ODA) or in the private form of direct investment by firms interested in gaining a foothold in developing country markets or increasing their global competitiveness through reductions in production costs. Over the last two decades, private capital flows from industrialized to developing countries have eclipsed public flows by a wide margin. In 2000, public development financing from industrialized donor countries represented about one third of the capital supplied to developing countries (around \$65 billion), while private flows totaled \$117 billion (OECD 2002). Alongside capital flows, trade flows are another route through which developed countries can encourage economic development in developing countries. When trade flows are considered together with private investment flows, the difference in scale of the private versus the public resource flows between industrialized and developing countries is all the more apparent. Trade between OECD countries and the developing world has increased dramatically since the 1980s, rising in volume from \$700 billion in 1980 to \$2200 billion in 2000 (UNCTAD, 2004). During the same period, aid volumes rose from \$26 billion to \$54 billion (OECD 2006). In the 1990s, however, aid allocations stagnated, with 16 of 21 of the main industrialized donors providing less aid as a percentage of their national income at the end of the decade than they had at the beginning of the decade (World Bank, 2001). This paper examines the relationships between the trade ties that link industrialized donors and developing countries and patterns of foreign aid allocations.

One possible explanation for stagnancy in the volume of official aid provided to developing countries is that donors have increasingly adopted the view that resource transfers to

developing economies through trade and investment are more effective means of promoting economic development than foreign aid and should therefore be favored as development instruments. There is considerable agreement among development economists that international trade is a key pathway for fostering economic development (Krueger 1997), a position often associated with the Washington Consensus reform program, which encouraged developing countries to lower barriers to trade and limit the role of the government in the economy as a means of attracting investment and spurring economic growth through exports (Gore 2000). A reliance on open market mechanisms, in this view, can offer particular advantages to developing economies by facilitating an efficient allocation of resources, building production capacity, and promoting the transfer of technology and skills necessary for developing economies to thrive in the global economy.<sup>1</sup>

At the same time, the efficacy of aid as a development instrument has been widely disputed. While this debate is as old as foreign aid itself (Millikan and Rostow 1957; Vernon 1957; Kaufman 1982), a recent spate of research in development economics has drawn attention to limitations of aid as a policy instrument. Guardedly optimistic appraisals of aid effectiveness (Dollar and Pritchett 1998; Burnside and Dollar 2000; Collier and Dollar 2004; Hansen and Tarp 2001) indicate that aid can have a positive impact on growth in recipient economies if aid is injected into a good policy environment, while more negative assessments emphasize, for example, that political regime type trumps aid as a determinant of economic development (Boone 1996) or that aid agencies themselves have difficulty ensuring transparent and efficient dispersal of aid resources that could lead to growth (Easterly 2003; 2006). The notion that aid creates perverse incentives,

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<sup>1</sup> Scholars continue to examine whether trade actually contributes to economic growth and the reduction of inequality and poverty across the world and within developing countries. For example, Dollar and Kraay (2004) cast doubt on the assertion that trade accentuates inequalities and argue that trade contributes to poverty reduction. Ravallion (2006) suggests that the argument that trade leads to poverty reduction has limited support and that policies implemented alongside trade promotion may be consequential in determining development outcomes.

either by encouraging leaders to delay economic or political reforms or by fostering rent-seeking within recipient economies has also lingered in discussions of aid effectiveness (Gibson et al. 2005). Viewed together, the presumed development benefits of trade and perceived shortcomings of aid offer a justification for donor governments to reduce aid expenditures. As a result, the global trend toward declining foreign aid described above might simply reflect a shift toward donor reliance on market mechanisms as instruments for promoting development rather than a diminished interest in furthering international development goals. As Kosack and Tobin (2006) have recently suggested, a desire among policymakers to privilege development through private instruments carries with it the assumption that private resource flows can serve as a substitute for official aid transfers.

Rather than questioning the assumption of the substitutability of public and private resource flows on the grounds of their relative effectiveness in contributing to the economic or human development of recipient countries, this paper highlights another fundamental flaw in the argument that trade and aid serve as substitutes. In particular, we argue that foreign aid allocation decisions have been strongly shaped by commercial interests in donor countries. Drawing on an analysis of the bilateral economic relationships between 22 donor countries and 187 recipient countries from 1980 to 2002, we find that donor countries have in practice viewed aid as a complement to trade rather than as a substitute, since donors provide higher levels of public investments in countries where the economic ties between donors and recipients are more important at the outset.<sup>2</sup> Although the ‘trade, not aid’ logic may well drive donor commitments to foreign aid

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<sup>2</sup> The donor countries used in this study are the 22 members of the OECD’s Development Assistance Committee (DAC), which dispense the bulk of world’s official development assistance. These countries are Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Japan, Luxembourg, the Netherlands, New Zealand, Norway, Portugal, Sweden, Switzerland, the United Kingdom, and the United States. The recipient countries included cover two categories of economies as identified by the DAC: Part I countries, a category that covers the majority of developing countries, and Part II countries, a category that comprises more advanced recipient economies, in particular the transition economies of Central and Eastern Europe

toward developing countries at the aggregate level, in our test of the relationship between trade patterns and aid patterns at the bilateral level, quite the opposite is true. Instead of displacing aid, private commercial flows have in fact stimulated public investment in developing nations. While this positive relationship between public and private resource flows may be mutually advantageous for donors that bolster their positions in promising emerging markets and recipients that obtain official support to strengthen private sector development efforts, this finding also highlights an international development dilemma. If countries which are of limited economic interest to donors also receive less aid, this raises questions about what options are available for such countries to raise capital needed for development.

Simply put, donor philanthropy has been instrumental in the 1980s and the 1990s. This finding counters the notion that altruistic motives for aid disbursement have increasingly displaced donors' self-interested motives as the foreign aid regime has matured (see for example, Lumsdaine 1993). The policy implications of this study are sobering: foreign aid is not offsetting the disadvantages of developing countries which are unable to acquire resources for economic development via trade. On the contrary, aid disbursements accentuate existing differences among developing nations with respect to possibilities for development, since countries privileged by international market integration have also been privileged as aid recipients.

### **Theoretical Perspectives**

A productive body of scholarship addresses the determinants of the geographical disbursement of foreign aid.<sup>3</sup> A common reference point in this literature is the 'donor interest versus recipient need' model presented by McKinlay and Little (1977) and subsequently adapted in

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and the former Soviet Union. A complete list of recipients included in this analysis appears in the appendix.

<sup>3</sup> For a more detailed overview of studies on aid disbursement highlighting the main variables identified in existing research, central findings, and periods of study, see Neumayer (2003).

numerous studies of aid disbursement (Maizels and Nissanke 1984; Schraeder et al. 1998; Lewis 2003; Neumayer 2003). This model has been applied to identify whether donors tend to allow political and economic goals to influence their aid allocation decisions or whether they instead select recipients on the basis of their objective development needs. While existing work suggests that the motives underlying aid decisions are mixed, these studies point to a range of donor interests such as the maintenance of colonial ties, military alliances, the protection of spheres of influence, and trade and investment ties as central determinants of patterns of aid flows (Maizels and Nissanke 1984; Schraeder et al. 1998). Recent studies by Alesina and Dollar (2000) and Alesina and Weder (2002) reinforce the point that the characteristics of recipient countries themselves (in these examples, the level of democratization, the character of economic policies, and good governance practices) are less significant predictors of aid allocations than donor interests. In short, these studies conclude that donors in general select aid recipients to serve their diplomatic or strategic aims rather than to address the development needs of poor countries.

However, as Alesina and Dollar (2000) and Neumayer (2003) note, it is difficult to compare results across studies in part because what constitutes donor national interest is often defined inconsistently, which is not surprising given that this concept can cover a variety of objectives in a state's foreign policy portfolio. While variables such as formal alliances between donors and recipients (Schraeder et al. 1998) or correlations of UN voting patterns (Alesina and Dollar 2000) may provide good proxies for the strategic interests of large donor countries, for instance, it is unlikely that these variables provide much information about the importance of potential aid recipients on the security agenda of the more numerous small donors. In contrast, the commercial dimension of national interest, reflected in trade ties of the donors with the developing world, represents a consistent benchmark to evaluate the self-interested attributes of aid allocations

because the meaning of the concept itself does not vary across donors or over time. Our analysis therefore focuses on the trade dimension of donor interest.

This study advances recent work on the determinants of geographical patterns of aid disbursement in important respects. Most notably, it places central emphasis on the bilateral trade linkages between donors and recipients as expressions of donor interest. Alesina and Dollar (2000) and Alesina and Weder (2002) focus on testing whether aid disbursements are influenced by the recipients' policy and institutional environments. In addition to the many recipient-specific measures in these analyses, the authors use UN voting patterns and colonial linkages as proxies for donor interest.<sup>4</sup> Surprisingly, the authors do not employ any specific measure of bilateral economic flows to test the role of donors' economic interests in aid disbursements. Since trade and aid can be viewed as alternative development instruments, examining the influence of trade flows on aid decisions is worthwhile. Two recent studies do draw attention to commercial interest as a determinant of aid flows. The first analysis (Schraeder et al. 1998), however, examines aid allocations from only four donor countries to African recipients from 1980-1989 while the second (Neumayer 2003) examines patterns of aid flows between donor-recipient pairs in the post-Cold War period only. The time period our study covers is more comprehensive, and importantly spans both the Cold War and the post-cold war eras.

Why should donors employ foreign aid to promote their commercial interests? We identify three main motives in this regard: promoting exports, supporting the implantation of donor firms in recipient economies, and maintaining access to essential imports. First, donors may use aid for export promotion purposes. OECD countries have routinely provided credits (which are counted as

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<sup>4</sup> Because colonial linkages are time invariant, they are less suitable to understand variations in aid disbursements over time. Countries vote on UN resolutions on a wide variety of political, economic, and social issues. Hence, it is not clear how this variable captures a precise dimension of donors' national interest.

aid) to recipient governments to enable recipients to purchase goods exported by donors' firms in order to reduce the risk to firms of entering developing markets (Moravcsik 1989). The practice of tying aid allocations to procurement contracts with domestic firms has also furthered export promotion efforts. In addition to direct tying which obliges recipients to spend a portion of the aid they receive on goods and services from the donor country, donors may also encourage the development of stronger bonds between recipients and donor suppliers by dispersing aid to particular sectors where donor companies are more internationally competitive (Jepma 1991; Wagner 2003). The Japanese foreign aid program has often been cited as a prime example of how aid policy has serviced trade-related goals, since Japan's development assistance program has facilitated both the extension of business networks to developing countries and the promotion of Japanese exports (Schraeder 1995; Hatch and Yamamura 1996; Eyinle 1999). In short, the export promotion motive is likely to encourage donors to focus foreign aid on recipient countries which represent an attractive outlet for goods and services produced in the donor country.

A second reason why aid disbursements may mirror trade patterns between donors and recipients is that aid can be used to support the entry of donor firms in the recipient economy and to enhance their competitive edge once they are established. Aid can be directed towards physical infrastructure such as roads, ports, and power plants that can help to strengthen the capacity of donor firms to operate efficiently in the recipient economy and improve their ability to export back to the donor country. After all, intra-firm trade represents an increasing share of global commerce (Milner 1988; McKeown 1991), and bilateral trade flows reflect, in part, transfers of goods and services between multinational corporations and their subsidiaries in recipient countries. In sum, investment in specific types of infrastructure through foreign aid can improve the business climate for donor countries' investors and serve to protect their existing investments in the recipient economy.

Third, in addition to solidifying the position of donor country exporters in recipient markets, aid may also aim to assure the supply of crucial raw materials to donor firms that are produced, extracted, or mined in the recipient country. As an example, sparsely populated Gabon has traditionally been a privileged recipient of French foreign aid thanks to its large reserves of petroleum, uranium and other minerals critical to the energy and defense industries in its former metropole (Reed 1987; Martin 1989). Maintaining good relations with suppliers of a wide variety of natural resources, including oil, copper, platinum, timber, and iron ore has similarly been identified as a key driver of China's burgeoning international aid program, which is notable given that China itself continues to receive foreign aid.<sup>5</sup>

The above discussion suggests that behind national foreign economic policy decisions are domestic interests that favor foreign aid not for purely humanitarian reasons but because it provides a direct economic return to economic actors in the donor country. Decision makers sensitive to demands from these actors may find that focusing foreign aid on countries with which their economy has good trade linkages allows them to satisfy domestic business constituencies while at the same time demonstrating their country's compassion for the world's poor. In the analysis below, we investigate whether such trading ties between donors and recipients serve as a consistent driver of aid disbursement across countries and over time.

### **Data**

To test the relationship between bilateral trade and foreign aid allocations, we examine the volume of official development assistance (ODA) provided by 22 donors to 187 recipient countries from 1980 to 2002. Statistics on ODA are compiled by the OECD's Development Assistance

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<sup>5</sup> *The Financial Times*. 2006. Friend or Forager? How China is Winning the Resources and the Loyalties of Africa. February 23, page 15. Kahn, Joseph. 2006. China Courts Africa, Angling for Strategic Gains. *New York Times*, November 3.

Committee (DAC), which also acts as a guardian of the standard definition of what types of resource transfers donors are allowed to report as development aid. ODA refers to grants or loans to recipient countries “undertaken by the official sector; with promotion of economic development and welfare as the main objective; [and] given at concessional financial terms” (OECD 2002). Military aid is excluded from this definition. Our dependent variable, *Aid*, reflects the net official resource transfer from donors to recipients in a given year (OECD 2004a; 2004b). Following the convention in the literature, the ODA variable has been logged in order to attenuate the skewness in its distribution and to facilitate inference.<sup>6</sup> Appendix 3 describes the main variables that are included in the analysis.

Our central explanatory variable gauges the importance of trade between donors and recipients. We expect that the levels of exports from donors to recipients as well as the levels of imports in donors from recipient countries are likely to encourage donors to disburse aid to specific beneficiaries. Donor exporters will benefit from official aid simply because it is likely to help recipient countries serve as outlets for their goods and services. Given that most international trade takes place within the value chains of multinational firms (UNCTAD, 1998), exports of the aid recipients to the donors are likely to reflect the exports of donor multinationals based in recipient countries to their home (donor) country. In addition to boosting the profits of donor multinationals, these exports may constitute a low cost and reliable supply of resources important for the donor economy. To evaluate how the strength of trade relationships between donors and recipients influences aid allocations, we include the log of bilateral trade, *Trade*, in our model as reported in

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<sup>6</sup> Because development assistance can come in the form of both grants and loans, in years where development loan repayments exceed fresh resource infusion, the net ODA figure may have a negative value for some donor-recipient pairings. We treat the negative ODA values as zeros in this analysis because they indicate that there has not been a net inflow of aid to the recipient country.

the IMF's *Direction of Trade Statistics Database* (IMF 2003).<sup>7</sup> Importantly, our results hold when we include exports and imports as separate covariates in our model.

As alternatives to our donor commercial interest argument, we examine recipient characteristics as predictors of aid disbursements. The nature of a recipient's political regime has been of interest to scholars evaluating the effectiveness of aid in promoting political reforms (Goldsmith 2001; Dunning 2004) and to scholars attempting to identify whether donors reward recipients that have already made strides toward democratic reforms (Alesina and Dollar 2000; Alesina and Weder 2002; Neumayer 2003). The levels of democracy and human rights protection in recipient countries may influence donor decisions if donors do not want their money to support autocracy and repression. Thus, our model includes indicators of the degree of political freedom (*Political Rights*) and the level of protection of individual liberties (*Civil Liberties*) in recipient countries as reported by Freedom House (2005).

The 'recipient need' hypothesis posits that the overriding purpose of foreign aid is to address the development needs of recipient countries with an objective of improving the quality of life of the world's poor (Lumsdaine 1993). The most widely employed indicator of need is a recipient's (logged) income level (*Per Capita Income*), which reflects the material well-being of a country's population. To account for the quality of life of individuals living in recipient countries and to identify their access to basic services such as health care and education, it is also useful to examine indicators of the level of human development in recipient countries (Kosack 2003). The literacy rate of the recipient country (*Literacy*), taken from *World Development Indicators* (World Bank 2005), provides a second indicator of recipient need. Chronic indebtedness may constrain recipient

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<sup>7</sup> Donors' commercial interest can also be influenced by the stock of donor foreign direct investment in the recipient economy. To investigate this speculation, we included donor FDI stock as a covariate and it was statistically significant. However, the limited availability of the dyadic FDI data (either from the OECD or the UNCTAD) leads to a drop in the number of observations (dyad years) from 28,895 to 2,716. Hence, we decided not include foreign direct investment as a covariate in our final model.

governments in their ability to undertake development-promoting policies and foreign aid might be provided to alleviate indebtedness (Michaelowa 2003). The external debt (logged) of the recipient country (*External Debt*), as reported by the World Bank (2005), constitutes a third indicator of recipients' need based on the countries' economic situation. Finally, to control for the prospect that aid disbursements might be influenced by exogenous shocks such as natural disasters in recipient countries, our model includes a variable that indicates whether recipients experienced a disaster such as a flood, earthquake, or cyclone in the prior year (*Natural Disasters*) as reported by Reliefweb (2006).<sup>8</sup>

Previous literature suggests that donor countries' special relationships with recipients may influence aid allocations. Donors may employ aid to sustain their colonial influence with recipient countries. France's development cooperation policy has often been presented as the archetypal example of a colonial power which has maintained a prominent presence in its former colonies through its foreign aid program (Petiteville 1996). Many donor countries have, at one time or another, exercised political control over countries in the developing world, and the variable *Colony* examines the relevance of these historical ties in their aid disbursements. It reflects whether a recipient country was under the political control of the donor country at any time from 1750 to the present (Appendix 4).

Although linguistic similarity between donors and recipients is partly a reflection of colonial legacies, donors can also be expected to focus more attention on aid recipients with whom they share an official language. Having a common administrative language can make the recipient country's political and legal system more transparent to the donor and reduce transaction costs associated with aid delivery. We employ the variable *Language* because commonalities in language

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<sup>8</sup> To test for the robustness of the model, we included several other recipient characteristics such as age dependency, economic openness, agricultural exports, and population size as covariates. None of them were statistically significant and dropping them from the final model does not change the presented results.

are likely to influence aid decisions. The language data comes from the *CIA World Fact Book* (CIA 2005).

A final variable that fits within the ‘donor interest’ category is the distance between the capital cities of the donor and recipient (*Distance*). Distance between countries has been identified as a key factor in explaining a variety of bilateral economic relationships (Anderson 1979; Bergstrand 1985), and we expect that donors would have more interest in sending aid to countries in their near-abroad than to more distant locales, since demographic, political, and economic developments in recipients that are closer to the donor country are likely to be more consequential for the donor. The data are from USDA (2004). As we discuss below, *Colony*, *Language*, and *Distance* are employed as instrumental variables in the selection equation of our two-stage Heckman model.

## Methods

Most donors provide aid to only a subset of all the potential recipients: about 43% of all potential donor-recipient dyads in the given sample have no aid flows. Consequently, the inferential analysis of dyadic aid patterns is challenging. Because “zeros” may be generated by a different causal process than “non-zeros”, predicting all aid disbursements in a single equation is problematic. To account for this potential bias (stemming from selection on unobservables), we rely on a two-stage Heckman selection model (Heckman 1976; 1979).<sup>9</sup> This model allows estimation in two stages: first to evaluate the likelihood of whether aid flows will occur at all (selection equation) and second to examine how much aid is allocated across countries that receive aid (outcome equation). Consequently, the first stage is estimated via probit and the second by OLS. A number of studies adopting a two-stage approach (Dudley and Montmarquette 1976; Cingranelli and

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<sup>9</sup> A simple matching model provided similar results.

Pasquarello 1985; Poe and Meernik 1995; Meernik et al. 1998) suggest that the aid decision-making process itself follows a two-stage logic, where donors decide first whether or not to grant aid and second how much aid they should provide to individual countries. While dividing the decision-making process into two discrete phases is likely a simplification, the two-stage approach is useful in separating those countries that are likely recipients for a given donor from countries that are less plausible candidates for assistance at the outset.

The key challenge in employing a two-stage model is to identify variables that affect aid eligibility (selection equation) but not the amount of allocated aid (outcome equation). In other words, we need to employ theoretically defensible instruments that strongly affect the endogenous variable (binary: aid, no aid) in the selection equation but not the outcome equation's dependent variable (Wooldridge 2002, Sartori 2003). For both theoretical and econometric reasons, we consider three variables to be suitable instruments: *Colony*, *Language*, and *Distance*.<sup>10</sup>

Theoretically, these variables should explain whether or not a recipient will receive aid from a particular donor but, at the same time, not directly predict variations in aid disbursements. In other words, the instrumental variables influence aid disbursements to select recipients only indirectly via their effect on whether donors will provide any aid to these recipients in the first place. To illustrate, a developing country's membership in the francophone club is likely to strongly influence whether France provides any aid to this country. However, this membership is not likely to be a direct (and significant) predictor of how much aid it will receive from France. Our instruments are strongly correlated with the endogenous variable and weakly correlated with aid disbursement, the outcome variable of the second stage. A Wald test for the independence of the selection and outcome equations is clearly rejected (thus making a simple OLS regression an inappropriate

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<sup>10</sup> An additional candidate is membership in a military alliance (Gibler and Sarkees, Forthcoming). Because only 1.5 percent of dyads are indicated as allies, this variable is unsuitable as an instrument.

method of inference) and  $\lambda$  (the coefficient of the inverse Mill's ratio) is statistically significant ( $p < .001$ ) in all presented models.

We lag all time-varying explanatory variables by one year in order to account for the aid decision making sequence. We also examined the model with different lag structures of *Trade* ranging from two years to five years to assess the long-term effects of trade relations on aid disbursements. Because the results remained substantively the same and long lags (e.g. five years) shrink the number of observations used for estimation, we have not reported them in this study.

Panel data are beset with serial correlation problems. Further, given that budget decisions are often sticky, we have theoretical reasons to expect that previous aid disbursements are likely to influence future ones. Both Wooldridge (2002, 282–283) and Arellano-Bond tests (Arellano Bond 1991) indicate first-order autocorrelation in our data. We respond to this issue by including a lagged dependent variable (Beck and Katz, 1995). While sensitivity analyses did not show clear evidence for heteroskedasticity in the Heckman selection model, we nevertheless provide specification checks with robust standard errors, clustered standard errors (by dyad), and bootstrapping. Our model is robust across these varying econometric specifications.

## **Results**

Our analyses provide strong support for the argument that aid disbursements are significantly influenced by bilateral trade between the donors and the recipients. Further, we find mixed evidence that political characteristics of recipient countries and their need for assistance influence aid disbursement decisions. Table 1 presents the results of our main model.

Insert Table 1 about here

Our analysis reveals that there is a positive and statistically significant relationship between bilateral *Trade* between donors and recipients and *Aid* disbursement by donors to the recipient. Substantively, a one standard deviation increase in *Trade* (2.72 percent) leads to a 6.5 percent increase in *Aid* allocations in the following year. This suggests that at the bilateral level donors do not view trade and aid as substitutes. Rather, donors distribute aid to the recipient countries that already benefit from their economic exchanges with the donor

The political characteristics of recipient countries have an uneven influence on aid disbursements. Although our measure of individual freedom, *Civil Liberty*, is statistically significant and negative, suggesting that aid is directed to countries where the protection of individual rights is stronger, our measure of democracy, *Political Rights*, is not statistically significant.<sup>11</sup> However the potential reasons driving this finding should be explored further before making any more conclusive statements especially because of the high correlation between the two variables.

We also find mixed evidence in support of the hypothesis that aid decisions are motivated by perceptions of recipient countries' development needs. *Per Capita Income* is a statistically significant predictor of aid disbursements in a manner consistent with the 'recipient need' hypothesis. In simple terms, as the *Per Capita Income* of a recipient country increases by one standard deviation, aid declines by almost 0.7% in the following year. Thus, trade and per capita income have the strongest substantive effects on aid.

While the income level of the recipient is negatively associated with aid disbursements, the *Literacy* of the recipient is positively associated with aid outlays. Donors, it seems, provide more aid to countries whose the populations are more literate. In contrast to *Per Capita Income* and

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<sup>11</sup> Because the Freedom House measures evaluate freedom along a scale that moves from 1 (high freedom) to 7 (low freedom), a negative correlation between this measure and aid outlays suggests that aid increases where there is greater freedom.

*Literacy*, the *External Debt* burden of the recipient country does not appear to influence aid disbursement decisions. This may reflect the different perceptions that donors might have of the causes of indebtedness and how it might influence the utilization of aid. Following the logic of recent international campaigns to cancel the debts of the poorest countries, chronic debt can be viewed as an impediment to development because it limits the capacities of a governments to invest in its economy and in human capital. However, a high level of indebtedness might also be viewed as a sign of bad governance and fiscal irresponsibility (Easterly 1999); hence donors might be wary of giving more aid to countries that have larger debt burdens. The interpretation of the *Natural Disaster* variable is much more straightforward. As expected, donors increase assistance to recipient countries which have experienced natural catastrophes.

### **Specification Checks**

We examined different specifications of our model and find that our key findings hold across specifications: *Trade* is a statistically significant predictor of aid across specifications. This robustness provides additional evidence that aid disbursements are significantly influenced by the bilateral trading relations between donors and the recipients.

Insert Table 2 about here

### *Cold War*

The time period under consideration spans a period of fundamental transformation in the structure of the international system. Because donor motivations for aid disbursement may have been driven by the dynamics of great power politics during the Cold War (Dunning 2004), we examine whether the determinants of geographical patterns of aid allocations followed a different

(that is, a potentially non-commercial) logic during the Cold War period. In restricting our analysis to the period 1980-1990, we find that *Trade* is still a statistically significant predictor of aid disbursements.

### *Israel and Egypt*

Although Israel and Egypt became leading recipients of US development assistance as a result of the 1978 Camp David Accords, their particular historical relationships with individual countries and geopolitical positions in the Middle East have made these countries significant beneficiaries of aid from multiple sources (Alesina and Dollar 2000). Because these special cases could potentially bias our results, we excluded them from our model and re-ran the model. Dropping Israel and Egypt from our sample does not substantively alter our overall findings, however. Bilateral trade continues to be statistically significant predictor of bilateral aid disbursements.

### *Aid to Sub-Saharan Africa*

Arguably, the strong relationship between commercial interest and foreign aid allocations may not apply equally to all regions of the developing world. Given that many of the world's poorest countries which are decoupled from international markets are located in Sub-Saharan Africa, we would expect that commercial interests would be less likely to be strong predictors of aid flows toward these countries. On the other hand, recent initiatives to use aid to stimulate trade ties with a select group of African partners such as the African Growth and Opportunity Act in the United States or the Economic Partnership Agreements included in the European Union's Strategy for Africa provide an indication that donor aid disbursements might support commercial aims in sub-Saharan Africa as well. To examine this issue, we tested a model that included Sub-Saharan African countries only as aid recipients. Our central explanatory variable of interest, *Trade*, along

with recipient need indicators (*Civil Liberties, Per capital Income, Literacy*) are statistically significant predictors of aid dispersal in this specification.

#### *Existing States*

Some of the recipients listed in Appendix 1 of the OECD database were not independent states throughout 1980-2002, the period our data analysis covers. These recipients include countries such as former Soviet republics which gained independence in the 1990s or territories over which donor countries continue to exercise some degree of political control. French overseas departments and territories such as French Polynesia and New Caledonia have traditionally received substantial volumes of ODA, even though they are technically considered an integral part of the French state. To evaluate whether the inclusion of non-existent states and non-states in our list of recipient countries affects our results, we have conducted an additional test by examining aid relationships between donors and existing states only (Correlates of War Project 2005). *Trade* is positively correlated with aid flows and statistically significant in this specification.

#### *Nordic Donors*

The commercial interest argument may also apply more to certain donor countries than others. Previous studies of donors' aid policies suggest that in disbursing aid, Nordic countries place greater emphasis on the humanitarian needs of recipient countries than on pursuing their own economic objectives (Pratt 1989; Stokke 1989). As a consequence, these countries have directed more aid to the lowest income recipients (Lumsdaine 1993). In limiting our analysis to Nordic donors only, we find that these countries do indeed represent a departure from the global norm: *Trade* is not a statistically significant predictor of aid disbursements by the Nordic donors. In contrast, recipient need indicators continue to remain statistically significant predictors of Nordic

aid disbursements. Interestingly, however, the positive relationship between *Literacy* and *Aid* holds for Nordic donors as well. While these donors may target some of the world's poorest countries, they do not necessarily target the ones with least educated populations.

### *Belgium, Luxembourg, and Greece*

Because there is a substantial amount of missing data for key variables of interest for Belgium, Luxembourg, and Greece, their inclusion might introduce a bias into our analysis. Trade statistics for Belgium and Luxembourg were reported jointly for much of the period under study; for Greece the missing data problem reflects the country's relatively recent rise to donor status (Greece became a member of the Development Assistance Committee only in 1999). To examine whether the inclusion of these countries is biasing our results, we re-ran our model by excluding these countries from the donor sample. The results are consistent with our main model.

### *Robust Standard Errors*

To control for heteroskedasticity, we use two alternative inferential techniques to confirm the two-stage selection model. First, we employed a Heckman model using MLE with Huber/White robust standard errors and using dyadic clustering in order to compute the standard errors (i.e. assuming independence across groups). Second, we bootstrapped the original two-stage Heckman model. Both these estimation techniques are consistent with the results reported in the main model: *Trade* is a statistically significant predictor of aid disbursements.

## **Conclusion**

The central policy problem that this article highlights is that while trade and aid have often been presented as foreign policy substitutes (Kosack and Tobin 2006), in practice aid flows are

strongly related to patterns of trade flows between donors and recipients. Employing a two-stage Heckman model to analyze bilateral aid disbursements from 22 donors to 187 developing countries from 1980 to 2002, we find strong support for ‘trade *and* aid’ policies instead of the ‘trade, not aid’ approach often associated with the so-called Washington Consensus (Williamson 1993). The complementarity of aid and trade flows may well be to the mutual advantage of donors and recipients in their efforts to build more prosperous and politically stable societies. Donors can use aid to expand outlets for their firms’ products and secure regular access to strategic materials while for recipients, trade and aid together might serve as a healthy cocktail to stimulate economic and human development if donor investments generate positive spillover effects in the local economy and enhance the ability of recipient countries to foster private sector development and invest in their populations.

Whether the commercial orientation of aid policies is beneficial or detrimental for recipient countries is a question for future research on aid effectiveness to consider. The impact of commercially motivated aid on recipient economies can potentially be evaluated by examining how the sectoral composition of aid in recipients influences economic growth and improvements in the quality of life of recipient populations, since more commercially-oriented aid programs may privilege investments in economic infrastructure where less commercially-oriented aid programs may invest more in providing social services to recipient country populations. In short, future development effectiveness research can benefit by paying attention to how the varied motivations lying behind the distribution of aid and the variety of forms aid takes might influence development outcomes.

The central finding of this study should inform research on aid effectiveness in another way. While the effects of trade on growth or development and the effects of aid on growth or development are often evaluated independently, the complementarities between aid and trade at the

level of donor policy may also indicate that there are important complementarities between public and private development instruments within recipient countries themselves. Researchers and policymakers fond of the ‘Trade, not Aid’ argument in particular should recognize that the developing countries that have been most integrated into global trading networks have also been privileged aid recipients over time.

However, the complementary nature of trade and aid patterns also means that commercially unattractive recipients have difficulty attracting both aid and the commercial attention of industrialized countries. The policy implications which follow are sobering. If an external infusion of capital is necessary for development, then the world’s poorest countries face a double disadvantage. Poor countries bypassed by the forces of economic globalization are likely to be passed over by instruments of international compassion as well.

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**Table 1**

**Determinants of Aid Disbursement (Heckman Selection Model)**

	<b>Outcome Equation</b>	<b>Selection Equation</b>	<b>Effect of One Standard Deviation Change on Aid</b>
<i>Log of Aid</i>	-0.0219*** (0.0059)	0.0336*** (0.0013)	-0.153
<i>Log of Trade</i>	0.240*** (0.014)	0.0427*** (0.0042)	.650
<i>Civil Liberties</i>	-0.174*** (0.033)	-0.0306** (0.011)	-0.266
<i>Political Rights</i>	0.0173 (0.026)	0.0711*** (0.0085)	
<i>Log of External Debt</i>	-0.0294 (0.024)	-0.123*** (0.0062)	
<i>Log of Per Capita Income</i>	-0.808*** (0.049)	0.153*** (0.015)	-0.692
<i>Literacy</i>	0.0120*** (0.0014)	-0.000282 (0.00048)	.283
<i>Natural Disaster</i>	0.245*** (0.051)	-0.0193 (0.017)	.115
<i>Language</i>		0.125*** (0.027)	
<i>Distance</i>		-0.0000423*** (0.0000018)	
<i>Colony</i>		0.473*** (0.037)	
<i>Constant</i>	19.03*** (0.42)	0.788*** (0.14)	
<i>Lambda</i>		-3.205*** (0.19)	
<i>Mills</i>		-3.205*** (0.19)	
Observations		28895	

Standard errors in parentheses. Levels of significance: \*\*\* p < .001, \*\* p < .01, \* p < .05

**Table 2**  
**Alternative Specifications**

<b>Outcome Equations</b>	<b>Cold War only</b>	<b>Israel &amp; Egypt Dropped</b>	<b>Sub-Saharan Africa Only</b>	<b>Existing States Only</b>	<b>Nordic Donors</b>	<b>BEL. LUX, &amp; GRE dropped</b>
<i>Log of Aid</i>	-0.0803*** (0.022)	-0.0242*** (0.0060)	-0.00235 (0.0071)	-0.0196** (0.0067)	0.0417*** (0.011)	-0.0349*** (0.0065)
<i>Log of Trade</i>	0.206*** (0.045)	0.232*** (0.014)	0.311*** (0.020)	0.245*** (0.016)	0.0427 (0.030)	0.241*** (0.015)
<i>Civil Liberties</i>	-0.279** (0.094)	-0.166*** (0.034)	-0.0659 (0.048)	-0.136*** (0.035)	-0.125* (0.063)	-0.168*** (0.035)
<i>Political Rights</i>	0.0421 (0.076)	0.0179 (0.027)	0.145*** (0.037)	0.0657* (0.027)	0.110* (0.056)	0.00166 (0.028)
<i>Log of External Deb</i>	0.138 (0.091)	-0.0230 (0.025)	-0.197*** (0.030)	-0.0347 (0.028)	0.124** (0.038)	-0.0116 (0.026)
<i>Log of Per capita income</i>	-0.533*** (0.15)	-0.796*** (0.051)	-0.685*** (0.071)	-0.685*** (0.045)	-0.425** (0.13)	-0.831*** (0.053)
<i>Literacy</i>	0.0192*** (0.0044)	0.0117*** (0.0014)	0.0203*** (0.0017)	0.0124*** (0.0014)	0.0254*** (0.0026)	0.0128*** (0.0015)
<i>Natural Disasters</i>	-0.333* (0.16)	0.237*** (0.052)	0.227** (0.074)	0.331*** (0.052)	0.113 (0.10)	0.234*** (0.054)
<i>Constant</i>	16.28*** (1.31)	18.97*** (0.42)	17.55*** (0.55)	17.24*** (0.41)	10.10*** (1.30)	19.18*** (0.45)
Observations	8458	28511	7017	23582	5906	27487

Table 2, continued

<b>Outcome Equations</b>	<b>Robust SE</b>	<b>Robust SE by Dyads</b>	<b>Bootstrapping</b>	<b>Bootstrapping by Dyads</b>
<i>Log of Aid</i>	-0.0103*	-0.0103	-0.0219***	-0.0219
	-0.0044	-0.0096	-0.0061	-0.015
<i>Log of Trade</i>	0.264***	0.264***	0.240***	0.240***
	-0.011	-0.028	-0.013	-0.034
<i>Civil Liberties</i>	-0.179***	-0.179**	-0.174***	-0.174**
	-0.031	-0.054	-0.033	-0.06
<i>Political Rights</i>	0.0374	0.0374	0.0173	0.0173
	-0.024	-0.045	-0.026	-0.049
<i>Log of External Deb</i>	-0.0760***	-0.076	-0.0294	-0.0294
	-0.018	-0.047	-0.025	-0.075
<i>Log of Per capita income</i>	-0.763***	-0.763***	-0.808***	-0.808***
	-0.041	-0.11	-0.058	-0.12
<i>Literacy</i>	0.0126***	0.0126***	0.0120***	0.0120***
	-0.0013	-0.0036	-0.0015	-0.0033
<i>Natural Disasters</i>	0.249***	0.249***	0.245***	0.245**
	-0.048	-0.074	-0.056	-0.076
<i>Constant</i>	18.57***	18.57***	19.03***	19.03***
	-0.37	-0.93	-0.36	-0.91
Observations	28895	28895	28895	28895

**Appendix 1**  
**Recipient List**

Afghanistan	Dem. Rep.	Jordan	Nicaragua	Tajikistan
Albania	Congo	Kazakhstan	Niger	Tanzania
Algeria	Rep. Congo	Kenya	Nigeria	Thailand
Angola	Cook Islands	Kiribati	Niue	Togo
Anguilla	Costa Rica	Korea	N. Mariana Is.	Tokelau
Antigua and Barbuda	Croatia	Korea, Dem. Republic	Oman	Tonga
Argentina	Cuba	Kuwait	Pakistan	Trinidad and Tobago
Armenia	Cyprus	Kyrgyz Rep.	Palau	Tunisia
Aruba	Djibouti	Laos	Palestinian Ter.	Turkey
Azerbaijan	Dominica	Lebanon	Panama	Turkmenistan
Bahamas	Dom. Republic	Lesotho	Papua New Guinea	Turks and Caicos
Bahrain	Timor-Leste	Lesotho	Guinea	Tuvalu
Bangladesh	Ecuador	Liberia	Paraguay	Uganda
Barbados	Egypt	Libya	Peru	UAE
Belize	El Salvador	Macao	Philippines	Uruguay
Benin	Equatorial Guinea	Macedonia (FYROM)	Qatar	Uzbekistan
Bermuda	Guinea	Madagascar	Rwanda	Vanuatu
Bhutan	Eritrea	Malawi	Samoa	Venezuela
Bolivia	Ethiopia	Malawi	Sao Tome and Principe	Vietnam
Bosnia and Herzegovina	Falkland Islands	Malaysia	Saudi Arabia	Virgin Islands (UK)
Botswana	Fiji	Maldives	Senegal	Wallis and Futuna
Brazil	French Polynesia	Mali	Serbia	Yemen
Brunei	Gabon	Malta	Seychelles	Zambia
Burkina Faso	Gambia	Marshall Is.	Sierra Leone	Zimbabwe
Burundi	Georgia	Mauritania	Singapore	Bulgaria
Côte d'Ivoire	Ghana	Mauritius	Slovenia	Czech Republic
Cambodia	Gibraltar	Mayotte	Solomon Is.	Estonia
Cameroon	Grenada	Mexico	Somalia	Hungary
Cape Verde	Guatemala	Micronesia	South Africa	Latvia
Cayman Islands	Guinea	Mongolia	South Africa	Lithuania
Central African Republic	Guinea-Bissau	Montserrat	Sri Lanka	Poland
Chad	Guyana	Morocco	St. Helena	Romania
Chile	Haiti	Mozambique	St. Kitts-Nevis	Slovak Republic
China	Honduras	Myanmar	St. Lucia	Belarus
Chinese Taipei	Hong Kong	Namibia	St. Vincent	Moldova
Colombia	India	Nauru	Sudan	Russia
Comoros	Indonesia	Nepal	Suriname	Ukraine
	Iran	Neth. Antilles	Swaziland	
	Iraq	New Caledonia	Syria	
	Israel			
	Jamaica			

**Appendix 2**  
**Descriptive statistics (N = 28895)**

<b>Variable</b>	<b>Mean</b>	<b>Std. Dev.</b>	<b>Min</b>	<b>Max</b>
<i>Foreign Aid</i>	8.02	7.28	0.00	21.81
<i>Being Recipient</i>	0.57	0.50	0.00	1.00
<i>Logged and Lagged Foreign Aid</i>	11.11	6.49	0.00	21.81
<i>Trade</i>	17.14	2.72	3.26	26.22
<i>FDI</i>	0.49	1.69	0.00	10.58
<i>Civil Liberties</i>	4.21	1.54	1.00	7.00
<i>Political Rights</i>	4.12	1.95	1.00	7.00
<i>External Debt</i>	22.35	1.69	16.09	26.22
<i>Per capita Income</i>	7.72	0.86	5.78	9.64
<i>Literarcy</i>	69.20	23.70	8.27	99.80
<i>Natural Disasters</i>	0.33	0.47	0.00	1.00
<i>Language</i>	0.10	0.30	0.00	1.00
<i>Distance</i>	7727.64	4368.19	56.65	19429.20
<i>Colony</i>	0.06	0.24	0.00	1.00

### Appendix 3 Descriptions of Main Variables and Data Sources

Variable	Description and Sources
Aid	Net Official Development Assistance Flow from Donor to Recipient, in US Dollars. OECD. 2004. <i>Geographical Distribution of Financial Flows to Part I (Developing Countries)</i> and <i>Geographical Distribution of Financial Flows to Part II (Transition Countries)</i> .
Trade	Sum of exports from the donor to the recipient country and imports from the recipient country into the donor economy, in US Dollars. IMF. 2003. <i>Direction of Trade Statistics</i> [CD-Rom].
Civil Liberties	Freedom House. 2005. <i>Freedom in the World Country Ratings: 1972-2004</i> . Ratings are assigned along a seven point scale, where a one indicates the highest level of freedom and a seven the lowest level of freedom. This measure focuses particularly in the level of freedom of expression and association as well as economic freedom in a given country.
Political Rights	Freedom House. 2005. <i>Freedom in the World Country Ratings: 1972-2004</i> . Countries are rated in terms of levels of political freedom, as reflected in the existence of free and fair elections, the existence of political competition, and guarantees of protection for political minorities. The scale is from one (high level of freedom) to seven (low level of freedom).
External Debt	External debt of recipient country in US Dollars. External debt includes the sum of public, publicly guaranteed, private non-guaranteed long-term debt, use of IMF credit, and short-term debt. World Bank. 2005. <i>World Development Indicators Online</i> .
Per Capita Income	GDP per capita of recipient country. In Purchasing Power Parities (Current International Dollars). World Bank. 2005. <i>World Development Indicators Online</i> .
Literacy	Adult Literacy Rate. Percentage of people aged fifteen and above who are able to read and write a short simple statement about their daily lives. World Bank. 2005. <i>World Development Indicators Online</i> .
Natural Disaster	Dummy variable. Recipients that were reported as having experienced at least one natural disaster were assigned a 1; countries with no natural disasters reported were assigned a zero. Source: Reliefweb.int. <i>Countries and Emergencies</i> .
Language	Dummy variable indicating whether a recipient country shares an official language with a given donor country. Source: <i>CIA World Factbook</i> .
Distance	Distance in kilometers between the capital city of the recipient country and the capital city of the donor country. Source: USDA. 2004. <i>Distance Between Capital Cities</i> .
Colony	Dummy variable indicating whether a recipient country or part of a recipient country was under the political control of the donor at any time from 1750 onward. Various sources.

## Appendix 4

The following internet resources were consulted in the preparation of the colonial heritage variable:

<http://www.answers.com>; <http://flagspot.net/flags/gb-colon.html>; [http://www.snap-](http://www.snap-dragon.com/french_colonies.htm)

[dragon.com/french\\_colonies.htm](http://www.snap-dragon.com/french_colonies.htm); [http://www.crwflags.com/fotw/flags/de\\_colon.html](http://www.crwflags.com/fotw/flags/de_colon.html);

<http://www.answers.com/topic/dutch-colonial-empire>;

<http://www.answers.com/italian%20colonies>; <http://www.answers.com/spanish%20colonies>;

<http://www.answers.com/topic/portuguese-empire>;

<http://www.un.org/Depts/dpi/decolonization/main.htm>; [http://www.answers.com/topic/portuguese-](http://www.answers.com/topic/portuguese-empire)

[empire](http://www.answers.com/topic/portuguese-empire); <http://www.britishempire.co.uk/timeline/18century.htm>;

<http://www.cia.gov/cia/publications/factbook/>; [http://www.crwflags.com/fotw/flags/pt\\_col.html](http://www.crwflags.com/fotw/flags/pt_col.html);

<http://www.documentsonline.nationalarchives.gov.uk/>;

<http://www.geocities.com/CapitolHill/Rotunda/2209/Belgium.html>;

<http://www.geocities.com/dutcheastindies/portugal.html>;

<http://www.zum.de/whkmla/histatlas/haindex.html>;

<http://www.library.uu.nl/wesp/populstat/Oceania/austradp.htm>;

[http://ic.ucsc.edu/~naso/hist159b/presentations/imperialism%20pres/japanese\\_imperialism.htm](http://ic.ucsc.edu/~naso/hist159b/presentations/imperialism%20pres/japanese_imperialism.htm);

<http://www.nationmaster.com/encyclopedia/Italian-military-history-of-World-War-II>;

<http://www.nationmaster.com/encyclopedia/Category:Portuguese-colonies>;

<http://www.state.gov/s/inr/rls/10543.htm>;

<http://www.tiscali.co.uk/reference/encyclopaedia/countryfacts/netherlands.html>