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Are Nordic Donors Different?

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The Relation Between Aid and Bilateral Trade: Are Nordic Donors Different?

Lars M. Johansson* and Jan Pettersson†

September 29, 2009

Abstract

Donor aid is often regarded as being informally tied (aid increases donor-recipient exports) and this is, in general, interpreted as being harmful to aid recipients. However, using a gravity model, we show that aid is also positively associated with recipient-donor exports. That is, aid increases bilateral trade flows in both directions. Our interpretation is that an intensified aid relation reduces the effective cost of geographic distance.

We analyse the effects of various foreign development assistance variables on both recipient and donor exports and we specifically study the effects for Sweden, so-called Nordic Plus countries and Likeminded countries. We find a strong relation between aid in the form of technical assistance and exports in both directions, thus supporting our interpretation that market knowledge through interpersonal relations is an important driving force for exports. The Nordic Plus donors show a particularly strong effect of technical assistance on recipient exports. When we disaggregate aid to specifically study the effects of trade-related assistance (Aid for Trade), we find this form of aid to only be associated with donor exports and not with recipient exports. However, for Sweden and Nordic Plus donors, we find an effect in both directions, implying that Aid for Trade may mirror the effect of technical assistance. An alternative interpretation is that Sweden (and Nordic Plus) provides Aid for Trade primarily to its larger trading partners (to a larger extent than do other donors).

Our sample includes all 184 countries for which data is available during the period 1990 to 2005.

JEL Classification: F35; O19; O24

Keywords: Foreign Aid, International Trade, Exports, Gravity, Aid for Trade

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1 Introduction

This article empirically studies the relation between bilateral foreign development assistance (aid) and bilateral exports. There is a number of reasons for why such an aid-trade link would be expected.[1] Donor countries are rarely seen as pure altruists but rather as acting to pursue multiple objectives. As such, recipient country development is only one goal along with foreign policy considerations and commercial interests. A quite established result is the positive effect of aid on the volume of *donor country exports*. The size of this effect is often referred to as the effective amount of tied aid (Nilsson, 1997; Wagner, 2003). To the extent that donors are also providing the best quality of the goods actually imported – at competitive prices – tying does not carry any efficiency costs. However, there is evidence that tying of aid results in import cost increases (Jepma, 1991; Osei, 2004) and there could also be more dynamic effects by locking countries into less favourable production and trade structures.[2] Therefore, it is important to distinguish between the effects of formally tied aid and the effects resulting from an intensified bilateral relationship. The latter are likely to be less harmful and should presumably also have a positive effect on recipients' exports. Moreover, it is not evident that tied aid always results in increased donor exports. Tied aid funds may simply finance donor exports that would have been undertaken anyway. Donor exports may thus be considered to be "fungible", similarly to the normal use of the term relating to recipient government behaviour.[3]

Concerning the effects of aid on *recipient country exports*, aid has the possibility of speeding up the learning-by-doing process when practising trade, thus facilitating future exports in its creation of customer relations, reputation, distribution channels and in adapting to the formal and informal market environment.[4] In short, aid creates links between the donor and the recipient that will enhance the recipient's exports to the donor. The same mechanism may also lead donors to choose to import from development partners instead of other countries. These relations may be sticky in nature (i.e. an importer keeps its current supplier) under positive switching costs. Thus, aid might have long-run positive effects on trade. A positive effect on recipient bilateral exports could also be observed if a donor provides aid as a means of guaranteeing imports of strategically important products/natural resources. In particular, for materials of strategic interest, aid may entail an

[1] Morrissey (2006) provides a structured discussion on the relationship between trade and aid. This is part of the wider literature on aid allocation where Alesina and Dollar (2000) and Collier and Dollar (2001) are important contributions. Recent examples include Feeny and McGillivray (2008) and Wood (2008).

[2] Tied aid may also be bad for the donor if it implies supporting domestic old inefficient firms by subsidising their exports.

[3] For a discussion on the effect of fungibility on growth and poverty reduction, see Pettersson (2007a,b).

[4] Using data on Moroccan manufactures, Fafchamps et al. (2008) test whether productivity learning (lower costs) or market learning (market familiarity) is the driving force for export selection. They find evidence of adaptability to changing consumer tastes (familiarity with export markets) to be important, while productivity learning turns out to be empirically unimportant.

implicit (or explicit) obligation to sell to the donor country. To the extent that the aid recipient controls the strategic resource, this could alternatively be seen as a means of securing future aid inflows. In contrast, one reason for instead expecting the effect of aid on recipient bilateral exports to be small is that aid (even if targeted on trade facilitation) may primarily affect trade between the recipient and its neighbouring countries (not necessarily trade between the recipient and the donor). From this perspective, the effect on recipient bilateral exports says nothing about the extent to which aid is efficient.[5]

Each of the above arguments may also be used to make a case for the positive effects of trade on aid. Donors choose to support the development process for their trading partners rather than for other countries; exporters may identify the need for reform in countries where they are active; exports and aid to former colonies may be high; and concessions for certain strategic products may require a positive amount of aid. This means that the causal effect can go from trade to aid as well as from aid to trade. Since the direction of causality cannot be established, our hypothesis echoes that of Wagner (2003): Donors and recipients enter a reciprocity agreement. Aid and trade decisions are interlinked in that none of them would increase without the other. The main hypothesis to be tested is thus that (after controlling for other relevant variables) bilateral aid is not only correlated with donor exports but also with recipient exports. Moreover, since donors' aid policies differ in many ways (in terms of countries supported, the extent to which aid is tied, the relative emphasis on sector supported, the relative importance of technical assistance, etc) we expect the aid-trade relations to differ systematically among donors and/or groups of donors. We specifically study Sweden, the so-called Nordic Plus countries and the group of "Likeminded Donors". We use panel data to estimate gravity equations (explaining bilateral exports) augmented with various foreign development assistance variables. Our sample includes all 184 countries for which there is data available during the period 1990 to 2005.

This study mainly differs from earlier research in its focus on the impact of aid on both recipient and donor exports. Other papers using the gravity model of trade in analysing the effect of aid include Nilsson (1997), Osei et al. (2004) and Wagner (2003). However, they all only consider the effect of aid on donor exports. The exception is Johansson and Pettersson (2009) who systematically study the effects on both recipient and donor exports.[6] Furthermore, we disaggregate aid in various dimensions. First, we make a distinction between technical assistance (and general budget

[5]It is arguably the effect of aid on the total and not the bilateral level of exports that is of greatest importance for development. If aid is effective in enhancing the export potential of the recipient country (i.e. exports in total increase as a result of aid), this would be positive from a development perspective, regardless of the effects on bilateral trade. However, for a supply constrained developing nation, exports will not necessarily largely respond in total volumes but rather in their allocation. Hence, this article does not evaluate whether aid or trade is "good" for development. A recent article covering the literature on aid and growth is McGillivray et al. (2006). For a discussion on the effects of trade (openness) on development, see Rodrik et al. (2004).

[6]Johansson et al. (2006) do this on a country-case basis using the gravity model applied to Uganda and its donors.

support) and other aid. Thereafter, we focus on aid aimed at increasing a developing country's export potential, that is, the amount of Aid for Trade (AfT).[7]

The article proceeds as follows. In Section 2, we set out our main empirical specification as well as some digressions from it. Section 3 presents the data we are using. Section 4 presents the results and Section 5 concludes the paper.

2 Empirical specification

Our empirical model is an augmented gravity model following the "usual" set up.[8] The gravity model explains bilateral trade intensity (in terms of total or unidirectional trade) as depending on economic size (proxied by GDP and population of the trading countries) and "distance". Distance is broadly defined as factors that in different ways act as resistance to trade, such as geographical distance, but also factors that may hinder or facilitate a trade relationship, such as the existence of a free trade agreement between trading partners, a common language etc. Anderson and van Wincoop (2003) have demonstrated that for trade between country pairs, it is the relative resistance that is of importance, that is, the resistance to trade between the country pair in relation to the resistance to trade between these countries and other potential trading partners (so-called *multilateral resistance*). Preferably one would want to account for multilateral resistance in gravity model estimations. However, according to Anderson and van Wincoop, including country-specific dummies will also lead to consistent estimates of model parameters which is the strategy we have chosen.[9] Let us define $Gravity_{eit}$ for an exporting-importing $(e-i)$ country pair to include the "fundamental" gravity-model variables and their associated multipliers as:

$$\begin{aligned} Gravity_{eit} &= \alpha_e + \gamma_i + \lambda_t + \beta_1 LnGDP_{et} + \beta_2 LnGDP_{it} + \beta_3 Pop_{et} + \beta_4 Pop_{it} \\ &\quad + \beta_5 LnDistance_{ei} + \beta_6 Contiguity_{ei} + \beta_7 ComColonizer_{ei} \\ &\quad + \beta_8 Colony_{ei} + \beta_9 ComOffLang_{ei} + \beta_{10} RTA_{eit}. \end{aligned} \tag{2.1}$$

Subindex e represents the exporting country, i the importing country and t the period. GDP is the GDP of the respective country, Pop is population, $Distance$ is the distance between the two countries (in kilometres between the economic centres in the respective country), $Contiguity$

[7] Johansson and Pettersson (2009) do not study different donor groups but provide a number of other extensions to this study, including a disaggregation of total bilateral exports into a number of subsectors. That work also includes a more thorough analysis of the direction of causality.

[8] Reader-friendly, non-technical introductions to gravity models are Piermartini and Teh (2005) and Head (2003). Egger (2005), Baldwin and Taglioni (2006) and Helpman et al. (2008) are good references for alternative techniques when estimating gravity models.

[9] By including country dummies, we imperfectly control for multilateral resistance. Preferably, time varying country dummies would be used. However, this would imply estimating a model with more than 5 000 variables. We have chosen time invariant dummies simply to get a model that puts less demand on computing capacity.

is a dummy taking the value of one if the two countries are contiguous (and zero otherwise), $ComColonizer$, $Colony$ and $ComOffLang$ are dummies taking the value of one if the two countries have had a common colonizer after 1945, ever had a colonial link and share a common official language. RTA, finally, is a dummy variable equal to one if the two countries are members of the same regional trade agreement. To control for unobserved country and time characteristics (including multilateral resistance as discussed above), we follow e.g. Mátyás (1997), Feenstra (2002) and Helpman et al. (2008) by including export, import and time dummies (α_e, γ_i and λ_t). We then add aid to the typical gravity variables. Our extended gravity model becomes

$$\begin{aligned} LnExport_{eit} &= Gravity_{eit} + \beta_{aidr} LnAidr_{eit-1} + \beta_{NADr} NADr_{eit-1} \\ &\quad + \beta_{aidg} LnAidg_{eit-1} + \beta_{NADg} NADg_{eit-1} + \epsilon_{eit} \end{aligned} \tag{2.2}$$

where $Export_{eit}$ are exports from country e to country i in period t. $LnAidr_{ei}$ ($LnAidg_{ei}$) is the log of aid that the exporting country receives from (gives to) country i. However, in many cases we will not have any aid flow. To control for these zeroes, we include $NADr$ and $NADg$, no-aid-dummies taking the value of one whenever $LnAidr_{ei} = 0$ or $LnAidg_{ei} = 0$.[10] The coefficient β_{aidr} (β_{aidg}) hence measures the recipient's (donor's) aid elasticity of exports given that it is receiving (giving) aid. Exports to aid donors exceed exports to non-donors when $\beta_{aid} LnAidr_{ei} > \beta_{NADr}$ (equivalently for donors). To some extent handle the potential endogeneity of aid flows to exports, we use one-period lagged aid flows.[11]

2.1 Disaggregating aid: Technical assistance and Aid for Trade

When assessing the growth effects of aid, it has been shown to be important to disaggregate aid (e.g. Clemens et al., 2004). There is some reason to believe that this also applies to the trade effects of aid. Assume, for example, that aid that involves broad contacts between business people from both countries is more important for bilateral export creation than are other forms of aid. We would then expect aid such as technical assistance (TA) to show a positive effect while no effect would be expected from, say, general budget support (GBS). Therefore, we subtract the amount

[10] To be precise, NAD is a dummy for all cases where aid is reported to be zero, negative or not reported at all. In all these cases, we have set $aid = 1$ so that the log of aid equals zero.

[11] If aid causes trade, it is reasonable to assume that this effect materialises with some lag (where the use of a one-year lag is admittedly arbitrary) even if this is not necessarily the case.

of technical assistance from total aid. The corresponding equation becomes

$$\begin{aligned} &LnExport_{eit} = Gravity_{eit} \qquad (2.3)\\ &+\beta_{aidr} LnAidr^{NTA}_{eit-1} + \beta_{NADr} NADr_{eit-1} + \beta_{TAr} LnTAr_{eit-1} + \beta_{NTAr} NTADr_{eit-1}\\ &+\beta_{aidg} LnAidg^{NTA}_{eit-1} + \beta_{NADg} NADg_{eit-1} + \beta_{TAg} LnTAg_{eit-1} + \beta_{NTAg} NTADg_{eit-1} + \epsilon_{eit} \end{aligned}$$

where $LnAidh^{NTA}_{k}, \quad h \in r, g, and \quad k \in e, i$ denote total aid net the amount of technical assistance (i.e. $Ln(Aidh_k - TAh_k)$). With a similar change in specification, we try to control for the level of GBS.[12]

An alternative attempt is made in order to assess whether it is the sector supported rather than the type of aid that influences recipient country exports. One notable change in international development cooperation in the last decade is the increased emphasis on the potential of aid to help developing countries expand their trade capacity. Promises to increase trade-related assistance were an important part of the WTO Ministerial Declaration of 2001 (Doha) and this work on 'Aid for Trade' was further mandated in the 2005 Declaration (Hong Kong), for example through the set up of a specific Aid for Trade Task Force. Our ambition is therefore to separate from aggregate aid the amount aimed at increasing a developing country's export potential, that is the amount of Aid for Trade (AfT). This involves some problems. Conceptually, it is far from evident how to define what should actually count as AfT since, in principle, any support that loosens the supply-side constraints of a country will also have a potentially positive effect on exports. At the practical level, data availability determines the possibilities for disaggregation. In order not to let AfT mean "anything", we define AfT as aid aimed at improving (i) trade policy, (ii) trade related infrastructure and (iii) productive capacity.[13] Including AfT, the estimating equation becomes

$$\begin{aligned} &LnExport_{eit} = Gravity_{eit} \qquad (2.4)\\ &+\beta_{aidr} LnAidr^{NAFT}_{eit-1} + \beta_{NADr} NADr_{eit-1} + \beta_{AfT} LnAfTr_{eit-1} + \beta_{NAFTr} NAFTDr_{eit-1}\\ &+\beta_{aidg} LnAidg^{NAFT}_{eit-1} + \beta_{NADg} NADg_{eit-1} + \beta_{AfT} LnAfTg_{eit-1} + \beta_{NAFTg} NAFTDg_{eit-1} + \epsilon_{eit} \end{aligned}$$

where $LnAidh^{NAFT}$ denotes total aid net of Aid for Trade (i.e. $Ln(Aidh - AfTh)$).

One potential problem in estimating the above equations using ordinary least square estimation is that country pairs that are not trading with each other will not be included in the estimation. Hence, the estimates will be conditioned on the fact that countries are having a trading relation (the estimates will suffer from so-called Heckman selection bias). While there are ways of con-

[12] A correct subtraction of GBS depends on a number of assumptions (see Section 3), making these results uncertain.

[13] For a conceptual discussion, see e.g. Andersson et al. (forthcoming).

trolling for the probability that countries start trading, what ultimately matters is the size of the bias. Helpman et al. (2008) find the selection bias to be "economically negligible though statistically (strongly) significant" (p. 446). Johansson and Pettersson (2009) use a two-stage Heckman selection model as their baseline estimation model. However, they apply four different methods of estimation and confirm the finding in Helpman et al. of minor quantitative differences between methods of estimation. Therefore, we maintain ordinary least squares as our method of estimation throughout the article.

3 Data

Our sample covers the years 1990-2005 and includes all 184 countries for which there is data available. Our data on bilateral exports is from the United Nations Comtrade dataset. Due to data quality (mainly completeness), we use reported imports so that, for example, Kenyan exports to France are France's imports from Kenya as reported by France.[14] The data on aid comes from the OECD Development Assistance Committee's online database International Development Statistics. This, in turn, consists of two databases; the Development Assistance Committee online database (DAC) and the Creditor Reporting System online database (CRS). From DAC, we obtain the volumes of disbursed aid, while CRS reports commitments. Unfortunately, with one exception (technical assistance), we do not have any disbursement data on disaggregated aid so we are forced to use commitments from CRS. This is clearly a problematic measure, since it does not give any information about whether the amount committed has been disbursed or whether the disbursement has taken place in the same year as the commitment was made. We try to overcome this by using the shares of the respective commitments to total commitments. Assuming the share of commitments to be the same as the share actually disbursed in each sector, we use these shares to disaggregate total disbursements.

Data for distance, contiguity, colonial and common language dummies is taken from the "distance database" at CEPII. Data for GDP and population is taken from the World Development Indicators Online database. Following Helpman et al. (2008), all nominal variables are deflated into 2000 dollars using the US GDP chain price index.[15] The appendix describes the data in greater detail. Table A1 presents summary statistics and a correlation matrix is found in Table A2.

[14] A similar strategy is followed when constructing the trade data used in Helpman et al. (2008). When imports are not reported, we instead use the corresponding reported exports with some adjustments. See the Appendix for details.

[15] Baldwin and Taglioni (2006) instead propose to use nominal trade and GDP data and include time dummies. However, when including time dummies, their results are identical to those obtained when using non-deflated data. An alternative is to deflate the data in nominal national currency by a national price index and then convert it to US dollars. However, all data we have is provided in current US dollars and previous studies on aid and trade also use constant dollar values. Therefore, we stick to this procedure.

4 Aggregate results

The results from regressing aggregate bilateral export on aggregate aid as specified in equation (2.4) are presented in Table 1. The first column presents the results for the baseline model. Coefficient signs and levels on the non-aid variables are consistent with previous studies such as Iwanow and Kirkpatrick (2007), Francois and Manchin (2007) and Melitz (2007). The negative coefficient estimates for exporting country population mirror the result in e.g. Frankel and Romer (1999, Table 1), that "residents of larger countries tend to engage in more trade with their fellow citizens simply because there are more fellow citizens to trade with" (p. 380). Melitz (2007) posits that population should have a negative impact on bilateral trade in his model, but reports that it does not enter significantly when including country-fixed effects. The coefficient estimates on the donor aid variables (*lnaidg* and *NADg*) mirror earlier findings of a positive correlation between donor aid and donor exports, thus corroborating the hypothesis that aid is tied to exports from the donor country. An increase in aid of ten per cent is associated with roughly one per cent higher exports from the donor to the recipient. However, if the aid relationship facilitates the trade relationship more generally and is not only a means of persuading the recipient to buy goods and services from the donor, then we should be able to observe a similar effect on recipient exports. The results on recipient aid suggest this to be indeed the case. The parameter estimate for aid received, *lnaidr*, indicates to what extent received aid is associated with an increase in the recipient's exports to the donor. The estimated elasticity is essentially identical to the estimate for donor aid (0.102).

Table 1: Aid Aggregated

	(1) All	(2) Sweden	(3) Nordic+	(4) Likeminded
		Donor group of interest:		
lnaidg	0.102***	**0.165***[b]	0.105***	0.101***
(aid given)	(0.008)	(0.031)	(0.013)	(0.010)
lnaidr	0.102***	0.119*	0.117***	0.101***
(aid received)	(0.011)	(0.051)	(0.016)	(0.013)
NADg	0.938***	1.795***	1.012***	0.949***
(no-aid dummy)	(0.115)	(0.460)	(0.180)	(0.147)
NADr	0.776***	1.421	0.986***	0.823***
(no-aid dummy)	(0.157)	(0.776)	(0.228)	(0.189)
		Other trade pairs:		
OP_lnaidg		0.099***	0.100***	0.103***
(lnaidg other pairs)		(0.008)	(0.010)	(0.011)
OP_lnaidr		0.101***	0.095***	0.102***
(lnaidr other pairs)		(0.011)	(0.012)	(0.013)

Continued on next page...

... table 1 continued

OP_NADg		0.901***	0.908***	0.936***
(NADg other pairs)		(0.117)	(0.137)	(0.156)
OP_NADr		0.746***	0.693***	0.735***
(NADr other pairs)		(0.160)	(0.169)	(0.186)
		Controls:		
log	0.646***	0.645***	0.646***	0.646***
importer GDP	(0.024)	(0.024)	(0.024)	(0.024)
log	0.368***	0.368***	0.369***	0.368***
exporter GDP	(0.026)	(0.026)	(0.026)	(0.026)
log	0.031	0.028	0.034	0.031
importer population	(0.100)	(0.100)	(0.100)	(0.100)
log	-0.319**	-0.318**	-0.319**	-0.321**
exporter population	(0.112)	(0.112)	(0.112)	(0.112)
regional	0.606***	0.606***	0.615***	0.609***
trade agreement	(0.044)	(0.044)	(0.044)	(0.044)
log	-1.429***	-1.429***	-1.430***	-1.429***
distance	(0.017)	(0.017)	(0.017)	(0.017)
contiguity	0.548***	0.549***	0.549***	0.551***
	(0.087)	(0.087)	(0.087)	(0.087)
common	0.527***	0.527***	0.526***	0.527***
official language	(0.036)	(0.036)	(0.036)	(0.036)
ever a	1.013***	1.013***	1.017***	1.008***
colony	(0.085)	(0.085)	(0.085)	(0.085)
common	0.901***	0.901***	0.901***	0.901***
colonizer	(0.047)	(0.047)	(0.047)	(0.047)
N	282212	282212	282212	282212
adj. R^2	0.726	0.726	0.726	0.726

The dependent variable is (log) exports.
Standard errors in parentheses clustered on country pairs.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Coefficients in **bold** in the upper panel implies that they are significantly different from comparable coefficients in the second panel using an F-test at ^{c} $p < 0.1$, ^{b} $p < 0.05$, ^{a} $p < 0.01$
The estimation also includes exporter, importer and time dummies (not shown).

Recall that $NADg$ and $NADr$ are no-aid dummies indicating the extent to which exports are larger to (from) trade partners not receiving (giving) aid (given the other determinants). Hence, donor exports to aid recipient countries will be larger than exports to non-aid-recipients when $0.102 * lnaidg > 0.938$, that is if aid given exceeds 9860 dollars. Similarly, recipient country exports to aid donors will be larger than their exports to no-donors if aid received exceeds 2010 dollars. Since aid, if it is given at all in a bilateral relation, almost always exceeds these amounts, it would only be in exceptional cases that a donor or recipient would gain in terms of exports under

the counterfactual of no aid being given. This relation can be illustrated by plotting the predicted effect on an average country under aid vs. under no-aid. Figure 1 shows that bilateral trade is relatively more important for aid recipient exports than for donor exports (a level effect due to the larger no-aid dummy for aid donors).

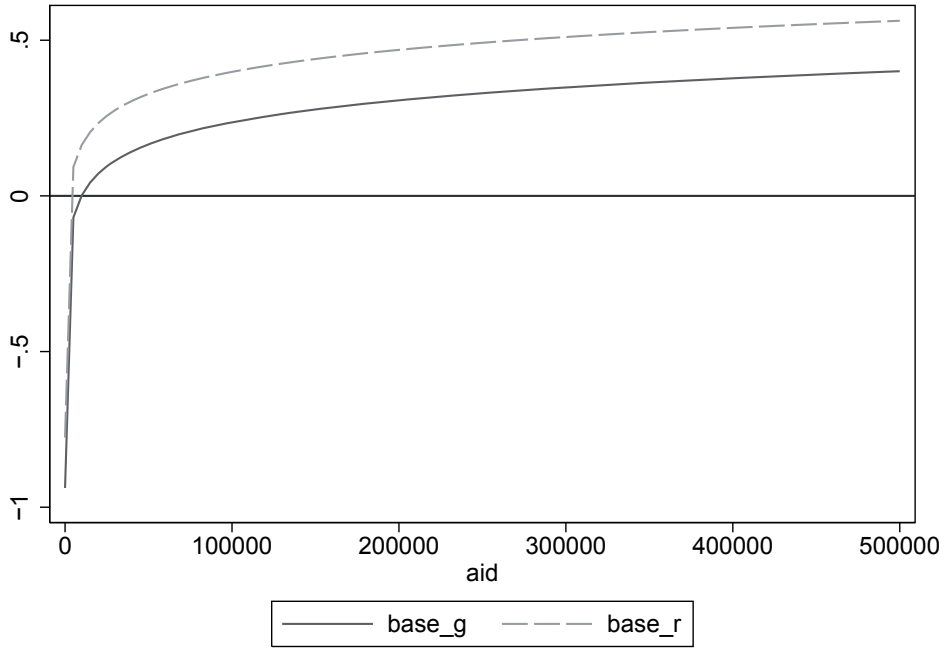

Figure 1: Aid vs. no-aid predictions for recipient and donor exports. Full sample.

What is the quantitative importance of the effect of aid on donor and recipient exports? Let us take figures for Sweden and Tanzania in the year 2005. The bilateral assistance from Sweden to Tanzania was 81 million dollar. Exports from Sweden to Tanzania were 65 million dollar while Tanzania's exports to Sweden were 4.1 million dollar. Taking these numbers as a departure and the elasticities of aid given and aid received above, a ten-per cent increase in aid (8.1 million dollar) would imply an increase in Swedish exports to Tanzania of around 660 000 dollar and an increase in Tanzanian exports to Sweden of about 42 000 dollar. With the elasticity for distance from column 1, a reduction in the distance between Sweden and Tanzania of less than 55 kilometres would predict the same increase in exports. So, even if aid given and aid received are statistically significant as predictors for exports, as compared to the importance of distance, aid tends to only play a minor role for bilateral trade relationships. Note, however, once more, that this estimate of aid on bilateral exports is not informative of whether aid is associated with an increase in total exports.

The results in the first column of Table 1 are based on the implicit assumption that the aid-trade relations of all countries can be squeezed into the same aid augmented gravity model. However, donors' aid policies differ in many ways.[16] We may therefore expect the aid-trade relations to differ systematically among donors and/or groups of donors (over and above what can be captured by our use of importer and exporter fixed effects). In columns 2 to 4, we specifically focus on three donor groups: Sweden (in column 2); the so-called "Nordic Plus" countries[17] (in column 3) and "Likeminded Donors"[18] (in column 4). We obtain our estimates for the group of interest by separating the aid variables into $D * aidvar$ and $(1 - D) * aidvar$ where $aidvar$ is the respective aid measure and D takes the value of one if the bilateral trade relation involves a member of the donor group on at least one side (i.e. importer or exporter) and zero otherwise. Hence, the upper panel of the table presents donor group coefficient estimates ($D * lnaidr$ etc.) and the lower panel reports the estimates for the remaining trade pairs ($(1 - D) * lnaidr$ etc., variable names preceded by OP for "other trade pairs"). To assess whether each estimated effect is statistically equal for the two groups of donors we perform an F-test. An effect that is statistically different between the donor group of interest and the rest of the sample is given in bold in the upper panel (see the table notes for details).

In column 2, we see that both Swedish exports and exports from aid recipients to Sweden have a higher responsiveness to aid than what other trade pairs have in general. Coefficient estimates are 0.165 (0.119) for aid given (received) to be compared with 0.099 (0.101). However, in terms of statistical significance, only the estimate for aid given, $lnaidg$, is larger than for other countries. This would suggest that Swedish development cooperation might spill over and benefit Swedish exports to an above average degree (supporting a conclusion that Swedish aid is, at least implicitly, tied). However, this interpretation depends on the assumption that aid causes trade, an assumption we cannot verify. An equally valid explanation is that Swedish aid is to a larger extent allocated to countries with which Sweden trades more intensively.

When broadening our group of donor countries into Nordic Plus and Likeminded donors (in columns 3 and 4), we get parameter estimates for the aid variables that are broadly similar to those obtained for the rest of the sample.[19] It might be believed that the development assistance provided by Sweden, the Nordic Plus countries and the Likeminded Donors would be less tainted by self-interest and hence, a lower than average correlation between those donors' exports and their development assistance should be expected. Our data does not support such a hypothesis. Note

[16] For example, the extent to which aid is tied, the relative emphasis on sector supported, the relative importance of technical assistance, etc.

[17] Denmark, Finland, Ireland, The Netherlands, Norway, Sweden and United Kingdom

[18] Nordic Plus except Ireland with the addition of Australia, Canada and Germany.

[19] While the coefficient for $lnaidr$ in column 3, 0.117, is larger than the one for OP_lnaidr, 0.095, the difference is not statistically significant.

once more, however, that this estimate (for *lnaidr*) says nothing about whether donor aid fosters recipient exports in general rather than bilaterally.[20]

4.1 Disaggregated results

Johansson and Pettersson (2009) show that the correlation between aid and trade differs between different sub-categories of aid. They find Technical Assistance (TA) to capture a great deal of the correlation between aid and trade while General Budget Support is not correlated with trade. This result is consistent with the hypothesis that aid acts as a contact creator or match maker that induces trade between countries with an aid relation. Development cooperation that involves broad contacts between business people on both sides would be expected to have a strong positive effect on bilateral trade. We make the same disaggregation as Johansson and Pettersson as specified in equation (2.3).

The results are presented in Table 2. Column 1 shows that technical assistance accounts for the lion's share of the aid-trade correlation in both directions. In columns 2 to 4, we see that TA's impact on donor exports is fairly similar between the different groups of donors (the parameter estimates for TAg and OP_TAg vary between 0.076 and 0.091 for different groupings of the data, which are never statistically different from each other). The estimate for the correlation between received TA and recipient exports on the other hand is considerably larger for the donor groups of interest in columns 3 and 4, although not statistically so for the Likeminded group.[21] For the Nordic Plus countries, the partial correlation coefficient is almost twice that of the remaining countries (0.122 vs. 0.069).

Table 2: Technical Assistance

	(1) All	(2) Sweden	(3) Nordic+	(4) Likeminded
	Donor group of interest:			
lnaidg	0.030***	0.080*	0.038**	0.029*
(aid given)	(0.008)	(0.032)	(0.013)	(0.011)
lnaidr	0.027*	0.046	0.015	0.020
(aid received)	(0.012)	(0.054)	(0.020)	(0.016)
NADg	0.289*	0.883	0.430*	0.258
(no-aid dummy)	(0.115)	(0.466)	(0.181)	(0.156)

Continued on next page...

[20] Or whether donor aid leads to increases in other countries' exports to the recipient.

[21] A note on the interpretation: While it is true that the point estimate for e.g. TA_r in column (2), 0.056, enters insignificantly, we cannot say whether this is due to a non-existing effect from Swedish TA or due to the smaller number of positive observations for estimating the parameter than when estimating the corresponding parameter for a larger group of donors. What we can say, and maybe more interesting, is that the estimate is not statistically different from the estimated effect for the other group (0.083).

... table 2 continued

NADr	0.207	0.755	0.102	0.115
(no-aid dummy)	(0.163)	(0.763)	(0.270)	(0.217)
TAg (TA	0.086***	0.099**	0.076***	0.078***
given)	(0.009)	(0.032)	(0.014)	(0.012)
TAr (TA	0.083***	0.056	**0.122**^{***b}	0.098***
received)	(0.013)	(0.044)	(0.020)	(0.016)
TANADg	0.660***	0.695	0.516**	0.582***
(no-aid dummy)	(0.120)	(0.406)	(0.175)	(0.150)
TANADr	0.470**	0.057	**0.912**^{***b}	**0.732**^{***b}
(no-aid dummy)	(0.164)	(0.523)	(0.241)	(0.198)
		Other trade pairs:		
OP_lnaidg		0.026**	0.025*	0.033**
(lnaidg other pairs)		(0.008)	(0.010)	(0.012)
OP_lnaidr		0.026*	0.030*	0.036*
(lnaidr other pairs)		(0.012)	(0.013)	(0.016)
OP_NADg		0.239*	0.216	0.352*
(NADg other pairs)		(0.118)	(0.141)	(0.161)
OP_NADr		0.180	0.230	0.350
(NADr other pairs)		(0.167)	(0.181)	(0.207)
OP_TAg		0.088***	0.091***	0.094***
(TAg other pairs)		(0.010)	(0.012)	(0.014)
OP_TAr		0.083***	0.069***	0.066***
(TAr other pairs)		(0.013)	(0.015)	(0.019)
OP_TANADg		0.693***	0.744***	0.744***
(TANADg other pairs)		(0.123)	(0.150)	(0.177)
OP_TANADr		0.473**	0.321	0.160
(TANADr other pairs)		(0.169)	(0.196)	(0.235)
N	282212	282212	282212	282212
adj. R^2	0.726	0.726	0.726	0.726

The dependent variable is (log) exports.
Standard errors in parentheses clustered on country pairs.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Coefficients in **bold** in the upper panel implies that they are significantly different from comparable coefficients in the second panel using an F-test at ^{c} $p < 0.1$, ^{b} $p < 0.05$, ^{a} $p < 0.01$
The estimation also includes exporter, importer and time dummies (not shown).

A further disaggregation of aid into TA, GBS and other forms of aid gives little additional insights. The results are shown in Table 3. The GBS variables are not, or very weakly, correlated with trade. If anything, GBS tends to show a negative correlation with trade even though there is only one instance in which the parameter estimate is significant at any conventional level of significance (*GBSr* for Likeminded, in column 4). A negative estimate on GBS is fully consistent

with a situation in which a recipient reallocates exports from the partner providing untied aid (GBS) towards countries providing tied aid or TA. However, we refrain from further speculation since the result is weak, to say the least.[22]

Table 3: Technical Assistance and General Budget Support

	(1) All	(2) Sweden	(3) Nordic+	(4) Likeminded
		Donor group of interest:		
lnaidg	0.043***	**0.077**^{*c}	0.029*	0.038***
(aid given)	(0.008)	(0.031)	(0.013)	(0.011)
lnaidr	0.029*	0.056	0.017	0.036*
(aid received)	(0.012)	(0.054)	(0.022)	(0.016)
NADg	0.466***	0.847	0.299	0.397*
(no-aid dummy)	(0.117)	(0.453)	(0.183)	(0.155)
NADr	0.242	0.879	0.116	0.348
(no-aid dummy)	(0.162)	(0.762)	(0.297)	(0.229)
TAg (TA	0.040***	0.097**	0.066***	0.089***
given)	(0.004)	(0.032)	(0.014)	(0.012)
TAr (TA	0.084***	0.059	**0.122**^{***c}	**0.113**^{***b}
received)	(0.013)	(0.045)	(0.021)	(0.016)
TANADg	0.083	0.680	**0.384**^{*c}	0.735***
(no-aid dummy)	(0.062)	(0.405)	(0.171)	(0.151)
TANADr	0.483**	0.096	0.896***	**0.938**^{***a}
(no-aid dummy)	(0.164)	(0.531)	(0.261)	(0.208)
GBSg (GBS	0.011	-0.045	0.018	**-0.024**^{c}
given)	(0.018)	(0.052)	(0.029)	(0.023)
GBSr (GBS	-0.043	-0.137	-0.048	-0.069*
received)	(0.029)	(0.090)	(0.039)	(0.033)
GBSNADg	-0.062	-0.883	-0.019	**-0.617**^{c}
(no-aid dummy)	(0.270)	(0.739)	(0.459)	(0.353)
GBSNADr	-0.595	-1.926	-0.453	-0.912
(no-aid dummy)	(0.446)	(1.312)	(0.574)	(0.492)
		Other trade pairs:		
OP_lnaidg		0.023**	0.025*	0.015
(lnaidg other pairs)		(0.008)	(0.010)	(0.012)
OP_lnaidr		0.028*	0.033*	0.023
(lnaidr other pairs)		(0.012)	(0.014)	(0.016)
OP_NADg		0.198	0.220	0.085
(NADg other pairs)		(0.117)	(0.141)	(0.162)
OP_NADr		0.204	0.283	0.138

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[22] Moreover, as noted in Section 3, the disaggregation involving GBS is based on commitment shares and, therefore, is possibly subject to measurement error.

... table 3 continued

(NADr other pairs)		(0.165)	(0.186)	(0.218)
OP_TAg		0.087***	0.094***	0.080***
(TAg other pairs)		(0.010)	(0.012)	(0.014)
OP_TAr		0.084***	0.072***	0.052**
(TAr other pairs)		(0.013)	(0.016)	(0.020)
OP_TANADg		0.683***	0.781***	0.548**
(TANADg other pairs)		(0.124)	(0.153)	(0.185)
OP_TANADr		0.489**	0.360	-0.037
(TANADr other pairs)		(0.169)	(0.205)	(0.254)
OP_GBSg		0.005	-0.002	0.035
(GBSg other pairs)		(0.019)	(0.023)	(0.026)
OP_GBSr		-0.039	-0.046	-0.021
(GBSr other pairs)		(0.030)	(0.032)	(0.036)
OP_GBSNADg		-0.097	-0.161	0.443
(GBSNADg other pairs)		(0.285)	(0.351)	(0.398)
OP_GBSNADr		-0.536	-0.735	-0.338
(GBSNADr other pairs)		(0.462)	(0.493)	(0.564)
N	282212	282212	282212	282212
adj. R^2	0.726	0.726	0.726	0.726

The dependent variable is (log) exports.
Standard errors in parentheses clustered on country pairs.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Coefficients in **bold** in the upper panel implies that they are significantly different from comparable coefficients in the second panel using an F-test at ^{c} $p < 0.1$, ^{b} $p < 0.05$, ^{a} $p < 0.01$
The estimation also includes exporter, importer and time dummies (not shown).

Another way of cutting the pie would be to separate from aggregate aid the amount of aid that is specifically aimed at strengthening the trading capacity of the development partner, the so-called Aid for Trade (AfT, see equation (2.4)). We follow the same disaggregation as in DAC (2006), although somewhat less detailed, distinguishing between aid to *Trade Policy and Regulations* ($POLREG$); *Investments in Trade-Related Infrastructure* (INF); and *Building Productive Capacity* ($PROCAP$). The broadest definition of AfT is the sum of all these parts.[23] When singelling out AfT, in the first column of Table 4, the quantitative effect of other aid decreases. AfT shows a small but statistically significant positive correlation with donor exports. One speculation could be that it is easier to informally tie AfT than other forms of aid. AfT is apparently not correlated with recipient exports ($AFTr$). When looking at the group-specific parameter estimates, the correlation between AFT and donor exports (see $AFTg$) seems to be driven by our donor groups of interest only. $AFTg$ enters strongly significant for all our groups of interest and is significantly

[23] See the Appendix for details.

different from the estimate for other trade pairs at the one percent level for Sweden and Nordic Plus. The estimate is larger for Sweden than for any of the other sub-groups of donors. A possible interpretation (in line with the findings in Table 1) is that Swedish AfT (and to a certain extent AfT from the Nordic Plus donors) is more (informally) tied than AfT from other donors. However, Sweden and the Nordic Plus donors also show a correlation between AFT and recipient exports (see $AFTr$), significant at the one percent level and significantly different from the other trade pairs (at the ten and five percent level, respectively). So AfT, at least for Sweden and Nordic Plus countries, may mirror the effect of TA, that aid in this form tends to intensify business relations and therefore increase bilateral trade in both directions. An alternative interpretation is that Sweden (and Nordic Plus) provides trade facilitating support primarily to its larger trading partners (to a larger extent than do other donors).

When disaggregating the amount of total AfT in Table 5, the results in column 1 appear quite noisy. The only estimate to enter at any conventional level of significance is donor aid to investments in trade-related infrastructure ($INFg$). However, when specifically looking at different donor groups, the only general pattern seems to be that aid to Building Productive Capacity stands out as the only important factor for donor as well as recipient exports (i.e. $PROCAPg$ and $PROCAPr$) for our groups of interest (different from the estimate for other trade pairs at least at the ten percent level), in particular for Swedish and Nordic Plus exports. To a higher extent than the other AfT-parts, $PROCAP$ consists of a great deal of support to sectors in which personal contacts are involved (and we believe this type of aid to largely be TA; see the Appendix for details). This corroborates our interpretation of the results in Table 4, i.e. that the TA-effect is mirrored and/or that larger trading partners are supported.

Table 4: Aid for Trade

	(1) All	(2) Sweden	(3) Nordic+	(4) Likeminded
	Donor group of interest:			
lnaidg	0.076***	0.082**	**0.045*****a**	0.070***
(aid given)	(0.008)	(0.030)	(0.012)	(0.010)
lnaidr	0.077***	0.033	0.055**	0.068***
(aid received)	(0.011)	(0.051)	(0.019)	(0.014)
NADg	0.641***	0.787	**0.258**^{a}	0.594***
(no-aid dummy)	(0.112)	(0.434)	(0.175)	(0.143)
NADr	0.506***	0.388	0.219	0.459*
(no-aid dummy)	(0.151)	(0.752)	(0.262)	(0.200)
AFTg (AFT	0.029***	**0.123*****a**	**0.086*****a**	0.038***
given)	(0.008)	(0.035)	(0.015)	(0.011)

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... table 4 continued

AFTr (AFT received)	0.015 (0.012)	**0.094**^{*c} (0.045)	**0.045**^{*b} (0.020)	0.028 (0.015)
AFTNADg (no-aid dummy)	0.211 (0.117)	**1.206**^{*b} (0.497)	**0.934**^{***a} (0.212)	0.273 (0.159)
AFTNADr (no-aid dummy)	-0.016 (0.167)	0.810 (0.651)	0.295 (0.283)	0.091 (0.217)
		Other trade pairs:		
OP_lnaidg (lnaidg other pairs)		0.076*** (0.008)	0.090*** (0.010)	0.084*** (0.012)
OP_lnaidr (lnaidr other pairs)		0.080*** (0.011)	0.086*** (0.012)	0.087*** (0.015)
OP_NADg (NADg other pairs)		0.638*** (0.115)	0.815*** (0.135)	0.692*** (0.159)
OP_NADr (NADr other pairs)		0.511*** (0.154)	0.635*** (0.173)	0.553** (0.205)
OP_AFTg (AFTg other pairs)		0.025** (0.009)	0.004 (0.010)	0.019 (0.012)
OP_AFTr (AFTr other pairs)		0.011 (0.012)	0.002 (0.013)	0.001 (0.016)
OP_AFTNADg (AFTNADg other pairs)		0.172 (0.119)	-0.094 (0.142)	0.174 (0.169)
OP_AFTNADr (AFTNADr other pairs)		-0.046 (0.172)	-0.138 (0.184)	-0.102 (0.211)
N	282212	282212	282212	282212
adj. R^2	0.726	0.726	0.726	0.726

The dependent variable is (log) exports.
Standard errors in parentheses clustered on country pairs.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Coefficients in **bold** in the upper panel implies that they are significantly different from comparable coefficients in the second panel using an F-test at ^{c} $p < 0.1$, ^{b} $p < 0.05$, ^{a} $p < 0.01$
The estimation also includes exporter, importer and time dummies (not shown).

Table 5: Aid for Trade disaggregated

	(1) All	(2) Sweden	(3) Nordic+	(4) Likeminded
		Donor group of interest:		
lnaidg (aid given)	0.077*** (0.008)	0.077* (0.032)	**0.047**^{***a} (0.013)	0.078*** (0.010)
lnaidr (aid received)	0.079*** (0.011)	0.033 (0.053)	0.055** (0.020)	0.077*** (0.015)
NADg	0.650***	0.728	**0.281**^{b}	0.704***

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... table 5 continued

(no-aid dummy)	(0.112)	(0.449)	(0.182)	(0.148)
NADr	0.522***	0.377	0.219	0.582**
(no-aid dummy)	(0.152)	(0.769)	(0.283)	(0.211)
POLREGg	-0.029	-0.048	-0.036	**-0.055**^{*c}
(AFT-regulations given)	(0.016)	(0.070)	(0.041)	(0.025)
POLREGr	-0.043	**0.123**^{c}	-0.042	-0.044
(AFT-regulations received)	(0.023)	(0.100)	(0.047)	(0.032)
PROCAPg	0.010	**0.087**^{**a}	**0.051**^{***a}	**0.034**^{**a}
(AFT-prod capacity given)	(0.008)	(0.033)	(0.014)	(0.011)
PROCAPr	0.003	**0.069**^{c}	**0.042**^{*b}	**0.039**^{*a}
(AFT-prod capacity received)	(0.012)	(0.036)	(0.021)	(0.015)
INFg	0.022**	0.027	**0.051**^{***b}	0.021
(AFT-infrastructure given)	(0.008)	(0.024)	(0.015)	(0.011)
INFr	0.010	0.007	0.000	0.006
(AFT-infrastructure received)	(0.013)	(0.056)	(0.025)	(0.018)
POLREGNADg	-0.357	-0.573	-0.381	**-0.770**^{*b}
(no-aid dummy)	(0.205)	(0.841)	(0.480)	(0.302)
POLREGNADr	-0.505	**1.663**^{c}	-0.483	-0.597
(no-aid dummy)	(0.285)	(1.257)	(0.578)	(0.396)
PROCAPNADg	0.033	**0.785**^{c}	**0.530**^{**a}	**0.320**^{*a}
(no-aid dummy)	(0.116)	(0.438)	(0.190)	(0.151)
PROCAPNADr	-0.113	0.606	**0.333**^{c}	**0.332**^{a}
(no-aid dummy)	(0.162)	(0.476)	(0.291)	(0.216)
INFNADg	0.138	0.023	**0.473**^{*b}	0.086
(no-aid dummy)	(0.106)	(0.313)	(0.213)	(0.150)
INFNADr	0.009	-0.311	-0.197	-0.042
(no-aid dummy)	(0.168)	(0.798)	(0.342)	(0.247)
		Other trade pairs:		
OP_lnaidg		0.078***	0.090***	0.077***
(lnaidg other pairs)		(0.008)	(0.010)	(0.012)
OP_lnaidr		0.081***	0.088***	0.082***
(lnaidr other pairs)		(0.011)	(0.012)	(0.015)
OP_NADg		0.648***	0.817***	0.595***
(NADg other pairs)		(0.115)	(0.138)	(0.165)
OP_NADr		0.527***	0.656***	0.469*
(NADr other pairs)		(0.155)	(0.178)	(0.213)
OP_POLREGg		-0.027	-0.026	0.005
(POLREGg other pairs)		(0.017)	(0.018)	(0.022)
OP_POLREGr		-0.051*	-0.040	-0.030
(POLREGr other pairs)		(0.024)	(0.025)	(0.029)
OP_PROCAPg		0.008	-0.006	-0.013
(PROCAPg other pairs)		(0.009)	(0.010)	(0.012)

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... table 5 continued

OP_PROCAPr		0.000	-0.013	-0.034*
(PROCAPr other pairs)		(0.012)	(0.014)	(0.017)
OP_INFg		0.021*	0.011	0.026*
(INFg other pairs)		(0.008)	(0.009)	(0.011)
OP_INFr		0.011	0.011	0.021
(INFr other pairs)		(0.013)	(0.015)	(0.017)
OP_POLREGNADg		-0.332	-0.337	0.166
(POLREGNADg other pairs)		(0.210)	(0.223)	(0.287)
OP_POLREGNADr		-0.613*	-0.488	-0.263
(POLREGNADr other pairs)		(0.292)	(0.306)	(0.347)
OP_PROCAPNADg		0.019	-0.162	-0.251
(PROCAPNADg other pairs)		(0.120)	(0.142)	(0.168)
OP_PROCAPNADr		-0.137	-0.285	-0.553*
(PROCAPNADr other pairs)		(0.167)	(0.191)	(0.230)
OP_INFNADg		0.136	0.020	0.220
(INFNADg other pairs)		(0.110)	(0.117)	(0.141)
OP_INFNADr		0.035	0.059	0.147
(INFNADr other pairs)		(0.172)	(0.189)	(0.223)
N	282212	282212	282212	282212
adj. R^2	0.726	0.726	0.726	0.726

The dependent variable is (log) exports.
Standard errors in parentheses clustered on country pairs.
* $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$
Coefficients in **bold** in the upper panel implies that they are significantly different from comparable coefficients in the second panel using an F-test at ^{c} $p < 0.1$, ^{b} $p < 0.05$, ^{a} $p < 0.01$
The estimation also includes exporter, importer and time dummies (not shown).

4.2 Endogenous aid, causality

As mentioned in the introduction, we strongly suspect aid to be endogenous to trade. Therefore, we would like to sort out the direction of causality, primarily by instrumenting for aid. Here, we face one major obstacle: We are unable to find any variable that we judge to be a credible instrument. We believe the absolute majority of aid-determinants to be unlikely to identify any exogenous variation in aid to assess its causal effect on trade, i.e. we expect the instruments to not only be correlated with aid but also directly correlated with trade, thus violating the exclusion restrictions for a valid instrument (that is, that the instrument has no partial effect on trade once aid is controlled for and that it is not correlated with unobservables affecting trade). Johansson and Pettersson (2009) do, however, instrument for aid and conclude that while it is important to address the likely endogeneity of aid, the available instruments are not sufficiently strong to

identify the exogenous variation in aid and hence, they cannot provide any evidence of a causal relation between aid and trade.[24] Since the direction of causality cannot be established, we stress (as we did previously) the importance of modesty in interpreting the results in a causal context.

4.3 Bilateral vs. total effect

For a recipient country, it is naturally of most interest to know the total effect of aid on its trading capacity and exports. An increase in exports from Tanzania to Sweden as a result of Swedish-Tanzanian development cooperation is of minor interest to Tanzania if it does not also mean that there is an increase in Tanzania's total exports. A mere reallocation of exports to Sweden from other trading partners is of limited value. Johansson and Pettersson (2009) test for this by including in the estimations the amount of total aid received from partners other than the bilateral trading partner. The (highly significant) parameter estimate for this effect gives an elasticity that is about one third of the elasticity for aid received from the trading partner but with a reversed sign. This would imply that a donor will import less from its partner if that partner receives more aid from other partners.[25] This result supports the argument that bilateral aid to some extent is trade diverting rather than, more generally, trade facilitating. In an ongoing research project, Helble et al. (2009) look at countries' total (not bilateral) receipts of AfT and how these affect their exports and imports. They find that total AfT received is positively correlated with both a recipient's exports and its imports. When limiting the sample to developing countries only (to assess whether AfT facilitates trade among developing countries), AfT received is still positively correlated with exports but not with imports. This is consistent with AfT being, formally and/or informally, tied to exports from donor countries. The authors find that support targeted at policy and regulatory reforms can have a particularly large impact on the recipients' trade performance.

5 Conclusions

While earlier studies find a positive correlation between donor aid and donor exports (leading to the interpretation that aid is informally tied and thus, harmful for recipient countries), we find a very similar correlation between received aid and recipient exports (or, in other words, between donor aid and donor imports). From this finding, we draw the conclusion that aid cannot be interpreted as only being conditioned on donor exports. There could, of course, be different mechanisms

[24] They also perform so-called Granger causality tests which confirm that two-way causality cannot be rejected. However, it is not evident that a Granger causality test captures causality. Aid is often disbursed following previous commitments, so that import decisions may be taken anticipating aid inflows. Lloyd et al. (2000) study the aid-trade relation between European donors and African recipients and find that Granger tests confirm all three links (i.e. aid-trade, trade-aid, and simultaneity) and conclude that the sample should be divided accordingly.

[25] Including aid received by other partners does not have any significant impact on the parameter estimate for aid received from the trading partner.

that determine the donor export effect than those determining the recipient export effect. If so, tying could still explain the positive correlation between aid and donor exports. But then, another explanation is needed to interpret the link between aid received and recipient exports. Our favoured explanation is that an intensified aid relation is associated with a reduction in the effective cost of physical distance, which implies larger bilateral trade. Our guess is that this is a good candidate explanation for donor exports as well as for recipient exports, even though we cannot rule out the "tacit binding"-explanation for donor exports. Somewhat surprisingly, Swedish aid is found to be more tied than aid from other donors.

Besides finding aid to be positively associated with recipient-donor exports as well as donor-recipient exports, we find a particularly strong relation between aid in the form of technical assistance and exports in both directions, thus supporting our interpretation that market knowledge through interpersonal relations is an important driver for exports. The Nordic Plus donors show a particularly strong effect of technical assistance on recipient exports.

Moreover, when disaggregating aid to specifically study the effects of trade-related assistance (Aid for Trade) we find, using all sample countries, this form of aid to be associated with donor exports only and not with recipient exports. This suggests that Aid for Trade is a form of aid that is easier to link to donor exports than other forms of aid. However, for Sweden and Nordic Plus, we find an effect in both directions implying that, at least for Sweden and Nordic Plus countries, Aid for Trade may mirror the effect of technical assistance, that aid in this form tends to intensify business relations and therefore increase bilateral trade in both directions. An alternative interpretation is that Sweden (and Nordic Plus) provides trade facilitating support primarily to its larger trading partners (to a larger extent than other donors). Among the aid contained in Aid for Trade, we find aid to Building Productive Capacity (particularly rich in aid involving personal contacts and technical assistance) to drive this result.

References

Alberto Alesina and David Dollar. Who Gives Foreign Aid to Whom and Why? *Journal of Economic Growth*, 5:33–63, March 2000.

James E. Anderson and Eric van Wincoop. Gravity with Gravitas: A Solution to the Border Puzzle. *American Economic Review*, 93(1):171–192, March 2003.

J. Andersson, C. Behrendt, and K. Fukasaku. The international architecture of aid for trade. *A joint SECO-OECD Development Centre Report*, forthcoming. Paris.

R. Baldwin and D. Taglioni. Gravity for dummies and dummies for gravity equations. *NBER Working Papers 12516*, 2006.

Michael A. Clemens, Steven Radelet, and Rikhil Bhavnani. Counting Chickens When They Hatch: The Short-Term Effect of Aid on Growth. *Center for Global Development Working Paper No. 44*, July 2004.

Paul Collier and David Dollar. Can the world cut poverty in half? how policy reform and effective aid can meet international development goals. *World Development*, 29(11):1787–1802, 2001.

DAC. *Aid for Trade: Making it Effective*. OECD Publishing, Paris, 2006.

Peter Egger. Alternative techniques for estimation of cross-section gravity models. *Review of International Economics*, 13(5):881–891, 2005.

Marcel Fafchamps, Said El Hamine, and Albert Zeufack. Learning to export: Evidence from maroccan manufacturing. *Journal of African Economies*, 17(2):305–355, 2008.

Robert C. Feenstra. Border Effects and the Gravity Equation: Consistent Methods for Estimation. *Scottish Journal of Political Economy*, 49(5):491–506, November 2002.

Simon Feeny and Mark McGillivray. What determines bilateral aid allocations? evidence from time series data. *Review of Development Economics*, 12(3):515–529, 2008.

Joseph Francois and Miriam Manchin. Institutions, infrastructure and trade. *CEPR Discussion Paper No. 6068*, 2007.

Jeffrey A. Frankel and David Romer. Does trade cause growth? *American Economic Review*, 89 (3):379–399, 1999.

Keith Head. Gravity for Beginners. Sauder School of Business, University of British Columbia. Available at: http://strategy.sauder.ubc.ca/head//gravity.pdf, 2003.

Matthias Helble, Catherine Mann, and John S. Wilson. Aid for Trade Facilitation. Draft, March 2009.

Elhanan Helpman, Marc Melitz, and Yona Rubinstein. Estimating Trade Flows: Trading Partners and Trading Volumes. *Quarterly Journal of Economics*, 123(2):441–487, May 2008.

Tomasz Iwanow and Colin Kirkpatrick. Trade facilitation, regulatory quality and export performance. *Journal of International Development*, 19:735–753, 2007.

Catrinus J. Jepma. The tying of aid. OECD Development Centre, Paris, 1991.

Lars Johansson and Jan Pettersson. Tied aid, trade-facilitating aid or trade-diverting aid? Uppsala University, Department of Economics Working Paper 2009:5, March, 2009.

Lars Johansson, Justine Nannyonjo, Jan Pettersson, and Ulrika Stavlöt. Uganda: Aid and trade. Case study for the OECD Policy Dialogue on Aid for Trade, 6-7 November, Qatar, 2006.

Tim Lloyd, Mark McGillivray, Oliver Morrissey, and Robert Osei. Does aid create trade? An investigation for european donors and african recipients. *The European Journal of Development Research*, 12(1):107–123, 2000.

Lásló Mátyás. Proper Econometric Specification of the Gravity Model. *The World Economy*, 20: 363–369, 1997.

Mark McGillivray, Simon Feeny, Niels Hermes, and Robert Lensink. Controversies over the impact of development aid: it works; it doesn't; it can, but that depends... *Journal of International Development*, 18(7):1031–1050, October 2006.

Jaques Melitz. North, south and distance in the gravity model. *European Economic Review*, 51: 971–991, 2007.

Oliver Morrissey. Aid or Trade, or Aid and Trade? *The Australian Economic Review*, 39(1):78–88, 2006.

Lars Nilsson. Aid and donor exports: The case of the european union. In *Essays on North-South Trade*, Lund Economic Studies Number 70. University of Lund, 1997.

Barfour Osei. The Cost of Tying Aid in Ghana. *African Economic Research Consortium Research Paper No. 144*, October 2004.

Robert Osei, Oliver Morrissey, and Tim Lloyd. The nature of aid and trade relationships. *The European Journal of Development Research*, 16(2):354–374, 2004.

Philip M. Parker. *National Cultures of the World: A Statistical Reference*, volume 4 of *Cross-Cultural Statistical Encyclopedia of the World*. Westport,CT: Greenwood Press, 1997.

Jan Pettersson. Foreign Sectoral Aid Fungibility, Growth and Poverty Reduction. *Journal of International Development*, 19(8):1074–1098, November 2007a. doi: 10.1002/jid.1378.

Jan Pettersson. Child Mortality: Is Aid Fungibility in Pro-Poor Expenditure Sectors Decisive? *Review of World Economics*, 143(4):673–693, December 2007b. doi: 10.1007/s10290-007-0127-7.

Roberta Piermartini and Robert Teh. Demystifying Modelling Methods for Trade Policy. *WTO Discussion Paper No. 10*, 2005.

Dani Rodrik, A. Subramanian, and F. Trebbi. Institutions rule: The primacy of institutions over geography and integration in economic development. *Journal of Economic Growth*, 9(2), June 2004.

Don Wagner. Aid and trade an empirical study. *Journal of the Japanese and international economies*, 17:153–173, 2003.

Adrian Wood. Looking ahead optimally in allocating aid. *World Development*, 36(7):1135–1151, 2008.

Appendix: More on data

Here follows a short description of the variables used. All nominal values have been translated into constant year 2000 USD using the US GDP chain price index from the World Development Indicators database. In the estimations, variables for export, GDP, population etc. are all in their logarithmic values.

- **Export**. The dependent variable is the value of total annual bilateral exports per exporter-importer pair downloaded from the UN Comtrade data base on 27 September 2007. In the Comtrade data base, all commodity values are converted from national currency into US dollars using exchange rates supplied by the reporter countries, or derived from monthly market rates and volume of trade. We used the Standard International Trade Classification (SITC) revision 2 (for more information visit http://comtrade.un.org). The figures we have used are, in general, those reported by the importer. Where data is lacking and the corresponding data is reported by exporter, this data is instead used. On average, the import data reported by importer is higher than the corresponding export data reported by exporter. Therefore, in those cases where we use data reported by exporter, we increased the reported data by a factor equal to the factor by which importer reported data on average exceeds exporter reported data.[26]
- **GDP** is the World Development Indicators' (WDI) series for GDP in current USD, downloaded on 23 October 2007.
- **pop** is total national population downloaded from WDI on 23 October 2007.
- **dist** is distance in kilometres between trading partner downloaded from Centre D'Etudes. Prospectives Et D'Informations Internationales (CEPII, http://www.cepii.fr).
- **comlang_off** is a dummy variable taking the value of one if the exporting and importing countries share a common language (also from the CEPII database).
- **colony** is a dummy variable taking the value of one if the trading pair has had a historical colonial relation (also from the CEPII database).
- **comcol** is a dummy variable taking the value of one if the trading pair has had the same coloniser after 1945 (also from the CEPII database).
- **rel** is a dummy variable taking the value of one if the trading pair shares the same dominant religion. The religions considered are Christianity, Buddhism, Hinduism, Jewish, Islam and traditional beliefs (source: Parker, 1997).
- **aid** is bilateral disbursement, given (*aidg*) and received (*aidr*), of Official Development Assistance (the ODA type chosen is "ODA (OA) Total Net") downloaded on 15 October 2007 from DAC online table 2a. All aid variables are adjusted so that a zero value or a missing value is replaced with one (i.e. the log value in these cases then becomes zero).
  - **TA** is disbursements of the ODA type "Technical Cooperation" downloaded on 15 October 2007 from DAC online table 2a.
  - **GBS** is General Budget Support. There does not exist any good disbursement data for GBS over the period in which we are interested. Therefore, GBS is constructed by calculating the share in total ODA commitments that is GBS commitments (sectorname "VI.1 General Budget Support") from DAC's Creditor Reporting System (CRS, downloaded on 19 October 2007). The *GBS*-variable is then obtained by multiplying the disbursement of *aid* with this share.

[26] This procedure seems quite innocuous. The results from using exporter reported data (211 278 observations) do not differ to any considerable extent from our presented results (using 282 212 observations). The results are available from the authors upon request.

– **AfT** Aid for Trade variables are created in a similar way to *GBS* using CRS data (downloaded on 19 October 2007). AfT is the sum of *POLREG PROCAP* and *INF* **is** defined as follows:

  * **POLREG** is based on the commitment for *Trade Policy and Regulations* (sector code 331);
  * **PROCAP**, *Building Productive Capacity*, is based on the sum of commitment for the following sectors: Banking & Financial Services (240), Business & Other Services (250), Agriculture (311), Forestry (312), Fishing (313), Industry (321), Mining (322), Construction (323) and Tourism (332);
  * **INF**, *Investments in Trade-Related Infrastructure*, is based on the sum of commitment for the following sectors: Transport & Storage (210), Communications (220) and Energy (230).

– **NAD** is a dummy = 1 if the aid variable that *NAD* refers to is zero or missing.

- **RTA** is a dummy variable that takes the value of one if the exporter and importer both belong to the same Regional Trade Agreement. The following RTAs have been considered: NAFTA, EEA, AFTA, SPARTECA, MERCOSUR, CARICOM, USAIsr, PATCRA, ANZERTA, CACM, APEC, SAPTA, EFTA, GCC, CEFTA, ANDEAN, BA, ECOWAS, COMESA, CEMAC and SACU.

Summary statistics are presented in Table A1 and a correlation matrix is found in Table A2. Our baseline model is estimated using a sample of 184 countries over the period 1990-2005. Table A3 lists these countries together with information on how many times each country emerges as an exporter and importer, respectively, in the data set. The table also includes data on total aid given and received by the respective country as well as information on the number of observations over which this aid given and received is spread.[27]

Table A1: Summary Statistics

Variable	Mean[a]	Median[a]	SD	Min	Max	N-pos[b]
expValueI	3.0e+08	1737718	3.1e+09	1	2.6e+11	282,194
aidg	19249554	2404768	83172560	9,138	4.7e+09	30,026
aidr	19249554	2404768	83172560	9,138	4.7e+09	30,026
GDP_i	1.8e+11	8.3e+09	7.9e+11	34814932	1.1e+13	503,398
GDP_e	1.8e+11	8.3e+09	7.9e+11	34814932	1.1e+13	503,398
pop_i	32070793	6096955	1.2e+08	19,700	1.3e+09	503,398
pop_e	32070793	6096955	1.2e+08	19,700	1.3e+09	503,398
dist	7,933	7,495	4,550	3	19,904	503,398
RTA				0	1	28,272
contig				0	1	11,284
comlang_off				0	1	85,082
colony				0	1	5,690
comcol				0	1	58,837

a) The mean and median of the aid variables are conditional on aid being positive.
b) The number of positive values for each variable (i.e. for dummy variables we count values = 1, for aid values > 1 and for other variables we count values > 0. Since we use the log of the non-dummy variables we have had to replace all 0 with 1).

[27] Aid is lagged one year in our baseline model; hence the table includes the sum of aid over the period 1989-2004.

Table A2: Pairwise Correlations

Variables	expValueI	aid_g	aid_r	year	GDP_i	GDP_e	pop_i	pop_e	RTA	dist	contig	comlang_off	colony
aid_g	0.049	1.000											
	(0.000)												
aid_r	0.060	-0.005	1.000										
	(0.000)	(0.004)											
year	0.009	-0.024	-0.024	1.000									
	(0.000)	(0.000)	(0.000)										
GDP_i	0.214	-0.013	0.212	-0.004	1.000								
	(0.000)	(0.000)	(0.000)	(0.023)									
GDP_e	0.177	0.211	-0.013	-0.007	-0.031	1.000							
	(0.000)	(0.000)	(0.000)	(0.001)	(0.000)								
pop_i	0.063	0.043	0.029	0.001	0.263	-0.022	1.000						
	(0.000)	(0.000)	(0.000)	(0.773)	(0.000)	(0.000)							
pop_e	0.078	0.026	0.040	-0.010	-0.025	0.255	-0.023	1.000					
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)						
RTA	0.190	0.025	0.025	0.042	0.028	0.026	0.017	0.012	1.000				
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)					
dist	-0.054	-0.000	-0.000	-0.016	0.054	0.057	0.054	0.064	-0.245	1.000			
	(0.000)	(0.903)	(0.914)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)				
contig	0.147	-0.011	-0.011	0.003	-0.008	-0.009	0.030	0.027	0.237	-0.217	1.000		
	(0.000)	(0.000)	(0.000)	(0.077)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)			
comlang_off	0.016	0.021	0.021	-0.018	-0.001	-0.001	-0.023	-0.020	0.169	-0.098	0.125	1.000	
	(0.000)	(0.000)	(0.000)	(0.000)	(0.776)	(0.488)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)		
colony	0.042	0.097	0.097	-0.015	0.059	0.058	0.001	-0.002	-0.005	-0.033	0.078	0.172	1.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.621)	(0.385)	(0.006)	(0.000)	(0.000)	(0.000)	
comcol	-0.026	-0.025	-0.024	-0.003	-0.082	-0.082	-0.014	-0.009	0.128	-0.088	0.076	0.379	-0.046
	(0.000)	(0.000)	(0.000)	(0.123)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)

Table A3: Sample countries

Country	Exp-o[a]	Imp-o[b]	Aidg[c]	Aidg-o[d]	Aidr[e]	Aidr-o[g]
Albania	1 242/2 838	1 290/2 838	0	0	2 713	263
Algeria	1 581/2 838	1 941/2 838	0	0	4 361	228
Angola	926/2 838	1 259/2 838	0	0	5 395	306
Antigua Barbuda	972/2 838	1 153/2 838	0	0	81	80
Argentina	2 346/2 838	1 992/2 838	0	0	2 733	268
Armenia	884/2 838	956/2 838	0	0	1 507	193
Australia	2 648/2 838	2 448/2 838	15 044	1 101	0	0
Austria	2 628/2 838	2 622/2 838	4 925	1 525	0	0
Azerbaijan	1 014/2 838	1 106/2 838	0	0	1 193	173
Bahamas	1 261/2 486	1 150/2 486	0	0	4	28
Bahrain	1 485/2 838	1 519/2 838	0	0	30	57
Bangladesh	2 100/2 838	1 893/2 838	0	0	15 523	316
Barbados	1 470/2 838	1 790/2 838	0	0	39	144
Belarus	1 325/2 838	1 248/2 838	0	0	0	0
Belgium	1 220/2 838	1 185/2 838	8 651	1 484	0	0
Belize	1 196/2 838	1 284/2 838	0	0	298	141
Benin	1 251/2 838	1 633/2 838	0	0	3 355	254
Bermuda	444/1 418	542/1 418	0	0	65	10
Bhutan	572/2 838	602/2 838	0	0	840	229
Bolivia	1 422/2 838	1 631/2 838	0	0	9 255	294
Bosnia Herzeg	892/2 135	941/2 135	0	0	6 499	213
Botswana	500/2 838	534/2 838	0	0	1 470	253
Brazil	2 578/2 838	2 234/2 838	0	0	4 145	303
Brunei	923/2 838	1 145/2 838	0	0	38	42
Bulgaria	2 095/2 838	1 858/2 838	0	0	0	0
Burkina Faso	1 055/2 838	1 327/2 838	0	0	5 349	292
Burundi	933/2 838	1 169/2 838	0	0	2 097	277
Cambodia	1 243/2 838	1 006/2 838	0	0	3 793	306
Cameroon	1 595/2 838	1 674/2 838	0	0	8 528	272
Canada	2 626/2 838	2 577/2 838	16 656	1 819	0	0
Cape Verde	649/2 838	1 083/2 838	0	0	1 648	267
Centr Afr Rep	1 034/2 838	1 116/2 838	0	0	1 680	223
Chad	812/2 838	917/2 838	0	0	2 453	232
Chile	2 266/2 838	1 881/2 838	0	0	2 288	280
China	2 704/2 838	2 494/2 838	0	0	31 164	310
Colombia	2 173/2 838	2 186/2 838	0	0	4 644	297
Comoros	699/2 822	808/2 822	0	0	82	108
Congo	1 180/2 838	1 307/2 838	0	0	2 747	223
Costa Rica	1 871/2 838	1 748/2 838	0	0	1 970	229
Cote D'Ivour	1 844/2 838	1 742/2 838	0	0	9 888	258
Croatia	1 934/2 838	2 004/2 838	0	0	824	175
Cyprus	2 079/2 663	1 945/2 663	0	0	217	68
Czechoslovakia	2 117/2 838	2 054/2 838	0	0	0	0
Denmark	2 688/2 838	2 520/2 838	14 141	1 110	0	0
Djibouti	758/2 838	1 080/2 838	0	0	1 398	152
Dominica	1 180/2 838	1 342/2 838	0	0	210	118
Dominican Rep	1 426/2 838	1 261/2 838	0	0	1 673	239
Ecuador	1 872/2 838	1 712/2 838	0	0	3 419	285
Egypt	2 314/2 838	2 078/2 838	0	0	39 890	302
El Salvador	1 454/2 838	1 397/2 838	0	0	5 137	304
Eq. Guinea	561/2 838	756/2 838	0	0	561	161
Eritrea	511/2 486	690/2 486	0	0	1 723	220
Estonia	1 548/2 838	1 626/2 838	0	0	0	0

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... table A3 continued

Country	Exp-o[a]	Imp-o[b]	Aidg[c]	Aidg-o[d]	Aidr[e]	Aidr-o[g]
Ethiopia	1 254/2 838	1 380/2 838	0	0	10 505	327
Fiji	1 101/2 838	1 313/2 838	0	0	819	160
Finland	2 617/2 838	2 353/2 838	4 033	1 219	0	0
France	2 678/2 822	2 650/2 822	85 446	1 893	0	0
Fr. Polynesia	505/1 954	797/1 954	0	0	5 370	38
Gabon	1 423/2 838	1 543/2 838	0	0	1 668	147
Gambia	1 040/2 838	1 284/2 838	0	0	691	264
Georgia	1 147/2 838	1 146/2 838	0	0	1 714	215
Germany	2 556/2 838	2 553/2 838	63 937	1 879	0	0
Ghana	1 697/2 838	1 855/2 838	0	0	8 016	303
Greece	2 564/2 838	2 389/2 838	0	0	0	0
Greenland	41/180	87/180	0	0	0	0
Grenada	945/2 838	1 346/2 838	0	0	113	106
Guatemala	1 763/2 838	1 589/2 838	0	0	3 944	289
Guinea	1 279/2 838	1 469/2 838	0	0	3 311	264
Guinea Bissau	523/2 838	735/2 838	0	0	1 439	256
Guyana	1 279/2 838	1 388/2 838	0	0	1 075	170
Haiti	1 027/2 838	1 127/2 838	0	0	4 208	264
Honduras	1 622/2 838	1 703/2 838	0	0	5 314	278
Hong Kong	2 602/2 838	2 424/2 838	0	0	144	86
Hungary	2 475/2 838	2 324/2 838	24	43	0	0
Iceland	1 761/2 838	1 749/2 838	49	44	0	0
India	2 646/2 838	2 368/2 838	0	0	20 186	275
Indonesia	2 471/2 838	2 258/2 838	0	0	27 821	280
Iran	1 838/2 488	1 361/2 488	0	0	1 982	226
Iraq	177/538	188/538	0	0	675	49
Ireland	2 635/2 838	2 491/2 838	2 234	1 078	0	0
Israel	2 236/2 838	1 868/2 838	0	0	17 214	109
Italy	2 696/2 838	2 648/2 838	24 477	1 358	0	0
Jamaica	1 733/2 838	1 730/2 838	0	0	1 810	192
Japan	2 700/2 838	2 689/2 838	119 801	1 985	0	0
Jordan	1 875/2 838	1 674/2 838	0	0	7 389	272
Kazakhstan	1 316/2 838	1 413/2 838	0	0	1 804	211
Kenya	2 003/2 838	1 812/2 838	0	0	8 910	312
Kiribati	521/2 838	592/2 838	0	0	315	89
Korea RP.(S)	2 661/2 838	2 521/2 838	0	0	789	118
Kuwait	1 345/2 310	1 409/2 310	0	0	12	17
Kyrgyzstan	858/2 838	959/2 838	0	0	0	0
Laos	1 002/2 838	736/2 838	0	0	2 550	276
Latvia	1 480/2 838	1 355/2 838	0	0	0	0
Lebanon	1 818/2 838	1 888/2 838	0	0	1 755	287
Lesotho	282/2 838	318/2 838	0	0	1 146	242
Liberia	1 057/2 838	1 170/2 838	0	0	1 008	235
Libya	1 089/2 838	1 301/2 838	0	0	55	78
Lithuania	1 596/2 838	1 464/2 838	0	0	0	0
Luxembourg	1 139/2 838	860/2 838	1 132	919	0	0
Macedonia	1 129/2 838	1 436/2 838	0	0	1 200	179
Madagascar	1 843/2 838	1 658/2 838	0	0	5 334	261
Malawi	1 608/2 838	1 321/2 838	0	0	4 805	308
Malaysia	2 644/2 838	2 461/2 838	0	0	3 057	236
Maldive Islands	796/2 838	874/2 838	0	0	330	180
Mali	1 309/2 838	1 454/2 838	0	0	5 776	277
Malta	1 973/2 838	1 830/2 838	0	0	375	105
Marshall Islands	358/2 838	521/2 838	0	0	695	54

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... table A3 continued

Country	Exp-o[a]	Imp-o[b]	Aidg[c]	Aidg-o[d]	Aidr[e]	Aidr-o[g]
Mauritania	1 188/2 838	1 219/2 838	0	0	2 415	251
Mauritius	1 923/2 838	1 889/2 838	0	0	618	197
Mexico	2 356/2 838	2 360/2 838	0	0	3 652	281
Micronesia	250/2 838	343/2 838	0	0	1 323	70
Moldova	1 095/2 838	1 181/2 838	0	0	529	138
Mongolia	715/1 780	687/1 780	0	0	1 489	194
Morocco	2 165/2 838	2 098/2 838	0	0	8 723	251
Mozambique	1 290/2 838	1 322/2 838	0	0	16 975	342
Namibia	775/2 838	671/2 838	0	0	2 165	322
Nepal	1 245/2 838	1 173/2 838	0	0	5 260	307
Netherlands	2 697/2 838	2 645/2 838	30 626	1 741	0	0
New Caledonia	460/1 954	602/1 954	0	0	5 464	48
New Zealand	2 444/2 838	2 156/2 838	1 181	1 036	0	0
Nicaragua	1 361/2 838	1 468/2 838	0	0	9 344	304
Niger	1 134/2 838	1 373/2 838	0	0	4 267	261
Nigeria	1 651/2 838	1 899/2 838	0	0	2 873	304
Norway	2 628/2 838	2 335/2 838	15 500	1 498	0	0
Oman	1 626/2 663	1 505/2 663	0	0	369	94
Pakistan	2 468/2 838	2 222/2 838	0	0	10 866	277
Palau	60/530	79/530	0	0	75	14
Panama	1 722/2 838	1 562/2 838	0	0	1 174	189
Papua Guinea	1 095/2 838	1 069/2 838	0	0	6 415	233
Paraguay	1 451/2 838	1 255/2 838	0	0	1 358	234
Peru	2 070/2 838	1 880/2 838	0	0	7 990	309
Phillipines	2 362/2 838	2 061/2 838	0	0	15 343	306
Poland	2 438/2 838	2 253/2 838	0	0	0	0
Portugal	2 598/2 838	2 440/2 838	3 697	334	0	0
Qatar	1 481/2 838	1 593/2 838	0	0	16	21
Romania	2 392/2 838	2 096/2 838	0	0	0	0
Russian.Federation	1 994/2 838	1 886/2 838	0	0	0	0
Rwanda	798/2 838	1 197/2 838	0	0	4 785	307
Sao Tome Principe	270/884	298/884	0	0	133	49
Saudi Arabia	2 045/2 838	2 223/2 838	0	0	295	92
Senegal	1 659/2 838	1 832/2 838	0	0	8 659	297
Seychelles	1 013/2 838	1 183/2 838	0	0	243	183
Sierra Leone	1 048/2 838	1 115/2 838	0	0	2 055	299
Singapore	2 381/2 838	2 210/2 838	0	0	323	55
Slovakia	1 836/2 838	1 832/2 838	10	92	0	0
Slovenia	1 973/2 838	2 040/2 838	0	0	122	87
Solomon.Islands	589/2 838	600/2 838	0	0	820	112
Somalia	39/177	41/177	0	0	523	17
South Africa	1 038/2 838	1 018/2 838	0	0	5 283	247
Spain	2 649/2 838	2 633/2 838	16 142	1 272	0	0
Sri Lanka	2 194/2 838	1 668/2 838	0	0	6 104	280
St. Lucia	817/2 838	1 389/2 838	0	0	230	106
St. Vincent Gren	748/2 838	1 250/2 838	0	0	104	101
St. Kitts Nevis	654/2 838	1 083/2 838	0	0	66	79
Sudan	1 453/2 838	1 653/2 838	0	0	5 429	321
Suriname	1 131/2 838	1 229/2 838	0	0	1 077	118
Swaziland	686/2 838	479/2 838	0	0	494	200
Sweden	2 684/2 838	2 526/2 838	15 920	1 486	0	0
Switzerland	2 680/2 838	2 610/2 838	8 786	1 534	0	0
Syria	1 765/2 838	1 542/2 838	0	0	2 183	210
Tajikistan	803/2 838	725/2 838	0	0	776	193

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... table A3 continued

Country	Exp-o[a]	Imp-o[b]	Aidg[c]	Aidg-o[d]	Aidr[e]	Aidr-o[g]
Tanzania	1 610/2 838	1 788/2 838	0	0	16 232	313
Thailand	2 623/2 838	2 508/2 838	0	0	10 613	297
Togo	1 377/2 838	1 703/2 838	0	0	1 768	234
Tonga	407/2 838	585/2 838	0	0	432	103
Trinidad Tobago	1 678/2 838	1 758/2 838	0	0	87	138
Tunisia	2 013/2 838	2 102/2 838	0	0	3 864	214
Turkey	2 518/2 838	2 315/2 838	895	293	5 086	194
Turkmenistan	837/2 838	811/2 838	0	0	288	119
USA	2 695/2 838	2 677/2 838	109 565	1 543	0	0
Uganda	1 505/2 838	1 673/2 838	0	0	8 354	312
Ukraine	1 772/2 838	1 678/2 838	0	0	0	0
Un. Arab Emirates	2 057/2 838	1 991/2 838	0	0	35	25
UK	2 691/2 838	2 676/2 838	35 401	1 740	0	0
Uruguay	1 845/2 838	1 607/2 838	0	0	791	246
Uzbekistan	919/2 838	840/2 838	0	0	1 517	183
Vanuatu	585/2 838	687/2 838	0	0	698	99
Venezuela	1 821/2 838	1 793/2 838	0	0	842	241
Vietnam	2 042/2 838	1 682/2 838	0	0	11 290	309
Western Samoa	521/2 838	685/2 838	0	0	580	129
Yemen	1 225/2 838	1 416/2 838	0	0	3 254	233
Zaire	1 168/2 838	1 080/2 838	0	0	10 626	292
Zambia	1 404/2 838	1 490/2 838	0	0	9 546	302
Zimbabwe	1 960/2 838	1 663/2 838	0	0	5 710	315
Total	282 194/503 398	282 194/503 398	598 274	30 026	598 274	30 026

Notes: The total number of countries in the samle is 184 and the number of export-import pairs is 33 818.
a) Number of observations in which the country is an exporter (postive observations/all observations).
b) Number of observations in which the country is an importer (postive observations/all observations).
c) Aid given in million USD.
d) Number of observations with aid given per exporting country.
e) Aid received in million USD.
f) Number of observations with aid received per exporting country.

UTV Working Paper

2007:1 **Sida Evaluations and Audit 2006: A synthesis of findings and conclusions**
Lars Johansson, Mattias Lindgren
Department for Evaluation and Internal Audit
http://www.sida.se/sida/jsp/sida.jsp?d=118&a=31955&searchWords=UTV%20Working%20Paper

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Jens Andersson
Department for Evaluation and Internal Audit
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2007:3 **Assessment of Sida's Support for Human Rights and Democracy**
Fredrik Uggla, Monica Wulfing
Department for Evaluation and Internal Audit
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2008:1 **Sida Evaluations and Audits 2007: A Synthesis of Findings and Conclusions**
Lennart Peck, Verena Knippel
Department for Evaluation

The Relation between Aid and Bilateral Trade: Are Nordic Donors Different?

The authors analyse the effects of various foreign development assistance variables on both recipient and donor exports and specifically study the effects for Sweden, so-called Nordic Plus countries and Likeminded countries. They find a strong relation between aid in the form of technical assistance and exports in both directions, thus supporting our interpretation that market knowledge through interpersonal relations is an important driving force for exports. The Nordic Plus donors show a particularly strong effect of technical assistance on recipient exports.

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