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Determinants of the Allocation of US Aid for Trade

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Abstract

Since the 2001 Doha Round of multilateral trade negotiations, members of the World Trade Organization (*WTO*) have shown a renewed interest in using a new type of aid known as aid for trade (hereafter to be simply referred as *AFT*) as a means for catapulting the economic growth performance of developing countries. Japan, U.S., and the United Kingdom account for a significant proportion of *AFT* outlays being extended to developing countries. Despite the rise in the amount of funding outlays, to date, there is little information as to what determines the allocation of the *AFT* funds to different countries and the impact of the aid on the economic performance of the recipient developing economies. Using data on U.S. *AFT* outlays extended to a panel of 54 developing countries during 1999-2005, this study identifies some salient donor and recipient specific factors that influence the propensity and intensity of *AFT* allocation. Our study indicates that the share of *AFT* given to a country is greater: the larger is the relative magnitude of the donor's exports to the recipient country, the more vulnerable the recipient country is to external economic shocks, the more politically globalized and landlocked the recipient is, the lower the level of economic freedom enjoyed by the citizens of the recipient country, and the higher the amount of the traditional *Non-AFT* aid per capita inflow is to the country. On the other hand, both the propensity and intensity of U.S. *AFT* falls with a rise in the recipient country's ability to serve as a source for U.S. import supply and the more integrated it is with the rest of the world.

Key Words: Aid for trade, capacity building, export promotion, economic growth

JEL: F13, F14, F15, F35, O24

I. Introduction

Over the past several decades, numerous studies have assessed the contribution of foreign aid to the economic growth performance of developing countries (see, Boone, 1996; Deardorff, 1998; Alesina and Dollar, 2000; Feenstra, et al., 2001; Milner et. al., 2000; Dalagard and Tarp, 2004; Rajan and Subramanian, 2005). While many indicate a positive impact of aid (Chenery and Strout, 1966; Papanek, 1973; Levy, 1987; and Islam, 1992; Fayissa and El-KAissy, 1999), several others question the viability and sustainability of aid in enhancing the economic growth of recipient countries (Heller, 1975; Mosley, 1987; Pack and Rothenberg, 1990; Boone, 1994; Easterly, 2006). Lingering questions thus exist on the effectiveness of aid in promoting the economic growth of least developed countries.

Similarly, while the advocates of international trade as an engine of growth and thus its potential to lifting millions of people out of poverty are many (e.g., Dollar, 1992; Ben-David, 1993; Edwards, 1998; Krueger, 1997), the skeptics of the role of international trade in spurring the economic growth of the least developed countries are not in short supply either (See for e.g., Lewis, 1980; Rodriguez and Rodrik, 2001). Despite such a controversy, members of the World Trade Organization (*WTO*) have recently launched a new program known as aid for trade (*AFT*) that has components of both aid and trade as a means for catapulting the economic growth performance of developing countries.

Dadush (2005) asserts that such an effort was motivated by two factors: First, many poor countries that have undertaken significant trade reforms and received preferences under the existing world trade agreements have yet to see adequate improvements in their trade performance. Second, there is also a concern that the benefit from having access to the international markets even in those countries that undertook significant trade reforms is limited as the bulkiness and standardization of goods constrain their comparative advantage.

Spearheaded by World Trade Organization (*WTO*), industrialized nations have thus started to earmark a significant amount of aid for trade to cope with these problems on two fronts: trade policy and trade development. On the trade policy front, they aim at building the institutional capacity and ability of developing countries to negotiate and implement trade agreements and reduce or eliminate traditional trade barriers (tariff and non-tariff) which have prevented them from benefiting from the existing world trading system. On the trade development front, they target the removal of supply side bottlenecks (such as lack of knowledge, excessive red tape, inadequate financing, and poor infrastructure through multilateral and bilateral development assistance). Thus by enhancing the recipients' effective participation in multilateral trade agreements, trade policy mainstreaming, development of technical standards, and trade facilitation, they intend to use *AFT* for further development of trading capacities and removal supply side bottlenecks in the recipient nations (UNDP, 2005).

Since its first inception in 1999, *AFT* outlays from developed countries have been on the rise. For instance, between 2002 and 2005 alone, there has been a 22 percent increase in the total *AFT* outlays in real terms (i.e., from $17.8 billion in 2002 to $21.7 billion in 2005). While the average share of *AFT* for trade policy, economic infrastructure, and productive capacity building comprised 26 percent, the share of the *AFT* outlay for trade development (education, health, and governance) accounted for 41 percent, with the non-sector allocable share for debt relief, multi-sector initiatives, emergency aid, and administrative cost accounting for the remaining 33 percent.[1] Japan, followed by the United States, the United Kingdom, and Germany are major providers of *AFT*. However, there is significant variation in the proportion *AFT* funds extended by these donors to different countries under each of the schemes; an indication of the lack of consensus on what each donor deems is more effective.

Examining the extent to which the use of this new approach (*AFT*) has enabled the achievement of the intended goal (enhancing the trade performance and thereby the economic growth of the recipient countries) is thus of prime interest to researchers and policy makers alike. However, given the significant variation on the amount of *AFT* funds allocated to different countries by different donors and the differences in the schemes under

[1] Major schemes under which aid for trade outlays are being extended include: (1) trade policy regulation (for building capacity to formulate trade policy, participate in negotiations and implementation of agreements), (2) economic infrastructure (for investing in infrastructure such as roads, ports, telecommunications, energy networks needed to link products to global markets, (3) productive capacity building (for strengthening economic sectors that range from improved testing laboratories to better supply chains- that enable increased competitiveness in export markets), and (4) adjustment assistance (for helping with transition costs of related to economic liberalization such as preference erosion, loss of fiscal revenue and declining terms of trade).

which the aid is being extended, it is rational to expect the ultimate effect of the outlay to vary. Understanding what donor-recipient specific factors determine the allocation of the *AFT* funds is thus the natural first step for those who want to understand the impact of the *AFT* as this has policy implications relevant in the prioritization of projects and thus the implementation of programs. Using data on U.S. *AFT* funds extended to a panel of 54 developing countries during 1999-2005, this study identifies some key donor and recipient specific factors that influence the propensity and intensity of *AFT* allocation.

Our study contributes to the literature both by providing information on whether the *AFT* allocation follows the traditional *ODA* allocation and which donor-recipient behaviors contribute to the increased likelihood and intensity of *AFT* outlays. Results from our study indicate that the share of *AFT* given to a country is greater: the larger is the relative magnitude of the donor's exports to the recipient country, the more vulnerable recipient countries are to external economic shocks, land locked, politically more globalized, have less economic freedom, and are traditional recipients of higher *Non-AFT* (U.S.) aid per capita. On the other hand, significantly lower share of U.S. *AFT* funds are extended to countries from which U.S. imports are on the rise, and where globalization has made significant inroads.

The reminder of the paper proceeds as follows. In section II, we specify the theoretical and empirical models and provide detailed descriptions of the variables in our empirical model together with their *a priori* expectations. Results from the empirical model and their interpretations are provided in section III. Section IV draws conclusions and makes some policy recommendations based on the empirical results.

II. The Theoretical Framework and Empirical Model.

2.1 The Theoretical Model

In many developing countries, external aid from industrialized nations has become a source of several government-run programs and projects. As a result, foreign aid is an essential and permanent source of income for the welfare improvement of some population in certain developing countries. As indicated earlier, there is no consensus on whether aid can be relied upon to serve as a sustainable source of economic growth in aid recipient developing countries. Yet, as the conditions and the policy environment under which aid is extended may matter in determining its effectiveness in spurring the economic growth of the recipient countries, it is important to first understand factors that determine the allocation of aid itself. We consider that donors extend aid to developing countries for one or both of the following motives: (1) self-interest and/or (2) altruism on the part of donor governments. Focusing first on the altruistic motives, consider that donors care about the well-being of the population in the recipient countries. Following Becker (1974) and the economic theory of remittances postulated by Lucas and Stark (1985), we can thus state that the utility (U_i) of an altruistic donor, *i* is a function of the utility (V_j) of the population in the recipient country, *j*. There are *m* self-sufficient and *n* aid-dependent population in the recipient country, so that $p = m + n$. Each donor is expected to set its economic aid outlay to maximize its altruistic utility function, taking as given the amount set by other donors, leading to the Nash non-cooperative equilibrium. Thus, the utility function to be maximized by each donor is:

$$U_i = u(C_i) + \alpha \sum_j \gamma_j v(C_j) \qquad \text{i} = 1..., \text{m} \quad \text{and j} = 1,..., \text{n} \tag{1}$$

where U_i is the utility of the donor country i, $u(C_i)$ is the utility from expenditure on domestic programs and projects for own population, $v(C_j)$ the utility of aid recipient country from expenditure on goods for own consumption of its population γ_j is the relative weight of each aid recipient country's welfare in the donor *i*'s utility function. For simplicity, assume that the donor values each recipient country equally and thus making Σ $\gamma_j = 1$. Varying between 0 and 1, (α) measures the degree of altruistic behavior of the donor. The closer the value of alpha is to 1, the more altruistic is the donor (the more value the donor assigns to the recipient's welfare in its utility). For simplicity, assume that all donors are equally altruistic that each would value a recipient country's welfare equally in its respective utility function. Further, consider that the utility functions u and v are continuous and twice differentiable with positive first-order and negative second-order derivatives with respect to C_i and C_j, respectively. Maximizing the above utility function subject to the following consumption-income constraints yields:

$$C_i = Y_i - T_i \qquad \text{i} = 1,..., \text{m} \tag{2}$$

$$C_j = Y_j + \frac{1}{n} \sum_{h \neq i} T_h + \frac{T_i}{n} \qquad \text{i} = 1,..., \text{n} \tag{3}$$

Where Y_i, C_i, and T_i are donor *i*'s income, consumption, and aid transfers, respectively and Y_j and C_j are aid recipient *j*'s income and consumption, respectively. Thus,

$dC_i/dT_i = -1$ and $dC_j \Big/ dT_j = \frac{1}{n}$. Each donor considers that the aid extended by other donors (T_h) as given and independent of its own decisions. Setting the first-order condition of each donor's utility function with respect to T_i equal to zero, we get:

$$\frac{dU_i}{dT_i} = u'(C_i).\frac{dC_i}{dT_i} + \alpha \sum_j \gamma_j v'(C_j).\frac{dC_j}{dT_i} = \frac{\alpha}{n}\sum_j \gamma_j v'(C_j) - u'(C_i) = 0 \quad (4)$$

Re-arranging (4), we get the optimality condition in (5)

$$\frac{\alpha}{n}\sum_j \gamma_j v'(C_j) = u'(C_i) \quad (5)$$

Where u' and v' are first-order derivatives of u and v with respect to C_i and C_j. Assuming that all donors are identical with respect to their consumption, income, and utility function and that the weights $\Sigma \gamma_j$ are all equal to one, we have $\sum_j \gamma_j v'(C_j) = \mathrm{n}.u'(\overline{C_j})$ where $(\overline{C_j})$ is the average consumption of a representative aid recipient, thus making equation (5)

$$\alpha v'(\overline{C_j}) = u'(C_i) \;\; \mathrm{i} = 1,..., \mathrm{m} \quad (6)$$

Equation (6) implies that each donor sends additional aid until $u'(C_i)$, the marginal utility from the last dollar spent on own consumption equals α times $v'(\overline{C_j})$, the marginal utility from an extra dollar spent on aid outlays on a representative aid recipient. While solving the system of equations 2, 3, and 6 gives the optimal aid outlay, T_i^* by each donor to obtain a practical solution, we use a logarithmic utility function as it produces a well-behaved and concave shaped utility function. That is,

$$u(C_i) = a\log(C_i) \quad ===> \mathrm{u'(C_i)} = \frac{a}{C_i} \tag{7}$$

and

$$v(C_j) = b\log(C_j) \quad ===> \mathrm{v'(C_j)} = \frac{b}{C_j}. \tag{8}$$

Assuming that all donors are identical so that their aid outlay is represented by $\overline{T_i}$ (aid outlay of a representative donor), equation (3) can be re-written as follows:

$$C_j = Y_j + \left(\frac{m-1}{n}\right)\overline{T_i} + \frac{T_i}{n} \tag{3`}$$

Substituting equations (2) and (3`) into equations 7 and 8, and equations 7 and 8 into equation 6, the optimal aid can be derived as follows:

$$\alpha\frac{b}{Y_j + \left(\frac{m-1}{n}\right)\overline{T_i} + \frac{T_i^*}{n}} = \frac{a}{Y_i - T_i^*} \quad => \quad \alpha\frac{b}{\overline{Y_j} + \left(\frac{m}{n}\right)\overline{T}_i^*} = \frac{a}{\overline{Y_i} - \overline{T}_i^*} \quad => \quad \overline{T}_i^* = \frac{\alpha b\overline{Y_i} - a\overline{Y_j}}{\alpha b + a\frac{m}{n}} \tag{9}$$

2.2 The Empirical Model

Re-writing equation (9) in a general functional form, we have: $T_i^* = F\left((\overline{Y_i}, \overline{Y_j}, \frac{n}{m})(Z(.)) \right)$

where $Z(.)$ denotes a vector of variables that affect the altruistic behavior of the donor and thus the degree to which its *AFT* budget allocation follows the recipients' income and relative population size in need of economic aid. Partial differentiation of the *AFT* outlays with respect to the income and relative need for international aid in each recipient country yields testable hypotheses with $\frac{\partial F}{\partial \overline{Y_i}} > 0$, $\frac{\partial F}{\partial n} > 0$ and $\frac{\partial F}{\partial \overline{Y_j}} < 0$, $\frac{\partial F}{\partial m} < 0$, suggesting that optimal *AFT* outlay increases with the donor's level of income and the proportion of aid dependent population in the recipient country while decreasing with a rise in the recipient country's income level and self-sufficient population. However, as the factors that affect the donor's altruistic behavior may affect this relationship, we augment the general functional form by adding several recipient country specific factors that also influence both the donors' and recipients' utilities from *AFT* outlays and thus estimate the following empirical model:

$$\ln AFTT_{jjt} = \alpha_0 + \beta' X + \lambda' Z + \xi_{ijt} \qquad (10)$$

Where vectors X and Z, respectively denote donor-recipient macroeconomic factors and fixed effects arising from the recipient's membership to one or more of the regional trading agreements that might influence the donor's multilateral commitments under *WTO*. Expanding our vector of the donor-recipient country specific factors X and recipient-specific fixed effects Z depicting its membership to regional trading agreements in equation (10), we have the following empirical model:

$$\begin{aligned}\ln \mathrm{AF}T_{jt} = {} & \alpha_0 + \beta_1\left(\ln AFFIN\_X_{ijt}\right) + \beta_2\left(\ln AFFIN\_M_{ijt}\right) + \beta_3\left(\ln PCI\_C_{jt}\right) + \beta_3\left(\ln VULN\_C_{jt}\right) \\ & + \beta_4\left(\ln FDI\_S_{jt}\right) + \beta_5\left(\ln AIDPC\_N_{jt}\right) + \beta_6\left(\ln REM\_E_{jt}\right) + \beta_7 \ln FREE\_E_{jt\,jt} + \beta_8\left(\ln RWTO\_Y_{jt}\right) \\ & + \beta_9\left(\ln NDC\_X_{jt}\right) + \beta_{10}\left(\ln NDC\_M_{jt}\right) + \beta_{11} \ln ECON\_G_{jt} + \beta_{12} \ln POL\_G_{jt} + \beta_{12}\left(\ln SOC\_G_{jt}\right) \\ & + \beta_{13}ENG_j + \beta_{14}SMIL_j + \beta_{15}LLCK_j + \beta_{16}FTAA_j + \beta_{17}ANDEAN_j + \beta_{18}APEC_j + \beta_{19}ASEAN_j \\ & + \beta_{16}FTAA_j + \beta_{17}ANDEAN_j + \beta_{18}APEC_j + \beta_{19}ASEAN_j + \beta_{20}CARICOM_j + \xi_{ijt} \qquad (11)\end{aligned}$$

2.3 Variable Descriptions, Hypotheses, and the Data

Following the theoretical model, we expect that the trade interest of donors would be in promoting growth and alleviating economic difficulties of developing countries. Recipients could thus be donor's major trading partners, either as markets for their exports, or as sources of imports. Under such a scenario, Maizels and Nissanke (1984) indicate that aid would help ensure the profitability of donors' export trade and the adequacy of essential imports from suppliers. Cnossen et al. (1999) and Lloyd et al. (2001) maintain that the link between aid and trade can be bi-directional, making trade (recipients' imports from donors)

an indicator of economic ties between donors and recipients. Thus, we expect the allocation of aid to be a function of the recipients' past trade affinity with the donor. We include variables that control for the degree of trade affinity based on the volume of exports (*Affin_X*) and imports (*Affin_M*).

In their recent study of the relationship between foreign direct investment and overseas development assistance (*ODA*), Chauvet and Mesple-Somps (2006) indicate that the stock of donors' foreign direct investment in the recipient countries may influence the amount of aid received by a given country as *FDI* (i) improves the economic performance and capacity of recipients to absorb aid, (ii) captures the commercial and strategic interests of donor countries, and (iii) reflects the need for foreign capital in the recipient countries. Thus, we include the stock foreign direct investment (*FDI*) as an explanatory variable. While the first two reasons suggest *FDI* and aid (*AFT*) to be positively related, the third indicates the relationship to be negative suggesting that aid compensates for low allocations of foreign capital. Consequently, we maintain that the impact of *FDI* on *AFT* allocation is ambiguous, ***a priori***.

Collier and Dollar (2001) argue that aid allocation decision should be guided by the poverty-efficiency principle, making the primary determinant of aid allocation to be the goal of achieving the largest possible reduction in poverty. McGillivray (2005) indicates that taking into account the structural vulnerability and political stability of recipients in aid allocation would ensure poorer countries to receive more aid without compromising the poverty reduction efficiency. While Guillamont (2006) and Llvador and Roemer (2001) echo similar arguments, Round and Odedokun (2004) suggest economies of scale, domestic pro-poor policy, the extent of donors' military adventurism, political polarization and

fractionalization of the recipient countries as determinants of the aid for trade allocation. To this end, we include the vulnerability index (*VULN_C*) as a measure of the overall dependency of each recipient country in our data. We expect *AFT* allocation to be larger in countries with higher vulnerability (*VULN_C*) index.

We also include three variables, namely *ECON_G, POL_G, and SOC_G*, respectively, representing the degree of economic, political, and social globalization of the recipient countries. According to the International Forum on Globalization (IFG, 2002), economic globalization is anchored on four important pillars including: 1) the need to integrate and merge the economic activity of all countries into a single, homogenized model of development, 2) giving primary importance to achieving an ever more rapid and never ending global corporate economic growth, 3) the privatization and commodification of goods as many traditionally non-commodified nooks and crannies of existence, and 4) emphasis on conversion to export-oriented production and trade as economic and social means of progress. Increased transfer of capital from rich to poorer nations is thus listed as a justification for enhancing the economic globalization of developing countries (Rosenberg, 2007). Thus, we expect a decreasing proportion of *AFT* outlays extended to developing countries with relatively higher degree of economic globalization.

In their study of the patterns of allocation of foreign aid from various donors to receiving countries, Alesina and Dollar (2000) find considerable evidence suggesting that the direction of foreign aid is dictated by political and strategic considerations much more than by the economic needs and the policy performance of the recipient countries. Accordingly, they argue that colonial past and political alliances are the key determinants

of foreign assistance for trade promotion while marginal countries that democratize receive more aid, ceteris paribus. The main sources of external financing for developing countries was the official development assistance provided by governments of high-income countries in the form of food aid, emergency relief, technical assistance, peace keeping efforts, and financing for construction projects. Donor countries were motivated by the desire to support their political allies and trade partners to expand the markets for their exports and to reduce poverty and military conflicts threatening international security (Sheram and Soubbotina, 2000). Thus, we expect the coefficient of political globalization (*POL_G*) to be positive.

The social dimension of globalization (*SOC_G*) refers to its impact on the life and work of people, their families, and their societies with respect to employment, working conditions, income, and social protection (International Labor Organization, 2004; Rodrik, 1997). Because aid for trade may flow to countries which are negatively impacted by the social dimension of globalization in the form of trade adjustment assistance, we expect a positive relation between *AFT* and the degree of social globalization of recipient countries, *SOC_G*.

The flow foreign aid to developing countries as a source of real per capita growth has been widely studied and the findings are mixed at best i.e. positive (Chenery and Strout, 1966; Papanek, 1973; Fayissa and El-Kaissy, 1999) and negative (Heller, 1975; Mosley, 1987; Pack and Rothenberg, 1990; Boone, 1994; Easterly, 2006). In a recent study, Dollar and Levin (2004) have found that, over time, aid has become directed more towards countries with sound institutions and policies. When donors' interests dominate

over the recipients needs, foreign aid may actually have unintended consequences of appreciating the domestic exchange rate and reduce the real per capita income, and vice versa. Consequently, we expect a negative relationship between real per capita income (*PCI*) and the foreign aid flow.

On the other hand, we expect that countries that traditionally receive larger amounts of foreign aid (*AIDPC)* to also receive larger amounts of assistance for the promotion of their international trade and integration into the world. Thus, we include the real non-US per capita aid flow into each recipient country to be positively related with the *AFT*. Repressive governments that have received massive foreign aid based on the donors' political interests have failed to experience economic growth due to lack of economic freedom (CATO Institute, 2006). We, thus, include a variable representing the index of economic freedom index (*EFREE*) in our model to capture the effect of lack of economic freedom on the flow of foreign assistance for trade policy liberalization and the promotion of trade capacity building.

Since each recipient country's geographic location with respect to that of a particular donor may also depend on other donors, we include a measure of economic remoteness in our model to reflect the trading opportunities available to each recipient country. Expressed as $REM_{jt} = 1/\sum_{k=1}^{K}\left[\left(Y_{kt}/Y_{wt}\right)/GD_{jk}\right]$, the variable is a measure of an inverse of the quasi-distance described in Wagner et al. (2002), where GD_{jk} is the distance between each recipient country *i* and all other donors K excluding a given donor, and Y_{it} is the total output of country *i* and Y_{wt} represents gross global product (World Bank, 2006).

We also include dummy variables capturing both the recipient and donor country and regional characteristics that may influence the aid allocation of donors. For example, common language has been identified as an important determinant of trade flows in gravity specifications (Dunlevy, 2006; Hutchinson, 2002). By implication, developing countries that share a common language with the donors may receive more generous aid for trade assistance. Thus, we include a dummy variable *ENGLISH* which takes a value of 1 if English is the official language of a given country (CIA, 2006), 0 otherwise. Taking a value of 1 if the *AFT* recipient is a small island economy and 0, otherwise, the dummy variable *SMLI_C* is included to account for deliberate decisions of donors to assist economies that often fail to take advantage of international trading opportunities because of their size. Thus, we expect a negative relationship between *AFT* and *SMLI_C*.

Using data from the IMF, Radelet and Sachs (1998) estimate that transport and insurance costs are twice as high for landlocked countries as for coastal countries. Given that the primary goal of *AFT* is to improve trade performance of the recipient countries, we include a dummy variable *LLOCKED* which takes a value of 1 if a country is landlocked and 0 otherwise, to capture the effects of geographic location of each country on *AFT* outlay allocation.

The disbursement of foreign aid for trade capacity building may also be influenced by the regional orientation of trading blocs. As an extension of the North American Free Trade Agreement (*NATFA*), the Free Trade Area of the Americas (*FTAA*) has been fiercely resisted on the presumption that the creation of such a massive trading bloc in the western hemisphere will result in the transfer of thousands of jobs and economic power from the

U.S. to the South (Jasper, 2004) and trade related intellectual property problems (*TRIPS)* (Weisman, 2001). On the other hand, given its commitments to *WTO*, the U.S. provides a substantial amount of funds to promote the ability of developing countries to effectively participate in their respective regional trading blocks. Thus, we include dummies denoting the Free Trade Area of the Americas (*FTAA*), the Asian Pacific Economic Cooperation (*APEC*), the South African Development Community (*SADC*), the Western African Economic and Monetary Union (*WAEMU*), and the African Growth and Opportunity Agreement (*AGOA*). Greater complementarities between several other regional trading blocks such as the *ASEAN*, the U.S.-South African customs union (*SACU*), the *ANDEAN* Community (comprising of Colombia, Ecuador, and Venezuela) the Caribbean Community (*CARICOM)*, the Common Markets of Eastern South Africa (*COMESA*), the Economic Community of West African States (ECOWAS), and the largest Common Market of South America (*MERCOSUR*) and trade intensity might also bias US *AFT* allocation (Nicholas, 2007).

III. Empirical Results

Table-1 presents total and average annual *AFT* outlays extended by the U.S. to 155 developing countries during 1999-2005 periods together with the rate of growth of the outlays and the proportion of the outlays extended under different schemes. Accordingly, from 1999-2005, the U.S. has allocated more $7.9 billion for *AFT* related projects, with an average annual outlay of $884 Million, and at an annual growth rate of 0.19 percent. Project wise, while 24.33 percent of *AFT* outlays (the largest share) went to financing projects aimed at facilitating trade performance of the recipient countries, projects in the

area of Physical Infrastructure Development (22.89 percent), Financial Sector Dev. & Good Governance (11.28 percent) and Trade-Related Agricultural Programs (10.43 percent) also receiving a lion's share of the total *AFT* budget.

[Insert Tables-1 and 2 here]

Table-2 presents descriptive statistics of the variables for a sample of 54 countries included in our empirical analysis, for which data on all the variables of the empirical model are available, during the 2000-2005 time period. While the descriptive statistics for most of the variables are self-explanatory, it is important to note that the *AFT* outlays of a typical country in the analysis ranges from a minimum of 0 to a maximum of $118 Million, with an average annual *AFT* outlay of $5.8 Million. On average, the countries that received *AFT* had per capita purchasing power parity (PPP prices) of $4,619 with a range of $524.00 to $13,000 and non-U.S. aid flow of about $26.33 per person. About 17 percent of the countries are landlocked economies, 8 percent of them being small island nations, and English is a common language in about 18 percent of the recipient countries, 35 percent (the largest) of them being members of FTAA. An evaluation of the extent to which these countries were affiliated to the U.S. markets using exports and imports as our measures of trade affinity indicates that the extent to which the typical recipient country is integrated to the U.S. economy appears to be larger in terms of U.S. imports (0.46) than U.S. exports (0.16). The typical country has a relatively higher degree of economic, political, and social index of globalization (55, 56, and 40 percent), respectively. As indicated earlier, *AFT* is driven by both the altruistic and the self-interest of donors; the extent to which recipient country-specific characteristics and membership to different regional trading blocs affect

the relative amount of *AFT* received by each country is a matter of empirical question. Below, we turn to our main objective of identifying the determinants of U.S. *AFT* outlays and provide a summary of the findings based on results from the Tobit model estimation of Equation 11. The results presented in Tables 3a-3c provide interesting insights on the key donor- recipient country-specific factors that determine the proportion of U.S. *AFT* outlays allocated to the sample countries in our data set. Table-3a provides marginal effects of the determinants of *AFT*. In Tables-3b and 3c, we decompose the marginal effects to separate the extent to which each of the variables affects the propensity (likelihood) of U.S. *AFT* outlays and conditional on the positive *AFT* outlays, the intensity (proportion) of *AFT* outlays allocated to a typical recipient.

[Insert Tables 3a,3b &3c here]

In each case, we estimate four versions of our general model. In model-1, we account only for the impact of the basic variables. In model-2, we control for the number of documents needed for importing and exporting purposes reflecting differences in the commercial policy measures of the recipient countries. In model-3, we account for the economic, social, and political globalization of the recipient countries. In model-4, we include all variables in model-3 and measures of the characteristics of the recipient countries, depicting their membership into different regional trading blocs as detailed in the estimation of Eq.-11.

The coefficients of the variables, both from the basic as well as the extended models indicate the following: 1) the proportion of U.S. *AFT* outlays allocated to a recipient increases with a rise in the level of trade integration of the recipient with the U.S. markets. To evaluate the relative importance of recipient's integration with the U.S. markets in serving as U.S. export destination and U.S. imports supply source, we include two measures of trade affinity: export affinity based on the ratio of U.S. exports to the recipients' GDP and import affinity is defined as the ratio of U.S. imports from the *AFT* recipients relative to its GDP. Results from the tables indicate that while the U.S. *AFT* outlays allocated to a typical country increases with an increase in the relative importance of the recipient as the destination for U.S. exports and decreases with a rise in the degree to which the recipient serves as supply source for U.S. imports. Accordingly, a one percent increase in the degree of export integration of the recipient to the U.S. markets increases its likelihood of receiving positive U.S. *AFT* by 1.81 percent and the intensity of U.S. *AFT* outlays by 4.75 percent (equivalent to $27.8 Million). A similar percentage increase in the ability of the recipients to serve as import supply source for the U.S., on the other hand, reduces its likelihood of receiving positive U.S. *AFT* outlays by 0.12 percent and the intensity of U.S, *AFT* outlays by 0.33 percent (equivalent to $1.93Million).

We also find a significantly larger share of U.S. *AFT* outlays with a rise in the composite vulnerability index, amounts of traditional aid (non-*AFT*) received per person, the relative number of years the recipient country has been a member of WTO, and its degree of political globalization. Accordingly, while a one percentage point increase the composite vulnerability index of a country results in a 0.49 percent increase in the proportion of the *AFT* allocated to a country, a similar percentage increase in the amount of

traditional non-*AFT* aid and relative number of years spent as member of *WTO* would increase the likelihood of the recipient to receive *AFT* outlays of the U.S. by 0.19 percent.

Consistent with the theoretical predictions, we observe a declining proportion of U.S. *AFT* outlays with a rise in the per-capita income level (*PCI*), the number of documents needed for exporting (*WTOYRS*), and the degree of economic globalization of the recipient country (*ECON_G*). Accordingly, for every one percent increase in the per capita income level (*PCI*), while the likelihood of the country to receive positive U.S. *AFT* outlays decreases by 0.17 percent, the proportion of actual *AFT* outlays it receives falls by 0.46 percent. A similar percentage increase in the number of documents necessary for completing export of the recipient country reduces its likelihood of being US *AFT* recipient by 0.50 percent while reducing the actual *AFT* outlays it receives by 1.30 percent.

Given that the economic globalization of a country is an indication of the extent to which it has integrated with the economic activity of all countries, we observe that with a one percent increase in the degree of economic globalization of a country results in a 0.024 percent reduction in the U.S. *AFT* allocation intensity while the likelihood of obtaining a positive *AFT* by a typical recipient only falls by 0.009 percent. In effect, these findings imply that in the U.S. *AFT* budget allocation priority is given to countries that have difficulty integrating themselves with the rest of the world, a premise upon which agreements among *WTO* members were reached in their drive for a new kind of economic assistance to developing countries. On the contrary, we observe that both the propensity and intensity of U.S. *AFT* outlays to a country rises with increased political globalization of the recipient country. Accordingly, a one percentage point increase in the political

globalization of a recipient country increases its likelihood of receiving positive *AFT* outlays by 0.008 percent while the intensity of U.S. *AFT* allocation to the country goes up by 0.02 percent. The divergence in both the likelihood (propensity) and intensity of U.S. *AFT* outlays allocated to a recipient country based on its indices of political and economic globalization is a clear reflection of the trade-off between the altruistic and self-interest motives that donors face in extending economic aid to developing countries.

While not consistent across all specifications, we also find that the proportion of U.S. *AFT* outlays that is transferred to a recipient significantly increases with a rise the index of its economic freedom and declines with a rise in the degree of the economic remoteness of the recipient country, implying that relatively larger U.S. *AFT* budgets are allocated to countries that have relatively lower trading opportunities. Lastly, turning to the trade-related regional economic characteristics of the recipients, we find that landlocked and *ANDEAN*, *ASEAN*, *ECOWAS*, and *SACU* regional trading block members, not only have higher likelihood of receiving U.S. *AFT* outlays, but also receive a larger proportion of the U.S. *AFT* than those that have access to seaports and are members of other regional trading blocs, a possible indication of the differences in the allocation of U.S. *AFT* budget following the relative importance of regional trading blocs to the U.S.

IV. Conclusion

In this paper, we have examined the salient donor-recipient specific factors that affect the allocation of U.S. *AFT* funds to developing countries. We find considerable

evidence that the direction of *AFT* is dictated as much by self-interest (political and strategic considerations) as by the economic needs and policy performance of the recipients (the altruistic behavior of the donor). The parameters of our "hybrid" models which reflect both the self-interest motive of the donor and the recipient's welfare as a basis for the *AFT* allocation suggest that there is evidence of both motives. Our study, however, corroborates the view that the former motive (i.e. the self-interest motive of the donor) appears to dominate the recipient's welfare considerations both in the direction and magnitude of the U.S. *AFT* allocation decision to developing countries in line with the findings of McGillivray and White (1993), Dollar and Levin (2004), Berthelemy and Tichit (2004), and Berthelemy (2006). The success of the renewed *AFT* effort for promoting the trade performance and poverty reduction in developing countries, hence, depends in the delicate balancing of the donor's self-interest motive against its altruistic motive of aid giving.

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Table-1: United States Aid for Trade (AFT) Global Outlays (Sum of AFT Extended to 155 Recipient Countries) in US$ by Type

TCB Category	Total US AFT Outlays by Type (1999-2007)	Proportion of AFT Outlays by Type	Average Annual AFT Outlays by Type (1999-2007)	Average Annual Growth Rate of AFT Outlay (1999-2007)
WTO Awareness and Accession	111,991,542.00	1.40	6,221,752.33	0.15
WTO Agreements (Sum of)	258,202,882.00	3.25	28,689,209.11	0.34
Agreements on Trade in Goods	14,775,267.00	*5.72*	1,641,696.33	0.21
Agreement on Agriculture	24,661,493.00	*9.55*	2,740,165.89	0.51
Agreement on SPS	63,651,792.00	*24.65*	7,072,421.33	0.33
Agreement on TBT	29,472,045.00	*11.41*	3,274,671.67	0.53
Agreement on TRIMs	5,039,555.00	*1.95*	559,950.56	17.48
Agreement on Anti-Dumping	2,484,402.00	*0.96*	276,044.67	3.98
Agreement on Customs Valuation Methods	22,048,588.00	*8.54*	2,449,843.11	0.33
Agreement on Rules of Origin	6,533,597.00	*2.53*	725,955.22	0.61
Agreement on Import Licensing Proc.	2,783,588.00	*1.08*	347,948.50	0.53
Agreement on CVMs	2,784,466.00	*1.08*	309,385.11	2.83
Agreement on Safeguards	3,134,474.00	*1.21*	348,274.89	2.66
General Agreement on Trade in Services	15,604,447.00	*6.04*	1,733,827.44	20.56
Agreement on TRIPs	40,386,437.00	*15.64*	4,487,381.89	0.79
Agreement on Disputes Settlement	5,853,057.00	*2.27*	650,339.67	0.24
Agreement on TPRM	5,946,609.00	*2.30*	660,734.33	7.20
Agreement on Gov't Procurement	11,289,765.00	*4.37*	1,254,418.33	0.26
Other WTO Agreements	1,753,296.00	*0.68*	292,216.00	8.71
Trade Facilitation	1,935,483,626.00	24.33	215,053,736.22	0.23
Customs Operation & Administration	200,673,618.00	2.52	33,445,603.00	0.30
E-Commerce & IT	149,189,863.00	1.88	24,864,977.17	0.07
Export Promotion	423,678,325.00	5.33	70,613,054.17	0.13
Business Services & Training	643,463,858.00	8.09	107,243,976.33	0.16
Regional Trade Agreements (RTA)	130,163,366.00	1.64	21,693,894.33	0.21
Other Trade Facilitation	106,944,966.00	1.34	17,824,161.00	0.47
Human Resources & Labor Standards	897,177,647.00	11.28	99,686,405.22	0.19
Financial Sector Dev. & Good Governance	795,950,121.00	10.01	88,438,902.33	0.15
Physical Infrastructure Development	1,820,952,757.00	22.89	202,328,084.11	0.56
Environmental Trade & Standards	274,412,976.00	3.45	30,490,330.67	0.15
Competition Policy & Foreign Investment	224,075,126.00	2.82	24,897,236.22	0.01
Trade-Related Agriculture	829,002,270.00	10.42	92,111,363.33	0.19
Tourism Sector Development	108,130,823.00	1.36	12,014,535.89	0.45
Other Services Development	90,620,203.00	1.14	10,068,911.44	0.10
Gov/Transparency & Inter-Agency Coord.	345,663,889.00	4.34	38,407,098.78	0.15
Other TCB	263,777,064.00	3.32	29,308,562.67	2.70
TOTAL TCB	7,955,441,091.00	100.00	883,937,899.00	0.19

Source: Authors Calculation Based on Data from USAID(2007)

Table 2: Descriptive Statistics of the varibales in the Model

Variable	Mean	Std. Dev.	Min	Max
Total AFT Outlay	5,854,885.00	13,700,000.00	0.00	118,000,000.00
Share of AFT Outlay Received	1.06	2.45	0.00	21.32
Trade Affinity (Based on US Exports)	0.16	0.20	0.01	1.40
Trade Affinity (Based on US Imports)	0.49	1.42	0.00	21.94
Vulnerability Index (Output)	5.45	2.61	1.59	13.49
Vulnerability Index (Composite)	4.99	1.05	3.19	10.16
Stock of FDI ($Million)	20,760.21	42,263.96	132.36	272,094.00
Economic Freedom Index	59.03	7.37	33.40	79.27
Economic Remoteness Index	117,957.90	193,806.60	585.56	1,062,190.00
Real Per Capita Income (PPP)-- in $	4,619.14	3,270.17	524.19	13,880.82
Real Aid Per Capita (Non- US)--In $	26.33	34.00	-14.20	223.18
Relative Number of Years in WTO	0.94	0.18	0.00	1.00
Economic Globalization Index	54.81	12.71	23.83	85.13
Political Globalization Index	56.54	23.33	11.00	93.10
Social Globalization Index	40.36	11.12	17.55	66.81
Number of Documents to Export	7.48	1.90	3.00	12.00
Number of Documents to Import	8.19	1.77	4.00	13.00
Common Culture (Language)	0.19	0.39	0.00	1.00
Land Locked Economy	0.17	0.37	0.00	1.00
Small Island Economy	0.08	0.27	0.00	1.00
Membership To Regional Trade Agreement				
FTAA	0.35	0.48	0.00	1.00
ANDEAN	0.09	0.29	0.00	1.00
APEC	0.13	0.34	0.00	1.00
ASEAN	0.07	0.26	0.00	1.00
CARICOM	0.06	0.23	0.00	1.00
COMESA	0.11	0.31	0.00	1.00
ECOWAS	0.11	0.31	0.00	1.00
MERCOSUR	0.06	0.23	0.00	1.00
SACU	0.06	0.23	0.00	1.00
SADC	0.15	0.36	0.00	1.00
WAEMU	0.07	0.26	0.00	1.00
AGOA	0.31	0.47	0.00	1.00

Table-3a: Tobit Model Estimates of Donor-Recipient Characteristics as Determinants of AFT Allocation--Aggregate Share

	(1) Share of AFT(%)	(2) Share of AFT(%)	(3) Share of AFT(%)	(4) Share of AFT(%)
llgaffin	0.35654			
	(3.22)***			
llgaffin_x		2.43286	3.84326	6.75916
		(2.28)**	(3.49)***	(4.96)***
llgaffin_m		-0.73301	-0.37002	-0.46465
		(1.93)*	(1.93)*	(1.98)**
lcompvul	1.11650	0.81786	2.09456	0.70288
	(1.56)	(1.10)	(2.75)***	(2.76)***
lfdi	-0.25125	-0.13002	-0.04988	-0.06037
	(1.93)*	(1.05)	(0.34)	(0.36)
ENGLISH	-0.16078	-0.13356	-0.17453	-0.51292
	(0.66)	(0.54)	(0.73)	(1.58)
LLOCKED	0.34930	0.05053	0.55449	0.75255
	(1.10)	(0.17)	(1.57)	(1.95)*
lefree	0.89036	0.95292	0.70969	2.06465
	(1.02)	(1.09)	(0.79)	(2.08)**
lremo	-0.46821	-0.65632	-0.37777	-0.22336
	(3.19)***	(4.46)***	(2.08)**	(1.19)
lrpci	-0.64986	-0.56506	-0.20869	-0.65184
	(3.68)***	(3.18)***	(0.96)	(2.12)**
RAIDPC	0.01182	0.01276	0.01561	0.01476
	(4.21)***	(4.42)***	(4.56)***	(4.17)***
SMILAND	-0.29410	-0.29201	-0.43248	-0.66889
	(0.75)	(0.71)	(1.09)	(1.25)
RWTOYRS	1.20966	1.35422	0.83818	0.15443
	(2.22)**	(2.43)**	(1.40)	(2.22)***
ldocexp		-0.74816	-1.75009	-1.85391
		(1.51)	(3.28)***	(2.79)***
ldocimp		-0.03227	0.50219	0.43178
		(0.05)	(0.78)	(0.57)
ECON_GLOB			-0.03969	-0.03452
			(2.91)***	(2.08)**
POL_GLOB			0.02748	0.02841
			(3.14)***	(2.94)***
SOC_GLOB			0.00454	-0.00445
			(0.31)	(0.28)
FTAA				-1.21120
				(1.99)**
ANDEAN				0.99120
				(1.78)*
APEC				-0.92763
				(2.40)**
ASEAN				1.26039
				(1.78)*
CARICOM				1.30146
				(1.29)
COMESA				0.71236
				(1.30)
ECOWAS				1.87917

				(2.12)**
MERCOSUR				0.76834
				(1.00)
SACU				2.78512

Table-3a:Continued …

	(1) Share of AFT(%)	(2) Share of AFT(%)	(3) Share of AFT(%)	(4) Share of AFT(%)
llgaffin	0.35654			
				(2.66)***
SADC				-0.31719
				(0.80)
WAEMU				-1.15853
				(2.29)**
AGOA				-1.36760
				(3.74)***
Constant	-1.25554	7.77146	1.70382	1.91015
	(0.34)	(1.94)*	(0.35)	(0.34)
Observations	330	330	324	324
Pseudo R-squared	0.04	0.04	0.07	0.09

Absolute value of z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%

Table-3b:Tobit Model Estimates of Donor-Recipient Characteristics as Determinants of AFT Allocation--Propensity

	(1) Share of AFT(%)	(2) Share of AFT(%)	(3) Share of AFT(%)	(4) Share of AFT(%)
llgaffin	0.08965			
	(3.22)***			
llgaffin_x		0.61255	1.00031	1.81371
		(2.28)**	(3.49)***	(4.96)***
llgaffin_m		-0.18456	-0.09631	-0.12468
		(1.93)*	(1.93)*	(1.98)**
lcompvul	0.28075	0.20592	0.54517	0.18861
	(1.56)	(1.10)	(2.75)***	(2.76)***
lfdi	-0.06318	-0.03274	-0.01298	-0.01620
	(1.93)*	(1.05)	(0.34)	(0.36)
ENGLISH	-0.04167	-0.03448	-0.04701	-0.15280
	(0.66)	(0.54)	(0.73)	(1.58)
LLOCKED	0.08202	0.01260	0.12886	0.17221
	(1.10)	(0.17)	(1.57)	(1.95)*
lefree	0.22389	0.23993	0.18472	0.55401
	(1.02)	(1.09)	(0.79)	(2.08)**
lremo	-0.11774	-0.16525	-0.09833	-0.05993
	(3.19)***	(4.46)***	(2.08)**	(1.19)
lrpci	-0.16341	-0.14227	-0.05432	-0.17491
	(3.68)***	(3.18)***	(0.96)	(2.12)**
RAIDPC	0.00297	0.00321	0.00406	0.00396
	(4.21)***	(4.42)***	(4.56)***	(4.17)***
SMILAND	-0.07964	-0.07915	-0.12637	-0.21696
	(0.75)	(0.71)	(1.09)	(1.25)
RWTOYRS	0.30418	0.34097	0.21816	0.04144
	(2.22)**	(2.43)**	(1.40)	(2.22)***
ldocexp		-0.18837	-0.45551	-0.49747
		(1.51)	(3.28)***	(2.79)***
ldocimp		-0.00812	0.13071	0.11586
		(0.05)	(0.78)	(0.57)
ECON_GLOB			-0.01033	-0.00926
			(2.91)***	(2.08)**
POL_GLOB			0.00715	0.00762
			(3.14)***	(2.94)***
SOC_GLOB			0.00118	-0.00119
			(0.31)	(0.28)
FTAA				-0.35643
				(1.99)**
ANDEAN				0.20727
				(1.78)*
APEC				-0.31295
				(2.40)**
ASEAN				0.24407
				(1.78)*
CARICOM				0.24630
				(1.29)
COMESA				0.16066
				(1.30)
ECOWAS				0.32525

				(2.12)**
MERCOSUR				0.16691
				(1.00)
SACU				0.37013

Table-3b Continued…

	(1) Share of AFT(%)	(2) Share of AFT(%)	(3) Share of AFT(%)	(4) Share of AFT(%)
				(2.66)***
SADC				-0.09153
				(0.80)
WAEMU				-0.44083
				(2.29)**
AGOA				-0.41938
				(3.74)***
Constant	-0.31572	1.95670	0.44347	0.51256
	(0.34)	(1.94)*	(0.35)	(0.34)
Observations	330	330	324	324
Pseudo R-squared	0.04	0.04	0.07	0.09

Absolute value of z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%

Table-3c: Tobit Model Estimates of Donor-Recipient Characteristics as Determinants of AFT Allocation-Intensity

	(1) Share of AFT(%)	(2) Share of AFT(%)	(3) Share of AFT(%)	(4) Share of AFT(%)
llgaffin	0.25080			
	(3.22)***			
llgaffin_x		1.71121	2.69982	4.74576
		(2.28)**	(3.49)***	(4.96)***
llgaffin_m		-0.51558	-0.25993	-0.32624
		(1.93)*	(1.93)*	(1.98)**
lcompvul	0.78539	0.57526	1.47139	0.49351
	(1.56)	(1.10)	(2.75)***	(2.76)***
lfdi	-0.17674	-0.09145	-0.03504	-0.04238
	(1.93)*	(1.05)	(0.34)	(0.36)
ENGLISH	-0.11337	-0.09412	-0.12288	-0.36405
	(0.66)	(0.54)	(0.73)	(1.58)
LLOCKED	0.24522	0.03552	0.38967	0.53057
	(1.10)	(0.17)	(1.57)	(1.95)*
lefree	0.62631	0.67026	0.49855	1.44964
	(1.02)	(1.09)	(0.79)	(2.08)**
lremo	-0.32936	-0.46164	-0.26538	-0.15682
	(3.19)***	(4.46)***	(2.08)**	(1.19)
lrpci	-0.45714	-0.39745	-0.14660	-0.45767
	(3.68)***	(3.18)***	(0.96)	(2.12)**
RAIDPC	0.00832	0.00897	0.01097	0.01036
	(4.21)***	(4.42)***	(4.56)***	(4.17)***
SMILAND	-0.20840	-0.20688	-0.30748	-0.48229
	(0.75)	(0.71)	(1.09)	(1.25)
RWTOYRS	0.85092	0.95252	0.58881	0.10843
	(2.22)**	(2.43)**	(1.40)	(2.22)***
ldocexp		-0.52624	-1.22941	-1.30167
		(1.51)	(3.28)***	(2.79)***
ldocimp		-0.02270	0.35278	0.30316
		(0.05)	(0.78)	(0.57)
ECON_GLOB			-0.02788	-0.02423
			(2.91)***	(2.08)**
POL_GLOB			0.01930	0.01995
			(3.14)***	(2.94)***
SOC_GLOB			0.00319	-0.00312
			(0.31)	(0.28)
FTAA				-0.87098
				(1.99)**
ANDEAN				0.70359
				(1.78)*
APEC				-0.67949
				(2.40)**
ASEAN				0.90260
				(1.78)*
CARICOM				0.93425
				(1.29)
COMESA				0.50226
				(1.30)
ECOWAS				1.37242

				(2.12)**
MERCOSUR				0.54290
				(1.00)
SACU				2.12700

Table-3c Continued …

	(1) Share of AFT(%)	(2) Share of AFT(%)	(3) Share of AFT(%)	(4) Share of AFT(%)
				(2.66)***
SADC				-0.22397
				(0.80)
WAEMU				-0.89730
				(2.29)**
AGOA				-0.99576
				(3.74)***
Constant	-0.88320	5.46623	1.19690	1.34116
	(0.34)	(1.94)*	(0.35)	(0.34)
Observations	330	330	324	324
Pseudo R-squared	0.04	0.04	0.07	0.09

Absolute value of z statistics in parentheses * significant at 10%; ** significant at 5%; *** significant at 1%