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Aid for Trade

Matching Potential Demand and Supply

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Abstract

This paper is designed to help both the beneficiary governments and donors of aid-for-trade identify countries that are under-performing in trade and which are receiving less aid for trade than their global performance might otherwise suggest is necessary. The authors develop ten measures of trade performance and capacity (including trade-related infrastructure, institutions, and incentives) to *assess potential demand,* and then look at country allocations of aid for trade to see which are receiving below-average amounts in the supply of aid for trade—relative to their potential demand. As they design national development strategies, countries may wish to consider giving greater attention to trade and requesting that donors allocate more aid for trade. As part of the analysis, the paper provides a conceptual framework for selecting indicators of trade performance and its policy determinants that the World Trade Organization and its partners might monitor closely as part of the aid for trade initiative.

AID FOR TRADE: MATCHING POTENTIAL DEMAND AND SUPPLY

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Introduction

WTO Ministers during the Hong Kong ministerial emphasized the importance of Aid for Trade to improve the *capacity* of countries to participate in the world economy. Indeed, while the overriding objective of the Doha round has been to create new opportunities for countries – particularly for low-income countries – to trade by reducing external barriers, ministers recognized that internal barriers might prevent countries from taking advantage of any new opportunities. Internal constraints include economy-wide factors, such as macroeconomic instability, weak property rights, and underdeveloped financial systems. Other internal constraints are more specific to trade, including trade-related *infrastructure*, such as ports and transport, trade-related *institutions* such as customs or standards agencies, and *incentives* that through barriers at the border create price incentives that discourage trade.

Clearly, policies and regulation determine the final outcome, but aid for trade can help governments sustain their agenda and pursue reforms. Moreover, the lessons of the aid effectiveness literature have to be kept in mind: countries that need aid for trade but have a high probability of using it ineffectively (perhaps, say, because of excessive corruption, political instability, or an investment climate that discourages private activity, exports included) should not receive it.

Governments can use donor-provided assistance – aid for trade – to help address the internal barriers and to improve their trade performance. The ability of governments to avail themselves of aid for trade depends on the availability of overall amounts of assistance (*the supply*) and the decisions of governments, working with donors, to allocate available development assistance to trade-related problems instead of alternative -- and often no less urgent -- development problems (*the demand*). The aggregate amount of aid for trade in a given year therefore does not lend itself to negotiation because it reflects the sum of all the allocation decisions of developing countries around the world.

This paper brings together an analysis of both the supply and demand at the country level with two purposes in mind. The first is to help both beneficiary governments of aid for trade and the donors identify countries that are under-performing in trade and which are receiving less aid for trade than their global performance might otherwise suggest is necessary. The second is to single out a few indicators of trade performance and its determinants that the WTO and its partners might monitor closely as part of the aid for trade initiative.

Specifically, we take up three questions:

- Which countries might exhibit a *potential demand* for aid for trade, either because of poor relative performance in world markets or because of shortcomings in the supply-side determinants of trade -- infrastructure, institutions, and policy-induced *incentives* that hamper their trade performance?

- Which countries are receiving below average *supply of aid for trade* – relative to their potential demand?

- Which indicators seem most useful for monitoring from a macro perspective aid for trade as measure by their *predictive effects* on trade performance and therefore country needs?

In addressing these questions, the purpose is not to prescribe amounts for any country or to calculate an "optimal" amount of aid for trade.   Even a country whose trade performance or capacity might indicate a high potential demand for aid for trade may have other pressing needs that in fact are more important. Rather, the objective is more limited: it is to call attention to governments and donors as they sit down to draft national development programs that internal constraints to trade *may* be a problem, and that they *may wish to consider* seeking more aid for trade as part of the remedy. Moreover, in identifying particular weaknesses the paper provides a rough indication of relative strengths and weaknesses in trade that governments might find helpful as they design strategies. As such, this paper focuses on trade performance, trade capacity and policy, and aid for trade decisions – trying to bridge at the mezzo level both aggregate supply and country-level decisions.

To that end, we discuss indicators of trade performance that might fit well with the WTO's aid for trade monitoring effort. Among the many indicators we have explored, we point out indicators of trade underperformance and indicators that seem to have the *largest predictive power* in explaining trade performance. These variables may merit monitoring and reporting back to the WTO membership on a periodic basis.

The paper begins by examining recent *trade performance* of developing countries over the last decade -- using five different measures as a prism to evaluate trade performance. The second section tests various determinants of bilateral trade levels to hone in on *capacity constraints* – in infrastructure, institutions and policy -- that are most powerful in explaining trade patterns; it turns out five indicators of infrastructure, institutions, and policy are particularly influential in predicting trade bilateral levels, controlling for other factors. A short third section then creates a measure of "potential demand" for aid for trade by identifying countries in the bottom quintiles in five indicators of trade performance and the five indicators of policy.   A final section examines the overall allocation of aid for trade allocation to determine which countries receive below average aid for trade, controlling for these variables, and whether those that have the highest potential demand are in fact receiving the most aid for trade. In conclusion, we summarize the findings and offer some observations on indicators that might be included in the WTO's monitoring exercise.

1. Trade Performance: Leading and Lagging Countries

Real growth of exports

Openness to trade is highly correlated with economic growth. Although the direction of causality is difficult to prove categorically, several studies support this relationship. Wacziarg and Welch (2008), perhaps the most recent study, finds that over the period 1950-1998, on average, countries that liberalized their trade regime had 1.5 percent faster annual growth than in the pre-liberalization period. They find that average annual growth of per capita GDP for a liberalized country is about 2.7 percent compared to 1.5 percent for

countries that did not liberalize. Moreover, countries with a liberalized trade regime accumulated capital at a rate 1.9 percent higher than non-liberalized regimes. Because trade tends to lead to economic growth, and economic growth is indispensable for poverty reduction, aid for trade that helps countries that are under-performing in trade will contribute to poverty reduction.

Trade performance represents thus the first dimension to look at in looking at the need for aid for trade. However, under-performance in trade could have many definitions. In this section we look at five dimensions of trade performance. The first is to simply look at the real growth rates of exports of goods and services over the last ten years. The last ten years was a period of particularly extraordinary growth in the world economy, with growth in world exports in excess of 6 percent annually and rising strongly after the 2001 slowdown. Most countries did very well – and developing countries had growth rates that were on average 7.9 percent during this period.   Ranking countries by real export performance during this period shows that the top two quintiles performed substantially better than the rest (Figure 2).

Box 1 Services trade is becoming the most important exports for certain countries.

Services are becoming the major source of exports of a number of developing countries. In Fig.1, we show the example of Kenya, where exports of services overtook merchandise exports during the 90s. The importance of services exports for certain countries requires a major analysis aimed at capture the sources of performance.

Box Figure 1 Exports of goods and services from Kenya.
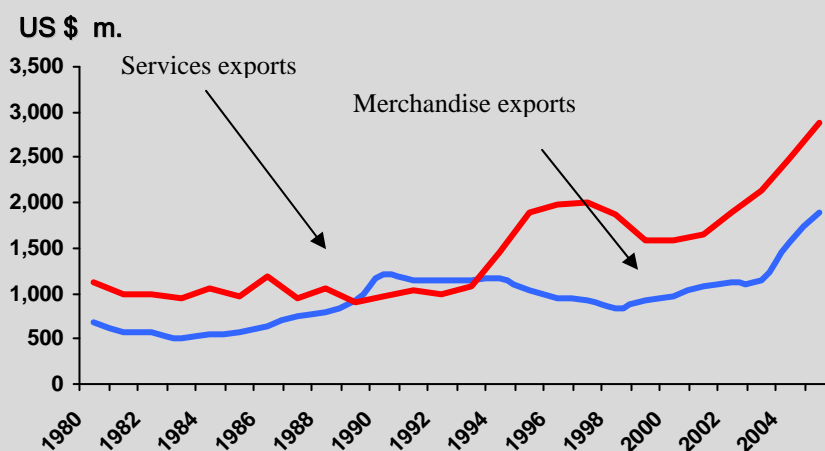
However, analysis requires data, which is still very limited particularly for developing countries. In defining potential demand for Aid for Trade, we take into account services in the indicators of exports growth and change in market share. It remains a challenge to defying the sources of competitiveness behind services exports.

Source: Bank staff from World Economic Outlook, United Nations COMTRADE

Thus, governments and donors might therefore look at their relative performance, and, if a country falls in the bottom two quintiles during this period, they may wish to explore the causes of this relative under-performance – and low-income countries in particular might

want to see if aid for trade could help improve performance. So this is our first indicator[2].

Figure 2a Low income countries, real growth of exports of goods and services (1996-2006 Annual Average)
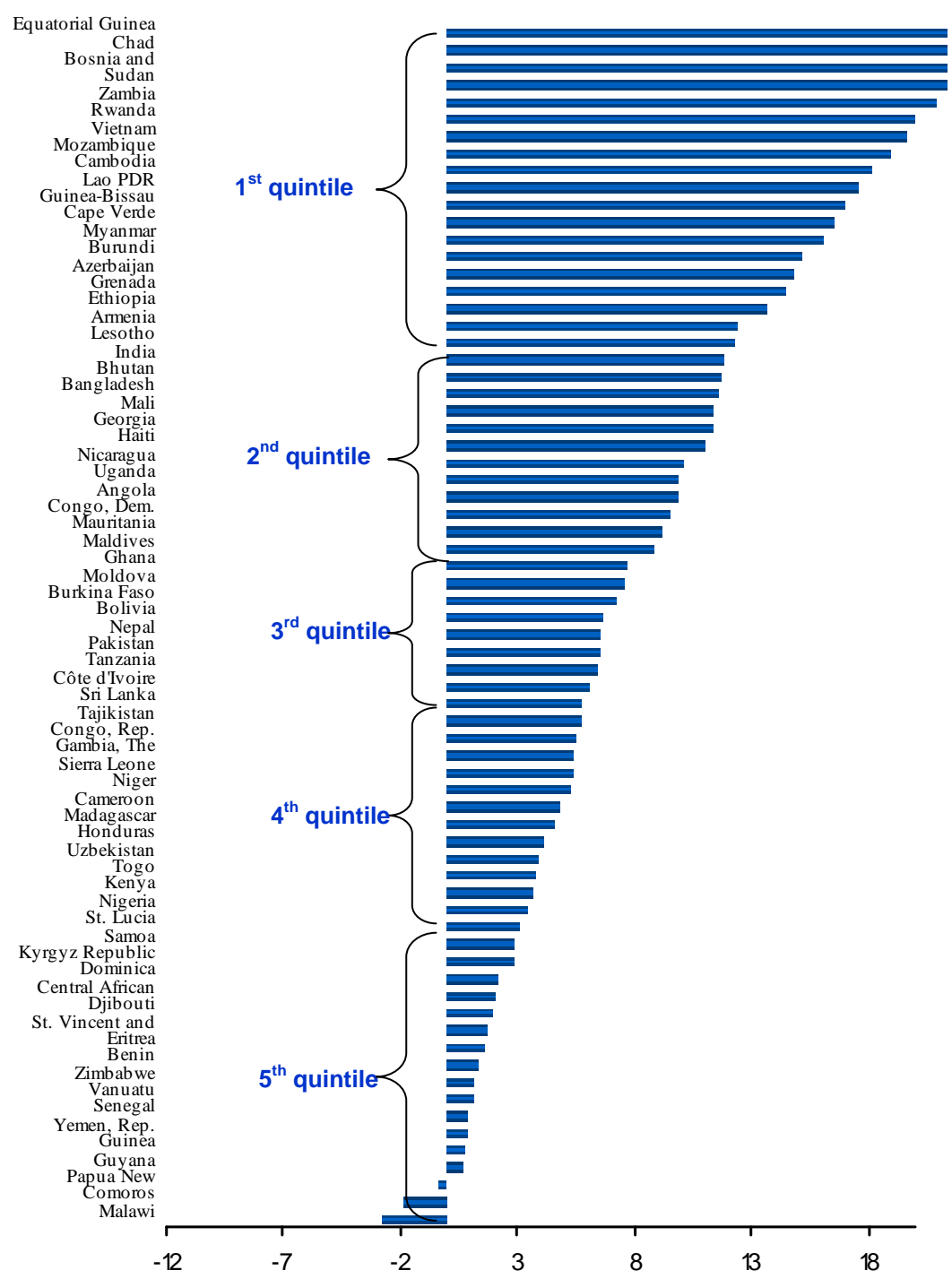
Source: Authors calculation. World Bank, WTI
Note: Quintile scale is from the entire sample of low and middle (not shown) income countries

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[2] While total exports of goods and services are available, more detailed trade data are absent. This prevented us from excluding the exports of oil and gas as major oil-exporter countries do not report such detailed level of exports in a systematic way. However, excluding these countries that do not report detailed data and excluding oil and gas from the real exports growth leaves the regression results of the aid allocation (see section 3) almost unchanged (See Annex 3.2).

Figure 2b middle income countries, real growth of exports of goods and services (1996-2006 Annual Average)

Changing competitiveness

A more sophisticated way to think about trade performance is to look at changes in underlying competitiveness of the exports of goods and services. Export growth may prove illusory if a country's exports are growing rapidly, but it is still losing market share to competing countries in the global market. Looking at the change in global export market share therefore enables us to identify whether export performance is driven by the market or by the ability of exporters to compete in the market place**.** In the period 1996-2006, despite a relatively robust performance of 9 percent, almost half of the LDCs and other low-income countries lost market share. Similarly, between 1996-06, middle-income countries grew by 7 percent, but about one-third of middle income countries had a negative change in market share. This then is our second indicator.

Underneath these changes in global market share are important undercurrents in specific markets. For example, a country may improving its productivity – and hence its market share in its specific export markets – but selling products that are slow-growing in world markets or similarly selling into country markets abroad that are slow growing. Or vice versa: a country may be exporting hot-selling products to fast growing markets, thereby increasing its global markets, but in fact in these more narrow dynamic markets loosing market shares to other countries. For example, Korea might be gaining global market share, but exporting computers to China – where it might be losing market share to Malaysia.

This analysis therefore focuses on competitiveness in sales to existing markets (the intensive margin). To distinguish among the different determinants, we use the Trade Performance Indicator of International Trade Center (ITC). The measure facilitates analysis of the sources of the inability to increase market share. The measure decomposes the relative change in world market share into two elements:

- **A competitiveness effect** in existing markets, which looks at the gains or losses of a country's aggregate market share that would occur if changes were only due to variations in the country's market share in its existing markets, regardless of the structure of the country's exports.

- **A demand effect** in existing export markets, which corresponds to gains or losses in a country's aggregate market share that would occur if changes were only due to the dynamism of import markets. This has two underlying structural components. First, the initial *geographic specialization* inherent in a country's export portfolio at the beginning of the period. This captures the contribution to changing global market share associated with the dynamism of the countries that import its products – so, for example, if a country were exporting to fast-growing China during this period, it would score high. The second component is the initial *product specialization* in that portfolio, which are the demand effects linked with a country's initial sector specialization. If, for example, demand effect of initial geographic specialization is negative, it means the country is in effect exporting to slow growing markets; similarly, if the country's initial sector specialization is negative, it means a country's export portfolio is weighted toward products that are growing slowly.[3]

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[3] The calculation also produces a residual which the ITC interprets as an adaption effect as shown in annex table 3. This is the residual after controlling for the competitiveness and demand effects. It is negative if the

These effects are shown in the four quadrants of Figure 3, showing the changes in market share associated with improvements in competitiveness along the vertical axis and changes associated with demand effects along the horizontal axis. Countries that lost competitiveness in existing markets and were selling in slow-growing markets – those in the lower left quadrant – are at severe risk of underperforming over the long run. These tended to be those countries that also had low overall export performance. Conversely, those countries in the top right hand quadrant -- those that increased competitiveness in their existing markets and were selling to rapidly expanding markets -- performed exceptionally well are generally well positioned to take advantage of global trade.

Bangladesh in the top left quadrant, for example, improved its competitiveness dramatically and this more than offset the dampening effects of being in slow growing product and geographic markets. Several other countries suffered deteriorating competitiveness and were left in relatively slow growing markets.

Fig. 3: Competitiveness effect versus demand effect (Average 1996-2006 annual change)

Source: Bank staff calculation based on ITC Trade Performance indicators.
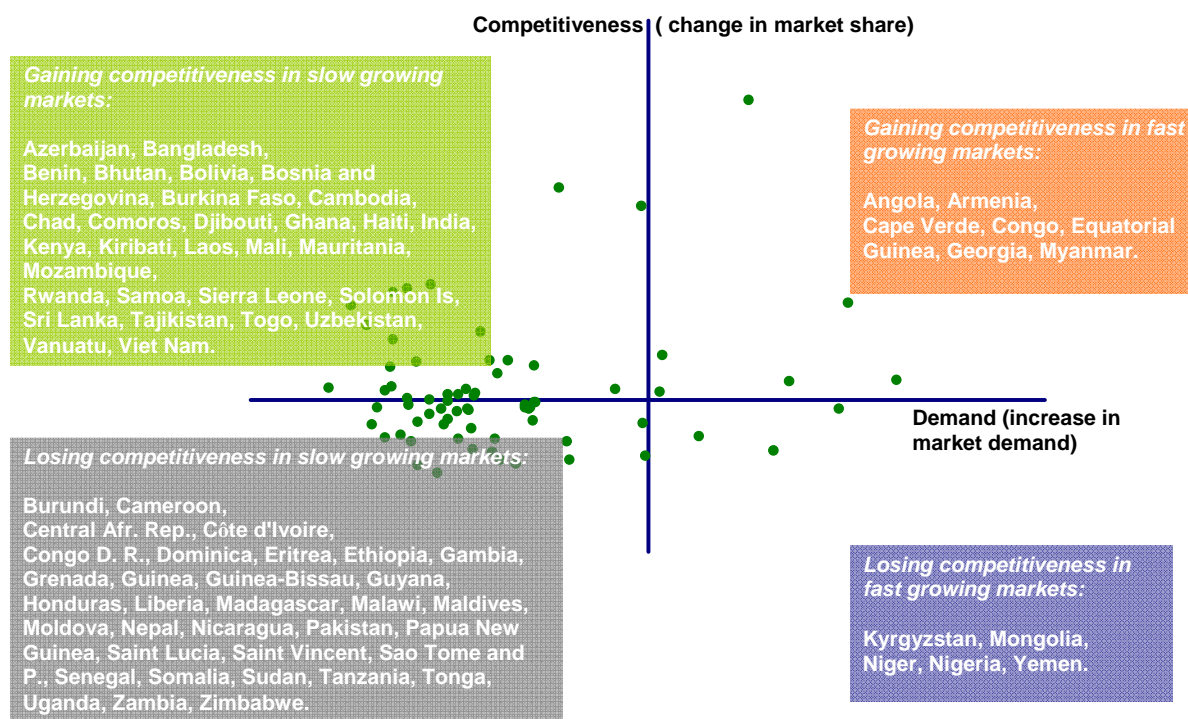
Thus, in addition to the first two indicators of trade performance (growth rate in exports and changes in global market share), we add changes in competitiveness in existing markets and demand structure. Before adding all this up, we look at one more measure of trade performance, degree of export concentration.

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demand effect is negative and the competitiveness effect is positive or vice-versa. It is positive if both the competitiveness and demand effect is positive or if both effects are negative.

Countries Overly Reliant on a Few Products: Lack of Diversification

Integration and the ability to compete in the global market ensure the gains from trade. However, greater integration in the global market place makes countries more vulnerable to sudden collapses in export prices or falls in demand – and this is a particular problem if the economy is dependent on only a few products. Moreover, it is not uncommon that these countries export commodities whose prices vary in common. Concentration of exports is therefore an important dimension to take into account when identifying the demand for aid for trade.

The extent of fragility of countries can be synthetically measured by the concentration of the export basket. As shown by Jansen (2004), higher export concentration leads to larger terms of trade volatility since the change in the price of a product affect deeply the terms of trade. High volatility in the terms of trade, in turns has a negative impact on the income growth (see Turnovsky and Chattopadhyay, 2003). This is particularly important for small vulnerable economies, which tends to be concentrated in commodity exports.

Fig 4a Developiong countries terms of trade volatility-concentration index (1996-2006)
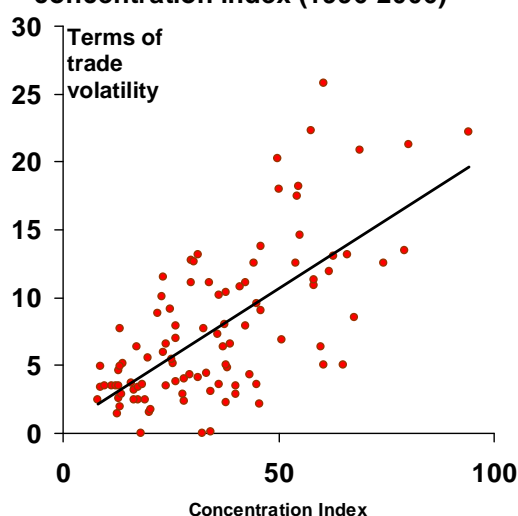
Fig 4b Developing countries concentration index and quality of transport and IT

Source: Bank staff calculation
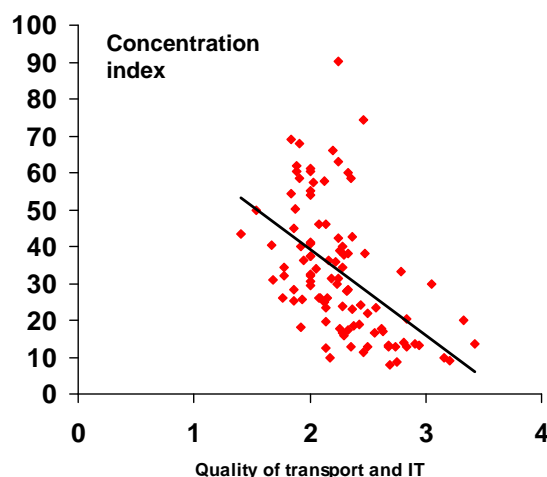
Export concentration is not the only variables that define the fragility but it represents the dimension in which aid for trade can have a great impact. For example, as pointed out by Jansen (2004), improvement in infrastructure can allow countries to better compete in new product lines.

The phenomena represent a distinctive feature of small vulnerable economies, for which aid for trade is an important resource of capitals given their low ability to access the financial markets.

In summary, we have identified five indicators of trade performance that the literature has established are linked directly or indirectly to growth and poverty reductions – and which policy makers and donors might want to consider using aid for trade to address. These are:

- Growth rate of exports of goods and services

- Changes in global market share of goods and services
- Changes in competitiveness in existing goods markets
- The demand structure of exports of goods
- The degree of concentration in the export portfolio.

2. Behind Poor Trade Performance: Capacity Constraints

Under-performance in export markets is symptomatic of domestic capacity constraints that aid for trade is designed to address. Some constraints are economy wide and affect all aspects of domestic economic activity. For example, insecurity and political fragility impede all investments (and we set aside fragile states in our analysis). Also, countries with a poor investment climate induced by *macroeconomic instability* because high and volatile inflation depresses investment, or by unenforceable *property rights* that impede investors from earning a return. Development assistance – though not necessarily aid for trade -- can at times help governments wishing to address these constraints.

Trade-related capacities include:
- *infrastructure*, particularly transport, ports, telecommunications, and information technology;
- trade-related *institutions* such as customs and port management facilities;
- *incentives* to export, particularly trade other policies that discourage private investment in exports and efficient import-substitution.

Governments can use various types of aid for trade to overcome these obstacles.

If it can be established that certain indicators of these capacity constraints are fairly robust in predicting poor trade performance, these variables ought to be high on the monitoring radar screen for those concerned about trade and growth – regardless of recent export performance.

Trade-related infrastructure, institutions, and incentives determine trade

Infrastructure, institutions and policy-induced price incentives are influential in determining trade flows – even controlling for economy-wide constraints. Several studies have shown that behind-the-border barriers represent important obstacles to the ability to export and import. The literature has analyzed the impact of these barriers using gravity model of trade and looking at the main factors that restraint bilateral volume.[4] For example, Limao and Venables (1999) have shown that an improvement in transport and communication infrastructure from the median score on surveys to the highest 25th percentile is associated with a decrease in transport costs by 12 percentage points and an increase in trade volumes of 28 percent.[5] Additionally, they show that landlocked countries face higher transport cost since their ability to transport goods depends also on the infrastructure endowment of the transit countries. Indeed, it is worthwhile to note that about a third of least developed countries are landlocked. For example, in East Africa, goods bound for landlocked countries face the time equivalent of at least three clearance

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[4] The gravity model provides a way of measuring bilateral trade flows among trading partners. The first gravity equation simply equated the volume of trade to the product of the exporting and importing countries' GDP and the distance between the two.

[5] Their infrastructure indicator is based on four components: the density of rail road per square km, the density of road and of paved road per square km and the number of telephone mainlines per capita. The indicator has been widely used by other researchers to proxy for the quality of infrastructure cost and thus, the cost of transport and communication (See Carrere, 2006).

processes of coastal countries. Arvis, Raballand and Marteau (2007) explain the reason behind these higher costs by providing a micro analysis of the different costs associated with being landlocked. Based on the supply chain model, the authors use micro-data and to identify the cost of being landlocked along three dimensions: (i) transport costs, (ii) logistics costs and (iii) hedging costs incurred by shippers to cope with unpredictable delivery schedules. The study highlights several examples of the higher cost associated with being landlocked. Piermartini and Nordas (2004) augment the Limao and Venables (1998) indicator with the quality of ports, the density of airports with paved railways, and the density of internet users and of mobile phone subscribers. They show that port infrastructure matters for all sectors, while timeliness and access to telecommunication matter more in the clothing and automotive sector.

Institutions also matter. Mann, Otsuky and Wilson (2003) provide an estimate of the gains in terms of trade volume associated with improvements in port efficiency, customs and greater electronic-business and the regulatory environment. They look at the trade flow among the Asia Pacific Economic Cooperation members and they show that bringing below average APEC member capacity halfway to the average for all members, intra-APEC trade could increase by US$254 billion suggesting an increase in APEC average per capita GDP of 4.3 percent. Improvements in port efficiency and customs environment, that is across the border barriers, represents about $117 billion of the total gain while reducing "inside the border" barriers would lead to gains of around $116 billion. The quality of institutions can also be capture by the time required to exports. The inability of exporting in time, restrain the possibility of countries to take part in the offshoring of production as time delays affect just in time production (see Nordas, 2005). Said differently, as shown by Djankov, Freund and Pham (2006), an additional day required for exporting is equivalent to being 70 km far away from the trade partner.

Putting infrastructure and institutions together, Francois and Manchin (2006) look at a large sample of countries in the period 1988-2002. They proxy transport and communication costs with the percentage of paved roads of total roads, on the number of fixed and mobile telephone subscribers (per 1,000 people), on the number of telephone mainlines (per 1,000 people), on telephone mainlines in largest city (per 1,000 people), telephone mainlines per employee, mobile phones (per 1,000 people), and freight of air transport. Additionally, they introduce an institutional variables which reflects the size of government: expenditures, taxes, and enterprises; the legal structure and protection of property rights; the access to sound money: inflation rate, possibility to own foreign currency bank accounts; freedom to trade internationally: taxes on international trade, regulatory trade barriers, capital market controls, difference between official exchange rate and black market rate, etc.; and the regulation of credit, labor, and business. They show that both infrastructure and institutions matter for both trade volume and the probability that trade occurs. Additionally, they show that North-South Trade is more affected by infrastructure quality and institution than protection imposed by the North countries on South imports. In line with this finding, Hoeckman and Nicita (2008) show that even if tariffs and non tariff measures still restrain the ability of developing country to serve the global marketplace, trade facilitation measures explain trade volume the most. Additionally, the authors show that reducing internal trade cost has an effect similar to reducing traditional trade restrictions associated with tariffs and NTMs.

Finally, incentives arising from the trade regime that guide private investment into exports or efficient import-substitution industries are no less important. Border barriers stemming from trade policy can define the ability of firms to compete in the market. Import tariffs

create an incentive for firms to invest in local industry rather than in export industries. If tariffs are high, reducing them can lead to productivity gains. Amiti and Koning (2007) have shown that 10 percent fall in tariff is associated with a productivity gain of 1 percent. Additionally, the authors have shown that reduction on tariffs of imported inputs leads to bigger productivity gains: a reduction on input tariff of 10 percentage points leads to an 11 percent productivity gain for importing firms. Indeed, lower inputs tariffs allow firms to import intermediates and exploit the benefits of a greater variety and/or higher-quality inputs[6].

Trade policy regimes do not only consist of tariffs. Fixed cost to entry in the foreign market dictates the ability of firms to exports. Moreover, high fixed to serve the importing market impair the pro-competition process in the importing country. Greater competition drives the least productive firms out of the market and increase the average productivity of the country (Melitz, 2002).

Indicators of capacity constraints that predict trade performance

What indicators are most useful in predicting low levels of trade? We conducted a "gravity model" analysis with the objective of identifying key indicators of underperformance in bilateral trade (see Annex 3). The simple idea underlying the analysis is that distance from markets, market size and growth rate should influence the scale of bilateral trade. So Guatemala, as a small country relatively close to the large market of the US, should sell more to that market, controlling for other factors, than to an equally large market that is far away, say Europe; likewise, it should sell a much smaller amount to Peru because that market is much smaller and even less to Argentina because that market is far away. By comparing all bilateral trade between a developing country and its partners, the analysis can determine who is trading above average or below average, controlling for economic size and remoteness, and what are the indicators of infrastructure, institutions, and incentives that explain most consistently under- and over-performance.

One limitation of this analysis is that the data do not include services. This is particularly problematic for countries that may be shifting their comparative advantage from merchandise exports to services exports.

The model and indicators

The analysis here uses cross-sectional data for 2006. This analysis looks at the expected level of bilateral trade between developing countries and all their trading partners, given the relative size of markets, growth rates, distance separating exporter from importers and indicators of infrastructure, institutions and policy. So beside distance and market size, we also included other predictors of trade levels – including market access through membership in a free trade agreement, former colonial relationships, and language commonalities. The dependent variable in all cases was the level of trade between country pairs.

The purpose of this exercise was to search for indicators of capacity that would have the "weightiest" predictive power in the cross section on trade levels. After experimentation with various measures, we settled on five:

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[6] Even conceptually, economists have long known that a tariff on imports is equivalent to an export tax since the effect on relative price is the same (Lerner, 1936).

- For *infrastructure*, the transport component of the World Bank's Logistic Performance Indicator[7] had the greatest power in explaining differences between low trade volumes and high trade volumes for any two countries, controlling for other factors. Since the LPI did not come into existence before 2006, it is worth noting that LPI is highly correlated with other indices of infrastructure.[8]

- For *institutions*, we found two measures to have a powerful explanatory effect on trade levels: First, the customs component of the LPI and, second, the time it takes to convey and process exports through customs to ship, taken from the *Doing Business* database[9] also performed well, but are less trade specific.

- For *trade policy-induced incentives*, the objective was to capture the effects of border policies on biasing private investment in favor of particular import-substitution industries in an inefficient manner and away from exports. We used two measures: The first was the percentage of tariff lines covered by tariff peaks (see Annex 2). The second was the tariff trade restrictiveness index of the World Bank, which measures the level of protection adopted by importing countries on bilateral exports.

These five measures, together with the control variables, have strong effects on increasing export performance.[10] Figure 5 illustrates the various effects of selected components of the gravity model. The center line in effect is the average level of trade between any two countries. If the quality of infrastructure were to improve by 1 percent (as measured in our indicator), exports would increase by more than 4 percent. Delays in exporting and trade restrictiveness along with distance diminish exports by substantial amounts. This reveals the impact of reforms. If the number of days to export could be reduced by 1 percent, exports on average would increase by more than 1.5 percent. Said differently, reducing time to exports by one day leads to 3.5 percent which is similar to a 1 percent decrease in the trade restrictiveness index. Additionally, a reduction of the exporter share of tariff lines subject to tariff peak by 10 percent raises exports by around 2 percent. And among the control variables, if the GDP of a country's trading partner increases by 1 percent, this increases the average country's exports by 1.5 percent.

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[7]The World Bank recently created this comprehensive indicator for trade facilitations called the Logistic Performance Indicator. It summarizes the logistic performance along seven areas: (1) the efficiency of the clearance process by customs and other border agencies, (2) the quality of transport and information technology infrastructure for logistics, (3) the ease and affordability of arranging international shipments, (4) the competence of the local logistics industry, (5) the ability to track and trace international shipments, (6) the domestic logistics costs and (7) the timeliness of shipments in reaching destination.

[8] One commonly used indicator, for example, is that created by Limao and Venables (1999) that uses density of rail and roads, share of paved roads, and telecommunications per capita. For example, the overall LPI correlates 0.79 with the quality of the quality of port infrastructure as proxy by the World Competitiveness yearbook, IMD Lausanne, 0.7061 with the number of internet users per 1000 inhabitants, 0.5645 with the density of paved road and -0.6114 with the Limao and Venables indicator. Note that a higher value of the Limao and Venables indicator implies worse infrastructure.

[9] The measure if reflected in a dummy variable that takes the value of 1 when both the importing and exporting country have a cost to enforce the contract below the median.
[10] See annex 3– for the cross sectional regression analysis and its explanation.

Fig 5: Determinants of trade: Effects of 1% change in infrastructure, institution, and incentive on exports.
(Change in exports relative to the average country in the sample)
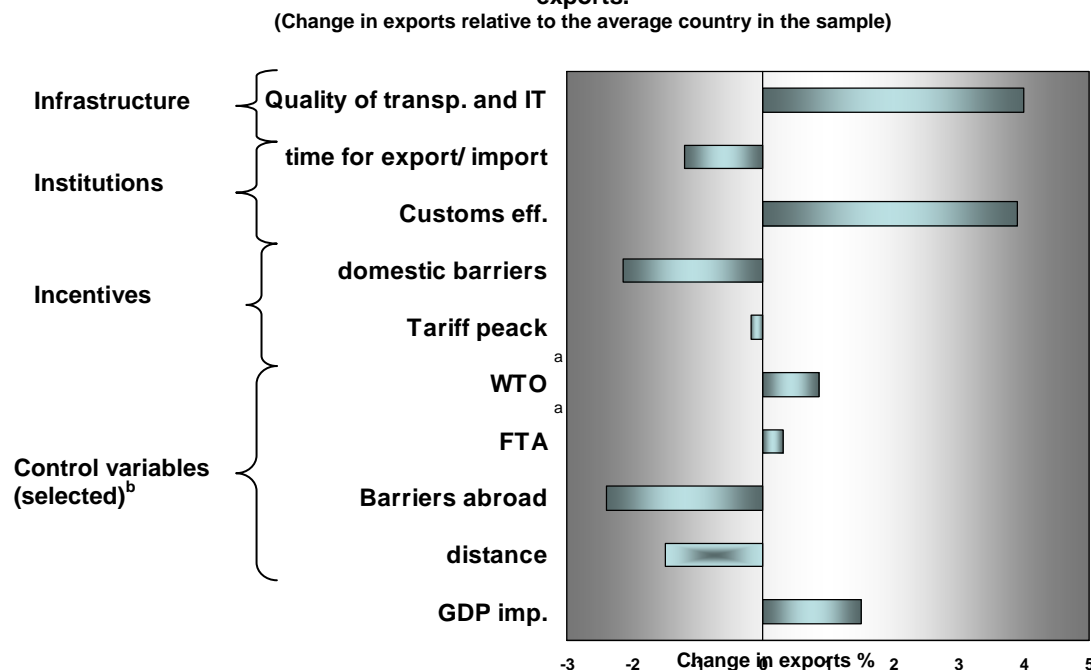
Note: Marginal effects calculated at the average of the sample. [a] represents the change passing from zero to one. The rest of the variables refer to change of 1 percentage point. [b]Other control variables are listed in the Annex. The regressions with the major number of observations have been used to define the marginal effects of a variable that appears in different regressions. The variable "barriers abroad" represents the bilateral Trade Restrictiveness Index (OTRI) that the exporter faces while the variable "domestic barriers" represents the average OTRI imposed by the exporter to the world.

Reforms benefit neighbors

It is important to note that reforms in one trading country have positive synergistic effects on its partner. If Kenya improves its customs border crossings and ports, Uganda and Tanzania will benefit. In effect, lowering trade costs through institutional reforms is, much like reductions in tariffs that provide market access, is a "global public good" that benefits both the reforming country and its trading partners.

Needless to say, infrastructure and institutions in low income countries are significantly less developed than middle income countries. Figure 6, for example, shows that about 60 percent of LDCS score in the lowest two quintiles of the ranking (i.e., in the lowest 40 percent of the sample of all developing countries), and therefore have greater needs to improve their transport and information technology. Less than 20 percent of middle income countries have infrastructure and information technology scores in the lowest two quintiles. Among LDCs in the bottom quintiles are: Afghanistan, Djibouti, Myanmar, Niger, Nepal, Rwanda, Solomon Islands, Sierra Leone, Chad, Timor-Leste and Tanzania. Among the low income countries: Armenia, Guyana, Mongolia, Tajikistan and Uzbekistan. A similar pattern is evident in Figure 7 for customs.

Fig. 6 Quality of Transport and IT   **Fig. 7 Efficiency of customs**
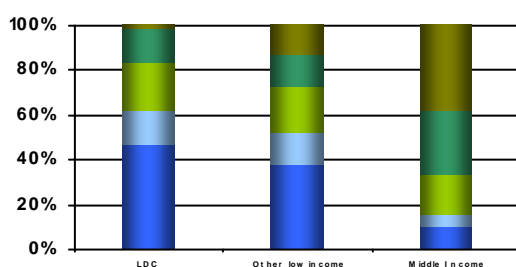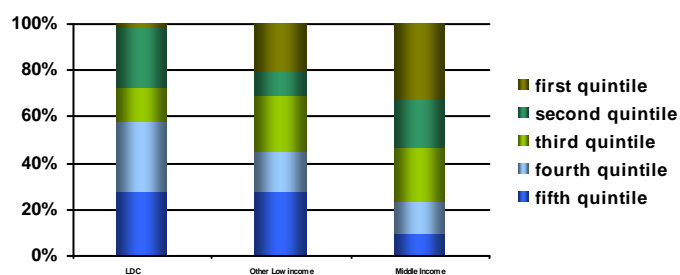
Sources: author calculation. World Bank, LPI database

Improving the policy and institutional variables captured in these measures would have a profound impact on trade. For example, improving policies so as to raise a country's score from the fourth to third quintile of the customs indicator would increases trade by 31.5 percent, keeping everything else at its mean. By the same token passing from the fourth to the third quintile in terms of quality of transport and IT raise trade by 35 percent.

If the indicators for infrastructure, institutions, and trade policy related incentives predict reliably trade performance, countries with low scores on these indicators ought to be among the strongest candidates for aid for trade. Said differently, as they discuss aid allocations in the PRSP process, donors and countries desirous of harnessing the global economy for their growth and poverty reduction should pay special attention to the policies and institutions that shape their scores – because these heavily predict trade performance. Aid for trade can act as a catalyst to improve these policies and institutions.

3. Gauging Potential Demand for Aid for Trade

So far we have presented here two reasons why countries might need aid for trade, namely poor trade performance and relatively low capacity to trade. These can be taken to be indicators of countries' potential demand for aid for trade[11]. To gauge *trade performance,* countries that are potential users of aid for trade are those with:

- Low or negative growth rates of exports of goods and services;
- Shrinking shares of the global market for goods and services;
- Deteriorating competitiveness performance in existing markets;
- Export sales concentrated in product or geographic markets;
- Dependences on a relatively few products its overall exports – lack of diversifications

To gauge *internal capacity* limitations, we have seen it is countries with:

- poor infrastructure (LPI – transport and quality of IT)
- poor customs
- and poor trade-related institutions generally
- disincentives to export because of high tariff peaks

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[11] In building the demand for aid for trade, we abstained from judgments on the aid effectiveness. At this stage, we are not interested in knowing which countries should receive more aid for trade given their sound track record of policy and reforms. In contrast, we are interested in knowing which countries ares facing the greatest challenges in terms of trade performance and internal capacity.

- and disincentives from poor trade policy (tariff peaks and Trade Restrictiveness Index)

Since those most in need of aid for trade are those toward the bottom of rankings in the 10 areas, we created a simplistic scale to gauge potential demand for aid for trade: If a country were in the bottom quintile of a variable, it received a five; if it were in the next lowest quintile, it received a "four"; and so on. We located every country in its respective quintile on each of the 10 indicators of performance and capacity. If a country was in the bottom quintile (a score of 5) in all 10 indicators, it would receive a maximum score of 50. Conversely, the best performers with the best capacity would receive of score of 10 (top quintile score of 1 in a sum of 10 indicators).

Simply adding a country's total scores gives some proximate indication of the potential demand for aid for trade. Note that we have given equal weight to all 10 indexes. An argument could be made for giving greater emphasis to one or another measure. This is especially true for a given country; a country might score low on one index, say, diversification, but high in export growth, and the government might decide that it diversification is a high policy priority. This paper avoids those judgments and opts for an unweighted approach[12].

The countries with the strongest *potential demand* by this measure are shown in Figure 8. Most are LDCs and other low-income countries, including Benin, Burkina Faso, Burundi, Central African Republic, Comoros, Congo, Congo DR, East Timor, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Guyana, Haiti, Kyrgyzstan, Laos, Lesotho, Madagascar, Malawi, Mali, Moldova, Nepal, Niger, Papua New Guinea, Rwanda, Saint Lucia, Saint Vincent and the Grenadines, Samoa, Sao Tome and Principe, Sierra Leone, Solomon Is, Somalia, Sudan, Tajikistan, Tanzania, Uganda, Uzbekistan, Vanuatu, Yemen, Zambia, Zimbabwe (Figure 8).

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[12] In appendix 3.4 we show the correlation of the various components of the overall indicator. The highest correlation is between the quality of transport and efficiency of customs (0.72) followed by the correlation between the herfindhal index of export concerntration and the time to export (0.58). Among the performance components the highest degree of correlation is between export growth and change in market share (0.48), followed by the correlation between export growth and the competitiveness component of the market share (0.3).

Figure 8: Potential demand for Aid for Trade.
Countries in the bottom two quintiles
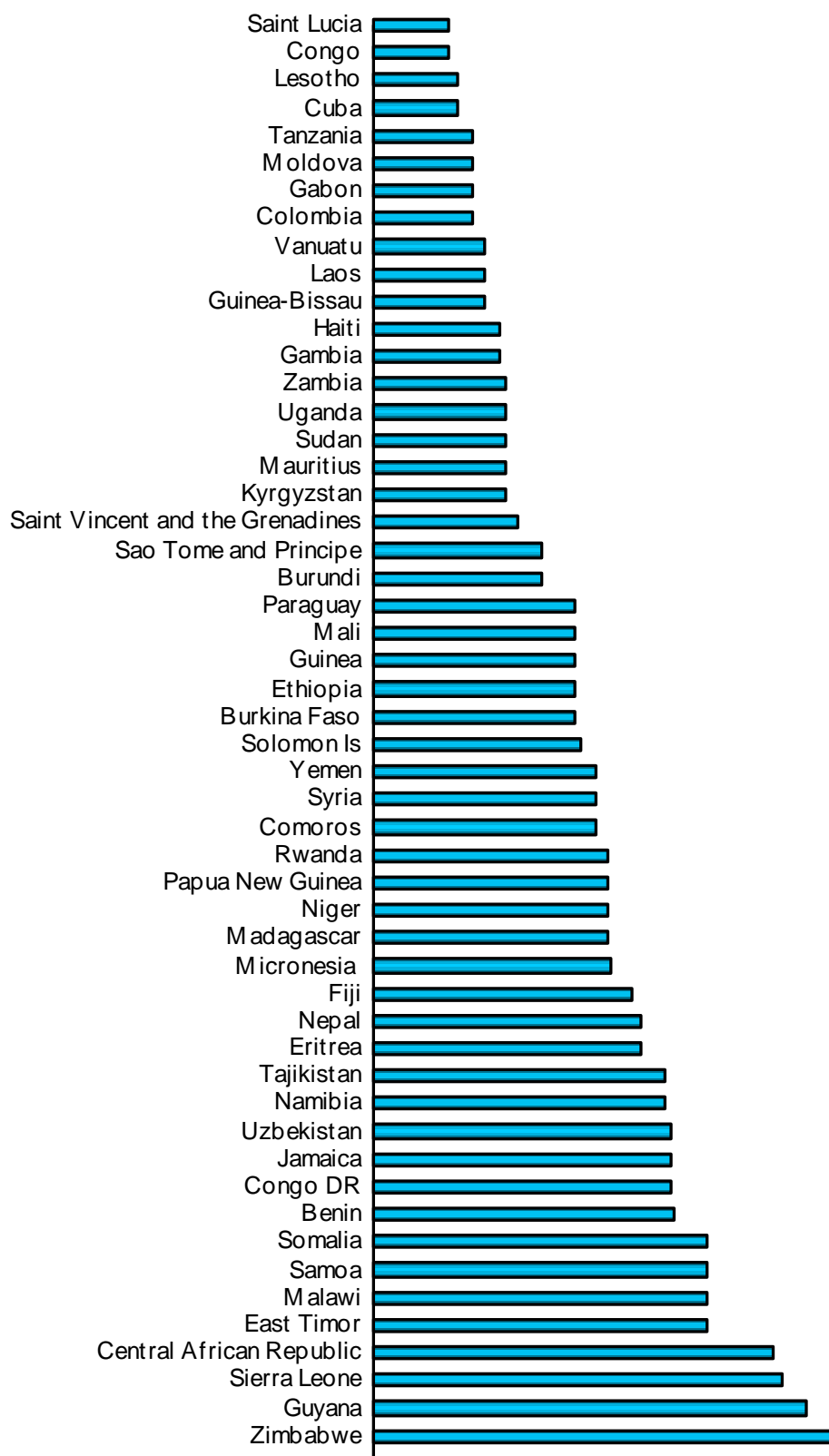
Source: Authors calculation based on data from ITC and World Bank.

Box 2 Overall trends in Aid for Trade

According to the 2008 definition of the OECD, aid for trade comprised about 25 percent of total development assistance and about 30 percent of aid that donors and governments allocated to particular sectors. This "sectoral allocable aid" excludes fund for debt relief, administrative costs and budget support. The OECD definition is a rather broad measure of aid for trade because it comprises all investments in infrastructure except water and sanitation, arguably necessary since it is virtually impossible to distinguish whether a power plant serves the tradeable or nontradeable sectors.

Aid for trade has fallen steadily as a share of sector allocable aid and total development assistance in every year since 1996 (Figure 9). Aid for trade represented the 50 percent of total sector allocable aid in 1996 to about 30 percent in 2006. In fact, trends in aid for trade declined in absolute terms to 2002, but have since risen slightly, perhaps associated with renewed donor interest in growth and in worldwide concerns for trade associated with the launch of the Doha Development round. Aid for trade commitments increased in recent years to a peak in 2004, where it has apparently plateaued at about about US$20 billion. Even so, this recovery has not kept pace with either total development assistance nor that portion allocated to particular activities.

Box Figure 9

Official assistance evolution (2005 constant price)
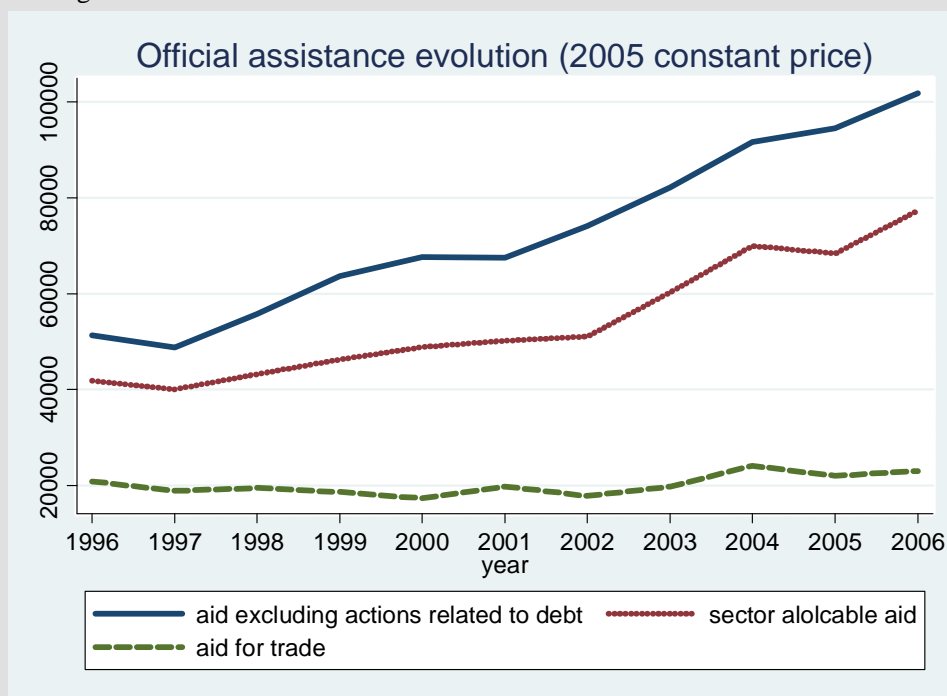
Note that these data, following DAC standard practice, exclude nonconcessional multilateral and bilateral lending. Nonetheless, the pattern would probably hold even if these numbers could be included in the analysis.

While much of the discussion in the Doha rounds has concerned additionality, evidence suggests that aid for trade is unlikely to increase unless donor expands overall supply of aid. Historically, aid for trade has expanded in tandem with overall sector allocable aid, if a slower pace. For every dollar spent on total aid sector allocation, aid for trade commitments amount at USD 0.12 on average. In 2004, the aid for trade commitment has been above the average pattern.

4. Supply of Aid for Trade: Who Gets Aid for Trade and Why?

So are the countries with the highest potential demand the ones that receive the most aid for trade? Can we identify countries that received below-average aid for trade, controlling for the major determinants, despite substantial needs?

By way of preface, the lessons of the aid effectiveness literature have to be kept in mind: countries that need aid for trade but have a high probability of using it ineffectively (perhaps, say, because of excessive corruption, political instability, or an investment climate that discourages all private activity, exports included) should not receive it. Zimbabwe at the moment is one such country – as high inflation and political stalemate mean the resources directed at any form of development assistance are likely to be wasted if not counterproductive.[13] For these reasons, we include a measure of aid effectiveness.

Box 3 *Bilaterals lead in overall amounts, but lag in amounts to the poorest countries*

Bilateral donors, here including the European Commission as one country, tend more aid for trade in absolute term than multilateral donors. Leading countries include Japan, the US and the EC.

However, bilateral governments tend to give a greater share to the middle income countries. Bilateral donors gave on average 52 percent of the aid for trade to middle income countries and 48 percent to low-income and least developed countries. For their part, multilateral donors devote a larger share to low-income and least developed countries – roughly 85 percent of their total aid for trade portfolio. Least developed countries received about a half of the multilateral donor total portfolio.

Box Figure 10-- Most multilateral aid for trade goes to low income countries

Average percentage aid for trade allocation (2002-2006)
Bilateral donors, including EC

17.91% · 29.88% · 52.2%

ldc · middle income countries · other low income countries

Average percentage aid for trade allocation (2002-2006)
Multilateral donours, excluding EC

34.75% · 49.49% · 15.76%

ldc · middle income countries · other low income countries

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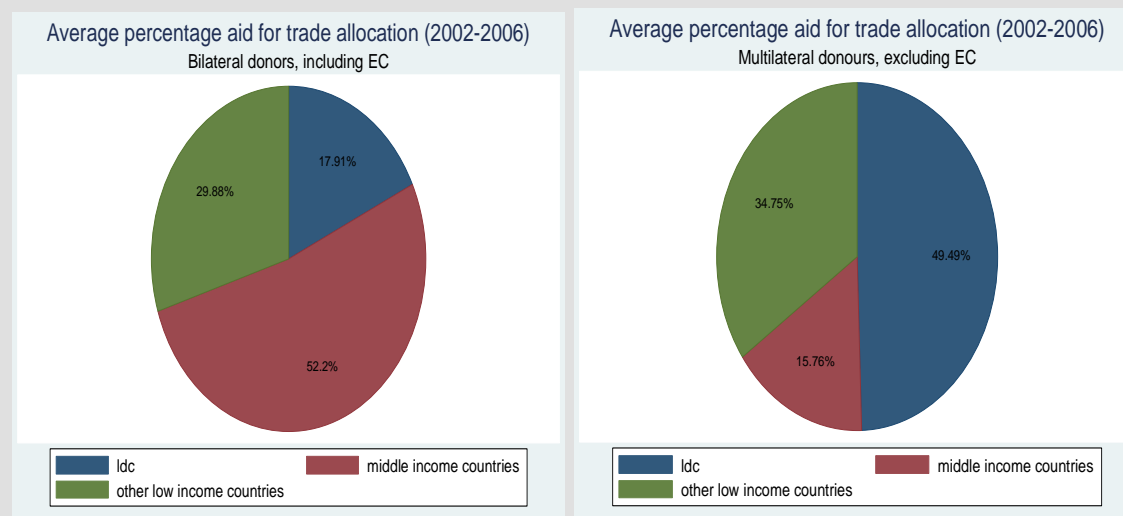
[13] To be sure, countries with these characteristics are precisely the ones that often need external assistance the most; for that reason, aid practitioners often try to consider the *potential for policy improvements* and disburse against that potential for improvement rather than the actual state of affairs. In these cases, indicators of aid effectiveness, since they are inherently retrospective, can have little value in turn around situations where new commitments are forward looking and often involve subjective bets on new country leadership. That said, these tend to be a small minority of cases in any given year, and so we opt to include indicators of aid effectiveness.

Is potential demand for aid for trade matched by supply?

To assess whether those with highest potential demand for aid for trade are those that receive it, we look at aid for trade commitments (as a share of recipient GDP), controlling for per capita income and a proxy for "aid effectiveness" and our "potential demand" score. (Since the aid effectiveness literature suggests aid allocation should correspond to legal systems that enforce contracts and minimize corruption, we have used the Kaufman-Kraay "rule of law indicator" [14].)

In fact, there is good news. Controlling for the factors, countries with the greatest potential demand are those that *in general* need it the most. Figure 11 shows the relationship between potential demand and aid for trade as a share of GDP, controlling for GDP per capita and rule of law. When we add individually our capacity measures for infrastructure, institutions, and incentives, these variables too have explanatory power. In 2006, for example, *on average,* donors committed higher amount of aid per GDP to countries with better quality of the legal system, lower logistic performance and lower GDP per capita.

Fig 11 Supply versus demand for aid for trade in 2006 for low income countries controlling for the quality of the legal system and per capita GDP

Source: Authors calculation, based on 2006 cross-section regression
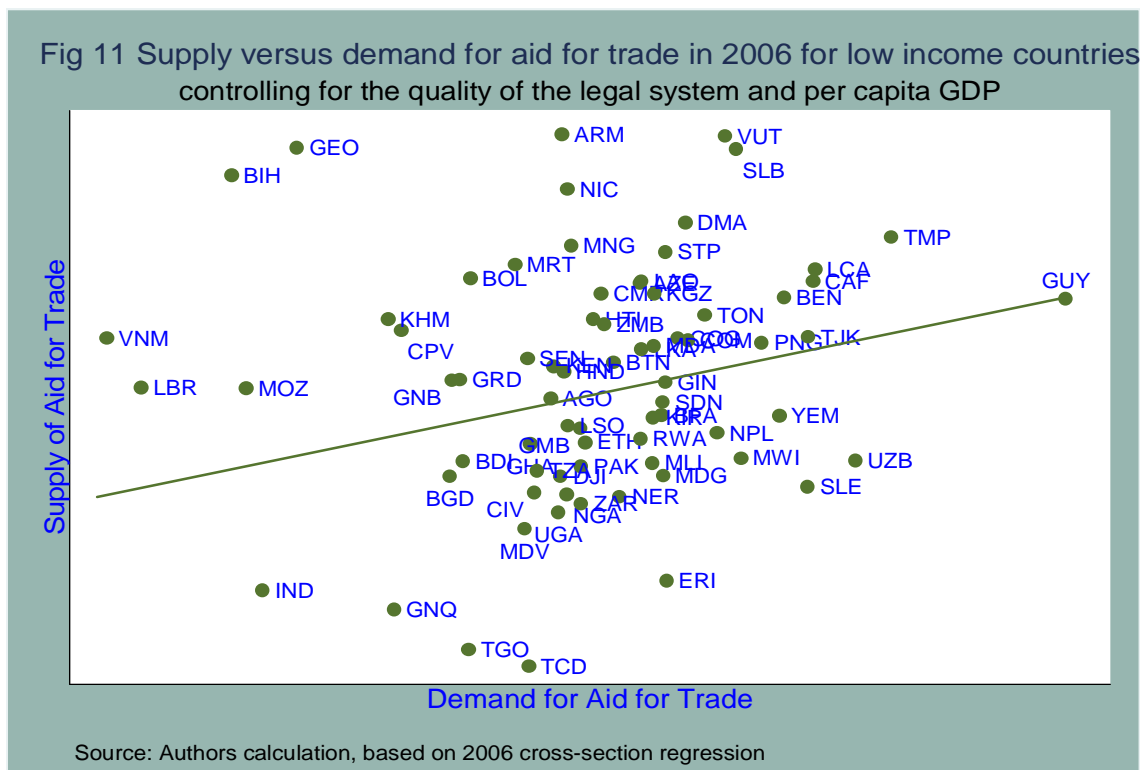
Even though aid for trade correlates broadly with potential demand the match is not perfect – so some countries receive far less aid for trade than their potential demand would otherwise indicate. Several countries whose scores in trade performance and capacity

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[14] Replacing the rule of law of Kaufman with other variables, like the control of corruption or the trade component of the CPIA (Country Policy and Institutional Assessment) gives similar results. Using the control of corruption variable, Central African Republic and St. Kitts and Nevis do not appear anymore in the list while Costa Rica, Croatia, Lebanon and Madagascar appear to have received below average aid for trade. Using the trade component of the CPIA, the Dominican Republic, Myanmar and St. Kitts and Nevis exit the list while Cameroon, Tajikistan and Uganda appear to have received below average aid for trade in the period 1996-2006.

would otherwise indicate they should receive large amounts of aid for trade in fact receive below average amounts. The low income countries that are receiving below average aid for trade are shown below the line in Figure 11. Among low income developing countries receiving below average aid for trade, there are: Bangladesh, Burkina Faso, Burundi, Chad, Congo DR, Côte d'Ivoire, Djibouti, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Ghana, Guinea, Guyana**,** India, Kiribati, Lesotho, Madagascar, Malawi, Maldives, Mali, Nepal, Niger, Nigeria, Pakistan, Rwanda, Sierra Leone, Sudan, Tanzania, Togo, Uganda, Uzbekistan, and Yemen.

Middle-income countries (not shown in Figure 11) that, should they be eligible and it be warranted, that receive less per capita aid for trade include: Argentina, Belarus, Botswana, Brazil, Chile, China, Colombia, Costa Rica, Dominican Republic, Ecuador, Fiji, India, Iran, Jamaica, Jordan, Libya, Malaysia, Mexico, Panama, Philippines, South Africa, St. Kitts and Nevis, Syria, Thailand, Uruguay, and Venezuela). Some of these are more statistical aberrations (say China because of its large GDP); other receive low levels of development assistance generally.

We made the calculation a second way – this time using time series data[15]. Specially, we look at the aid allocation for the period 1996-2006. We use GDP per capita, rule of law, the export growth in goods and services, the share of tariff peak and the Limao and Venables (1999) indicator. In the period under consideration, on average, donors still have allocated more aid *for* trade to countries with lower GDP per capita, worse infrastructure. However, controlling for these variables, developing countries that on average received below average commitments relative to their potential demand appeared to be: Algeria, Angola, Argentina, Botswana, Brazil, Burundi, Central African Republic, Chad, Chile, China, Colombia, Congo DR, Congo, Côte d'Ivoire, Dominican Republic, Ecuador, Equatorial Guinea, Ethiopia, Guatemala, India, Indonesia, Kazakhstan, Malaysia, Mexico, Myanmar, Niger, Nigeria, Pakistan, Panama, Paraguay, Peru, South Africa, St. Kitts and Nevis, Sudan, Togo, Turkey, Uruguay, Uzbekistan, Venezuela, Yemen. Half of these countries are nowadays low-income countries.

Conclusions

While the overall trade performance of developing countries has been remarkable – indeed unprecedented – in the last half decade, several countries have not yet fully harnessed the global economy to their development goals.   Moreover, several economies are at risk that the prospect of a slowdown in the global economy will severely erode recent gains as less efficient suppliers to the global market are driven out. For these reasons, focusing the attention of governments on strategies to improve their competitiveness and on mobilizing aid for trade is increasingly urgent.

It is worth reiterating that the results of our analysis that identifies countries warranting more aid for trade are meant to provoke a discussion -- within governments and between governments and donors – not to imply a specific aid for trade solution. One reason for humility is that governments have other pressing priorities and these are not considered in our discussion. Another is that some problems do not require much aid for trade to resolve – problems stemming from distorted trade regimes can be solved with a stroke of a pen or perhaps a small TA project, so our aggregate supply and demand calculations would not apply. Nonetheless, in the aggregate, our view is that governments and donors have

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[15] In the panel, countries receiving below average are identify by looking at the fixed effect.

considerable scope for increasing aid for trade, especially among the under-performing and under-served low-income countries.

Indicators of under-performance in trade

These countries are those that are in the lower two quintiles of performance measured along five dimensions: those experiencing relatively slow growth of exports of goods and services, those losing global market share, those suffering deterioration in competitiveness in existing markets, those exporting slow-growing products or to slow-growing markets, and/or those over-reliant on only a few exports. Within the lowest overall quintiles of performers, some countries score very low in certain areas but higher in others; this would point to areas where policymakers and their advisors might want to devote efforts for improvement in overall performance. Annex Table 1.2 is suggestive of areas that governments wishing to harness the global economic might want to make initial investments in policy improvements.

For example, countries that have increased their competitiveness in existing markets, but experienced slower-than-average growth because their main geographic markets were growing slowly, might well want to use export promotion agencies to help producers begin selling in faster-growing geographic markets.

Indicators of policy – infrastructure, institutions, and border protections

Measures of trade-related infrastructure, institutions, and border protection also presage lower than average levels of trade. Those likely to under-trade with bilateral partners, controlling for market size and distance, among other things, are those with low levels scores on the logistics performance index for transport (or, alternatively, the Limao-Venables infrastructure index), the logistics performance indicators for customs, and an indicator of peak tariffs.

Aid for trade can provide assistance in improving these scores. The good news arising from this paper is that indicators of potential demand correlate broadly with ratios of aid for trade to GDP of beneficiaries. Nonetheless, several countries that have the highest potential demand experience lower-than-average levels of aid for trade. Donors and governments in these countries that are in the process of designing growth and poverty reduction strategies ought to consider shifting additional development assistance into aid for trade.

Two corollaries are important to underscore: The first is that improvements in the scores of one country benefit its trading partners, a fact strongly evident in the analysis. In this sense, aid for trade has some of the characteristics of a public good – providing support to reforms in one country that have positive effects on their trading partners .

Indicators Worthy of Continued Monitoring

The second is that the ten indicators this paper employs offer considerable promise for the WTO's monitoring efforts. While other indicators could as readily be selected, the ones identified in this paper either provide a penetrating understanding of performance-related problems or have powerful effects in determining future trade performance, both elements important to the WTO monitoring exercise.

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ANNEX 1

Table 1.1 Average 1996-2006 real growth of exports of goods and services

Country	Real growth of exports (goods and services)	quintile score
Gabon	-2.97	5
Malawi	-2.77	5
Comoros	-1.87	5
Venezuela	-1.62	5
Jamaica	-0.54	5
Papua New Guinea	-0.38	5
Paraguay	-0.26	5
Guyana	0.61	5
Guinea	0.81	5
Yemen	0.85	5
Senegal	0.87	5
Vanuatu	1.17	5
Zimbabwe	1.17	5
Benin	1.37	5
Eritrea	1.61	5
Saint Vincent and the Grenadines	1.71	5
Djibouti	1.93	5
Fiji	1.95	5
Central African Republic	2.03	5
Dominica	2.19	5
Guatemala	2.60	5
Kyrgyzstan	2.80	5
Samoa	2.89	5
Panama	2.92	5
Saint Lucia	3.05	4
Nigeria	3.38	4
Algeria	3.60	4
Kenya	3.70	4
Togo	3.75	4
Uzbekistan	3.89	4
namibia	3.96	4
Honduras	4.06	4
Tunisia	4.23	4
Mauritius	4.39	4
South Africa	4.46	4
Madagascar	4.59	4
Dominican Republic	4.60	4
Swaziland	4.62	4
Cameroon	4.83	4
Ecuador	4.85	4
Jordan	5.02	4
Ukraine	5.15	4
Niger	5.31	4
Sierra Leone	5.42	4
Gambia	5.43	4
Colombia	5.46	4
Congo	5.46	4
Kazakhstan	5.61	4

Uruguay	5.61	3
Tajikistan	5.69	3
Sri Lanka	5.71	3
Macedonia	5.74	3
Syria	5.91	3
Indonesia	5.96	3
Côte d'Ivoire	6.09	3
Botswana	6.12	3
Philippines	6.24	3
Tanzania	6.37	3
Morocco	6.46	3
Pakistan	6.49	3
Nepal	6.51	3
Croatia	6.53	3
Argentina	6.61	3
Bolivia	6.64	3
Saint Kitts and Nevis	6.68	3
Thailand	6.71	3
Chile	6.85	3
Malaysia	7.13	3
Burkina Faso	7.27	3
Iran	7.41	3
Moldova	7.56	3
Ghana	7.65	2
Egypt	7.92	2
Brazil	8.36	2
Peru	8.59	2
El Salvador	8.83	2
Maldives	8.86	2
Seychelles	8.93	2
Costa Rica	9.08	2
Mexico	9.10	2
Mauritania	9.22	2
Belarus	9.45	2
Congo DR	9.53	2
Belize	9.54	2
Angola	9.82	2
Uganda	9.91	2
Nicaragua	10.12	2
Serbia	10.59	2
Haiti	11.01	2
Georgia	11.39	2
Mali	11.40	2
Bangladesh	11.54	2
Bhutan	11.66	2
Turkey	11.75	2
India	11.83	2
Lesotho	12.24	1
Lebanon	12.35	1
Armenia	12.44	1
Ethiopia	13.67	1
Grenada	14.48	1
Azerbaijan	14.77	1
Burundi	15.14	1
Turkmenistan	15.86	1

Myanmar	16.13	1
Cape Verde	16.58	1
Guinea-Bissau	17.00	1
Laos	17.64	1
Cambodia	18.21	1
Mozambique	18.93	1
Viet nam	19.64	1
Albania	19.78	1
Rwanda	20.03	1
Zambia	20.89	1
Sudan	22.48	1
Bosnia and Herzegovina	23.75	1
China	24.26	1
Chad	27.62	1
Equatorial Guinea	36.01	1

Table 1.2 Potential Demand for Aid for Trade: Quintile Ranking for 10 Measures
(1= best performance, 5= lowest quintile)

Country	Real growth of exports	Change market share	Struc. Effect	Comp. Effect	Conc. Index	Trade restrict. Index	Tariff Peak	Time	Eff. Customs	Quality of transp. And IT	Average Score
Albania	1	2	2	2	2	3	1	3	5	2	2.3
Algeria	4	1	1	2	4	4	1	1	5	5	2.8
Angola	2	1	1	2	5	..	4	5	2	3	2.8
Argentina	3	5	3	3	1	2	2	1	1	1	2.2
Armenia	1	2	1	1	2	..	5	4	4	5	2.8
Azerbaijan	1	1	3	1	5	2	3	5	3	5	2.9
Bangladesh	2	2	3	1	3	5	2	4	5	3	3.0
Belarus	2	1	1	1	1	3	2	2	1	1	1.5
Belize	2	3	5	4	4	..	4	2	2	2	3.1
Benin	5	4	4	3	4	4	1	4	5	5	3.9
Bhutan	2	..	1	1	3	..	3	4	5	5	3.0
Bolivia	3	2	2	2	2	2	2	2	5	4	2.6
Bosnia and H.	1	..	2	1	1	..	1	2	3	3	1.8
Botswana	3	3	..	..	5	3	5	4	1	1	3.1
Brazil	2	1	3	2	1	3	2	1	2	1	1.8
Burkina Faso	3	3	5	1	5	4	1	5	4	5	3.6
Burundi	1	3	5	5	5	4	1	5	4	2	3.5
Cambodia	1	2	3	1	3	4	2	4	4	3	2.7
Cameroon	4	2	2	4	4	5	1	4	1	5	3.2
Cape Verde	1	3	1	2	4	..	5	2	2	3	2.6
Central African R	5	4	4	4	4	5	1	5	5	5	4.2
Chad	1	2	5	1	..	..	1	5	5	5	3.1
Chile	3	1	2	3	2	1	2	2	1	1	1.8
China	1	1	4	1	1	1	3	1	1	1	1.5
Colombia	4	4	2	4	2	4	2	4	4	3	3.3
Comoros	5	3	4	3	5	..	5	3	3	2	3.7
Congo	4	2	1	3	5	..	1	5	4	4	3.2
Costa Rica	2	2	3	4	2	2	3	3	2	2	2.5
Côte d'Ivoire	3	5	4	4	3	3	1	2	3	3	3.1
Croatia	3	2	3	3	1	1	4	3	3	2	2.5
Cuba	..	..	4	5	3	..	1	..	..	..	3.3
Congo DR	2	5	3	5	4	..	1	5	5	5	3.9
Djibouti	5	4	2	3	1	..	1	2	5	5	3.1
Dominica	5	4	2	5	3	..	4	1	1	1	2.9
Dominican Republic	4	5	3	4	2	..	2	1	3	3	3.0
East Timor	..	..	..	..	3	..	..	3	5	5	4.0
Ecuador	4	2	2	3	3	1	2	2	3	2	2.4
Egypt	2	1	1	2	2	2	3	2	4	5	2.4
El Salvador	2	3	3	5	1	2	5	2	2	2	2.7
Equatorial Guinea	1	1	1	1	5	..	1	3	1	1	1.7
Eritrea	5	4	2	3	3	2	5	5	4	5	3.8
Ethiopia	1	2	5	4	4	5	1	5	4	5	3.6
Fiji	5	5	4	4	2	..	5	3	3	3	3.8

Country	Real growth of exports	Change market share	Struc. Effect	Comp. Effect	Conc. Index	Trade restrict. Index	Tariff Peak	Time	Eff. Customs	Quality of transp. And IT	Average Score
Gabon	5	5	1	5	5	5	1	1	3	2	3.3
Gambia	4	4	4	5	3	..	..	2	3	2	3.4
Georgia	2	2	1	1	1	..	3	3	3	3	2.1
Ghana	2	2	5	3	3	4	2	3	5	3	3.2
Grenada	1	..	2	5	3	..	4	1	1	1	2.3
Guatemala	5	2	4	4	1	3	4	1	3	4	3.1
Guinea	5	5	4	4	4	5	1	4	2	2	3.6
Guinea-Bissau	1	3	5	5	5	..	1	3	4	3	3.3
Guyana	5	4	5	4	3	5	4	3	5	5	4.3
Haiti	2	3	3	2	4	..	..	5	4	4	3.4
Honduras	4	4	3	5	2	3	3	1	2	2	2.9
India	2	1	3	2	1	5	3	3	1	1	2.2
Indonesia	3	5	2	4	1	1	3	2	1	1	2.3
Iran	3	1	1	4	5	5	5	3	2	2	3.1
Jamaica	5	5	3	5	4	..	4	2	3	4	3.9
Jordan	4	4	4	1	1	3	2	2	1	1	2.3
Kazakhstan	4	1	1	1	4	1	3	5	5	5	3.0
Kenya	4	4	4	2	2	3	3	4	3	3	3.2
Kiribati	..	..	5	1	5	..	5	2	2	2	3.1
Korea, DR	..	..	1	4	1	..	..	..	..	..	2.0
Kyrgyzstan	5	3	1	5	3	1	3	5	4	4	3.4
Laos	1	3	3	2	2	..	5	5	4	5	3.3
Lebanon	1	1	2	3	1	2	5	2	4	4	2.5
Lesotho	1	3	..	..	3	2	5	5	2	5	3.3
Liberia	..	..	1	5	..	..	..	1	2	4	2.6
Libya	..	1	1	3	5	..	4	..	2	1	2.4
Madagascar	4	4	4	4	2	4	4	4	3	4	3.7
Malawi	5	4	5	3	4	5	2	5	3	4	4.0
Malaysia	3	5	3	3	1	1	5	1	1	1	2.4
Maldives	2	4	2	3	4	..	3	2	2	2	2.7
Mali	2	2	5	3	5	4	1	5	4	5	3.6
Marshall Is	..	..	5	1	5	..	..	2	2	2	2.8
Mauritania	2	3	5	2	5	3	1	4	2	3	3.0
Mauritius	4	5	3	4	3	1	5	1	5	3	3.4
Mayotte	..	..	..	..	..	..	3	..	..	..	3.0
Mexico	2	1	2	2	1	1	3	1	2	1	1.6
Micronesia	..	..	5	5	5	..	4	3	2	2	3.7
Moldova	3	4	2	3	2	1	5	4	4	5	3.3
Mongolia	..	2	1	3	3	1	2	5	5	5	3.0
Montenegro	..	..	..	..	..	..	4	1	3	3	2.8
Morocco	3	2	3	3	1	5	3	1	4	2	2.7
Mozambique	1	2	4	1	4	2	2	3	3	4	2.6
Myanmar	1	2	1	2	2	..	4	..	4	5	2.6
Namibia	4	4	..	..	2	4	5	3	4	5	3.9
Nepal	3	5	2	4	2	5	3	4	5	5	3.8
Nicaragua	2	2	2	4	2	2	3	4	4	5	3.0
Niger	4	4	1	5	3	4	1	5	5	5	3.7
Nigeria	4	1	1	4	5	4	3	4	3	3	3.2
Pakistan	3	5	4	3	2	4	3	3	2	2	3.1

Country	Real growth of exports	Change market share	Struc. Effect	Comp. Effect	Conc. Index	Trade restrict. Index	Tariff Peak	Time	Eff. Customs	Quality of transp. And IT	Average Score
Palau	..	..	4	1	4	..		2	3	..	..	2.8
Panama	5	5	4	5	3	3	3	1	1	1	3.1
Papua New Guinea	5	5	1	4	3	1	5	3	5	5	3.7
Paraguay	5	5	5	4	3	2	2	4	4	2	3.6
Peru	2	1	2	2	2	2	1	2	1	1	1.6
Philippines	3	5	3	2	3	1	4	1	1	3	2.6
Rwanda	1	3	5	3	4	5	1	5	5	5	3.7
St Kitts and Nevis	3	..	2	1	4	..	4	1	1	1	2.1
Saint Lucia	4	4	5	5	4	..	4	1	1	1	3.2
St Vincent and G	5	3	3	5	3	..	4	1	..	..	3.4
Samoa	5	..	5	2	5	..	..	3	..	..	4.0
Sao Tome and P.	..	..	3	5	5	..	..	3	2	3	3.5
Senegal	5	4	4	4	2	4	1	1	2	4	3.1
Serbia	2	..	..	..	1	..	4	1	3	3	2.3
Seychelles	2	3	4	1	5	..	4	1	1	1	2.4
Sierra Leone	4	3	4	3	5	..	5	4	5	5	4.2
Solomon Is	..	4	5	2	5	..	1	2	5	5	3.6
Somalia	..	..	4	5	..	..	..	..	2	5	4.0
South Africa	4	5	2	2	1	2	4	3	1	1	2.5
Sri Lanka	3	5	3	3	2	3	3	2	3	4	3.1
Sudan	1	1	4	5	4	5	4	5	3	2	3.4
Suriname	..	3	3	2	5	..	1	3	2	2	2.6
Swaziland	4	3	..	..	3	2	5	2	3	3	3.1
Syria	3	3	1	5	4	..	5	3	4	5	3.7
Tajikistan	3	..	5	1	4	..	3	5	5	5	3.9
Tanzania	3	3	4	4	2	3	2	3	4	5	3.3
Thailand	3	5	3	2	1	3	4	2	1	1	2.5
Macedonia	3	3	2	3	1	..	5	3	5	3	3.1
Togo	4	4	5	2	2	4	1	3	4	3	3.2
Tonga	..	..	5	3	4	..	5	1	2	2	3.1
Tunisia	4	5	2	2	1	5	4	1	1	1	2.6
Turkey	2	1	3	3	1	1	5	1	1	1	1.9
Turkmenistan	1	..	3	1	4	..	5	..	..	..	2.8
Uganda	2	4	5	5	3	3	2	4	3	3	3.4
Ukraine	4	1	2	2	1	1	5	4	3	2	2.5
Uruguay	3	5	4	2	1	2	2	2	3	2	2.6
Uzbekistan	4	5	5	1	3	..	2	5	5	5	3.9
Vanuatu	5	4	5	1	4	..	3	3	2	3	3.3
Venezuela	5	1	1	5	5	3	1	4	2	1	2.8
Viet Nam	1	1	2	1	2	..	4	2	1	2	1.8
Yemen	5	2	1	5	5	..	3	4	4	4	3.7
Zambia	1	2	5	4	4	3	1	5	4	5	3.4
Zimbabwe	5	..	4	5	2	..	4	5	5	5	4.4

Annex 2 The dimensions of the Aid for Trade potential demand: indicators and sources.

Table 2.1 Indicators used in this analysis and related sources

Dimension		Indicator	Source
Trade performance		Real growth of exports of goods and services	World Bank , World Trade Indicator
		Change in export market share of goods and services	World Bank , World Trade Indicator
		Competitiveness effect (change in market share)	International Trade Center, Trade Performance Indicators
		Demand effect (change in market share)	International Trade Center, Trade Performance Indicators
		Index of export concentration (Herfindhal)	World Bank , World Trade Indicator
Capacity	Incentives	Trade restrictiveness Index (tariffs only)	World Bank , World Trade Indicator
		Share of tariff lines with domestic peaks	World Bank , World Trade Indicator
	Infrastructure	LPI Quality of Transport and IT	World Bank, LPI Indicators
	Institutions	Efficiency of customs	World Bank, LPI Indicators
		Time to export/import	World Bank, Doing Business database

Table 2.2 Other potential indicators and related sources

Dimension		Indicator	Source
Trade performance		FDI Inflows (as % of GDP)	World Bank , World Trade Indicator
		Real Growth in Total Trade (%)	World Bank , World Trade Indicator
		Number of product exported/imported	World Bank , World Trade Indicator
Capacity	Incentives	Share of Tariff Lines with MFN-0 (%)	World Bank , World Trade Indicator
		Share of Tariff Lines Bound (%)	World Bank , World Trade Indicator
		Tariff Overhang (%)	World Bank , World Trade Indicator
		Applied Tariff Escalation	World Bank , World Trade Indicator
		GATS Commitments Index	World Bank , World Trade Indicator
	Infrastructure	Number of internet users, mobile phone and fixed phone subscribers for 1000 inhabitants	World Bank, World Development Indicators
		Percentage of paved road, total km of rail lines, air transport freight costs to US	World Bank, World Development Indicators
		Quality of port and water infrastructure	IMD, Global competitiveness Report
	Institutions	Ease and affordability of arranging international shipments.	World Bank, LPI Indicators
		Domestic logistics costs	World Bank, LPI Indicators
		Timeliness of shipments in reaching destination.	World Bank, LPI Indicators
		Trading Across Borders (rank 1-178, worst)	World Bank, Doing Business database

ANNEX 3
Annex 3.1: Gravity regression.
This annex describes the technical justification for the gravity model analysis in section. It describes the datasets, the variables, the sources and the methodology.

Cross-section year 2006

Dependent Variable: log of imports from developing countries.

Independent variables:
- log of GDP of the importing and exporting country *(source: World Bank, World Development Indicators)*
- FTA: dummy variable that takes the value of 1 when exporting and importing country has a free trade area in place. *(source: World Bank, , World Trade Indicators)*
- Both wto: dummy variable that takes the value of 1 when both the exporting and importing country are WTO members*(source: World Trade Organization website as of July 2008)*
- Common border: dummy variable that takes the value of 1 when the exporting and importing country share a border *(source: Cepii database)*
- Colonial relationship: dummy variable that takes the value of 1 when one of the two trading partner were a colony of the other trading partner *(source: Cepii database)*
- Common language: dummy variable that takes the value of 1 when the exporting and importing country have the same official language *(source: Cepii database)*
- Log distance: distance between the capital cities of the exporting and importing countries *(source: Cepii database)*
- Log export tariff peak: log of the exporter's share of tariff lines with domestic tariff peak *(source: World Bank, , World Trade Indicators)*
- Log remoteness imp and exp: log of the product of the exporter and importer remoteness variable. The remoteness represents the weighted sum of the partners' share of GDP over world GDP weighted by the distance.
- Contract enforcement imp and exp: dummy variable that takes the value of 1 when both the exporter and importer need above average time and procedure to enforce a contract *(source: World Bank, Doing Business database)*
- Exp. Eff customs/ imp. Eff. Customs: LPI , efficiency of customs for respectively the exporter and importer *(source: World Bank, LPI database)*
- Exp. quality of transp. and IT/ imp. quality of transp. and IT: LPI quality of transport and IT for respectively the exporter and importer *(source: World Bank, LPI database)*
- Log time to export/ log time to import: the time required for complete all the procedure needed to export/ import a standardized cargo of goods by ocean transport *(source: World Bank, Doing Business database).*
- Log exp. quality of comm./ log imp. quality of comm.: the simple average of the number of internet users, fixed phone and mobile subscribers per 1000 inhabitants. The average is taken after normalization of the variables. The normalization consists in dividing each variable by the sample mean such that the mean equals one for every variable *(source: World Bank, World Development Indicators).*

- Log (1+TTRI overall) of the exporter: the log of one plus the overall trade restrictiveness index that include only tariffs. Tariffs taken into account include preferential tariff *(source:World Trade Indicators, 2008).*
- Log (1+TTRI) bilateral: the log of one plus the bilateral trade restrictiveness index (only tariffs) that the exporter faces. Tariffs taken into account include preferential tariff (source: Hoekman and Nicita, 2008). Since the variable is constructing using also preferential tariff, the FTA and the WTO variables were omitted from the regression.

Methodology: Heckman ML. The excluded variable from the second stage is the contract enforcement of importer and exporter. The methodology allows to deal with the presence of zeros and it has been shown to produce unbiased estimates (see Congo and Martin, 2008). The marginal effects represented in Table 1 have been calculated at the mean and represents the expected value of the independent variable given a one unit change in the independent variable.

Gravity cross-section 2006	Heckman ML							
	log import	Prob (import>0)	log import	Prob (import>0)	log import	Prob (import>0)	log import	Prob (import>0)
Constant	-60.993***	-16.765***	-57.236***	-16.630***	-60.622***	-14.163***	-69.869***	-14.365***
log exp. GDP	1.179***	0.182***	1.098***	0.179***	1.325***	0.182***	1.332***	0.197***
log imp. GDP	1.010***	0.355***	0.976***	0.357***	1.061***	0.404***	1.087***	0.298***
Fta	0.237*	0.023	0.165	0.027	0.268**	0.036	0.371***	0.12
Bothwto	0.225**	0.345***	0.065	0.336***	0.144	0.316***	0.327***	0.339***
common border	0.855***	-0.089	0.860***	-0.092	0.774***	-0.08	0.695***	-0.073
Colonial relationship	0.528*	0.075	0.525*	0.09	0.657**	0.09	0.705**	0.009
common language	0.923***	0.398***	0.945***	0.418***	0.743***	0.347***	0.801***	0.472***
log distance	-1.408***	-0.192***	-1.407***	-0.186***	-1.468***	-0.212***	-1.412***	-0.193***
log exp. Tariff peack	-0.158***	-0.039***	-0.107***	-0.034***	-0.086***	-0.042***	-0.089***	-0.045***
log remoteness imp. and exp.	1.238***	0.229**	1.199***	0.242***	1.614***	0.243***	1.843***	0.280***
contract enforce. imp. and exp.		-0.282***		-0.305***		-0.265***		-0.142**
exp. eff. Of customs	1.942***	0.172**						
imp. eff. Of customs	0.556***	0.610***						
exp. quality of transp. and IT			1.931***	0.142*				
imp. quality of transp. and IT			0.571***	0.502***				
log time to export					-0.913***	-0.216***		
log time to import					-0.407***	-0.344***		
log exp. Quality of comm.							0.328***	0.063***
log imp. Quality of comm.							0.106**	0.361***
Observations:6783								
* significant at 10%; ** significant at 5%; *** significant at 1%								

Gravity cross-section 2006	Heckman ML							
	log import	Prob (import>0)	log import	Prob (import>0)	log import	Prob (import>0)	log import	Prob (import>0)
log exp. GDP	1.154***	0.040*	1.084***	0.044*	1.321***	0.037*	1.342***	0.026
log imp. GDP	1.004***	0.084***	0.959***	0.066**	1.045***	0.157***	1.095***	0.105***
log (1+TTRI) bilateral	-2.133***	-1.045***	-1.923***	-1.019***	-2.116***	-0.869***	-2.564***	-0.636**
common border	0.935***	0.137	0.952***	0.11	0.870***	0.165	0.810***	0.279
colonial relationship	0.604**	0.197	0.592**	0.226	0.741***	0.244	0.756***	0.1
common language	0.750***	0.347***	0.761***	0.374***	0.557***	0.384***	0.663***	0.461***
log distance	-1.436***	-0.016	-1.418***	-0.012	-1.496***	-0.012	-1.453***	-0.017
log remoteness imp. and exp.	1.391***	0.658***	1.311***	0.665***	1.783***	0.628***	1.987***	0.803***
contract enforc. imp. and exp.		-0.426***		-0.419***		-0.369***		-0.303***
Constant	-62.312***	-14.615***	-57.996***	-13.952***	-62.052***	-10.919***	-71.807***	-14.507***
log exp. tariff peak	-0.178***	0.025	-0.120***	0.022	-0.100***	0.02	-0.093***	-0.001
exp. eff. of customs	2.062***	-0.059						
imp. eff. of customs	0.537***	1.060***						
exp. quality of transp. and IT			1.940***	-0.07				
imp. quality of transp. and IT			0.587***	0.853***				
log time to export					-0.940***	0.003		
log time to import					-0.454***	-0.758***		
log exp. quality of comm.							0.257***	0.094**
log imp. quality of comm.							0.097**	0.408***

Observations: 4221

* significant at 10%; ** significant at 5%; *** significant at 1%

Gravity cross-section 2006	Heckman ML							
	log import	Prob (import>0)	log import	Prob (import>0)	log import	Prob (import>0)	log import	Prob (import>0)
log exp. GDP	1.210***	0.055***	1.105***	0.051**	1.309***	0.047**	1.337***	0.029
log imp. GDP	1.038***	0.088***	1.000***	0.069***	1.074***	0.156***	1.131***	0.124***
common border	1.192***	0.212	1.223***	0.207	1.118***	0.231	1.060***	0.312
1 for pairs ever in colonial relationship	0.510**	0.205	0.460*	0.212	0.604**	0.207	0.614**	0.174
log (1+TTRI) bilateral	-1.604***	-1.186***	-1.512***	-1.103***	-1.560***	-0.824***	-2.171***	-0.657**
log (1+TTRI) exporter overall	-2.716***	0.305	-2.751***	0.382	-2.217***	0.44	-1.835**	**1.658****
common language	0.878***	0.170*	0.938***	0.193**	0.756***	0.183**	0.825***	0.224**
log distance	-1.410***	-0.078*	-1.395***	-0.075	-1.460***	-0.093*	-1.424***	-0.086*
log remoteness imp. and exp.	1.382***	0.734***	1.287***	0.731***	1.776***	0.695***	1.895***	0.891***
Constant	-62.264***	-15.790***	-58.099***	-14.917***	-62.739***	-11.476***	-71.067***	-16.021***
contract enforc. imp. and exp.		-0.465***		-0.474***		-0.404***		-0.386***
exp. eff. of customs	1.451***	-0.049						
imp. eff. of customs	0.485***	1.002***						
exp. quality of transp. and IT			1.699***	-0.013				
imp. quality of transp. and IT			0.533***	0.828***				
log time to export					-0.855***	-0.05		
log time to import					-0.412***	-0.754***		
log exp. quality of comm.							0.169***	0.111***
log imp. quality of comm.							0.064	0.355***

Observations: 5011

* significant at 10%; ** significant at 5%; *** significant at 1%

Correlations	wto	ln gdp exp	ln gdp imp	contiguity	colony	dummy contract enforcement	fta	common language	ln dist
wto	1								
ln gdp exp	0.0345	1							
ln gdp imp	0.0622	-0.0861	1						
contiguity	0.0085	0.0392	-0.0284	1					
colony	0.0311	0.0088	0.1319	0.0788	1				
dummy contract enforcement	0.0029	0.0486	-0.0881	0.0527	-0.0355	1			
fta	0.0316	0.056	0.0517	0.2707	0.0669	-0.0332	1		
common language	0.0544	-0.0836	-0.0583	0.1686	0.1475	-0.0081	0.2137	1	
ln dist	0.0974	0.0764	0.0829	-0.4024	-0.0684	0.0116	-0.5156	-0.3157	1
ln share of tariff peak	-0.0843	0.2216	-0.0044	-0.0175	0.0289	0.0681	0.0628	0.0267	-0.0437
ln Ri Rj	0.2503	0.0268	-0.0746	0.0681	-0.041	0.0893	-0.0721	0.1965	0.3122
lpi transport and IT imp	0.1798	-0.0667	0.7829	-0.0689	0.1137	-0.1163	0.0807	-0.0644	0.0679
lpi transport and IT exp	0.1722	0.6709	-0.071	0.0299	0.0146	0.1115	0.0781	-0.0492	0.0853
lpi efficiency customs imp	0.1794	-0.0635	0.7242	-0.0729	0.0993	-0.1185	0.08	-0.0523	0.0675
lpi efficiency customs exp	0.1377	0.5768	-0.0623	0.0203	0.0217	0.0757	0.075	-0.049	0.0577
ln time to export	-0.2006	-0.3203	0.0535	-0.0065	-0.0193	0.0185	-0.0572	-0.0356	-0.0983
ln time to import	-0.1846	0.049	-0.5733	0.0768	-0.0715	0.1507	-0.0822	0.056	-0.0578
ln communication exp	-0.0949	0.3865	-0.0363	-0.0042	-0.0015	-0.0294	0.084	-0.0612	-0.0125
ln communication imp	0.0969	-0.0637	0.6326	-0.0741	0.0885	-0.1586	0.037	-0.094	0.0608
ln bilateral OTRI	-0.0284	-0.0147	-0.2337	0.0147	-0.0681	0.0434	-0.0709	0.0317	0.0243
ln overall OTRI exp	0.1192	-0.1192	-0.0075	0.0107	-0.0179	0.0319	-0.0103	0.0743	-0.0787

	ln share of tariff peak	ln Ri Rj	lpi transport and IT imp	lpi transport and IT exp	lpi efficiency customs imp	lpi efficiency customs exp	ln time to export	ln time to import	ln communication exp
ln share of tariff peak	1								
ln Ri Rj	-0.0982	1							
lpi transport and IT imp	0.0012	-0.0903	1						
lpi transport and IT exp	0.2993	0.1499	-0.0596	1					
lpi efficiency customs imp	-0.001	-0.0817	0.9661	-0.0574	1				
lpi efficiency customs exp	0.3962	0.0925	-0.0525	0.9151	-0.0521	1			
ln time to export	-0.319	-0.0997	0.0423	-0.4895	0.042	-0.4705	1		
ln time to import	0.0016	0.0688	-0.8351	0.0436	-0.8198	0.0391	-0.0312	1	
ln communication exp	0.3727	-0.1902	-0.0246	0.4196	-0.026	0.4059	-0.4614	0.0161	1
ln communication imp	-0.0013	-0.0503	0.7445	-0.0542	0.701	-0.0471	0.0399	-0.7393	-0.0129
ln bilateral OTRI	-0.0506	0.0662	-0.3525	-0.0002	-0.3529	-0.0022	-0.034	0.3588	-0.035
ln overall OTRI exp	-0.3231	-0.1411	-0.0128	-0.1096	-0.0108	-0.1491	0.161	0.0105	-0.4791

	ln communication imp	ln bilateral OTRI	ln overall OTRI exp
ln communication imp	1		
ln bilateral OTRI	-0.3589	1	
ln overall OTRI exp	-0.0188	0.0401	1

ANNEX 3.2: Aid for Trade regressions.
Dependent variable: Log of Aid for Trade per GDP. 2006 Cross-sections.
Sources: OECD, CRS database; World Bank, Development Indicators; World Bank,
Governance database; World Bank, LPI indicators; World Bank, World Trade
Indicators.
The variable score represents the average of the scores along the ten dimensions.

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.363817***
rule of law	1.080166***
Score	0.8554585***
Constant	-11.22878**
Observation:123	
R2:0.5	

Excluding oil and gas	
Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.338082***
rule of law	1.07376***
Score	0.8468266***
Constant	-11.41394**
Observation:123	
R2: 0.48	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.326421*
rule of law	0.8289707*
ln(change in market share)	-94.41791*
ln(share of tariff peak)	-0.1712095*
LPI overall	-1.890653*
Constant	-4.821496*
R2:0.6	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.373421***
rule of law	0 .9275543***
ln(structural)	28.06872
ln(share of tariff peak)	-0.1863482 **
LPI overall	-1.737118***
Constant	-4.861803***
R2:0.56	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.355803***
rule of law	0.8748965***
ln(competitiveness)	-142.6534 ***
ln(share of tariff peak)	-0.165482 ***
LPI overall	-1.868199***
Constant	-4.616997 ***
R2:0.6	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.370607***
rule of law	0.8948869***
ln(exports growth)	-.0896575
ln(share of tariff peak)	-0.1906822 **
LPI overall	-1.774352***
Constant	-4.940824***
R2:0.56	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.375557***
rule of law	0.8748965***
ln(competitiveness)	-133.5647***
ln(share of tariff peak)	-0.201531***
LPI efficiency of customs	-1.912417***
Constant	-4.710891***
R2:0.6	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.387817***
rule of law	1.000047***
ln(structural)	52.51919
ln(share of tariff peak)	-0.2166517 **
LPI efficiency of customs	-1.840815***
Constant	-4.92939***
R2:0.56	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.386041***
rule of law	0 .9654638***
ln(exports growth)	-0.0869886
ln(share of tariff peak)	-0.2243122**
LPI efficiency of customs	-1.774352***
Constant	-4.934992***
R2:0.56	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	- 1.278681*
rule of law	0.8834856*
ln(competitiveness)	-141.1076*
ln(share of tariff peak)	-0.147153*
LPI quality of transport and IT	-1.931031*
Constant	-5.425227*
R2:0.6	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.246785***
rule of law	0 .8376146***
ln(change in market share)	-94.84804***
ln(share of tariff peak)	-0.1521243***
LPI quality of transport and IT	-1.962895***
Constant	-5.630799***
R2:0.6	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.292514***
rule of law	0.9020632***
ln(exports growth)	-0.0990229
ln(share of tariff peak)	-0.1727595**
LPI quality of transport and IT	-1.843541***
Constant	-5.743073*
R2:0.56	
Observation:96	

Dependent variable ln(aft/gdp)	
ln(gdp per capita)	-1.297809***
rule of law	.9402534***
ln(structural)	35.3686
ln(share of tariff peak)	-0.1677107**
LPI quality of transport and IT	-1.840815***
Constant	-5.576076***
R2:0.57	
Observation:96	

Panel regressions

Dependent variable: ln aid for trade on gdp	
Fixed effects	first stage
ln gdp per capita	-0.882***
rol_est	0.187
Ln(1+share of domestic tariff peak)	-0.073
ln(exportgrowth)	0.333
lninfrastructure	1.074**
constant	-13.237***
Number of obs: 1102	
* , **, *** denotes significance respectively at 1%, at 5%, at 10%	
R2 overall: 0.2306	

Dependent variable: ln aid for trade on gdp	
Fixed effects	
ln gdp per capita	-0.862***
coc_est	0.542**
Ln(1+share of domestic tariff peak)	0.136
ln(exportgrowth)	0.125
lninfrastructure	0.935*
constant	-13.188***
Number of obs: 1060	
* , **, *** denotes significance respectively at 1%, at 5%, at 10%	
R2 overall: 0.26	

Dependent variable: ln aid for trade on gdp	
Fixed effects	
ln gdp per capita	-0.980***
trade cpia	0.123*
Ln(1+share of domestic tariff peak)	-0.430
ln(exportgrowth)	0.043
lninfrastructure	0.947*
constant	-12.937***
Number of obs: 1087	
* , **, *** denotes significance respectively at 1%, at 5%, at 10%	
R2 overall: 0.26	

Annex 3.3: decomposition of change in market share.
Source: ITC

Let $\dfrac{X_{it}}{X_t}$ be the market share of export of country i to the world in times t, and let j defines

the importing country while k the sector, then the total change in market shares between times 0 and times t can be decomposed as follows:

$$\frac{X_{it}}{X_t} - \frac{X_{i0}}{X_0} =$$

$$1) \sum_j \sum_k \left(\frac{X_{ijkt}}{X_{.jkt}} - \frac{X_{ijk0}}{X_{.jk0}} \right) \frac{X_{.jk0}}{X_{..0}} +$$

$$2) \sum_j \left(\frac{X_{.j.t}}{X_{...t}} - \frac{X_{.j.0}}{X_{...0}} \right) \frac{X_{ij.0}}{X_{.j.}} +$$

$$3) \sum_j \sum_k \left(\frac{X_{ijkt}}{X_{.jkt}} - \frac{X_{ij.0}}{X_{.j.0}} \right) \left(\frac{X_{.jkt}}{X_{..t}} - \frac{X_{.jk0}}{X_{..0}} \right) +$$

$$4) \sum_j \sum_k \left(\frac{X_{ijkt}}{X_{.jkt}} - \frac{X_{ijk0}}{X_{.jk0}} \right) \left(\frac{X_{.jkt}}{X_t} - \frac{X_{.jk0}}{X_0} \right)$$

The first element represents the competitiveness effect and is given by the multiplication between the change in market share in import markets and the initial share of import markets in world imports. The second element represents the structural effect of initial geographic specialization and is given by the multiplication of the change in the partner imports in world imports and the exporter initial market share in the partner imports.

The third elements represents the structural effect of initial sector specialization and is given by the multiplication between a first term, which represents the difference of the exporter market share in import market and the position of the exporters in the importer markets at time zero, and the change of the partner position on world imports.

The sum of the second and third elements represents the total structural effect.

The last term, called the adaptation effect, represent the multiplication of the competitive and the total structural effect.

Annex 3.4: Correlation among component-scores of the aid for trade demand.

	time	herfindhal	TTRI	peak	structural	competitiveness	custom	realgrowth	change in market share	transport
time	1									
herfindhal	0.585	1								
TTRI	0.301	0.3885	1							
peak	-0.247	-0.4327	-0.42	1						
structural	0.208	0.1524	0.297	-0.3	1					
competitiveness	0.123	0.22	0.185	0.03	0.0228	1				
custom	0.475	0.3657	0.21	-0.2	0.0718	0.0991	1			
realgrowth	-0.056	0.0651	0.072	0.06	-0.1719	0.316	0.0346	1		
change in market share	-0.092	-0.0934	0.075	0.05	0.24	0.2773	-0.031	0.484	1	
transport	0.532	0.4549	0.206	-0.1	0.1007	0.0933	0.7253	0.0805	-0.0001	1