Effectiveness of Australian and New Zealand Aid for Trade: Implications for Asian Developing Countries and India

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Abstract

This paper examines the effectiveness of Australia's and New Zealand's aid and trade with Asian developing countries as these donors have major Asian regional focus in their aid programme. To assess the linkages between aid and trade the gravity model specifications indicate the impact of aid and trade based on the donor and recipient factors. As countries that receive aid and trade with those donors what is the implied return for the donors return on aid. The analysis is extended to infer if aid for trade infrastructure, aid for trade productive capacity building and aid for trade policy regulation yield exports should aid increase or it enhances competiveness of developing countries. The findings indicate that aid increase exports for Australia and New Zealand to Asian nations. The results for implied return of exports on aid to India indicate that AFT infrastructure is has a smaller impact on exports and not for productive capacity building and trade policy regulations.

Keywords: Aid for Trade, Gravity Models, Implied Return on Aid, Developing Nations, India

JEL Classification: F13, F35, O16, O53, O56

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Introduction

The revitalising and balancing aid and trade came into existence in 2005 due to flailing Doha Round that has contributed to Aid for Trade (AfT) initiatives. Stiglitz and Charlton (2006) suggest rethinking the aid for trade agenda as trade has been a significant part of nations' economic activities for development. The AfT is to assist developing nations in trade strategy development, trade agreement negotiations, implement outcomes, improve infrastructure to effectively compete in the global markets, enhance the capacities to address standards, trade policy, regional integration, and competitiveness. In evaluating the effectiveness of Australian and New Zealand AfT to Asia the study examines the link between aid and trade expansion using the gravity model. The impact of implied returns of exports on aid is further estimated for total aid and the disaggregated impacts of AfT components for 48 Asian developing countries. The analysis is also taken for the case of India in asking whether AfT programmes promote trade and aid its implied return of exported by each component of AfT category.

The motivation of foreign aid to assist developing countries' needs is also seen to promote commercial interests of the donors (Gounder, 1994; Bandyopadhyay and Vermann, 2012). Foreign aid is also tied to recipients' trade flows, thus the Organisation for Economic Cooperation and Development (OECD) policy on reducing tied aid is critical to recipients' trade linkages. The AfT categorisations include projects and programme activities for trade-related development priorities and strategies of developing countries (OECD, 2006). The emphasis on AfT to build the supply-side capacity, trade-related infrastructure and its overall effectiveness has become a crucial focus of foreign aid. In order for aid donors to facilitate trade in developing countries, they have targeted assistance aimed at supporting the removal of trade constraints and to promote economic growth.

In addition to contributing to the broader debates about aid for trade effectiveness, the results reported here indicate the impact of implied returns on exports and disaggregated impact of AfT components for Australia and New Zealand given their geo-political and economic linkages in the Asian region. To assess the linkages between aid and trade the gravity model specifications indicate the impact of aid and trade based on the donor and recipient factors, utilising the independent variables that affect the decision(s) of donors' aid-trade relationships. The estimation of Australian and New Zealand AfT flows to Asian countries indicate positive impacts of AfT activities. The implied returns for disaggregated impacts of AfT to Asia show that each dollar of additional aid increases exports significantly for these two donors. Aid for productive capacity building and trade policy regulation increases exports of the donors and those countries that do not receive aid leads to a reduction in exports. For India, the results show that these impacts are not large. Exports from the donors show a small increase for aid for trade for infrastructure development but this is not the case for productive capacity building and trade policy regulation. This implies that India does not regulate its markets according to the donor requirements.

Aid for Trade: Brief Literature Review

The World Trade Organization's (WTO) trade policy and AfT categorisations include projects and programme activities for trade-related development priorities and strategies of developing

[*] I acknowledge the assistance of Zhongwei Xing and Evan Williams, the usual caveat applies.

countries (OECD, 2006). The role of aid for trade is to provide targeted assistance that may assist with the removal of trade constraints, promote economic growth, and eradicate poverty, (OECD/WTO, 2007). The AfT from the foreign aid definitional structure is not much different from the role of foreign aid for economic and social development. The question then is what is AfT and what should be measured? The WTO's conceptual basis of AfT reflects the need to improve business environment and make developing economies more resilient and responsive to future needs. The focus than is to improve many of these nations institutions and enterprises and develop capacities such as information, policies, procedures and infrastructure to compete effectively in the global markets.

Foreign aid allocations from the OECD donor nations increased in the post-2008 period and AfT under various aid categories increased rapidly since the past several years and makes up a third of official development assistance (ODA).[1] To assess the capacities of developing Asia-Pacific nations' major concerns the OECD/United Nations and Economic Commission for Asia and the Pacific/WTO (2011) include standards, trade policy, regional integration and competitiveness.[2] For the development of trade and thus growth, trade strategies and agreement negotiations and implement trade outcome several categories of technical assistance are aimed.[3] The three main AfT categories are:

- The AfT-related infrastructure supports transport, storage, communication, and energy generation and supply (i.e., power policy management, power generation/non-renewable resources, oil and gas-fired power plants, and energy research).
- The AfT productive capacity building supports private sector to exploit its comparative advantage and to diversify exports (i.e., sectoral focus for agriculture, forestry, fishing, industry, mining, tourism, banking-financial services, business and other services).
- The AfT-related adjustment category is the assistance linked to trade liberalization (i.e., tariff reductions, preference erosion or declining terms of trade). Aid allocated for other trade-related needs is to support other projects such as health and education both of which provide indirect contribution to trade development.

The literature has subsequently debated various aspects of aid for trade and aid effectiveness and whether aid for trade enhances growth in developing countries. Morrissey (1993) notes the mixing of aid and trade policies while Stiglitz and Charlton (2006) point out the right to trade and development for developing nations. Several recent empirical studies have examined the AfT effectiveness in developing countries (Wagner, 2003, Cali and te Velde (2008, 2009); Turner (2008); Deardorff and Stern (2009); Hoekman (2010); Calì, Razzaque and te Velde (2011) and the literature cited therein). The priorities such as competitiveness, economic infrastructure and export diversification have become more prominent in the AfT initiatives. Some indirect effects of AfT include shifting trade priority in aid spending to strengthen the productive sector and for the supply-side relative to social sectors such as education and health (Hoekman and Prowse, 2009; Calì and te Velde, 2008).

To support trade through aid initiatives there is a need for stable policy and strong governance necessary to boost trade (Stiglitz and Charlton, 2006). They note that the AfT fund should prioritise programs to mitigate risks for enterprises in developing countries and to

[1] The initiatives address developing nations and small vulnerable economies export expansion, investment in climate, sectoral (Basnett, Engel, Kennan, Kingombe, Massa and te Velde, 2012; Razzaque and te Velde, 2013).
[2] The key focus is to address the supply-side constraints (i.e., private sector capacity, infrastructure) to improve trade integration and development by integrating into regional and global markets, i.e., macroeconomic adjustment measures in the developing nations.
[3] Trade strategy development, trade agreement negotiations and to implement outcomes include support for trade policy, legislation, regulatory reforms, multilateral trade negotiations, trade education and training.

promote the development of local financial markets. While aid motivation literature discusses the altruistic or self-interest aspects of aid patterns there also is the case of colonial ties, political and strategic interests (Gounder 1994, 1995). The motivations relating to trade since the change in AfT policy may provide another motive against AfT-induced shifts through recipient countries exports.

Nilsson (1998) examines the links between aid and exports of good from the European Union and identifies that average EU donor derives $2.60 per dollar of aid. Wagner's analysis of 22 OECD donor countries finds that 35 cents of every dollar of aid returns to the donor for exports of goods related to the aid-financed project. In addition, 98 cents comes back for exports of goods not directly linked to aid project. In the case of French aid from to Gabon Lundsgaarde, Breunig and Prakash (2010, p. 739) note that aid may "aim to assure the supply of crucial raw materials to donor firms that are produced, extracted or mined in the recipient country" (2003, p. 171). In a study by Helble, Mann and Wilson (2009), using 167 exporters and 172 importers, find that AfT increases export, i.e., a 1 percent increase in AfT increases global trade by US$415m.

For the disaggregated forms of AfT categories the empirical findings for infrastructure, productive capacity building and trade policy regulation show that aid for economic infrastructure promotes export and the aid component for productive capacity building increases export but at a lower rate and it leads to export costs reduction (Calì and te Velde, 2008). Also studies on AfT avidly note that despite years of growth and development poverty incidence remains highly prevalent and the developing countries are yet to benefit from trade (Cali, et al., 2011, Asian Development Bank (ADB)/WTO, 2011). The AfT measurements highlight that the effectiveness of aid in developing countries, and in particular for small and vulnerable economies, depend on the type of aid, sectoral focus of the aid programmes, and whether AfT removes the binding constraints (Cali, et al., 2011).

Cali and te Velde (2009) study on small and vulnerable economies, using the gravity model, show that AfT infrastructure increases export and AfT productive capacity building decreases exports in food and manufacturing but increases in mineral and tourism sectors. Developing countries to gain from trade preferences need to build their knowledge base and determine relevant preferences in their development processes and policies (Prowse, 2010).[4] In analysing the trade costs for a panel of 99 developing countries, Busse, Hoektra and Königer (2011) find that aid for regulatory quality leads to trade costs (i.e., import costs reduction and not export costs) and aid for policy regulation leads to trade cost reduction.

The aid and trade links to enhance trade and increase economic growth, reduce poverty, and sustainable development since the post-2000 period saw many Asian countries meeting some of these development targets. However, to improve trade potential through trade policy regulations is crucial for these nations to increase markets and adjustment capacities for higher growth. Australia and New Zealand's elimination of trade barriers with the Association of South East Asian Nations is aimed at improving efficiency, productivity and competitiveness in the region (Commonwealth Government, 2012). The AfT strategy for Asian nations' trade policies and regulatory environments can be conducive to achieve sustainable economic growth. The model specifications consider these measurements for Australia and New Zealand AfT links with countries in the Asian region.

[4] These include pre-utilization of preferences; build the supply capacity and regulatory environment (utilization); and create effective mechanism to deal with preference erosion (post-utilization), such as harmonization.

Aid and Trade, Models Specifications, Methodology and Results

To assess the linkages between aid and trade the gravity model specifications indicate this impact based on donor and recipient factors, utilising the independent variables that affect the decision(s) of donors' aid-trade relationship. Following Wagner (2003), this study evaluates the links between Australian and New Zealand's aid and exports of goods with 48 Asian developing countries (see Appendix 1 for the list of these nations) given their regional interest in the Asian region. Based on the disaggregated aid for trade data the models are estimated for the period 2002 to 2013.

AFT: Models, Data and Methodology

The two dependent variables include: (a) total aid flows (ODA disbursements) from Australia and New Zealand to countries in Asia; and (b) exports from Australia and New Zealand. The AfT is further disaggregated into three major categories: aid for trade infrastructure; aid for trade productive capacity building; and aid for trade policy regulation. Both Australia and New Zealand are major trading partners in Asia, the historical, social, trade linkages and their geographical proximity reflect that aid patterns can follow close commitments in this region.[5] The impact of aid for trade reflects the implied returns of exports on aid for the donors and is further specified by AfT categories. The computations include developing countries that Australia and New Zealand gave positive or zero aid to estimate the equations.

Based on the study by Wagner (2003) the model estimations, expressed as natural logs, include other control variables and the specifications equation (1) for trade (i.e., exports) and equation (2) in the aid framework takes the following form:

$$\ln(T_{ij}) = \beta_0 + \beta_1 \ln(GDP_{ij}/GDP_A) + \beta_2 \ln(GDPpc_i) + \beta_3 \ln(GDPpc_j) + \beta_4 \ln(Dist_{ij}) + \beta_5 Rem_i + \beta_6 Rem_j + \beta_7 Lang_{ij} + \varepsilon_{1ij} \quad (1)$$

$$\ln(A_{ij}) = \beta_0 + \beta_1 \ln(GDPpc_i) + \beta_2 \ln(GDPpc_j) + \beta_3 \ln(Dist_{ij}) + \beta_4 Rem_i + \beta_5 Rem_j + \beta_6 Lang_{ij} + \varepsilon_{3ij} \quad (2)$$

where: T*ij* is the exports between donor *i* to recipient country *j*;

A*ij* is total net ODA disbursements and disaggregated aid for trade categories from donor *i* to recipient country *j*;

GDP is Gross Domestic Product of donor *i*, recipient country *j* and *A* Asian nations;

GDPpc*i* is GDP per capita of donor *i*, and GDPpc*j* is per capita GDP of recipient country *j*;

Dist*i*, Dist*j* is distance in nautical miles between donor country *i* and country *j*;

Rem*i*, is remoteness of donor *i* and Rem*j* is remoteness of recipient country *j*;

Lang*ij* is the common language factor between donor country *i* and recipient country *j*;

ε_{ij} is error term that affects the dependent variable and is time variant.

To address whether procurement from a country amounts to a donor's aid related projects funded by them or exports are beyond aid, eq. (1) specifies whether aid increases trade in an upward direction between the donor and recipient or if aid reduces trade barriers. The elasticity of aid impact where zero aid is defined is explained using the method to handle the issue of no aid in the log term as log (1+aid) which then has all positive values with large numbers (see Wagner, 2003. p.162). To address the no aid dummy (NAD) used in the analysis it takes the value of 1 if aid from the donor$_i$=0, and takes the value of 0 if aid from donor$_i$ is > 0. The model estimation for trade–aid nexus takes the following specific form:

$$\ln T_{ij} = \ln \Gamma_{ij} + \beta_8 \ln(\max\{1, A_{ij}) + \beta_9 NAD_{ij} + \varepsilon_{3ij} \quad (3)$$

[5] Gounder (1995, 1998) provides a comprehensive discussion on regional focus of the Australian and New Zealand's aid programs and aid motivations, respectively.

Incorporating the aid variables in the equation, the trade-aid framework is as follows:

$$\ln(T_{ij}) = \beta_0 + \beta_1 \ln(GDP_{ij}/GDP_{AP}) + \beta_2 \ln(GDPpc_i) + \beta_3 \ln(GDPpc_j) + \beta_4 \ln(Dist_{ij}) + \beta_5 LnRem_i + \beta_6 LnRem_j + \beta_7 Lang_{ij} + \beta_8 \ln(\max\{1,A_{ij}\}) + \beta_9 NAD_{ij} + \varepsilon_{4ij} \quad (4)$$

To estimate trade-aid impact using the counterfactual impact for India the specification is:

$$\ln(T_{ij}) = \beta_0 + \beta_1 \ln(GDP_{ij}/GDP_{AP}) + \beta_2 \ln(GDPpc_i) + \beta_3 \ln(GDPpc_j) + \beta_4 \ln(Dist_{ij}) + \beta_5 LnRem_i + \beta_6 LnRem_j + \beta_7 Lang_{ij} + \beta_8 \ln(\max\{1,A_{ij}\}) + \beta_9 NAD_{ij} + \beta_{10} IndiaAid + \varepsilon_{5ij} \quad (5)$$

where $\ln \Gamma_{ij} = \beta_0 + \beta_1 \ln(GDP_{ij}/GDP_w) + \beta_2 \ln(GDPpc_i) + \beta_3 \ln(GDPpc_j) + \beta_4 \ln(Dist_{ij}) + \beta_5 Rem_i + \beta_6 Rem_j + \beta_7 Lang_{ij}$;

A_{ij} is net ODA (in US$ constant prices 2010) given by donor *i* to recipient *j*, and the disaggregated AfT categories, that is aid for trade infrastructure; aid for trade productive capacity building and aid for trade policy regulation;

NAD*ij* is dummy variable taking the value 1 if aid by donor *i*=0, and value of 0 if A*ij*>0;

IndiaAid is the interactive term to capture the incidence of India receiving aid from Australia and New Zealand, i.e., IndiaAid = [dummy variable× $\ln(\max\{1,A_{ij}\}]\beta 8$

The aid coefficient (β_8) is further disaggregated into aid for trade infrastructure ($AfTInf_{ij}$), aid for trade productive capacity building ($AfTPCD_{ij}$), aid for trade policy regulation ($AfTPR_{ij}$). Wagner notes that β_9 aid value is zero, thus the log value of trade when aid is positive exceeds the log value of trade when aid is zero by $\beta_8 \ln(A_{ij}- \beta_9)$. The variables indicate trade and aid linkages between the donor and recipient countries, trade facilitation factors and geographical constraints. The independent variables include GDP, GDP per capita, language, distance and remoteness. Distance is an important determinant of trade volume between countries in any region, and countries that are located closely together tend to constitute a natural trading bloc (i.e., a reduction in trade barriers between them can give economic benefits). Language reflects common languages spoken in the donor and recipient countries. The distance, remoteness and language variables are comprehensively discussed by Leamer (1977), Head, Ries and Wagner (1998), Nitsch (2000), Wager (2003), Mayer and Zignago (2006), and Vijil and Wagner (2012).

The empirical method uses gravity models for aid-trade nexus and AfT classifications for pooled and import residuals equations. The panel estimation captures the effect of changes in cross sectional attributes over time, variability within variables, reduces multicollinearity problem and analyses the effects of time variant factors. Heckman's inverse mills ratio is used as a control variable to test for sample distribution for unbiased estimates. The import residuals test is based on the assumption that the unmeasured variables would, on average, affect imports the same way as it would affect exports (Wagner, 2003, p.164). Data source are as follows: GDP, GDP per capita (World Bank, 2015); ODA and AfT data (OECD, 2015); exports and imports (Australian Bureau of Statistics, 2014; Statistics New Zealand, 2014); distance is measured as geodesic distance through great circle formula (Mayer and Zignago, 2006); remoteness (Vijil and Wagner, 2012) and language (Head, Ries and Wagner, 1998).

Empirical Results

The estimated negative $\ln GDP_i$ coefficient is significant, it suggests that donors GDP decline with aid to Asian nations. The positive and significant $\ln GDP_j$ coefficient of recipient countries implies that a 10 percent increase in recipients' GDP increases donors' aid to the recipients by 7.3 percent. The significant negative $\ln Dist_{ij}$ coefficient implies that aid declines the further the distance between donors and recipients. The donors' income per capita,

$\ln(GDPpc_i)$ coefficient, is positive and significant while the significant negative income per capita of the recipients, $\ln(GDPpc_j)$, do not increase with aid. The positive language coefficient is significant, there is no barrier given the common language between donors (Australia, New Zealand) and the level of common language of the recipients in Asia.

Table 1 Aid and Donor-Recipient Nexus, Asian Region

Dependent Variable: LODA	*Coefficientt ratio*	
$\ln(GDP_i)$	-1.09	-4.18***
$\ln(GDP_j)$	0.73	7.32***
$\ln(DIST_{ij})$	-12.01	-14.32***
$\ln(GDPpc_i)$	7.49	7.79***
$\ln(GDPpc_j)$	-5.47	-13.72***
$\ln(Lang_{ij})$	9.92	8.17***
Mills ratio	3.68	5.19***
C	79.78	9.52***
Adj. R-square = 0.61	Number of observations = 1086	

Notes: ***, **, * Significant at the 1, 5 and 10% level, respectively.

Table 2 presents the estimated impact of each factor's causality of whether aid leads to an increase in trade between the donors and recipients, followed by the impact using residuals from imports. The model hypothesis assumes that aid increases trade positively, it favours the donor through aid to the trading partner and/or it reduces barriers to trade. Thus, aid for infrastructure, trade capacity building, and trade policy regulation improves donors' trade. As tied and untied aid data is not available thus net ODA data has been utilised to estimate the impact of aid on trade.

The estimated results for the impact of aid $\ln(\max\{1,A_{ij}\})$ coefficient (Part 1), is positive and statistically significant at the 1 percent level, supporting the view that aid to the group of Asian countries' increases exports from Australia and New Zealand. The estimated coefficient shows that an increase in aid by 10% increases exports to the recipient country by 6.6 percent. The estimated impact with import residuals indicates a similar return on donors exports by 6.3 percent. The estimated implied returns of exports indicate the magnitude of how much exports would rise per dollar of aid by determining the predicted trade level increase if aid increased by 1 percent (Wagner, 2003). The estimated value for the implied return of exports is \$0.31, this indicates that on average an additional dollar in aid would increase exports by \$0.31. Although the tied aid of Australia and New Zealand (for 2001 to 2010 period) ranged up to 15 to 17 percent (OECD, 2010, 2013), the results indicate that the returns on aid is larger than the tied component of their aid levels.

The NAD coefficient is taken together to gain an understanding in relation to aid (i.e., $\ln(\max\{1,A_{ij}\})$, (see Nilsson, 1998; Wagner, 2003). The estimated NAD positive coefficient is significant indicating that exports increased by (0.66) $\ln A_{ij}$ - 6.5 in the countries that receive no aid (NAD_{ij}=0). The $DIST_{ij}$ coefficient with imports residuals is positive and significant which suggests that exports increase even with distance between the donors and recipients. The donor remoteness ($\ln Rem_i$) reduces exports with those Asian nations (this result is similar to Wagner, 2003) but remoteness of the recipients ($\ln Rem_j$) is insignificant which suggests that exports are not affected from the donors even if they are more remote to donor nations. Language is a barrier to trade between the donors and Asian countries. The implied return of exports results using residuals from imports (Part 2) shows the estimated value of \$0.18; i.e., a value of \$0.18 (on average) of exports produced per additional dollar increase in aid.

Table 2 Results for Trade-Aid Nexus

Dependent Variable: Exports	Part 1	Part 2
Variables	*Pooled OLS Coefficients* [a]	*With import residuals Coefficients* [a]
$\ln(\max\{1,A_{ij}\})$	0.661***	0.625***
	(8.44)	(7.11)
NAD_{ij}	6.526***	6.227***
	(6.02)	(5.49)
lnGDPShare	1.384***	1.174***
	(16.09)	(6.96)
$\ln(DIST_{ij})$	1.326	2.112***
	(1.33)	(3.18)
$lnRem_i$	-211079***	-190765***
	(-3.35)	(-2.99)
$lnRem_j$	-173238	0
	(-1.13)	(dropped)
$\ln(Lang_{ij})$	-3.346***	-3.257***
	(-3.26)	(-3.11)
Import residual		0.093
		(1.13)
Constant	3.24	60.59***
	(0.45)	(7.24)
Observation	1086	1086
Adjust R-square	0.51	0.55
Root MSE	3.58	3.41
Implied "return" of exports on aid	$0.31	$0.18

Notes: ***, **, * Significant at the 1, 5 and 10% level, respectively. The estimates of t-ratio are shown in parentheses. [a] Equations are estimated using other control variables that include ln(GDPpc*i*), ln(GDPpcj), and mills ratio.

The results reported in Table 3 are based on analysing the specific impacts of AfT related categories, i.e., the estimated parameters are shown for infrastructure (AfTInf); productive capacity building (AfTPCB); trade policy regulation (AfTPR), and the countries with zero aid. Next, the three AfT categories and the implied returns are reported for the case of India. The AfTInf coefficient is positive and significant, suggesting that aid to develop infrastructure in the recipient countries is positively correlated with donors' exports for both pooled and import residual equations. The estimated implied return of exports on aid for infrastructure shows that on average an additional dollar in aid would increase exports by $2.04 (pooled OLS) and with imports residual indicate the magnitude of $0.93 rise in exports rise per additional dollar of aid. However, for those recipients' which do not receive aid (i.e. zero aid) for infrastructure development leads to a reduction in exports significantly.

Aid for productive capacity building significantly increases exports of the donors by 1.24 percent and 0.9 percent for pooled and import residual equations, respectively. As NADPCB coefficient indicates a reduction in exports to nations with zero aid, the lack of trade-related infrastructure hinders donors' exports to non-recipient countries. The implied return of exports on aid for productive capacity building shows that donors' exports rise by $0.78 (pooled OLS equation) and $0.60 (import residual equation) for an additional dollar of aid. Similarly exports decline significantly to nations that do not receive aid. Interestingly, aid for trade policy regulation translates to a considerable significant benefit from this category of aid. The implied return of exports for the donors shows a very large increase in exports of $13.64 (pooled OLS equation) and $3.26 (import residual equation) for an additional dollar of aid. This implies that recipients regulate their markets according to donor requirements, thus significantly increasing exports from Australia and New Zealand. A reduction in exports is seen if nations do not receive aid for trade policy regulation.

In the case of India the level of aid from Australia and New Zealand and exports from these donors to India indicate that the implied return of exports on aid for infrastructure shows that donors' exports rise by $0.22 (import residual equation) for an additional dollar of aid.

However, there is no return on exports from aid for productive capacity building as India receives very little aid for this category, as such there is no gain for the donors in targeting aid to this sector. Also, aid for trade policy regulation translates to no significant benefit from this category of aid for the donors, the implied return of exports for the donors shows a very small amount by $0.003 for an additional dollar of aid. This suggests that India does not regulate its market according to donor requirements which does not substantially increase exports from Australia and New Zealand.

Table 3 Results for Trade-Aid Nexus

Dependent Variable: Exports	All Aid Recipient Countries		Implied "return" of exports on aid (all recipient countries)		Implied "return" of exports on aid (India)
	Pooled OLS[a]	With import residuals [a]	Pooled OLS	Equation with import residuals	Equation with import residuals [a,b,c]
	Coefficient	Coefficient			
$lnAfTInf_{ij}$	0.168***	0.076**	$2.04	$0.93	$0.22
	(5.42)	(2.06)			
$NADInf_{ij}$	-2.2***	-1.752***			
	(-6.83)	(-4.86)			
$lnAfTPCB_{ij}$	0.124***	0.094***	$0.78	$0.60	-$0.01
	(4.1)	(2.98)			
$NADPCB_{ij}$	-1.702***	-1.498***			
	(-4.93)	(-4.11)			
$lnAfTPR_{ij}$	0.078*	0.019	$13.64	$3.26	$0.003
	(1.93)	0.43			
$NADTPR_{ij}$	-2.133***	-1.853***			
	(-6.5)	(-5.12)			

Notes: ***, **, * Significant at the 1, 5 and 10% level, respectively. The estimates of t-ratio are shown in parentheses. [a] Equations are estimated using other control variables that include ln(GDPpc*i*), ln(GDPpcj), and mills ratio.[b] Estimated aid for trade coefficients are for each category of aid for trade infrastructure (AfTInf), aid for trade productive capacity building (AfTPCB) and aid for trade policy regulation (AfTPR), respectively. [c] Each estimated equation include other control variables, i.e., $\ln(GDP_{ij}/GDP_{AP})$, $\ln(DIST_{ij})$, $lnRem_i$, $lnRem_j$ $\ln(Lang_{ij})$, ln(GDPpc*i*), ln(GDPpcj), mills ratio and import residuals.

Conclusion

Understanding the right to trade and providing aid for trade is crucial to improve developing nations' growth for socio-economic development, and in particular the need to build their capacity for more effective trade negotiations. This study provides an assessment of aid for trade nexus for two donors, Australia and New Zealand, and Asian developing countries. The results for the implied return of exports by an additional dollar of aid are based on total aid, and disaggregated aid for trade categories of infrastructure, productive capacity building and trade policy regulation.

The results for the impact of aid and trade indicate a significant increase in exports from donors to Asian countries. Also, with an increase in gross domestic product in this region there is a greater capacity to import and donors have direct aid-trade linkages, mainly through explicit tied aid. Although distance reduces aid and trade, however many nations may also trade out of obligations to maintain goodwill and to secure aid in the future. The common language used between donors and Asian nations does not pose a substantial barrier to trade.

The aid for trade infrastructure, productive capacity building and trade policy regulation benefit donor countries. The implied return of exports on aid for the donors is much larger on average on exports. The additional dollar increase in aid increases exports at a much higher magnitude to that of tied aid of the donors. Donors' exports decrease due to remoteness of the recipients, however the donors could consider implementing aid for trade programmes and projects to identify various trade-related constraints and address specific trade-related concerns. This is noted as donors' regional focus of aid is critical and further trade would not

have happened if some aid was not forthcoming and also that aid would not have increased without additional trade.

The impact of aid for trade-related infrastructure suggests that aid for infrastructure increases exports but for those countries not receiving aid lead to exports reduction. A well-developed infrastructure could further reduce transport cost and promote trade amongst nations. Aid for productive capacity building is crucial to improve the sectoral performance of developing Asian nations. But a severe constraint many of these nations have is the lack of export opportunities rather than aid, and as aid does not reach private business development they require commercial opportunities to build their capacity.

The aid for trade-related policy regulations translate to most significant export benefits for the donors. The Asian nations in regulating their markets to donor requirements could also benefit through trade strategy development and trade agreement negotiations given their export potentials. Building these developing nations' capacity for trade policy regulations are crucial as they have trade pact and trade agreements which also highlight their right to trade. The results for India suggest that the implied return of exports on aid for infrastructure increases donors' exports for an additional dollar of aid. But this is not the case for implied returns on exports for productive capacity building and trade policy regulations. Aid to India in these two categories is small, which imply no gain for the donors in targeting aid to productive capacity building and trade policy regulations.

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Appendix Table 1 List of Asian Countries

Donor countries in sample					
Australia	New Zealand				
Recipient countries in sample					
Afghanistan	Armenia	Azerbaijan	Bahrain	Bangladesh	Bhutan
Brunei	Cambodia	China	Cyprus	East Timor	Georgia
Hong Kong	India	Indonesia	Iran	Iraq	Israel
Jordan	Kazakhstan	Kuwait	Kyrgyzstan	Laos	Lebanon
Macao	Malaysia	Maldives	Mongolia	Myanmar	Nepal
North Korea	Oman	Pakistan	Philippines	Qatar	Saudi Arabia
Singapore	South Korea	Sri Lanka	Syria	Tajikistan	Thailand
Turkey	Turkmenistan	United Arab Emirates	Uzbekistan	Vietnam	Yemen