

**AID FOR TRADE
IN HISTORICAL PERSPECTIVE:
WHAT CAN WE EXPECT
FROM CURRENT INITIATIVES**

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ABSTRACT

Has ‘Aid for Trade’ been successful in reducing trade transaction costs? If so, what are the expected returns to trade-related investments? The Gravity Model is used to evaluate the trade effects of aid for trade disbursements for the period 1988-2006 across 78 recipient countries. The project takes several approaches with respect to ‘Aid for Trade’ and recipient country aggregations. Estimates reveal that cumulative Aid for Trade has a positive and significant impact on trade flows although significantly less so for geographically remote regions. Disaggregated estimates of trade aid reveal positive and significant findings for investments in trade-related technical assistance and infrastructure, while investments in trade development yield marginal returns at best, the lone exception being emerging market economies. The tentative conclusion is that current ‘aid for trade’ initiatives hold much promise for stimulating trade growth. However, given the potential for adverse economic effects, a more cautious approach is warranted.

Keywords: Trade Capacity, Trade Development, Trade-Related Technical Assistance, Trade Infrastructure, Aid for Trade, Trade Transaction Costs

DEDICATION

To my family, for their thoughts, encouragement, and comic relief.

And to Carol-Anne, for her unconditional love, support, compassion, understanding, and patience and for the many sacrifices that she has so willingly undertaken throughout my academic pursuits.

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GLOSSARY

AfT	Aid for Trade
AGOA	African Growth and Opportunity Act
APEC	Asia Pacific Economic Cooperation
CRS	Creditor Reporting System
DDA	Doha Development Agenda
DTIS	Diagnostic Trade Integration Study
EBA	Everything but Arms Treaty
EME	Emerging Market Economy
FAO	Food and Agriculture Organization
FTT	Freedom to Trade
G8	Group of Eight
G20	Group of Twenty
GDP	Gross Domestic Product
IF1	First Integrated Framework
IF2	Second Integrated Framework
IMF	International Monetary Fund
ITC	International Trade Centre
JITAP	Joint Integrated Technical Assistance Program
LDC	Least Developed Country
MFN	Most Favoured Nation
NDC	Now Developed Country
NEG	New Economic Geography
ODA	Official Development Assistance
OECD	Organization for Economic Co-operation and Development

	Development Assistance Committee of the Organization for Economic
OECD/DAC	Co-operation and Development
OIE	World Organization for Animal Health
PCOI	Poor Coastal Oil Importer
PMA	Preferential Market Access
SIDC	Small Island Developing Country
SPS	Sanitary and Phytosanitary
STDF	Standards and Trade Development Facility
TF	Trade Facilitation
TD	Trade Development
TRTA/CB	Trade-Related Technical Assistance and Capacity Building
TTC	Trade Transaction Cost
UNCTAD	United Nations Conference on Trade and Development
UNDP	United Nations Development Program
WHO	World Health Organization
WTO	World Trade Organization

1: INTRODUCTION

The launch of the Doha Round, dubbed the ‘development round’, of WTO negotiations in 2001 has brought a renewed focus on the Aid for Trade (hereafter AfT) paradigm. AfT has existed for some time and has largely sought to address external (or demand-side) constraints by means of preferential market access and other favored trading relationships for lesser-developed countries. With the advent of the global debt crisis in the 1980s, the focus broadened to include support (mostly technical in nature) by the IMF and World Bank for countries engaged in lending programs aimed at liberalization of trade-related policies. However, the conclusion of the Uruguay Round and, subsequently, greater attention to MFN liberalization ushered in a decisive realignment in donor and recipient efforts towards addressing more internal (or supply-side) constraints through official flows. Implicit within this reallocation is the belief that despite, in many instances, getting the macroeconomic policy environment ‘right’, for example through structural adjustment policies, there are still sufficient domestic market failures and political constraints – be they institutional, informational, procedural, or other - that inflate the costs of trade and thereby result in under-investment by private capital in trade-related supply capacity. Underutilization of supply capacity in turn means that these economies are producing far below their potential. In essence, exorbitant trade transaction costs continue to undermine developing countries’ ability to harness and fully capitalize on trade opportunities available in the international market place, and therefore their ability to use trade as a tool for development. Consequently, official flows are thought necessary so as to equip recipient governments, institutions, and enterprises with the necessary tools for trading. This includes sufficient institutional, infrastructure, and knowledge capital as well as other support services that may initiate a supply response and thereby constitute an enabling environment in which trade and trade-related activities may flourish.

Despite the stalemates at Doha, AfT has managed to survive by integrating itself into development strategies of donors, recipients, and other international organizations, thereby taking on a life of its own. Indeed, the volume of AfT commitments rose substantially over the first half of the decade¹ (see Figures 1-4). As such, AfT is currently estimated to encompass roughly 20-40 percent of the total OECD/DAC ODA envelope (ODI/DATA 2006, OECD 2005, 2007)². This ‘enhanced profile’ is likely to be, at the very least, preserved over the medium term with the advance of new strategic statements, the range of initiatives to strengthen in-house capacities and increased prioritization in donor-partner dialogues and PRSPs all indicative of this trend (OECD 2007; Roberts 2006).

2: RATIONAL – WHY STUDY AID FOR TRADE?

As tariff barriers have steadily fallen with successive rounds of multilateral trade negotiations, other factors affecting the flow of trade are growing in importance. Addressing these factors may require substantial investment of resources, often most readily available from external sources. Traditionally, however, there has been an analytical gap between the aid and trade literature. That is, analysis of Aid and Trade has often taken place in separate silos and the two have traditionally been pitted as opposing rather than complementary strategies for development – as embodied in the debate of ‘aid versus trade’. As such, coordination between aid and trade policy presents a relatively new field of research. What is more, given that aid for trade involves opportunity costs in terms of fewer resources for other sectors, research, monitoring and appraisals of AfT disbursements is extremely important so as to decipher best (and worst) practices, strengthen mutual accountability, identify binding constraints and improve the overall effectiveness of AfT flows. To date, however, with the exception of a burgeoning inquiry into trade facilitation, there has been little consistent impact evaluation of AfT programs.

¹ Though many cite a 50% increase in available funds over this period, the omission of Iraq and Afghanistan and the conversion of flows into constant dollars disbursements reveals a slightly more modest increase at 24.6% over the period 2001-2006.

² Estimates vary along with definitions of AfT across international organizations and other statistical sources.

Where cases of self-assessment have been possible, the impact is found to have varied considerably. Evaluations have been mired by insufficient sample size, sample bias³, and spurious causation, among other inconsistencies. Given the lack of concrete information concerning the effectiveness of AfT, it is not surprising that many developing countries have been slow to mainstream AfT into national development strategies. Thus, greater understanding of AfT initiatives is an essential precondition for both donor and recipient engagement. As substantial commitments of resources have been forthcoming in recent years³ and particularly following the 2005 Hong Kong ministerial meeting of the WTO, it is time for the aid for trade dialogue to turn towards implementation and effectiveness. As such, it is the task of this paper to evaluate past performance of aid for trade initiatives in stimulating trade growth. The paper will begin with a clarification of what is meant by the term ‘aid for trade’ as well as a description of the three main sub-categories that comprise the AfT package. The paper will then offer an overview of both the theoretical and empirical literature underpinning AfT efforts with particular attention to the area of trade facilitation. Next, the paper will briefly characterize the context in which AfT is currently administered before moving on to an analysis of the associated costs and benefits. This is followed by an attempt to measure AfT against alternative courses of action. The paper will then turn to discussion of the relevant theory before presenting and interpreting the findings.

3: WHAT IS AID FOR TRADE?

Aid for Trade can be broadly defined as “any assistance intended to help countries to trade and, in particular, to help them take advantage of trade agreements” (Cameron and Njinkeu 2008, 2). Though there is little agreement as to their relative importance, there is, nonetheless, general consensus around three broad sub-components of the new

³ At the most recent meeting held in Geneva on November 20-21, 2007, donors reconfirmed their Hong Kong A4T pledges. In addition, The European Commission committed to an annual EUR 1 billion increase by 2010, with an additional EUR 1 billion from EU members. Also by 2010, the US has promised to double its spending to US \$2.7 billion. Furthermore, Japan pledged US \$ 10 billion in the period 2006-2008 (OECD/WTO 2007).

aid for trade regime. The first is trade-related technical assistance and capacity building (TRTA/CB), which concerns mostly the policy and regulatory environment. While the opportunities afforded by successive rounds of multilateral trade liberalization have made it easier for developing countries to access developed country markets, for many, there remain formidable technical challenges to meeting the demands of, and consequently assimilating within an increasingly complex global trading system. TRTA/CB therefore carries the objective of helping countries to negotiate, reform, and prepare for closer integration in the multilateral trading regime. In essence, this entails the development of human resources in a number of trade and trade-related activities including trade policy mainstreaming (into national development strategies), understanding, analysis and implementation of multilateral and bilateral trade agreements, trade facilitation including harmonization of behind the border measures (for example, customs regimes and tariff structures), and support for regional integration arrangements.

A second category of AfT is trade infrastructure, specifically transport and communications infrastructure. Included, for instance, are roads, ports, electricity, railways, and other networks that facilitate the production and flow of goods to markets while minimizing transaction costs. Transport infrastructure is identified as an important medium to trade particularly in the early stages of export development as cheaper transportation allows producer's better access to principle markets (Laird 2007, 11; Bannister and Thugge 2001). However, as social returns often exceed private returns, there is often significant under-investment in infrastructure by private capital⁴. Poor infrastructure, in turn, undermines competitive production and drives up costs, thereby restraining the potential for output growth (Bigsten and Soderbom 2005; Limao and Venables 2001). Nevertheless, despite its being a key constraint on trade competitiveness⁵, aid for infrastructure has, by and large, fallen out of fashion with donors in recent years as greater emphasis has been placed on aid for social sectors. As such, demand is far outstripping the requisite supply. Before we proceed, it is important

⁴ Typically, investments in infrastructure are not recouped until the long-term and yields, on average, tend to be low (Fugazza 2004, 47).

⁵ In several developing regions, particularly sub-Saharan Africa, existing infrastructure has been inherited from former colonial regimes and was designed foremost to service primary commodity extraction. As such, diversifying export bases and harnessing new opportunities in the global marketplace require significant investments in upgrading economic infrastructure.

to note two important challenges with respect to aid for infrastructure. For one, infrastructure is the most difficult of the three categories to define, as donors do not always specify whether infrastructure projects are trade-specific, which makes quantifying AfT resources particularly difficult. For example, how close must a road project be to a port to be considered ‘aid for trade’? As a result, those who seek to measure ‘infrastructure’ as AfT often use ODA for ‘economic infrastructure’ as a simple but imprecise proxy. Furthermore, as a result of the country-based nature of most aid programs, regional infrastructure needs are often unmet, to the detriment, in particular, of landlocked countries. This continues to be a challenge for the AfT regime (OECD 2007).

The third category is trade development. The objective here, seemingly, is to help firms engage in trade by targeting their productive potential. This includes improvements in the business climate (essentially, allowing businesses to be able to operate at competitive levels of cost and risk (Roberts 2006)), helping public-private sector networks to flourish (so as to properly identify needs as well as evaluate effectiveness in implementation), addressing credit market imperfections through greater access to trade finance and insurance⁶, and overcoming information asymmetries and deficient control systems that constrain adaptability to evolving tastes and standards in exporting markets. Aid for trade development may also entail the provision of information to potential foreign investors of opportunities within recipient countries as well as trade promotion activities in certain key sectors.

To illustrate both the demand and application of these three broad categories, consider the example of food and agricultural exports from developing markets, which together comprise roughly 61% of employment, 14% of GDP and the bulk of export earnings in developing countries (World Bank 1999). In the case of agricultural and food products especially, compliance with technical (i.e. sanitary and phytosanitary (SPS)) requirements is a prerequisite for successful export trade (Henson and Loader 2001, 88). At the same time, because of the perishable nature of these products, impediments that result in excess border delay can prove extremely costly, for instance, in terms of product loss and increased refrigeration and/or chemical cost. As such, given high transaction

⁶ In several LDCs, interest rates are between 20-30%, to the detriment of small and medium sized enterprises who lack access to international capital (Laird 2007, 11).

costs⁷, significant investments are required if agricultural exporting countries are to reap the full benefits of trade. Exporting countries must first be sure that producers have access to information on SPS requirements so that production and/or marketing techniques can be re-oriented to comply with standards and regulation imposed by the exporting market (Category 3: Trade Development). This, in turn, may require substantial investments in new production facilities -- for example landing and processing sites - in order to fulfill environment and/or public health requirements (Category 2: Infrastructure) (Henson and Loader 2001, 93). Moreover, exporting countries must also house requisite control and inspection capacity to ensure quality assurance is met, so as to minimize the risks of and consequent costs associated with rejection at the border. This, in turn, demands significant technical and/or scientific expertise related to trade formalities and the administration of cross-border procedures (Category 1: TRTA/CB). Thus, as we can see, there is both sufficient need and scope for trade-related aid.

Many analysts, organizations (including the World Bank and IMF), and WTO member countries also propose a fourth AfT category that would cover compensation for major micro- and macroeconomic adjustment costs attributed to the liberalization process pending the ‘ambitious’ conclusion of the Doha Round. Despite the positive-sum potential for both developed and developing nations of a successful Doha Round, there is wide variation in projections of short-term impacts across countries and sectors⁸. Although in practice total gains swamp total costs, the pains of adjustment and the possibility of ensuing social and political dislocations may constitute a price that is simply unaffordable for certain societies. Several advocates, therefore, view AfT adjustment as necessary in order to make MFN liberalization politically viable, especially given the rising tide of uncertainty and skepticism⁹ within LDCs with respect to the benefits of participating in the international trade regime. Indeed, the political significance of AfT is highlighted by the fact that trade facilitation is the only one of the

⁷ In one study of Japanese imports, trade transaction costs for agro-food products were found to be on average 50% higher than those for manufactured products (Walkenhorst and Yasui 2003, 11).

⁸ See for example Laird (2007) for a review of the literature.

⁹ This skepticism is attributed to several factors including the failure of structural adjustment policies in generating export growth, the substantial resource requirements of engagement in multilateral trade negotiations and rules enforcement (Bonaglia and Fukasaku 2002), and their perceived marginalized status within the agenda setting and negotiating framework.

'Singapore Issues' under negotiation at the Round (Ivanic et al 2006, 3). Therefore, it is argued that a 'concession' of AfT may be necessary in order to reduce opposition by certain developing countries to further MFN liberalization at the negotiating table (Bhagwati 2005, Evenett 2005, Stiglitz and Charlton 2006). On the surface, this appears consistent with the nature of the multilateral trade negotiation process, which is based on fashioning tradeoffs between member states. However, the ethics of inducing countries to support particular policies by means of direct monetary transfer remains questionable at best.

Others, perhaps less contentiously, see 'adjustment compensation' as more of an economic imperative given the anticipation of high transitional costs from a successful Doha Round conclusion¹⁰. Advocates here argue that the scope of adjustment assistance ought to extend beyond the traditional IMF-World Bank balance-of-payment activities, to include, for example, compensation for fiscal losses (in particular lost tariff revenue), welfare losses to net food importing LDCs (from higher food prices), costs of inter-sectoral labour reallocation (for example re-training and upgrading), implementation cost (including greater standards and regulations), as well as temporary assistance in the case of abrupt loss of key export markets (resulting from greater MFN liberalization and/or the expiry of preferential schemes). However, given that trade reform is but one of many factors driving 'adjustment', whether these 'costs' should be addressed within the new framework – and indeed, how to cost out adjustment processes that result from multilateral trade liberalization - continues to be a point of contention within the literature. Thus far, adjustment costs have yet to be included in the majority of AfT programs¹¹.

Taken together, the aid for trade program should aim to eliminate, or at least mitigate, supply side constraints through strengthening institutional development, increasing productivity, efficiency, and competitiveness, diversifying export capacity

¹⁰ Indeed, proponents are quick to point out that a number of previous international agreements that have anticipated structural adjustment have sought to include complimentary adjustment compensating packages including the IMF/World Bank Structural Adjustment Funds – which accompanied structural adjustment loan programs - and the EU's MEDA funds, which cover compensating transfers to Mediterranean countries experiencing sharp losses in tariff revenue (and consequent macroeconomic and social costs) from accession into the Barcelona Partnership (Suwa-Eisenmann and Verdier 2007, 497).

¹¹ Aid for commodity price stabilization is also under consideration but is yet to be included in official AfT packages (Laird 2007, 2).

(both in terms of products and markets), increasing value-added of exports, improving institutional capacity to engage in and comply with trade negotiations, and attracting foreign investment such that the recipient country may integrate and profit from the multilateral trading system and, accordingly, gain a solid footing on the development ladder. The goal of AfT, therefore, is to help recipient countries attain dynamic and innovative export-oriented sectors which achieve sustained growth through their ability to mobilize resources and to develop and market products, and through their resilience and ingenuity in the face of changing economic and political circumstances.

4: LITERATURE REVIEW¹²

Theoretically, the thrust for AfT could be conceptualized by the ‘capabilities approach’ put forth by Amartya Sen (1982), which distinguishes between positive and negative freedoms. In his study of Bengali famines, Sen identifies the limiting factor to food access not to be food supplies themselves, but a host of social and economic constraints that restrict the purchasing power of certain groups. As such, for those suffering from famine, the negative freedom to purchase food was not affected, rather they suffered because they lacked the positive freedoms to relieve themselves of hunger. Applied to the international trade regime, simply ensuring non-interference in the market place through, for example, ‘appropriate’ macroeconomic policies (i.e. negative freedom) is not sufficient for producers to engage in international economic transactions. Producers must have access to the tools (i.e. knowledge, finance, capital, etc) that allow them to compete effectively in the international marketplace. In this sense, Aid for Trade, is a proactive concept.

Indeed, many identify public financing for productive sector development as essential for trade growth. The influential Oxford economist and former director of development research at the World Bank, Paul Collier, has called for a one-off, country by country, big push in export sector aid (2007). The intent would be to lower trade

¹² For a more extensive review of the literature on Aid for Trade see, for example, Suwa-Eisenmann and Verdier (2007).

transaction costs so as to calibrate domestic export capacity to globally competitive levels. According to Collier, piecemeal disbursements are counterproductive given the relationship between aid inflows and the pressure on the domestic currency (*discussed in greater detail below*) and hence, disbursements of aid for trade development must entail a one-and-for-all component à la shock therapy. In view of the large disparity in export capacity between recipients and global ‘best-performers’, such a strategy necessitates a ‘big-push’ element if ‘under-performers’ are to reach comparable cost structures for exports.

There are others, however, who take a more disparaging view with respect to the entire spending process (Easterly, Levine, and Roodman (2003), Rajan and Subramanian (2005), and Roodman (2007)). William Easterly (2003, 2006), for example, unearths the poor track record of aid in stimulating economic growth and development in recipient countries over the past five decades. Easterly empirically dispels the idea that an aid-financed ‘Big Push’ of comprehensive, targeted investments can act as a primer for self-sustained economic growth. Given the scale of the current AfT regime, this is likely to be far from the exception. Unlike past efforts, therefore, aid-financed investments and actions geared towards addressing the constraints to trade (and development) are doomed for failure. Indeed, the current AfT regime encompasses many of the more destructive approaches to foreign aid identified by Easterly, including the inclusive and ‘top down’ nature in which AfT is operationalized (rhetoric of country ‘ownership’ aside), as well as the retention of collective responsibility for multiple goals, both of which, arguably, result in weak accountability. To be fair, however, the AfT regime has incorporated many of the more savory features of foreign assistance according to Easterly, including gauging and responding to need via individual country diagnostics and establishing mechanisms for monitoring and feedback (*see ‘governance structure’ below*).

Despite the dismal outlook of the empirical relationship between aid and growth *on aggregate*, there are, nonetheless, a number of studies demonstrating a strong causal link between trade-related aid and economic growth. Recently, Radelet and colleagues have undertaken to examine specific types of aid finding on average, a strong, positive, and causal effect between ‘early impact’ aid and economic growth, albeit with diminishing returns (2005). Here, ‘early impact’ aid, which accounts for roughly half of

the entire aid envelop, includes aid to build infrastructure (i.e. roads, bridges, irrigation systems and electricity) and to directly support productive sectors including agriculture, industry, trade, and services, or what otherwise constitutes the bulk of the AfT package.

Recently, and more specifically, a small body of literature has emerged identifying a positive relationship between trade growth and measures of trade facilitation (TF) – which is essentially a subcategory of the AfT envelop. Generally defined, trade facilitation is the alleviation of costs associated with procedures and controls governing the movement of goods across national borders. This relates specifically to the logistics of customs and regulatory environments, as well as harmonization of international standards and regulations (Wilson et al 2005). The implication of greater trade facilitation, therefore, is that resources devoted to suppressing these costs will also be positively related to trade growth. Here, two methodological approaches prevail.

The first is to introduce trade transaction costs (TTCs) or expenditures into a gravity model of bilateral trade so as to gain some appraisal of some specific cost or price of trading while holding constant other common factors affecting trade flows (ex. income, distance, tariffs, etc). Wilson, Mann and Otsuki (2003, 2005) for example examine trade transaction costs across four categories of trade facilitation: port infrastructure, customs environment, regulatory environment and e-business infrastructures (as proxy for trade support service sectors). Using an augmented gravity model, they estimate the effects of the four TF measures - based on survey and hard data - on trade flows in manufactured goods across directions of trade¹³. Their findings suggest that trade facilitation improvements in each of the four areas yield increases in both export and import flows (with the greatest elasticity in trade flows found in port efficiency (2003) and service sector infrastructure (2005)), where gains are a function of integration in global manufactures trade.

A second approach is to simulate - using for example competitive general equilibrium modeling - the effect of a reduction in trade costs on other economic or

¹³ Also see for example Moenius (2000) for the impact of common standards on bilateral trade flows; Yuen (2005) for the relationship between trade facilitation commitments and trade flows across different donor sources; Ivanic et al (2006) for the effect of alternative types of trade-promoting aid in reducing TTCs across various commodities; and De (2007) for the impact of various trade costs components on bilateral trade patterns in Asia.

monetary variables (for example trade growth, welfare gain, etc). The estimates from Wilson, Mann and Otsuki, for example, are used for simulating improvements in all four categories of trade facilitation. Specifically, the authors examine the effect of raising standards of the ‘below-average’ countries ‘halfway’ to global average. The result is a net increase in trade of 9.7%, equivalent to roughly US\$ 377 billion - though gains, which largely accrue through export expansion to OECD markets, depend heavily on market access (2005)¹⁴. Nevertheless, consistent positive estimates in the area of trade facilitation are encouraging for the Aid for Trade package.

5: GOVERNANCE STRUCTURE – WHAT IS FUNDAMENTALLY DIFFERENT ABOUT THE NEW AID FOR TRADE?

While there is little fundamentally new about composition of the AfT package itself, it is the administration, implementation, and scale of disbursements that differentiates current from past efforts. Thus, the extent to which past estimates of the effect of trade aid on trade flows can be used to project future returns depends in large part on the premium we attach to the framework in which AfT is currently dispersed. It is therefore important to review the overlying structure governing the execution of this new era of trade aid. With the conclusion of the Uruguay Round and the expansion of trade rules into new areas, it was thought that developing countries were disproportionately burdened by high costs for implementation. Many therefore, demanded assistance for compliance. Established in 1996, the Integrated Framework (hereafter IF) was the first attempt to address this demand for least developed countries. Comprising six multilateral organizations – UNCTAD, the ITC, UNDP, WTO, IMF and the World Bank – whose purview falls under trade related technical assistance and capacity building, the IF

¹⁴ Also see Walkenhorst and Yasui (2003) for the estimated impact of both direct and indirect trade transactions cost on global welfare, accounting for higher trade costs for agro-food products and small and medium sized enterprises; UNCTAD (2001) for benefits in Asian GDP of improvements in services in air and sea transport; APEC (1999, 2002) for benefits in merchandise exports for the APEC region; Fox et al (2003) for benefits on bilateral ground trade between the US and Mexico; Francois et al (2003) for an assessment of TF in the Netherlands and the implications for global welfare; and OECD (2003) for global benefits of TF measures.

mandated a more ‘integrated approach’ across the donor community to assisting LDCs in enhancing their trading opportunities (Prowse 2006). However, criticism over lack of country ownership and capacity as well as weak coordination and consistency in donor funding led to a reformulated Integrated Framework (IF2) in 2000 with greater attention to alignment and harmonization of donor funding as well as improved policy coherence within recipient countries. Thus, three mainstays of IF2 are the completion of a Diagnostic Trade Integration Study (DTIS)- the identification of key constraints and bottlenecks within the recipient country – which includes an action matrix¹⁵, greater focus on mainstreaming trade into national development plans so as to enhance country ownership and policy coherence among the various stakeholders, and greater efforts to coordinate donor response to identified needs, thereby bringing the IF more in line with the principles advocated at the Paris Declaration on Aid Effectiveness. As of March 2008, 45 LDCs had applied for assistance under this framework (Integrated Framework 2008). The IF therefore, serves as the leading implementation mechanism of AfT. Its success, however, depends in large part on the resolve of donors to commit sufficient funding in both a predictable and sustainable fashion.

Other international frameworks for coordination and funding include the Joint Integrated Technical Assistance Program (JITAP) – jointly administered by the WTO, UNCTAD, and the ITC - which is targeted mainly at trade capacity building within least developed and other African country governments as well as the Standards and Trade Development Facility (STDF) – a joint undertaking by the FAO, OIE, the World Bank, the WHO, and the WTO - targeted at aligning and implementing global health and safety standards within developing countries for trade and non-trade purposes.

In December 2005, the WTO included in its Ministerial Declaration at Hong Kong a commitment to take actions to encourage the new initiative on Aid for Trade. This was followed by the Recommendations of the WTO Task Force in July 2006, which provided a framework to operationalize AfT with particular emphasis on the principles of the Paris Declaration on Aid Effectiveness (OECD 2008). This has led to a number of donor pledges to scale-up their ‘aid for trade’ programs with the WTO providing a role in

¹⁵ This ranks the various tasks offered to external funding according to priority allotted (in consultation with relevant stakeholders).

promoting coherence as a forum for mobilizing, monitoring and evaluating AfT programs¹⁶. In terms of adjustment costs, in 2004 the IMF established its Trade Integration Mechanism to identify and address macroeconomic costs (in essence, short-term balance of payment issues) associated with trade liberalization, as it is common in the short-term for imports to increase rapidly relative to exports following trade reform. A number of multilateral and regional development banks are also major sources of trade investment and trade-related technical assistance when solicited by client countries (Hoekmann and Prowse 2005). It should be noted, however, that with the imminent death of the Doha Round and the reluctance of the World Bank and IMF to agree on an alternative framework, there may no longer be the necessary ‘institutional momentum’ (Page 2007a) nor a negotiating framework for future increases in AfT, a fact that remains particularly worrisome for aid advocates and developing countries alike.

6: GAINS FROM TRADE – DESIRED BENEFITS FROM AFT

There are a number of potential benefits from allocating aid resources towards building trade capacity. The first set of benefits stems directly from trade expansion itself and may be dependent on complementary reforms. To begin with, increased trade can generate growth in employment and wages. Employment growth comes not only from direct employment by the trading firm, but also indirectly as wealth generates flows through backward and forward linkages. That is, income received by direct employees of a firm may stimulate successive rounds of spending on goods and services and, ultimately, demand for labour to produce and sell these, such that the final increase in employment may well far exceed the initial demand by the trading firm. Job creation remains *the* top priority for citizens of LDCs according to a number of public opinion polls (see for example the Afrobarometer polls). With 90% of jobs in LDCs currently in the private sector (World Bank 2005), sustained foreign investment and other private sector development initiatives, including trade promotion, remain central to employment

¹⁶ This includes a global annual review of the Aid for Trade initiative.

creation. It should be noted, however, that the degree to which trade generates employment and wage growth depends in large part on labour market flexibility and the initial pattern of protection within the country concerned.

Concomitant to increased labour receipts, trade may also contribute to growth in output and productivity (Romer 1994; Edwards 1998; and Lumenga-Neso 2005). Integration within the international division of labour allows domestic firms and consumers alike, on aggregate, to reap the rewards of greater specialization in trade and increased international demand. This is by way of greater efficiency in production and access to cheaper goods and productive inputs as well as greater foreign exchange to import advanced capital and technology. In addition, trade expansion strengthens incentives for investment and increases the scope for learning by exporting¹⁷ – especially where domestic markets are so small so as to lack sufficient competition – both of which can improve scope for technological improvements and skill development, which are the keys to moving up the value-added ladder. Export diversification is also widely viewed as essential to decreasing vulnerability to external shocks (whether price, environmental, or other) and reducing long run dependence on a narrow range of markets and/or products. The degree to which trade contributes to productivity growth, however, may be subject to complementary policy and institutional environment (Rodrik and Rodriguez 1999).

It is also important to recognize the role of strong export growth in the context of industrialization and development. While we should be careful not to subscribe to a development blueprint *per se*, economic history tells us that the vast majority of (now) developed countries (NDCs) have done so based on strong export-led growth, particularly in the last half century. While this offers hope for late developers, it must also be taken into account that the current aid regime, while not overtly anti-trade, is not by itself going to provide the basis for a countries' transition to trade-led development (Booth 2006). Thus, in the eyes of many, AFT is a necessary complement to the new aid agenda. Again, however, the relationship between trade and development may be subject to favorable policy and institutional environments (Winters 2004)

Furthermore, while the direct relationship between trade and poverty reduction is less than clear, trade may, nonetheless, contribute to poverty reduction indirectly as an

¹⁷ See for example Harding, Soderbom and Teal (2004).

engine of long-run growth in aggregate income. In fact, there is little systematic evidence of a relationship between changes in trade to GDP and change in the income share of the poorest quintile (Dollar and Kraay 2004). That is, there is no empirical evidence showing that increased trade disproportionately affects, or for that matter neglects, poorer segments of the population. Therefore, to the degree that trade contributes to growth in national income, trade will lend to the improvement in the well being of the countries poorest citizens. Indeed, trade expansion helps the poor in the same fashion as it helps the rest of society, by lowering prices of imports and import substitutes, removing constraints to exports of which the poor are net producers, for example agriculture, and increasing the fiscal capacity for governments to reinforce redistributive channels, thereby expanding the range of choice and increasing real incomes (Bannister and Thugge 2001). Indeed, cross-country evidence finds that for those countries that have opened their economies in the last the last 25 years, absolute poverty has declined dramatically. The effect of trade on various segments of a countries labour force however is susceptible to initial conditions, policy environment, factor endowments and the functioning of social safety nets.

There are also a number of potential benefits specific to the administration of AfT. One hypothesis is that AfT may act to counterbalance exchange rate pressures from increasing inflows of ‘aid for development’ as promised by developed country leaders and the world’s leading development institutions at the 2000 Millennium Declaration, the 2002 Monterrey Consensus, and the G8 summits at Gleneagles and St. Petersburg. Aid windfalls may result in a recipient’s real exchange rate being overvalued, weakening export earnings of the tradable goods sector. This phenomenon is known as the ‘Dutch Disease’, of which, there are two possible avenues of contraction.

First, in a flexible exchange regime, aid inflows denominated in foreign currencies put upwards pressure on the nominal exchange rate. If wages do not respond by adjusting downwards, the tradable goods sector may become uncompetitive. Similarly, in a fixed exchange rate regime, when aid inflows are spent on domestic goods, they will push up the price of complementary resources that are in fixed supply—for example skilled labour or coastal land - thus rendering industries that depend on these resources uncompetitive in international markets (Rajan and Subramanian 2005). As the

traded goods sector is typically the basis of productivity growth (*as mentioned above*), as well as foreign exchange earnings within the economy, the adverse effect on trade costs readily spills over to other domestic sectors, undermining not only wages and employment in labor intensive and export sectors but ultimately, aggregate growth.

Indeed, Rajan and Subramanian show that industries with high labor share of value added - the very industries where poor countries have a comparative advantage in trade - tend to grow slower in countries that receive high aid inflows (2005). Only with a corresponding increase in demand do aid windfalls not disadvantage exporters. Thus, by alleviating trading costs, AfT should serve to boost the export base; thereby offsetting these negative macro effects on export cost and reducing the need for aid sterilization (i.e. borrowing on local capital markets which, in turn, raises local interest rates, squeezing out the private sector) (Booth 2006; Fugazza 2004). What is more, major components of the AfT envelope, namely infrastructure and technical assistance, are import-intensive and may not, therefore, be predisposed toward exchange rate pressure. Nonetheless, it should be noted that complementary empirical evidence in this regard is scant (Suwa-Eisenmann and Verbier 2007, 502).

Finally, in the long term, AfT aims to strengthen the recipient country's resolve for self-sufficiency and aid autonomy. The goal of AfT therefore is for countries to be able to eventually marshal their own resources for economic and social development purposes. In contrast to the current ideological impetus for aid embodied in the Millennium Development Goals, which has concentrated simply on the attainment of select targets, AfT focuses on the means by which to achieve these results, supporting rather than crowding out local economic interests, thereby promoting sustainable development. As such, AfT seeks to break both poverty and dependency traps, while, on net, enhancing the welfare of developed and developing countries alike. In sum, while the economic and social implications of aid for trade are indeed promising, they are not unequivocal.

7: PAINS FROM TRADE – THE POTENTIAL COSTS OF EXPANDING AFT

Though a number of potential benefits exist, there are also a number of drawbacks that should be addressed in any serious discussion on trade aid. Foremost, though total ODA is increasing, aid for trade involves real opportunity costs. Recipient countries must decide within an environment of sometimes-extreme social and economic underdevelopment whether or not to divert existing resources - that might otherwise be spent on more visible sectors such as health and education - toward trade-related initiatives, especially where pro-poor payoffs may not be immediately evident (Page 2006). Moreover, AfT flows may give rise to a number of short-term adjustment cost associated with economic restructuring that may, consequently, obscure the prospects of long run economic gain. In fact, in some cases economic gains are not realized until long after adjustment pains. Indeed, while benefits typically outweigh costs on aggregate, there is, nonetheless, a distribution of winners and losers in international trade across sectors and arguably countries. If those directly affected are well organized, or if appropriate redistributive or compensatory mechanisms are not in place, implementation may be politically unfeasible.

Furthermore, the introduction of a whole new paradigm within the aid regime necessitates greater transaction costs for recipient administrations that must articulate, negotiate and coordinate interests with donors as well as oversee implementation, monitoring, and evaluation of AfT projects. Thus, there is a considerable degree of planning, discussion, and program and project preparation and oversight, all of which demand significant, and often scarce resources. As a result, there is concern as to whether recipients have sufficient absorptive capacity to handle this new paradigm.

Also of concern is the absorptive capacity of key export markets. While fewer trade constraints allow for greater efficiency gains, we must be aware of the economic consequences of market saturation that might arise from a simultaneous move by recipients to expand exports. As many countries rely on a similar bundle of exports - namely, in primary commodities or labour-intensive manufactures - increased competitive pressures may see recipients suffering not only from declining terms of trade, but, if this shock is sufficient to swamp gains from growth, a decline in aggregate welfare - a problem referred to as 'immiserizing growth' (Bhagwati 1958). Lines (2004), for example, highlights the systematic decline in value of a number of major commodities

(including bananas, cocoa, coffee, cotton, tobacco, and tea, among others) following surges in exports between 1980 and 2000. The common thread appears to be that consumption of these products, like most primary products, tends to be highly income inelastic. Thus, it is imperative that export diversification and value-added production be cornerstones of aid for trade initiatives along with greater market access.

When administering Aid for Trade, one must also take into account the potential affect on the political development of the recipient country. Aid dependency can undermine the accountability of the recipient government as well as its negotiating capacity vis-à-vis their donor counterparts. In the case of the former, AfT may have undesired consequences if it is administered as direct budget support. That is, when a substantial share of government finance comes not from the domestic tax base but from external sources, government priorities may become askew from the needs of constituents. Even against the current rhetoric of aid ‘partnerships’, donors may be unable to restrain themselves from advocating their priorities (Page 2007). Given many developing countries have fragile political systems to begin with and remain reliant on external funding for day to day activities, it may not be feasible for recipient governments to override these wishes. This, in turn, may result in the crowding out of domestic economic interests, thereby reducing expected returns from trading and investing, and ultimately abating prospects for development (Page 2007, 28). On the other hand, if AfT bypasses governments altogether, it can potentially reduce or even replace institutional capacity of the public sector by absolving national policymakers of any responsibility for their economies export growth. Thus, the notion of ‘country ownership’ remains vital for successful implementation of AfT programs.

Furthermore, AfT may serve to distort the basis for bilateral and multilateral trade negotiations. When aid and trade relationships converge, this tilts the balance of power in favor of the donor country. Given the nature of international trade negotiations are inherently power based, the implicit (or explicit) threat of funding withdrawal undermines the ability of recipient nations, for example, to press donors for concessions or to challenge ‘unfair’ trade practices. Thus, paradoxically, the administration of aid for trade may give rise to further barriers to trade, or at least retard the dismantling or existing ones.

A final concern is what is perceived as increased environmental costs associated with expanding trade. Intuitively, we assume that when goods travel greater distances output of carbon emissions increase. Some therefore believe that international trade should be rolled back and that a greater number of goods should be produced strictly for local consumption. Recently, however, Frankel and Rose (2005) have challenged this assumption, arguing instead that trade actually reduces certain measures of air pollution. What is more, local production is unlikely to be a long-term option for countries most adversely affected by climate change.

8: OPPORTUNITY COSTS – ALTERNATIVE POLICY OPTIONS

Given these strengths and weaknesses, appropriate policy analysis demands that we weigh AfT against alternative courses of action for expanding developing countries trade capacity. Here, I briefly contrast AfT with other distinct policy alternatives for trade aid. One option, often put forward by economists on the right, is to pursue a laissez-faire approach with respect to trade assistance. Essentially, this would entail leaving individual countries to their own devices to experiment and eventually succeed at finding an optimal policy and institutional arrangement so as to facilitate greater alignment between its actual and potential levels of trade. Indeed, this is the approach followed by many successful NDCs in addition to many other recent strong growth performers, notably China, India, Turkey, Botswana, Chile, and the East Asian Tigers. One of the keys to economic success however is diversification into higher value export production, particularly in manufactures, and away from reliance on a narrow base of primary product exports and its attendant vulnerabilities to adverse market and environmental shocks. There is increasing apprehension though, especially among those associated with the ‘New Economic Geography’ (NEG) whether the opportunity for the world’s late developers to do so still exists. For those in the NEG school, a firm’s decision of where to produce is not only a function of factor prices – low cost labor in the case of manufactures – but also agglomerations, that is, positive externalities – for example multiple competing suppliers, greater specialization, and large pools of skilled labor - that

arise where related firms are clustered together (Crafts and Venebles 2005; Krugman and Obstfeld 2005). Thus, in relation to developing country production where agglomerations are absent or minimal, foreign firms face a trade off between low costs of production and generally higher coordination, transport, and time costs (Bigsten and Soderbom 2005, 35). The concern, however, is that over the last couple of decades newly industrializing Asian economies have built agglomerations in manufacturing and services that are so competitive that other developers may have, for all intents and purposes, ‘missed the boat’ (Collier 2007, 84). That is, niche markets aside, the requisite wage gap between Asia and the other developing regions - similar to the massive gap that arose between Asia and the rich world around 1980 that facilitated the rise in Asia agglomeration economies – is unlikely to prevail anytime in the near future. To make matters worse, increased demand for unprocessed primary products from these newly industrializing economies has likely undermined incentives for export diversification in the rest. Thus, for developing countries wishing to break into global manufactures markets, simply finding the correct policy and institutional environment may no longer be sufficient. As a result, it is argued that corrective measures may be necessary to reverse this competitive disadvantage.

A second policy alternative is ‘fair trade’. Fair trade is essentially a form of branding, whereby a buyer enters into a commitment with ‘poor’ and/or ‘marginalized’ producers agreeing to pay a price premium (or establish a price floor) in exchange for guarantees of certain social and environmental standards. Unfortunately, fair trade also does little to address diversification into higher value production. In fact, many see fair trade as encouraging recipients to continue producing low value products, thereby not only distorting productive incentives to move into higher value production but also potentially creating dependency as producers become reliant on rents generated from this activity. The lingering question, as such, is whether fair trade is creating an industry that can, in due course, withstand the reduction or termination of this special relationship. Therefore, while ‘fair trade’ may contribute to poverty alleviation for certain primary producers its viability as a sustainable development project, is certainly questionable.

A third, and perhaps most popular policy alternative, is the extension of preferential market access (PMA), wherein one or more parties enters into agreement

allowing imports of certain goods and/or services to enter the granting country at lower costs (whether duty, tariff, regulatory, etc) than would apply to third party imports, thereby giving these goods and/or services a competitive advantage. Thus, like other trade assistance schemes, PMA aims to expand the export base of developing countries by lowering trade costs, thereby providing them with greater means for self-sustained growth. There are, nonetheless, a number of problems associated with their use. Firstly, the future value of preferences may be called into question as successive rounds of MFN tariff reductions have resulted in preference margins being increasingly reduced. In addition, more and more schemes are found to be inconsistent with the WTO 'Enabling Clause' and therefore remain open to challenge. As such, the viability of trade preferences as a stimulus for sustainable export growth has become rather dubious as of late. In addition, many preferential schemes entail large administrative costs resulting from the implementation of technical requirements, command strict rules of origin, grant waivers and are themselves subject to renewal on a short term basis, and contain a number of exemptions, particularly in value-added products, all of which can severely restrict the scope of export activity. Indeed several prominent preferential access schemes, notably the African Growth and Opportunity Act (AGOA) and the EU's Everything but Arms Treaty (EBA) are said to be *under-utilized* (Prowse 2006). What is more, PMA may actually be harmful to a recipient's development trajectory where it distorts productive incentives and undermines further liberalization efforts. Countries that have been granted nonreciprocal market access to one or more vital markets may not experience the same pressure to reduce import barriers as countries in reciprocal arrangements (Page 2006b), thereby keeping domestic prices high.

Furthermore, preferential market access itself entails the artificial construction of market power and hence, economic rents. While these rents are intended to be only temporary, the literature on trade preferences is less than clear on how or when the rent receiving process is to cease. Beneficiaries may, therefore, develop vested interests in preserving these preferences to the detriment of further MFN liberalization. Indeed, many commentators currently see interests in preference receiving countries as a serious impediment to such reforms that would benefit the majority of the poor in developing countries (Page 2006b).

Finally, there is the possibility that preferences may yield significant trade diversion. This arises when production from a more efficient third party is bypassed in favor of a less efficient ‘preferred’ state. At one level, this results in efficiency loss in production, which culminates in a net global welfare loss, as first-best global technology is substituted for second-rate associate technology. However, of greater consequence, potentially, is the process of exclusion that trade preferences typically entail. Given developing countries often export similar bundles on goods and/or services, preferences can be damaging to the development prospects of third parties, often larger, economically poor countries where preferences are typically under-supplied.

Thus, despite its shortcomings, supply-side AfT holds several advantages over alternative forms of trade aid due in large part to its strong public goods character as non-exclusive and non-rivalous and therefore avoids distorting private flows and incentive structures. To recapitulate, this is because unlike alternative policy options, supply-side AfT does not by definition create rents (and vested interests in preserving high tariffs to the detriment of the rest of the country), discriminate against third parties (often other lesser developed country producers and indeed a chief complaint of the G-20 developing countries), undermine global welfare (where such schemes divert production from more efficient sources), or distort productive incentives for countries reliant on one or two primary exports. The bulk of evidence indicates that, while external barriers to trade continue to be of concern, these are often trumped by supply-side conditions as *the* limiting factor in export performance, particularly in African, Middle Eastern, and Latin American countries (Fugazza 2004; Commission for Africa 2005; Page 2004).

9: THEORY – FROM THE APPLE TREE TO THE TRADE SEA

Similar to a number of previous studies on trade facilitation, the approach taken in this paper to estimating the effect of aid for trade commitments on trade performance will be to use an augmented gravity model. The Gravity Model is commonly used for statistical analysis of bilateral flows, economic or otherwise, between a pair of geographical entities (Head 2003, 2). The attractiveness of this model is both its

simplicity and its empirical robustness. Analogous to Newton's law of gravity, which states that the gravitational attraction between any two objects is proportional to the product of their masses and is inversely related to distance, so too the economic gravity model states that the total volume of economic interactions between any two countries is, *ceteris paribus*, proportional to the product of their relative economic sizes (for example GDP) and is inversely related to distance (Junius 1999, 98). In its simplest form, this is given by the equation:

$$F_{ij} = G(M_i^\alpha M_j^\beta) / D_{ij}^\theta \quad (1)$$

such that G is a constant term, α , β , and θ are chosen coefficients designed to fit the actual data, F_{ij} is the total volume of interaction between units i and j, M_i and M_j are the relevant economic sizes of the two units, and D_{ij} is the distance between the two entities.

Most early economic analysis using gravity modeling was considered 'ad hoc' and lacked solid theoretical foundation (Cernat 2001, 8). More recently, however, there have been various attempts at formal derivation of the gravity equation beginning with Anderson (1979) and Bergstrand (1985) that have sought to impose a more robust economic basis to the model. The following will follow closely the derivation by Head (2003) in which the Dixit-Stiglitz model of monopolistic competition between differentiated but symmetric firms is used.

We begin with two countries, i and j, whereby

M_j denotes income spent by country j on all goods from any source

M_i denotes income spent by country i on all goods from any source

n_i denotes number of goods produced by i

u_i denotes quality of good produced by i

p_i denotes price in origin

p_j denotes price at destination

D_{ij} as before, denotes distance between country i and country j

and

s_{ij} denotes the share of M_j spent on goods from country i, where $0 \leq s_{ij} \leq 1$

Two assumption are made regarding the sign of this term

1. There is a positive relationship with both n_i and u_i
2. There is a negative relationship with D_{ij}

Therefore,

$$F_{ij} = s_{ij} M_j = g(n_i, u_i, D_{ij}) / \sum_l g(n_l, u_l, D_{lj})$$

whereby the subscript l denotes share of 'rest of world'

In order to specify the form for the function $g(*)$, we follow the Bergstrand (1985) approach which uses a model of monopolistic competition between differentiated but symmetric firms. Here the number of varieties is endogenized such that n_i is proportional to M_i and setting $u_i = 1$.

Assuming that goods from the same country are differentiated but are of the same average quality and are subject to the same transportation cost, we let

$$g(*) = n_i (p_{ij} / u_{ij})^{1-\delta}$$

where δ denotes elasticity of substitution between the differentiated goods and p_{ij} / u_{ij} is the delivered quality adjusted price

Next, connecting the delivered price to the price in i , we let

$$p_{ij} / u_{ij} = (p_i / u_i) D_{ij}^\delta$$

where D_{ij}^δ is the transportation cost between i and j

Note that p_i is often referred to as the 'free-on-board' price, which is essentially a measure of shipping costs (cost of goods plus the services of loading those goods onto the transport unit). As such, this allows for the effect of distance on pricing.

In the basic gravity equation, price differences are assumed away, such that

$$p_i / u_i = k$$

combining this with the assumption made in the monopolistic competition model that all firms are the same size such that

$$n_i = M_i / q$$

where q = firm size

and defining

$$\Theta = \delta(\sigma - 1) \geq 0$$

we find

$$g(*) = M_i D^{-\theta} / (qk^{\sigma-1})$$

This implies

$$s_{ij} = M_i D_{ij}^{-\theta} G$$

$$\text{where } G = 1 / (\sum_l M_l D_{lj}^{-\theta})$$

therefore, by substitution we find

$$F_{ij} = G(M_i M_j) / D_{ij}^{\theta} \tag{2}$$

This equation has been applied by economists, city planners, and business managers as early as the 1850s to analyze a range of economic and social interactions including migration, tourism, foreign direct investment, flows of buyers to shopping centers, recreational traffic, patent rights and patient flows to hospitals (Head 2003, 2, Cernat 2001, 3). The gravity equation was first applied in analysis of international trade flows in the 1960s when it appeared in a number of seminal studies including Tinbergen (1962), Poyhonen and Pulliainen (1965) and Linneman (1966).

Thus, with respect to trade, in its most basic form

$$T_{ij} = A * Y_i^a * Y_j^b / D_{ij}^c \tag{3}$$

such that A is a constant term, T_{ij} is the value of trade between country i and country j, Y_i is country i's GDP, Y_j is country j's GDP, D_{ij} is the distance between the two countries, and a, b, and c are the given coefficients. Estimates, in fact, have often found that $a \approx b \approx c \approx 1$. Hence

$$T_{ij} = A * Y_i * Y_j / D_{ij} \tag{4}$$

Equation (4) is thought to be a fairly accurate predictor of the 'natural' flows of bilateral trade between any two geographic entities¹⁸ (i.e. in the absence of trade aid). That is, there is a strong empirical relationship between the size of a country's economy,

¹⁸ See, for example, Anderson (1979), Bergstrand (1985), and Thursby and Thursby (1987).

measured, for example, in GDP, and its volume of trade. The logic is indeed intuitive in that the larger the economy in question, the larger its income per capita and the more likely it is to spend on imports. Moreover, there is the propensity to attract larger shares of other countries' spending, as larger economies tend to produce a wider variety and range of products. As such, the larger the *aggregated* economic mass of two trading partners, the larger their volume of trade will be (Krugman and Obstfeld 2005, 13). Likewise, economic intuition also holds for the distance variable. That is, all else equal, the greater the distance between two economic entities, the higher the cost of transportation (and ultimately trade transaction). I will refer to equation (4) hereafter as the baseline gravity model.

When applying the Gravity Model to international trade flows, the magnitude of trade between a pair of countries is shown to be determined by supply conditions at the origin, by demand conditions at the destination, and by a host of specific stimulating or restraining forces relating to flows between the two entities (Oguledo and Macphee 1994, 110). As such, when analyzing trade flows, the baseline equation is often augmented to include a number of additional variables, often in binary form, in attempt to control for specific effects or identify anomalies in trade. These might include, for example, the sharing of a common language or common land border or admission in a common regional integration arrangement.

Therefore, assuming that we want to test for X distinct effects, using standard ordinary least-squares regression analysis, the model can be expanded in log-linear form as

$$\text{Log}T_{ij} = \alpha + \beta\text{Log}(Y_i) + \gamma\text{Log}(Y_j) + \delta\text{Log}(D_{ij}) + \sum_{s=1}^X \lambda_s G_s + \epsilon_{ij} \quad (5)$$

where $\sum_{s=1}^X \lambda_s G_s$ is the sum of X distinct variables that each take the value of 1 where the variable is active for pairs of i and j and zero otherwise, and ϵ_{ij} is a random error term usually taken to be normally distributed.

10: DATA AND METHODOLOGY – WHAT IS FUNDAMENTALLY DIFFERENT ABOUT THIS STUDY?

The purpose of this paper is multifold. Foremost, the goal is to identify the scale effect of aid for trade inflows on recipient countries trade growth. In other words, this paper seeks to estimate the role of Aft flows in mitigating trade transaction costs. In so doing, it is hoped these findings will contribute towards establishing a significant and robust baseline measurement by which policymakers can balance evaluations of current disbursements, thereby strengthening the contemporary monitoring and evaluation regime. In the broader context this paper also seeks to address the debate as to whether ODA can be used as an effective stimulus for growth in productive sectors. In order to tease out these effects, we must hold constant other common determinants of trade, be they economic, political geographical, or otherwise. If we accept the baseline gravity model as a reasonably accurate measure of what bilateral trade levels should be in a 'natural' environment, then we should be able to predict, with a degree of certainty, whether past Aft flows have had a catalytic effect on trade as well as the potential rate of return on future investments, that is, assuming constant returns to scale. As quantitative assessments of aid for trade have been in short supply, this paper seeks to chart several distinct paths to measuring the relationship between Aft and trade flows. As with all economic modeling, both variable selection and aggregation remains central in terms of measuring the sign and magnitude of the variable of interest. As such, this paper will take several distinct approaches with respect to both Aft and recipient country aggregations.

While many previous studies examining the relationship between the various components of trade aid and trade flows have set to establish aggregate estimates, and thereby seek to characterize the environment as a whole, it is felt that such observations are of little use in terms of informing policy with respect to aid effectiveness of individual countries. That is, given the range of distinctive characteristics and constraints that each country embodies, large sample cross-country aggregations may well obscure a number of potentially important dynamics. As such, five discrete groups of countries will be examined based predominantly on geo-economic characteristics that are thought to

affect trade. These include ‘small landlocked economies’, ‘small island developing economies’, ‘emerging market economies’, ‘oil exporting economies’, and ‘poor coastal oil importing economies’ (for a list of country groupings see appendix B). Taken together, these categories seek to establish the importance of ‘destiny’ in the rate of return on AfT flows.

As of late, there appears to be increasing recognition among economists and others that geography matters. Among other factors, a country's physical location is a main determinant of the transport cost it faces when seeking to trade with other nations. This was observed over two centuries ago by Adam Smith who foresaw the inherent disadvantage of remote economies in engaging in international trade and consequently economic development given their disconnection from transport networks (1776). Moreover, a number of recent studies identify both negative and significant effects on income levels and income growth for countries in geographically disadvantageous regions, namely landlocked and small island developing nations (SIDs) (Frankel and Rose 2000, Gallup et al 1999). Venebles and Limao (2001), for example, find that the average landlocked country faces transport costs of around 50% greater than the average coastal economy. More recently, Collier and O'Connell (2006) find opportunities for economic advancement within landlocked countries to be largely a function of both resource endowments as well as the growth performance of their coastal neighbors. Thus, while these results may absolve landlocked countries of any inherent disadvantage to being removed from sea access, it is, nonetheless, important to keep in mind that the number of natural resource scarce countries that are able to benefit from growth spillovers of ‘good’ coastal neighbors is marginal at best. To make matters worse, despite recently being granted tariff free access to and from neighboring sea ports by the United Nations Convention on the Law of the Sea, past efforts to improve transport links between landlocked countries and their coastal neighbors have, in general, suffered from a number of coordination failures. Thus, whether innate or not, landlocked countries face severe disadvantages to integration within global production chains. Here, I sample thirteen of forty-four landlocked countries for which data is available.

Small island countries, on the other hand, despite having direct access to seaborne trade, often lack economies of scale that might be achieved by close relations with

neighbors. Moreover, these countries are often disadvantaged due to their disproportionately small population and stock of natural resources. As a result, transport infrastructure in small island states is often underdeveloped and underutilized. This serves as a double blow as on one hand SIDs suffer from alienation from international markets due to geographic remoteness (and hence, high transport costs) while at the same time being disproportionately dependent on international trade due to their small size. The sample used here comprises fifteen countries from a list of thirty-eight provided by the United Nation Office of the High Representative for the Least Developed Countries, Landlocked Developing Countries and Small Island Developing States.

Apart from proximity to transport networks, location also matters in terms of resources endowments. Countries well-endowed with natural resources often face exceptionally high costs when seeking to diversify their export base. Just as an abundance of aid dollars weakens a nation's export capacity, so does an abundance of natural resources, a paradox referred to as the 'resource curse'. As with aid windfalls, large flows natural resource exports put exceeding pressure on the value of the domestic currency, raising the cost to alternative export activities. Thus, the leading cause (and consequence) of this paradox is that of the crowding out of non-resource based sectors. This, in turn, leads to a number of potential pitfalls. Firstly, countries that see their revenue base highly concentrated in natural resource exports tend to lack both economic and political incentive for investment in alternative forms of productive activity, including those that have higher technological content, thereby contributing to lower rates of growth and underdevelopment (Sachs and Warner 1993). Concomitantly, such a narrow export base leaves a country more vulnerable to price volatilities in international commodity markets. Indeed, one only has to look at the price of crude oil over the last decade to see how quickly natural resources can change economic fortunes. The problem, however, is that this cuts both ways and therefore, instability in revenue can often wreak havoc on government management and planning. Finally, large resource windfalls can undermine democratic institution building as rents may well facilitate the shift from competitive to patronage politics, to the detriment of national development (Collier 2007). While the effects of natural resources on economic growth and democracy have recently been challenged, it is judged that the economic structure of net oil-exporting countries is

nonetheless sufficiently unique so as to warrant discrete examination. Thus, seventeen oil exporting countries are examined, once again on the basis of data availability.

A further category ‘emerging market economies’ concerns countries that have recently undertaken rapid economic growth and industrialization. Countries here are selected according to The Economists’ Intelligence Unit Emerging Market Report and include 21 of the 25 listed countries¹⁹. The purpose of this category is to examine what role AfT may have played in the success of these strong growth performers. Furthermore, as neither ‘emerging market economies’ nor the ‘poor coastal oil importers’²⁰ share any common characteristics with respect to locale or resource endowments (with the exception of the obvious in the later category), these may be considered as suitable ‘reference’ categories to those with common exogenous geo-economic factors.

In total, the sample comprises 78 recipient countries. Where applicable, countries are assigned to multiple groups so as to increase the robustness of the sample category. The time period examined spans 19 years (1988-2006) which is consistent with the period in which the CRS database began reporting AfT flows. In sum there are 269,872 data points.

10.1 Estimation Method (1)

The first equation that will be examined is as follows.

$$(1) \log(T_{ij})_t = \alpha + \beta_1 \log(\text{GDP/capita}_i * \text{GDP/capita}_j)_t + \beta_2 \log(\text{pop}_i * \text{pop}_j)_t + \beta_3(\text{Contiguity}_{ij}) + \beta_4(\text{Common Language}_{ij}) + \beta_5 \log(\text{Distance}_{ij}) + \beta_6(\text{Freedom to Trade})_t + \gamma_1 \log(\text{Total Aid for Trade Receipts}_i)_{t-5} + \epsilon^{ij}$$

This is consistent with many standard gravity estimates modified to include measures of aid for trade and trade freedom. The dependent variable is the value of trade (exports plus imports) in log form between a given pair of countries across the given 19-year period (1988-2006). Bilateral trade data are obtained from the International

¹⁹ Note Taiwan, Hungary, Poland, and Russia are not listed as ODA recipients according to the OECD CRS database and therefore are excluded from the emerging market sample set.

²⁰ This final group comprises nineteen mostly low and middle income countries.

Monetary Fund's Direction of Trade Statistics which captures trade values between each country and its trading partners. Estimates are given in current \$US and deflated using the US consumer price index adjusted for baseline year 2000. On the right hand side are standard gravity variables capturing size and distance. In terms of size, this study departs slightly from most gravity estimates which simply use measures of total GDP. Given that trade is predominantly a consumer rather than country driven phenomenon, a weighted measure of income is thought to be more appropriate and hence, the log product of GDP per capita is used. Indeed, GDP per capita is thought to be a robust measure of economic size as it captures the level of development of a country. It's relationship to trade therefore follows from the logic that the more developed the country on average, the more they tend to specialize, acquire superior transportation infrastructure and other production capabilities, have lower tariffs and higher taste for imported goods and consequently, the more it will trade (Head 2003, Findlay and O'Rourke 2000, Bergstrand 1989, Anderson and Wincoop 2004). That is to say, higher income is expected to increase both demand and supply of tradable goods within a given country. Income data is obtained from the World Bank World Development Indicators for all years and is captured in constant US dollars (2000). While some authors use both the log product of GDP and GDP per capita, in the interest of avoiding double counting as well as in gaining a more accurate measure of household income, this study will simply use the latter. Global estimates demonstrate that trade increase roughly proportional to size.

Also included in the estimation is a direct measure of population, expressed as the log product of countries i and j . Population as a separate determinant of bilateral trade is rationalized as the pure effects of scale are likely to be less than those of GNI/capita. This is consistent with trade models where the demand for tradable goods, and for increasing variety, exceeds growth in per capita incomes. As with income, data obtained from the World Bank World Development Indicators.

In terms of bilateral distance, I apply the log form of a weighted measure obtained from the CEPII database. Here, measures are calculated by the bilateral distance in kilometers between two countries major economic centers, adjusted for the share of the respective cities in the overall country's population. By all accounts, distance creates considerable frictions in bilateral trade as it gives rise to a number of trade transaction

costs. Apart from the aforementioned transportation costs, distance matters as trade increases as a function of familiarity. While modern transport and ICT technologies help to reduce the effect of physical distance on economic transactions, trade patterns suggest that decisions to engage in international market transactions are still largely determined by what Hans Linnemann (1966) referred to as “psychic distance”, that is, dissimilarities in social, cultural, institutional and/or other norms and standards. Conversely, greater commonality is thought to facilitate higher levels of trust, which, in turn raise the propensity for repeat economic transactions and towards strengthening existing trade infrastructure. Therefore, as familiarity is thought to increase with proximity, economic relations are expected to be more intense the closer the distance between two partners.

Distance, moreover, is highly correlated with time elapsed during shipping, which is thought to limit the range of goods, in particular perishable goods, produced for export in source countries. Furthermore, synchronization costs increase with distance, which means that goods that require the assembly of multiple inputs are subject to greater variation in arrival time and, consequently higher costs for inventory-holding. The outlook, therefore, for manufacturing in remote regions – which to date has been the most reliable driver of rapid development (Collier 2007, 55) - is somewhat discouraging, when considering the associated competitive disadvantage in comparison to regions that are closer to major world markets.

Thus, distance is said to act as a sort of tax “wedge”, imposing higher costs to trade, and hence, resulting in lower equilibrium trade flows (Head 2003, 3). Most estimates find anywhere from a 0.7 to 1-to-1 negative relationship between trade and distance (Krugman and Obstfeld 2005, 15; Anderson and van Wincoop 2004). While it is recognized that bilateral distances do not take full account of *real* transport costs –there being variation in modes of transportation, wait times at borders, and the quality of transportation infrastructure – given the size of the data set, it is assumed that the measured distance variable is a sufficient approximation of these effects.

Also included in the estimation are binary variables for ‘contiguity’ and ‘common language, which are active when the bilateral relationship entails the sharing of a common border and official language respectively. Again, both variables are taken from the CEPII database. With respect to the former, while borders do indeed still matter in

international trade²¹, countries are, nonetheless thought to be predisposed toward trading with their immediate neighbors for a number of reasons, including agglomeration forces (Crafts and Venables 2000), economies-of-scale (Head 2003, 9), and landlocked status (Collier 2007). Estimates, therefore, usually find that trade is approximately 65-85% higher where countries share a common border (Oguledo and Macphee 1994). With respect to the latter, language is often thought of as a proxy for cultural affinity and communication costs. Communication and cultural barriers, much like tariff barriers, raise transaction costs. As mentioned with distance, shared values foster networks of trust and shared institutions between trading partners and thus greater opportunity for repeat transaction (Easterly 2006, 86). In addition, common language is also apparent where colonial links, and thus, historically embedded trade relations exist, a common example being the well-established commercial links between the European Union and its former colonies in the African, Caribbean, and Pacific regions. Indeed, evidence suggests that countries that share a common language trade upwards of three times more than those who do not (Head 2003).

Furthermore, I include the estimate ‘freedom to trade’ (FTT) from the economic freedom of the world database. While some previous studies incorporate measures of tariff levels, FTT offers a more comprehensive picture of the policy environment within a given country, incorporating not only formal taxes on trade, but also regulatory and administrative barriers, black-market exchange rates, international capital market controls, and finally the size of the trade sector relative to expected, given other economic variables. As such, despite the general absence of any surefire measure of policy barriers, it is felt that FTT best approximates governments general attitude towards openness and trade. As with all economic transactions, perception matters. Indeed, producer’s decisions of whether or not to engage in trade is thought to depend largely on whether or not they believe that the domestic government will provide a supportive environment for them do so. Thus, as opposed to simply measuring tariff levels it is felt that FTT better captures the idiosyncrasies of individual countries policy environment. Intuitively, we expect that freedom to trade is highly correlated with bilateral trade flows.

²¹ See for example McCallum (1995)

Finally, I include the sum total of Aid for Trade in the recipient country as reported by the OECD CRS database. This extensive database contains comprehensive information on both individual countries and multilateral organizations aid activities. Data is disaggregated according to recipient country, donor, type of flow, channel of delivery as well as detailed break downs of the sector and subsector in which flows are targeted and disbursed, thereby making it possible to construct various aggregations of AfT consistent with current proposals. Indeed, as the OECD and WTO now maintain a separate database specific to aid for trade disbursements from 2002 onwards, it is possible to create a parallel measurement using the historical data. Amounts are expressed in constant USD millions and are measured in log form lagged five years. Time lags are necessary to account for appropriate implementation periods, as we cannot reasonably expect disbursements to have an instantaneous effect on growth accounts given the extent of inputs that are required for gains to be fully realized. While variation is expected across institutional and regime type, nonetheless, a five-year lag is thought to be consistent with Radelet and colleagues characterization of ‘early impact’ aid, that is, aid which is expected to affect growth (if at all) within a five year period. Thus, given that the vast majority of the AfT envelop falls under this category, the five year lag is thought to be an appropriate period between action (disbursement) and intended reaction (the effect on productive decision making).

All equations are regressed using the Ordinary Least Squares (OLS) method.

10.2 Results for Equation (1)

The estimated values for equation (1) are reported in table 1. All estimated coefficients are highly statistically significant above the one percent level with the exception of contiguity, which is significant at the ten percent level for three of the five categories. Strong effects were found for the standard gravity variables of GDP per capita, population, and distance with average coefficients of 1.737, 1.675, and -1.965 respectively. Most coefficients, moreover, are consistent with their expected sign with the exception, again of contiguity in oil exporting countries and poor coastal importing countries (PCIO) as well as freedom to trade for landlocked countries. The average adjusted R-square values range from 0.36 to 0.50 indicating that roughly a third to a half

of the variation in trade flows across categories is explained by the variables used in the model, which, admittedly, is somewhat lower than expected.

In terms of the Aid for Trade variable, coefficients reveal that the cumulative impact of trade aid is both positive and highly significant in all cases though with considerable variation across sample categories. SIDCs and landlocked countries yielded the smallest returns with coefficients of 0.024 and 0.057 respectively. That is, a doubling of aid for trade will be expected to increase trade values by 2.4 percent in small island developing countries and 5.7 percent in landlocked countries. Emerging market and oil exporting economies, on the other hand yielded the highest returns at 0.163 and 0.157 respectively. Poor coastal oil importers also show considerable returns with a coefficient of 0.121. These results suggest that trade-aid *en bloc* has a significant potential to lower trade costs five years after disbursement of funds and is consistent with earlier findings demonstrating a positive relationship between trade-related aid and trade flows.

As these results are encouraging, it is worth exploring the aid for trade data further. Therefore, the AfT variable is disaggregated so as to account for the effect of investments in its three main sub-categories: trade-related technical assistance, infrastructure, and trade-development.

Thus, the second equation that will be examined is as follows:

10.3 Estimation Method (2)

$$(2) \log(T_{ij,t}) = \alpha + \beta_1 \log(\text{GDP/capita}_i * \text{GDP/capita}_j)_t + \beta_2 \log(\text{pop}_i * \text{pop}_j)_t + \beta_3(\text{Contiguity}_{ij}) + \beta_4(\text{Common Language}_{ij}) + \beta_5 \log(\text{Distance}_{ij}) + \beta_6(\text{Freedom to Trade}_{i,t}) + \gamma_1 \log(\text{TRTA}_{i,t-5}) + \gamma_2 \log(\text{Infrastructure}_{i,t-5}) + \gamma_3 \log(\text{Trade Development}_{i,t-5}) + \epsilon^{ij}$$

Here, the basic structure of equation (1) is preserved except for the trade aid variable so as to isolate the impact of the various sub-components on trade flows. The results are reported in full in table 2.

10.4 Results for Equation (2)

Again, most of the variables are highly statistically significant above the one percent level with the exception of contiguity. While emerging market and oil exporting economies hold their significance at the ten percent level, this time the PCOI category

loses its significance entirely. Moreover, so too does small island countries for the FTT variable. Again, most coefficients are consistent with their expected sign with the same exceptions as equation one. Thus, by and large, there is little change in the non-trade aid variables across the two estimated equations.

With respect to the AfT sub-components, considerably higher returns are found for technical assistance and infrastructure (0.093 and 0.073) relative to trade development (0.034). However, there is substantial variation across country categories. Technical assistance is found to have the highest returns in the less remote regions of emerging markets (0.113), oil exporters (0.121), and PCIOs (0.116), while their isolated counterparts, landlocked and small island countries, are less fortunate with coefficients 0.045 and 0.072 respectively. Overall, however, technical assistance has the highest return of the sub-components with a one percent in TRTA yielding on average a 0.093 percent increase in trade values. Oil exporters again lead returns in infrastructure (0.141) which is also most favorable to landlocked countries (0.084). Once again, however, small island countries experience amongst the lowest relative returns (0.036). Average returns to infrastructure are slightly less than technical assistance but still respectable with a one percent increase corresponding to 0.073 percent increase in trade values. Rather less impressive, however, is trade development yielding only a 1 to 0.034 percentage gain overall. Indeed, greater TD flows are actually found to have a negative effect on trade values in landlocked countries (-0.044) with only slight to moderate gains elsewhere.

While the latter finding is troubling to say the least, it is possible, as with the other sub-components, that methodological error may influence sample estimates. Indeed closer examination of the trade aid data reveal, in many instances, a rather uneven pattern in disbursements and therefore, it is possible that the trade aid variables offer little in terms of explanatory power. Thus, in the interest of the overall robustness of the study, it is worth exploring alternatives to the standard (t-s) time lag structure. In equations (3) and (4), I attempt to smooth out this variation in year-to-year flows by replacing the five-year lag structure (t-5) with simple five-year averages lagged three years $((t-7 + t-6 + t-5 + t-4 + t-3)/5)$. In addition to reducing the effect of variability in year-to-year flows this also allows us to take greater account of the possibility of multi-year spending on single

projects that can only be consumed in their entirety, for example, transport networks or energy and communications infrastructure.

Thus, equation (3) and (4) are as follows:

10.5 Estimation Method (3) and (4)

$$(3) \log(T_{ij})_t = \alpha + \beta_1 \log(\text{GDP/capita}_i * \text{GDP/capita}_j)_t + \beta_2 \log(\text{pop}_i * \text{pop}_j)_t + \beta_3(\text{Contiguity}_{ij}) + \beta_4(\text{Common Language}_{ij}) + \beta_5 \log(\text{Distance}_{ij}) + \beta_6(\text{Freedom to Trade})_t + \gamma_1 \log(\text{Total Aid for Trade Receipts}_i)_{(t-7+t-6+t-5+t-4+t-3)/5} + \epsilon^{ij}$$

$$(4) \log(T_{ij,t}) = \alpha + \beta_1 \log(\text{GDP/capita}_i * \text{GDP/capita}_j)_t + \beta_2 \log(\text{pop}_i * \text{pop}_j)_t + \beta_3(\text{Contiguity}_{ij}) + \beta_4(\text{Common Language}_{ij}) + \beta_5 \log(\text{Distance}_{ij}) + \beta_6(\text{Freedom to Trade})_t + \gamma_1 \log(\text{TRTA}_i)_{(t-7+t-6+t-5+t-4+t-3)/5} + \gamma_2 \log(\text{Infrastructure}_i)_{(t-7+t-6+t-5+t-4+t-3)/5} + \gamma_3 \log(\text{Trade Development}_i)_{(t-7+t-6+t-5+t-4+t-3)/5} + \epsilon^{ij}$$

For the purpose of comparison with the above estimates, we examine trade aid in both aggregated and disaggregated forms. Results are reported in full in tables 3 and 4.

10.6 Results for Equation (3) and (4)

Despite the modification in the measurement of the trade aid variable, overall, results are quite similar to those of the simple lag estimations. Indeed, results are near identical in all case for the GDP/capita, population, distance, language, and FTT variables. Results vary only slightly in terms of the contiguity variables as significance decreases in both cases for emerging market economies and increases in both cases for oil exporters and for PCOIs in terms of the cumulative AfT estimation. In addition, for small island countries, the FTT variable becomes significant in the disaggregated AfT estimation. By and large, however, there is little difference in the coefficients of standard gravity variables across estimations.

Slightly greater variation in variable estimates is observed in the trade aid categories, namely across the disaggregated coefficients. Firstly, estimates for technical assistance are slightly lower in all cases except for small-island and poor coastal countries. Moreover, in all cases we see higher returns to infrastructure investment as the mean coefficient increases from 0.073 to 0.109. Finally, the adjusted estimation shows

moderately lower returns to trade development. Therefore, with the exception of the strong outlier, emerging market economies, which holds relatively constant, TD returns under the modified estimations are found to be either negligible (oil exporters, PCOIs) or outright negative (landlocked and SIDCs). In all cases the adjusted R-squared values hold constant with roughly 42 percent of the variability in the dependent variable being explained by the linear relationship with the standard gravity variables and trade aid coefficients. Thus, while on the whole, the estimates prove to be quite promising, we should be cautious in accepting these findings wholeheartedly given the rather tenuous goodness-of-fit statistics (adjusted-R2). Nonetheless, as before, all AfT coefficients are highly significant above the one percent level with the exception of trade development for PCOIs (10 percent significance) and oil exporters (insignificant).

11: DISCUSSION – AID FOR TRADE: COOL AID OR KOOL-AID?²²

Despite the sign of the standard gravity variable coefficients being consistent with theory and empirical evidence, the magnitude of GDP/capita and population coefficients were somewhat greater than expected while distance and contiguity were, to some extent, less than expected. Stronger distance effects for the remote regions, SIDCs and landlocked countries (-2.497 and -1.176), are consistent with the theory outlined above. Indeed, we might expect coefficients for landlocked countries to be underestimated given that, often, a disproportionate share of trade in transit through coastal neighbors is counted as direct bilateral trade. Furthermore, while not itself a location specific category, nonetheless, the strong negative distance coefficient for oil exporters is consistent with the nature of the global oil trade, that is, given that demand for oil is ubiquitous. What is surprising, however, is that the reference (i.e. non-geographic) category in this case, ‘poor coastal oil importers’, actually yields the greatest effect of distance on trade (-2.904). While on the surface this seems somewhat counter-intuitive, it is suspected that sample selection may have influenced these findings given the large majority of countries that comprise this group are in more geographically isolated regions

²² Term borrowed from Sam Laird’s 2007 paper of the same name.

relative to major world markets, namely Latin America and Africa. Yet again, this would confirm the effects of geography on trade flows.

Marginal coefficients for contiguity, with the expected exception of landlocked countries, may also be indicative of sample bias. At its core, trade is generated by differences. As the vast majority of recipient countries are 'lesser-developed', it is typical, and indeed desirable, for them to orient their trade towards developed country markets, thereby harnessing their advantage in cheap labour. Therefore, below average contiguity coefficients may well be consistent with the recent shift towards more outward oriented policies throughout the developing world. This logic may also explain the above average coefficients for GDP per capita, given the relatively greater economic size of developed country markets. In terms of the policy variable, 'freedom to trade', as expected, there appears to be a positive association overall with trade. What is interesting, however, is the negligible relationship for SIDCs and negative and significant relationship, across estimates, for landlocked countries. Again, however, it seems reasonable to expect that the negative signs reflect composition of the sample. Indeed, as table 5 shows, a highly disproportionate share of the sample fall within the bottom two quartiles for all measureable periods.

What is promising is that trade aid has been effective even where policy support has shown to be marginal. On the one hand, while we should not let this undercut the importance of policy in fostering trade, this would suggest, at least in certain cases, that a concentrated focus on policy reform may be misguided. On the other hand, however, while the overall effect of policy of trade values appears slight, there appears to be a consistent pattern with cumulative AfT being increasingly more effective with higher FTT coefficients. What is more, returns to trade-related technical assistance are shown to be both positive and significant. As such, when considering that a substantial component of policy advice to developing countries over the last two decades has focused mainly on trade liberalization (Winters 2004, 1), it would appear that policy is indeed an important, but perhaps not a decisive factor in determining the effectiveness of trade aid.

Focusing now on cumulative AfT, impressive returns are observed in emerging markets ($\gamma=0.183$), oil exporting economies ($\gamma=0.169$), and the PCOI's ($\gamma=0.148$). With respect to the former, these favorable findings seem to suggest that AfT played an

important supporting role in lowering trade costs and therefore helping to stimulating trade growth. Hence, given the importance of trade in the development of emerging market economies, it appears that AfT has been a successful component in the overall development strategies of recent rapid industrializing economies. While these findings are indeed promising, we should, nonetheless, be wary of the possibility of reverse causality. With respect to oil exporters, a slightly more cautious approach may be warranted when interpreting the findings given the possibility that sharp increases in oil prices over the sample period may have confounded results. Indeed, as the trade data used in this project, the IMF's Direction of Trade Statistics database, is limited in that it only reports trade values, we could reasonably expect most of the increased value to be explained by a steady rise in oil prices especially over the latter part of the sample period. I test this hypothesis by regressing indexed export values (in total) with crude oil prices over the sample period. While the findings are positive, they are not significant and the hypothesis must therefore be rejected. Another possibility is that the strong AfT coefficients in this case may actually be indicative of the effectiveness of trade aid in facilitating greater diversification in the countries export base and thereby mitigating the costs associated with Dutch disease. Again, however, the data appears inconclusive. Thus, it is evident that further research is needed in identifying possible factors that would explain higher to AfT in oil exporting economies.

Slightly less impressive are the returns to AfT investment in SIDCs (0.022) and landlocked countries (0.081). While the findings are positive and significant, nonetheless, they seem to confirm the geographic disadvantage these countries face in global market exchange relative to other countries. Thus, given the overwhelming burden of trade transaction costs within these countries, smaller returns to AfT investment in these cases may not be too surprising after all.

Turning now to the disaggregated estimates, we see significant returns to both technical assistance and infrastructure across the board. The higher returns to infrastructure may reflect the general neglect that infrastructure received by aid agencies over the sample period. That is, as infrastructure fell out of fashion in the 1990s, it is quite possible that what little was spent generally went a long way. Higher returns, moreover, may also reflect neglect by the private sector. If this is indeed the case, this

would confirm that overriding rationale for ‘aid for trade’, that being initial and persistent underinvestment by the private sector in trade-related areas. By and large, the results suggest that the recent shift by donor agencies back towards large infrastructure projects should be expected to yield both positive and significant impacts on recipients trading capacity irrespective of geo-economic status.

Despite its oft association with some of the more unsavory practices in foreign aid, technical assistance, nonetheless, is also shown to have played an important role in facilitating trade. Though TRTA attracts the least amount of resources among the three sub-components of AfT, the returns are among the highest, suggesting that technical assistance is a vital component of the AfT package. Indeed, these findings are consistent with most previous trade-aid estimates, namely Ivanic et al (2006) and Wilson et al (2005). As with infrastructure, results appear consistent across geographic categories ($\gamma \approx 0.09-0.1$) with the exception of landlocked countries who experienced considerably lower returns ($\gamma=0.036$). On the one hand, this could simply be the result of poor advice. That is, it is quite possible that those giving policy advice simply know little more about the conditions of landlocked countries than officials within the respective countries. Alternatively, however, it is also possible that officials, for a variety of reasons, simply chose to ignore or were unable to implement the advice that was given. Indeed, in their study of returns to technical assistance, Collier and Chauvet (2005) find no discernable effect of technical assistance in marginal policy environments. Given the relatively low and stagnant policy ratings across the sample (see Table 4), this would appear to be the case. This suggests, therefore, that while TRTA yields significant returns across country groupings, its true value is as complement to rather than condition for policy reform.

Finally, we note negligible or negative returns for trade development with emerging markets as a strong positive outlier ($\gamma=0.101$). Again, these estimates are somewhat surprising given their counter-intuitive nature. With respect to the outlier, considering the exceptional economic performance of this group by definition, this finding suggests that where TD investment can be made effective, it can possibly be made as a catalyst for growth. However, negative findings elsewhere suggest that this is a particularly risky investment, which carries the possibility of detrimental consequences for trade and economic welfare. While it is indeed difficult to interpret these findings, one

possible explanation for the negative TD effect for SIDCs and landlocked countries ($\gamma = -0.029$ and $\gamma = -0.053$) may be their relatively small size, both economically and demographically. As many countries within these groupings lack sufficient economies-of-scale to diversify away from a narrow range of goods and services, it is possible that certain trade promoting activities may have inadvertently served to distort either private flows and/or incentive structures by encouraging the development of new, inefficient sectors. We should, nonetheless, be cautious in attributing the entire effect to trade development as there are a number of possible idiosyncratic or other unobserved third variables that may also be at play. Be that as it may, the findings strongly point to the need for aid agencies and national governments to reconsider the way in which TD is administered.

12: CONCLUSION

This project has sought to examine, in historical perspective, the effects of ‘aid for trade’ initiatives on stimulating trade growth. The question that is proposed, therefore, is whether and to what extent does aid for trade reduce trade transaction costs? Using gravity modeling, the paper examines several aggregations of country and aid type. Estimates reveal that cumulative Aid for Trade has both a positive and significant impact on trade flows across a variety of country groupings although significantly less so for more remote regions, namely landlocked and small island developing countries. A disaggregated picture of trade aid reveals that while the positive and significant findings hold for investments in trade-related technical assistance and infrastructure, investments in trade development actual yield marginal to negative returns. The lone exception in this case is ‘emerging market economies’ which show a strong positive impact on trade flows. The tentative conclusion of the study therefore is that current ‘aid for trade’ initiatives hold much promise for stimulating trade growth. However, given the potential for adverse effects on recipient countries economic and development prospects, a more cautious approach is warranted. It is clear that as this is a relatively new area of study, much further research is needed.

APPENDICES

Appendix A: Composition of Aid for Trade Sub-Components

Category	Code	TRTA	Infrastructure	Trade Development
Transport Policy & Admin. Management	21010		✓	
Road Transport	21020		✓	
Rail Transport	21030		✓	
Water Transport	21040		✓	
Air Transport	21050		✓	
Storage	21061		✓	
Edu./Trng In Transport & Storage	21081		✓	
Communications Policy & Admin. Mgmt.	22010		✓	
Telecommunications	22020		✓	
Radio/Television/Print Media	22030		✓	
Information And Communications Technology	22040		✓	
Energy Policy And Admin. Management	23010		✓	
Power Generat./Non-Renewable Sources	23020		✓	
Power Generat./Renewable Sources	23030		✓	
Electrical Transmission/Distribution	23040		✓	
Gas Distribution	23050		✓	
Oil-Fired Power Plants	23061		✓	
Gas-Fired Power Plants	23062		✓	
Coal-Fired Power Plants	23063		✓	
Nuclear Power Plants	23064		✓	
Hydro-Electric Power Plant	23065		✓	
Geothermal Energy	23066		✓	
Solar Energy	23067		✓	
Wind Power	23068		✓	
Ocean Power	23069		✓	
Biomass	23070		✓	
Energy Education/Training	23081		✓	
Energy Research	23082		✓	
Financial Policy & Admin. Management	24010			✓

Category	Code	TRTA	Infrastructure	Trade Development
Monetary Institutions	24020			✓
Former Sector Financ. Intermediaries	24030			✓
Informal/Semi-Formal Fin. Intermed	24040			✓
Education/Trng In Banking & Fin. Services	24081			✓
Business Support Services & Institutions	25010			✓
Agricultural Policy & Admin. Mgmt	31110			✓
Agricultural Development	31120			✓
Agricultural Land Resources	31130			✓
Agricultural Water Resources	31140			✓
Agricultural Inputs	31150			✓
Food Crop Production	31161			✓
Industrial Crops/ Export Crops	31162			✓
Livestock	31163			✓
Agricultural Extension	31166			✓
Agricultural Education/Training	31181			✓
Agricultural Research	31182			✓
Livestock Research	31182			✓
Agricultural Services	31191			✓
Plant/Post-Harvest Prot.& Pest Ctrl	31192			✓
Agricultural Financial Services	31193			✓
Agricultural Co-Operatives	31194			✓
Livestock/Veterinary Services	31195			✓
Forestry Policy & Admin. Management	31210			✓
Forestry Development	31220			✓
Fuel wood/Charcoal	31261			✓
Forestry Education/Training	31281			✓
Forestry Research	31282			✓
Industrial Policy & Admin. Mgmt	32110			✓
Industrial Development	32120			✓
SME Development	32130			✓
Cottage Industries & Handicraft	32140			✓
Agro-Industries	32161			✓
Forest Industries	32162			✓
Textiles - Leather & Substitutes	32163			✓

Category	Code	TRTA	Infrastructure	Trade Development
Chemicals	32164			✓
Fertilizer Plants	32165			✓
Cement/Lime/Plaster	32166			✓
Energy Manufacturing	32167			✓
Pharmaceutical Production	32168			✓
Basic Metal Industries	32169			✓
Non-Ferrous Metal Industries	32170			✓
Engineering	32171			✓
Transport Equipment Industry	32172			✓
Technological Research & Development	32182			✓
Mineral/Mining Policy & Admin. Mgmt.	32210			✓
Mineral Prospection And Exploration	32220			✓
Coal	32261			✓
Oil And Gas	32262			✓
Ferrous Metals	32263			✓
Non-Ferrous Metals	32264			✓
Precious Metals/Minerals	32265			✓
Industrial Minerals	32266			✓
Trade Policy And Admin. Management	3311X	✓		
Trade Facilitation	33120	✓		
Regional Trade Agreements	33130	✓		
Multilateral Trade Negotiations	3314X	✓		
Null	3315X	✓		
Trade Education Training	33181	✓		
Tourism Policy And Admin. Management	33210			✓

Appendix B: Country Groupings List

Countries within the sample (78) are allocated according to the following classifications,

Small Island Developing Countries:

- | | |
|-------------------------|----------------|
| 1. Bahrain | 2. Bahamas |
| 3. Belize | 4. Barbados |
| 5. Dominican Republic | 6. Fiji |
| 7. Guinea-Bissau | 8. Guyana |
| 9. Haiti | 10. Jamaica |
| 11. Mauritius | 12. Madagascar |
| 13. Papua New Guinea | 14. Sri Lanka |
| 15. Trinidad and Tobago | |

Landlocked Countries:

- | | |
|-------------------------|------------|
| 1. Burundi | 2. Bolivia |
| 3. Central African Rep. | 4. Chad |
| 5. Mali | 6. Malawi |
| 7. Niger | 8. Nepal |
| 9. Paraguay | 10. Rwanda |
| 11. Uganda | 12. Zambia |
| 13. Zimbabwe | |

Emerging Market Economies:

- | | |
|------------------------|---------------|
| 1. Argentina | 2. Brazil |
| 3. Chile | 4. China |
| 5. Columbia | 6. Egypt |
| 7. Hong Kong | 8. Indonesia |
| 9. India | 10. Israel |
| 11. Korea, Republic of | 12. Morocco |
| 13. Mexico | 14. Malaysia |
| 15. Pakistan | 16. Peru |
| 17. Philippines | 18. Singapore |
| 19. South Africa | 20. Thailand |
| 21. Turkey | |

Oil Exporting Economies:

- | | |
|-----------------------|-------------------|
| 1. Argentina | 2. Bolivia |
| 3. Cameroon | 4. Columbia |
| 5. Congo, Republic of | 6. Ecuador |
| 7. Egypt | 8. Gabon |
| 9. Indonesia | 10. Iran, I.R. of |

- | | |
|--------------------------|--------------------------|
| 11. Kuwait | 12. Mexico |
| 13. Malaysia | 14. Nigeria |
| 15. Oman | 16. Syria, Arab Republic |
| 17. Venezuela, Rep. Bol. | |

Poor Coastal Oil Importers

- | | |
|---------------------|----------------|
| 1. Bangladesh | 2. Benin |
| 3. Congo, Dem. Rep. | 4. Costa Rica |
| 5. Côte d'Ivoire | 6. El Salvador |
| 7. Ghana | 8. Guatemala |
| 9. Honduras | 10. Jordan |
| 11. Kenya | 12. Nicaragua |
| 13. Panama | 14. Senegal |
| 15. Sierra Leone | 16. Tanzania |
| 16. Togo | 18. Tunisia |
| 19. Uruguay | |

REFERENCE LIST

Anderson, James and van Wincoop, Eric. 2004. "Trade Costs". *Journal of Economic Literature* 42(3). 691-751.

APEC. 2002. Measuring the Impact of APEC Trade Facilitation on APEC Economies: A CGE Analysis. Singapore: APEC.

APEC. 1999. "Assessing APEC Trade Liberalization and Facilitation 1999 Update". Singapore: *APEC Economic Committee*. Available at <http://www.apec.org/apec/publications/free_downloads/1999.MedialibDownload.v1.html?url=/etc/medialib/apec_media_library/downloads/committees/ec/pubs/1999.Par.0004.File.v1.1>. Accessed 07/08/08.

Bannister, Geoffrey and Thugge, Kamau. 2001. "International Trade and Poverty Alleviation". *Finance and Development* 38(4).

Bergstrand, Jeffrey. 1989. "The Generalized Gravity Equation, Monopolistic Competition, and the Factor Proportions Theory in International Trade". *The Review of Economics and Statistics* 71(1). 143-153.

Bhagwati, Jagdish. 2005. "World Bank Funds Should be Used to Lubricate Trade Liberalization by Developing Countries". *Financial Times* (Sept 26). 18.

Bhagwati, Jagdish. 1958. "Immiserizing Growth: A Geometrical Note". *Review of Economic Studies* 25 (June): 201-205.

Bigsten, Arne and Soderbom, Mans. 2005. "What Have We Learned From a Decade of Manufacturing Enterprise Surveys in Africa?" *World Bank Policy Research Paper Working Paper* 3798.

Bonaglia, Federico and Fukasaku, Kiichiro. 2002. "Trading Competitively: A Study of Trade Capacity Building in Sub-Saharan Africa". Available at <<http://www.oecd.org/dataoecd/30/55/1939825.pdf>>. Accessed 05/30/08.

Booth, David. 2006. "Is the New Aid Agenda Anti-Trade?" In Trade and Aid: Partners or Rivals in Development Policy? Ed. by Sheila Page. London: Cameron May.

Brunetti, Aymo et al. 1997. "Institutional Obstacles for Doing Business: Data Description and Methodology of a Worldwide Private Sector Survey". *World Bank*. Available at

< <http://siteresources.worldbank.org/INTWBIGOVANTCOR/Resources/wps1759.pdf>>. Accessed 03/26/08.

Cali, Massimiliano et al. 2007. "Aid for Trade in Africa: Report for DATA". Available at <http://www.odi.org.uk/IEDG/Projects/Aid4trade_files/aid_for_trade_report_for_data.pdf>. Accessed 05/21/08.

Cameron, Hugo and Njinkeu, Dominique. 2008. "Introduction: Aid for Trade and Development". In Aid for Trade and Development. Ed. by Dominique Njinkeu and Hugo Cameron. New York: Cambridge University Press.

Cernat, Lucian. 2001. "Assessing Regional Trade Agreements: Are South-South RTA's More Trade Diverting?". UNCTAD Policy Issues in International Trade and Commodities Study Series No. 16. Available at <http://r0.unctad.org/ditc/tab/publications/itcdtab17_en.pdf>. Accessed 07/09/08.

Cline, William. 2004. Trade Policy and Global Poverty. Washington: Peterson Institute.

Collier, Paul. 2007. The Bottom Billion: Why the Poorest Countries Are Failing and What Can Be Done About It. New York: Oxford University Press.

Collier, Paul and O'Connell, Stephen. 2006. "Opportunities, Choices, and Syndromes". Available at < <http://users.ox.ac.uk/~econpco/research/pdfs/AERC-OpportunitiesChoicesandSyndromes.pdf>>. Accessed 07/31/08.

Colliter, Paul and Chauvet, Lisa. 2005. "Development Effectiveness in Fragile States: Spillovers and Turnarounds". Available at <http://www.oecd.org/dataoecd/32/59/34255628.pdf>>. Accessed 08/03/08.

Collier, Paul and Gunning, Jan W. 1999. "Why Has Africa Grown Slowly". *The Journal of Economic Perspectives* 13(3). 3-22.

Crafts, Nicholas and Venables, Anthony. 2005. "Globalization in History: A Geographical Perspective". In Globalization in Historical Perspective. Ed. by Michael Bordo et al. Chicago: University of Chicago Press.

De, Prabir. 2007. "Impact of Trade Costs on Trade: Empirical Evidence from Asian Countries". *Asia-Pacific Research and Training Network on Trade Working Paper Series, No. 27*. Available at <<http://www.unescap.org/tid/artnet/pub/wp2707.pdf>>. Accessed 08/07/07.

Dollar, David and Kraay, Aart. 2004. "Trade, Growth, and Poverty". *The Economic Journal* 114(493). F22-F49.

Easterly, William. 2006. The White Man's Burden: Why the West's Efforts to Aid the Rest Have Done So Much Ill and So Little Good. New York: Penguin.

Easterly, William et al. 2003. "New Data, New Doubts: A Comment on Burnside and Dollar's 'Aid, Policies, and Growth'". *NBER Working Paper No 9846*.

Easterly, William. 2003. "Can Foreign Aid Buy Growth?" *Journal of Economic Perspectives* 17(3). 23-48.

Edwards, Sebastian. 1998. "Openness, Productivity and Growth: What Do we Really Know?" *The Economic Journal* 108(447). 383-398.

Evenett, Simon J. 2005. "Some Tough Love on Aid for Trade". Available at < <http://www.evenett.com/articles/EvenettonSomeToughLoveOnAidForTrade.pdf>>. Accessed 06/05/08.

Findlay, Ronald and O'Rourke, Kevin H. 2000. "Commodity Market Integration, 1500-2000". In *Globalization in Historical Perspective*. Ed. by Michael D. Bordo et al. Chicago: University of Chicago Press.

Fox, Alan K. et al. 2003. "Measuring the Border Crossing Costs and Their Impact on Trade Flows: The United States-Mexican Trucking Case". Available at <http://www-personal.umich.edu/~alanfox/gtap/bcc/MeasuringBCC.pdf>>. Accessed 07/07/08.

Francois, Joseph et al. 2003. "Economic Benefits of the Doha Round for the Netherlands". Available at < http://www.lei.dlo.nl/publicaties/PDF/2003/6_xxx/6_03_02_1.pdf>. Accessed 06/07/08.

Frankel, Jeffrey and Rose, Andrew. 2005. "Is Trade Good or Bad for the Environment? Sorting Out the Causality". *Review of Economics and Statistics* 87(1). 85-91.

Frankel, Jeffrey and Rose, Andrew. 2000. "Estimating the Effect of Currency Unions on Trade and Output". *National Bureau of Economic Research Working Paper No. 7857*.

Fugazza, Marco. 2004. "Export Performance and its Determinants: Supply and Demand Constraints". *UNCTAD Policy Issues in International Trade and Commodities Study Series No. 26*. Available at < http://vi.unctad.org/tda/papers/CGE%20Models_Marco/export%20performance.pdf>. Accessed 05/29/08.

Gallup, John Luke et al. 1999. "Geography and Economic Development". *International Regional Science Review* 22(2). 179-232.

Harding, Alan et al. 2004. "Survival and Success Among African Manufacturing Firms". *Centre for the Study of African Economies Working Paper 2004-05*.

- Head, Keith. 2003. "Gravity For Beginners". Faculty of Commerce, UBC. Available at <<http://pacific.commerce.ubc.ca/keith/gravity.pdf>>. Accessed 07/09/08.
- Henson, Spencer and Loader, Rupert. 2001. "Barriers to Agricultural Exports From Developing Countries: The Role of Sanitary and Phytosanitary Requirements". *World Development* 29(1). 85-102.
- Hoekman, Bernard and Prowse, Susan. 2005. "Economic Policy Responses to Preference Erosion: From Trade as Aid to Aid for Trade". Available at <http://www.ycsg.yale.edu/focus/gta/economic_policy.pdf>. Accessed 05/29/08.
- Integrated Framework. 2008. <<http://www.integratedframework.org/about.htm>>. Accessed 06/20/08.
- Ivanic, Maros et al. 2006. "Aid for Trade Facilitation". Available at <http://www.oecd.org/dataoecd/8/26/37635205.pdf>>. Accessed 06/22/08.
- Johnson, Simon et al. 2007. "The Prospects for Sustained Growth in Africa: Benchmarking the Constraints". *IMF Working Paper #52*. Available at <http://imf.org/external/pubs/ft/wp/2007/wp0752.pdf>>. Accessed 01/14/08.
- Junius, Karsten. 1999. The Economic Geography of Production, Trade, and Development. Kiel: Mohn Siebeck.
- Krugman, Paul and Maurice Obstfeld. 2005. International Economics: Theory and Practice 7th edition. Toronto: Pearson Addison Wesley.
- Laird, Sam. 2007. "Aid for Trade: Cool Aid or Kool-Aid?" *G-24 Discussion Paper Series* No. 48. Geneva: UNCTAD.
- Limao, Nuno and Venables, Anthony. 2001. "Infrastructure, Geographical Disadvantage, Transport Costs and Trade". *The World Bank Economic Review* 15(3). 451-480.
- Manduna, Calvin. 2005. "Addressing the Causes of Sub-Saharan Africa's Declining Exports and Addressing Supply-Side Constraints". Available at <http://www.tralac.org/pdf/tralac_WP2.2005_Assessing_the_Causes.pdf>. Accessed 05/30/08.
- Moenius, Johannes. 2000. Three Essays on Trade Barriers and Trade Volumes. San Diego: University of California.
- Lines, Thomas. 2004. "Commodities Trade, Poverty Alleviation and Sustainable Development: The Re-emerging Debate". Available at <http://www.tomlines.org.uk/userimages/CommonFundPaper.pdf>>. Accessed 06/16/08.

Lumenga-Neso, Olivier et al. 2005. "On 'Indirect' Trade-Related R&D Spillovers". *European Economic Review* 49(7). 1785-1798.

Nielsen, Julia. 2006. "Aid for Trade". In Trade, Doha, and Development: A Window into the Issues. Ed. by Richard Newfarmer. Washington: World Bank.

ODI. 2007. "Aid for Trade: One Year On". *ODI Background Briefing*. Available at <http://www.odi.org.uk/IEDG/Projects/Aid4trade_files/aid_for_trade_one_year_on_BB.pdf>. Accessed 05/15/08.

OECD. 2008. "OECD Policy Dialogue with non-Members on Aid for Trade: from Policy to Practice". Available at <http://www.oecd.org/document/50/0,3343,en_2649_34665_37232754_1_1_1_1,00.htm>. Accessed 06/20/08.

OECD/WTO. 2007. Aid for Trade at a Glance 2007 – 1st Global Review. Paris: OECD.

OECD. 2007. Trade Related Technical Assistance: What do Recent Evaluations Tell Us? Paris: OECD.

OECD. 2006. Aid for Trade: Making it Effective. Paris: OECD.

OECD. 2005. "Paris Declaration on Aid Effectiveness". Available at <<http://www.oecd.org/dataoecd/11/41/34428351.pdf>>. Accessed 07/09/08.

OECD. 2003. "The Doha Development Agenda: Welfare Gains from Further Multilateral Trade Liberalization With Respect to Tariffs". *TD/TC/WP (2003)10*. Paris: OECD.

Oguledo, Victor Iwuagwu and Craig R. Macphee. 1994. "Gravity Models: A Reformulation and an Application To Discriminatory Trade Agreements". Applied Economics 26(2): 107-20.

Our Common Interest: Report of the Commission for Africa. 2005. "Commission for Africa 2005. Available at www.commissionforafrica.org/english/report>. Accessed 06/29/08.

Page, Sheila. 2007a. "The Potential Impact of the Aid for Trade Initiative". *G-24 Discussion Paper Series No. 45*. Geneva: UNCTAD.

Page, Sheila. 2007b. "Aid for Trade: A New Issue in the WTO". *Negotiation Advisory Brief No. 16*. Available at

http://www.odi.org.uk/IEDG/Projects/Aid4trade_files/nab16_aid_for_trade

- Page, Sheila. 2006b. "Using Trade Preferences as Aid". In Trade and Aid: Partners or Rivals in Development Policy? Ed. by Sheila Page. London: Cameron May.
- Prowse, Susan. 2006. "Mega-Coherence: The Integrated Framework". In Trade and Aid: Partners or Rivals in Development Policy? Ed. by Sheila Page. London: Cameron May.
- Prowse, Susan. 2002. "The Role of International and National Agencies in Trade-related Capacity Building". *The World Economy* 25(9). 1235-61.
- Radelet, Steven et al. 2005. "Aid and Growth". *Finance and Development* 42(3).
- Rajan, Raghuram and Subramanian, Arvind. 2005. "What Undermines Aid's Impact on Growth?" *IMF Working Paper 05126*. Washington DC: IMF.
- Rajan, Raghuram and Subramanian, Arvind. 2005. "Aid and Growth: What Does the Cross-Country Evidence Really Show?" *NBER Working Paper No W11513*.
- Roberts, John. 2006. "Aid and Trade at the Micro Level". In Trade and Aid: Partners or Rivals in Development Policy? Ed. by Sheila Page. London: Cameron May.
- Rodrik, Dani and Rodriguez, Francisco. 1999. "Trade Policy and Economic Growth: A Skeptic's Guide to Cross-National Evidence". *NBER Working Paper No W7081*.
- Romer, Paul. 1994. "New Good, Old Theory and the Welfare Cost of Trade Restrictions". *Journal of Development Economics* 43(1). 5-38.
- Roodman, David. 2007. "The Anarchy of Numbers: Aid, Development, and Cross-Country Empirics". *Center for Global Development Working Paper No 32*.
- Sachs, Jeffrey and Warner, Andrew. 1995. "Natural Resource Abundance and Economic Growth". *NBER Working Paper No 5398*.
- Sen, Amartya. 1982. Poverty and Famines: An Essay on Entitlements and Deprivation. Oxford: Clarendon Press.
- Smith, Adam. 1776. "An Inquiry into the Nature and Causes of the Wealth of Nations". Available at <www.econlib.org/LIBRARY/Smith/smWN.htm>. Accessed 07/28/08.
- Stiglitz, Joseph and Charlton, Andrew. 2006. "Aid for Trade: A Report for the Commonwealth Secretariat". Available at <http://www.unctad.org/sections/ditc_tncdb/docs/ditc_tncd_bpGeneva03-06_en.pdf>. Accessed 06/02/08.
- Suwa-Eisenmann, Akiko and Verdier, Thierry. 2007. "Aid and Trade". *Oxford Review of Economic Policy* 23(3). 481-507.

Tinbergen, Jan. 1962. Shaping the World Economy: Suggestion for an International Economic Policy. New York: Twentieth Century Fund.

Tokarick, Stephen. 2005. "Aligning Aid with Adjustment". *Finance and Development* 42(1). 30-33.

te Velde, Dirk W. 2007. "Keep your promises on Aid for Trade: Presentation at the European Parliament". Available at <http://www.odi.org.uk/IEDG/Projects/Aid4trade_files/pres_european_parliament_3_dec_2007.pdf>. Accessed 05/18/08.

UNCTAD. 2003. Making Global Trade Work for People. London: Earthscan.

UNCTAD. 2001. E-Commerce and Development Report 2001. Geneva: United Nations.

Walkenhorst, Peter and Yasui, Tadashi. 2003. "Quantitative Assessment of the Benefits of Trade Facilitation". *OECD TD/TC Working Paper* 31. Paris: OECD.

Wilson, John et al. 2005. "Assessing the Benefits of Trade Facilitation: A Global Perspective". *The World Economy* 28(6). 841-871.

Wilson, John et al. 2003. "Trade Facilitation and Economic Development: Measuring the Impact." *World Bank Working Paper* #2988. Washington: World Bank.

Winters, L Allen. 2004. "Trade Liberalization and Economic Performance: An Overview". *The Economic Journal* 114(493). F4-F21.

World Bank. 1999. African Development Indicators. Washington DC: World Bank.

World Trade Organization (WTO). 2006. "Recommendations of the WTO Task Force on Aid for Trade". Available at <http://www.odi.org.uk/IEDG/Projects/Aid4trade_files/recommendation_taskforce_July24.pdf>. Accessed 05/12/08.

Yuen, Jennifer. 2005. "Is Trade Facilitation the right way to go in Building Trade Capacity?" Burnaby, BC: SFU.

Figure 1: Total Disbursements – Cumulative Aid for Trade

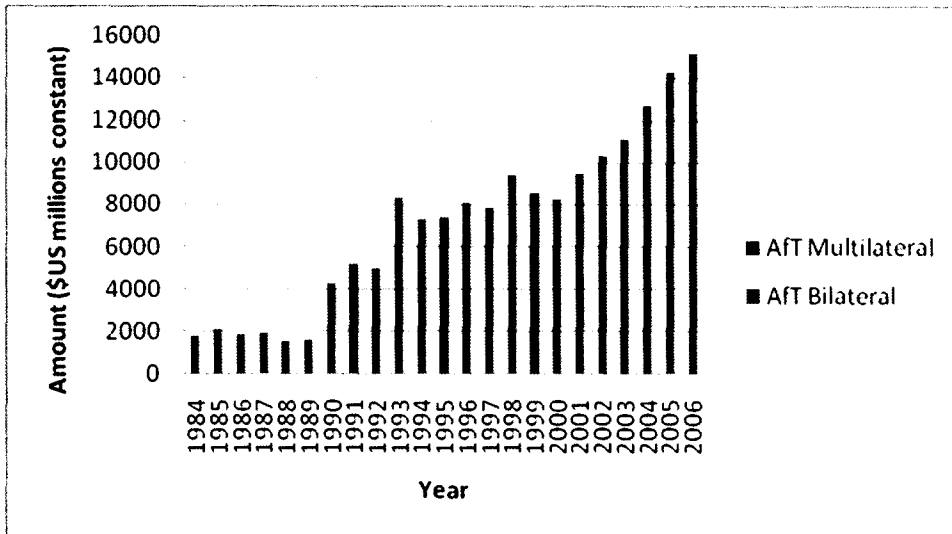


Figure 2: Total Disbursements – Trade Related Technical Assistance

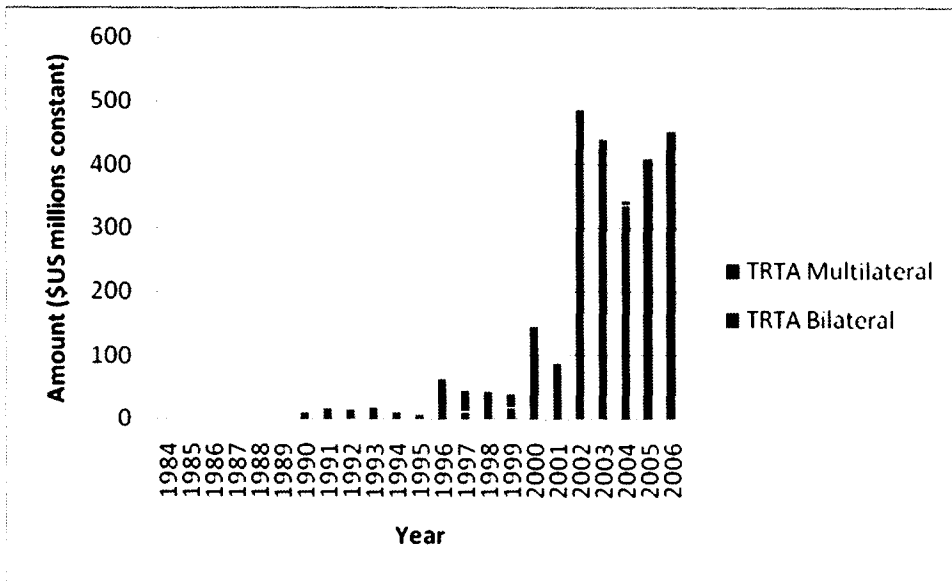


Figure 3: Total Disbursements - Infrastructure

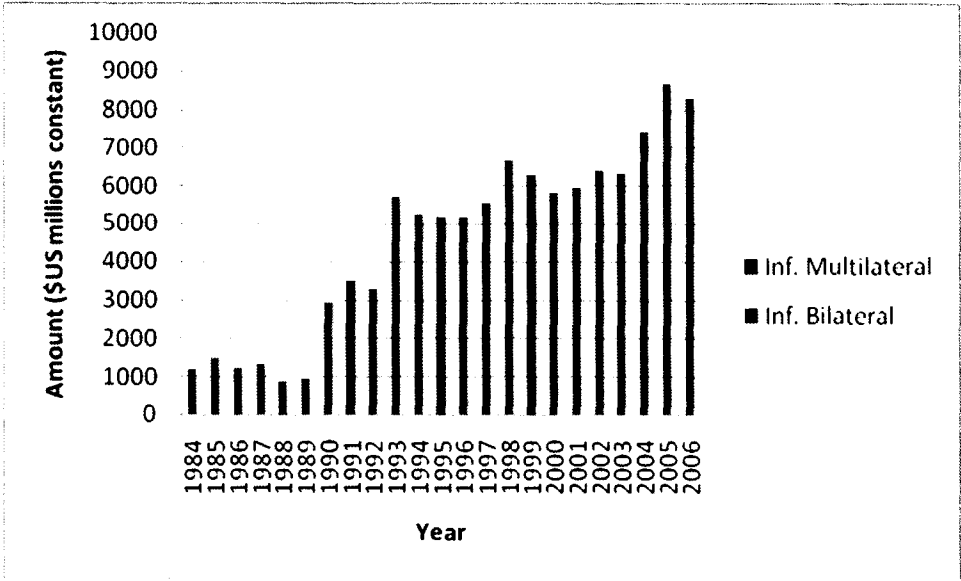


Figure 4: Total Disbursements – Trade Development

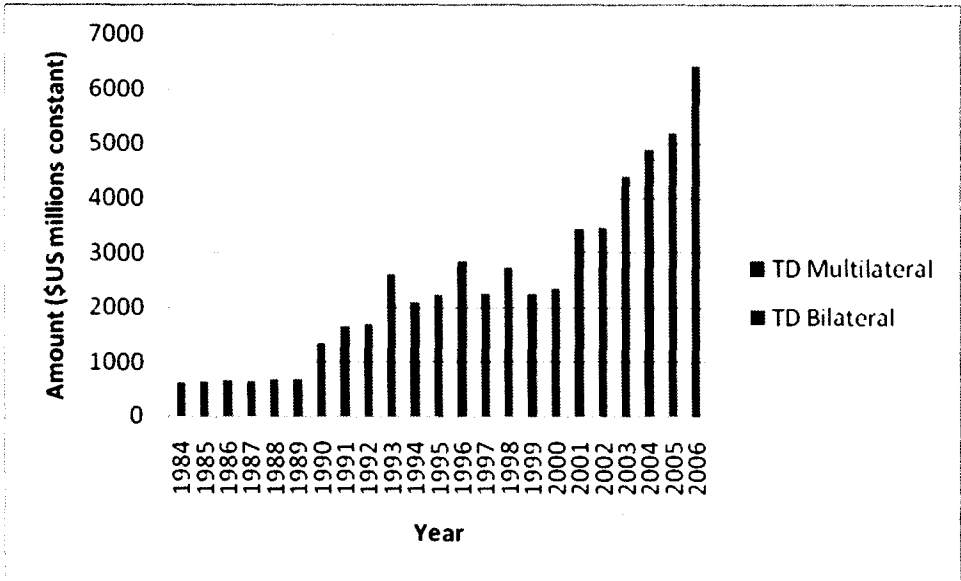


Table 1: Regression Estimates for Equation (1)

Category	SIDC	Landlocked	Emerg Mkts	Oil Exporters	PCOI	Mean
GDP/capita	1.932	1.743	1.575	1.644	1.791	1.737
Std. Error	0.013	0.017	0.013	0.015	0.012	
Population	1.536	1.779	1.71	1.595	1.754	1.675
Std. Error	0.012	0.014	0.011	0.011	0.01	
Contiguity	1.597	0.279	*0.125	*-0.161	*-0.123	0.343
Std. Error	0.175	0.082	0.074	0.085	0.071	
Language	0.927	0.734	0.974	0.979	1.062	0.935
Std. Error	0.026	0.03	0.029	0.037	0.025	
Distance	-2.404	-1.18	-1.015	-2.305	-2.922	-1.965
Std. Error	0.036	0.05	0.036	0.041	0.032	
FTT	0.039	-0.225	0.392	0.219	0.125	0.11
Std. Error	0.01	0.001	0.001	0.01	0.008	
AfT(total)	0.024	0.057	0.163	0.157	0.121	0.104
Std. Error	0	0.004	0.004	0.004	0.004	
Adj R-squared	0.441	0.378	0.361	0.411	0.5	0.418
SE	2.349	2.401	2.569	2.667	2.245	2.446

All estimates are significant at the 1% level unless otherwise indicated

* denotes significance at 10% level ($t \geq .645$)

Table 2: Regression Estimates for Equation (2)

Category	SIDC	Landlocked	Emerg Mkts	Oil Exporters	PCOI	Mean
GDP/capita	1.933	1.751	1.56	1.627	1.784	1.731
Std. Error	0.013	0.017	0.014	0.015	0.012	
Population	1.539	1.778	1.714	1.575	1.767	1.675
Std. Error	0.012	0.014	0.011	0.011	0.01	
Contiguity	1.581	0.282	^0.09	** -0.173	** -0.149	0.326
Std. Error	0.175	0.082	0.074	0.085	0.071	
Language	0.923	0.746	1.001	0.958	1.065	0.939
Std. Error	0.026	0.03	0.029	0.037	0.025	
Distance	-2.411	-1.183	-1.069	-2.337	-2.949	-1.99
Std. Error	0.035	0.049	0.036	0.041	0.032	
FTT	0.05	-0.224	0.39	0.216	0.16	0.118
Std. Error	0.01	0.009	0.008	0.01	0.008	

Category	SIDC	Landlocked	Emerg Mkts	Oil Exporters	PCOI	Mean
AfT(av. total)	0.022	0.081	0.183	0.169	0.148	0.121
Std. Error	0.005	0.005	0.004	0.004	0.005	
Adj R-squared	0.441	0.379	0.358	0.405	0.498	0.416
SE	2.349	2.399	2.576	2.679	2.25	2.451

All estimates are significant at the 1% level unless otherwise indicated
******denotes significance at 5% level ($t \geq 1.960$)
[^] denotes insignificance

Table 3: Regression Estimates for Equation (3)

Category	SIDC	Landlocked	Emerg Mkts	Oil Exporters	PCOI	Mean
GDP/capita	1.957	1.728	1.606	1.657	1.811	1.752
Std. Error	0.013	0.017	0.013	0.015	0.012	
Population	1.488	1.771	1.665	1.587	1.722	1.647
Std. Error	0.012	0.014	0.011	0.011	0.01	
Contiguity	1.66	0.306	**0.162	** -0.18	[^] -0.088	0.372
Std. Error	0.174	0.081	0.075	0.085	0.07	
Language	0.917	0.723	0.961	1.027	1.041	0.934
Std. Error	0.026	0.03	0.029	0.037	0.025	
Distance	-2.408	-1.163	-1.002	-2.313	-2.898	-1.957
Std. Error	0.036	0.049	0.036	0.041	0.031	
FTT	[^] -0.007	-0.209	0.352	0.182	0.111	0.086
Std. Error	0.01	0.01	0.008	0.01	0.008	
TRTA	0.072	0.045	0.113	0.121	0.116	0.093
Std. Error	0.006	0.005	0.006	0.01	0.004	
INF	0.036	0.084	0.05	0.141	0.053	0.073
Std. Error	0.004	0.005	0.004	0.004	0.004	
TD	0.026	-0.044	0.11	0.023	0.057	0.034
Std. Error	0.004	0.005	0.004	0.005	0.004	
Adj R-squared	0.446	0.381	0.366	0.417	0.511	0.424
SE	2.338	2.395	2.565	2.652	2.22	2.434

All estimates are significant at the 1% level unless otherwise indicated
******denotes significance at 5% level ($t \geq 1.960$)
[^] denotes insignificance

Table 4: Regression Estimates for Equation (4)

Category	SIDC	Landlocked	Emerg Mkts	Oil Exporters	PCOI	Mean
GDP/capita	1.979	1.729	1.61	1.688	1.832	1.768
Std. Error	0.013	0.017	0.012	0.015	0.012	
Population	1.483	1.77	1.667	1.591	1.741	1.65
Std. Error	0.012	0.014	0.011	0.011	0.01	
Contiguity	1.564	0.295	*0.133	-0.298	^-0.074	0.324
Std. Error	0.174	0.081	0.074	0.084	0.07	
Language	0.864	0.724	0.972	1.011	1.032	0.921
Std. Error	0.026	0.03	0.029	0.037	0.025	
Distance	-2.497	-1.176	-1.037	-2.444	-2.904	-2.012
Std. Error	0.036	0.049	0.036	0.041	0.032	
FTT	*0.018	-0.206	0.376	0.201	0.154	0.109
Std. Error	0.01	0.01	0.008	0.01	0.008	
TRTA	0.086	0.036	0.071	0.089	0.14	0.084
Std. Error	0.005	0.005	0.005	0.007	0.004	
INF	0.071	0.108	0.086	0.189	0.089	0.109
Std. Error	0.005	0.007	0.005	0.005	0.005	
TD	-0.029	-0.053	0.101	^0.002	*-0.008	0.013
Std. Error	0.005	0.006	0.005	0.006	0.004	
Adj R-squared	0.448	0.381	0.366	0.42	0.511	0.425
SE	2.334	2.395	2.56	2.646	2.221	2.431

All estimates are significant at the 1% level unless otherwise indicated

* denotes significance at 10% level ($t \geq 1.645$)

^ denotes insignificance

Table 5: Proportion of Landlocked Countries in Bottom Quartiles of FTT Scores

	1985	1990	1995	2000	2001	2002	2003	2004	2005
Burundi	3*	3.9*	2.6*	4.3*	4.3*	3.7*	3.2*	2.8*	3.3*
Bolivia	5.8	6.5	7.4	7.3	7.1	7.1	7.1	7.1	6.9
CAF	5.4**	4.8*	5.6*	4.8*	4.8*	4.7*	5.3*	3.8*	3.2*
Chad	5.8	5.8**	6.4**	5.8*	6.2**	5.9*	6*	6.1*	5.7*
Mali	6	5.8**	6**	6.4**	6.5**	6.5**	6.4**	6.2**	5.8*
Malawi	5**	5.9	6.3**	5.9*	6*	6.4**	6.3**	6.2**	5.6*
Niger	5.5**	4.9**	5*	6*	5.8*	5.8*	5.6*	5.6*	4.3*
Nepal	4.8**	4.4*	5.1*	6.2**	6.1*	5.9*	5.6*	5.4*	5.6*
Paraguay	4.5**	6.3	8.3	6.4**	7.2	7.4	7.6	7.4	7.2
Rwanda	2.5*	2.6*	3.8*	3.8*	5.4*	5.6*	5.4*	4.8*	4.2*
Uganda	3.7*	3*	5.1*	6.9**	7.2	6.6**	6.7**	6.4**	5.8*

	1985	1990	1995	2000	2001	2002	2003	2004	2005
Zambia	5.1**	4.8*	6.7	7.8	8	7.5	7	6.9**	6.4
Zimbabwe	4.7**	5.6**	6.4**	3.7*	3.2*	3.2*	3.5*	3.7*	2.8*
Quartile	4.4566	4.8344	5.8979	6.0629	6.1288	6.0757	6.0382	6.145	5.8151
1*	2	4	7	6	8	4	8	6	3
Quartile	5.7731	5.8649	6.7637	7.0434			6.8667	6.900	6.6226
2**	2	3	3	3	7.0915	6.8645	5	6	7
Quartile	6.9906	7.1601	7.5877	7.7964	7.8315	7.6743	7.6019	7.496	7.3115
3	1	7	8	3	6	2	8	8	9