Monitoring and Reducing Trade Costs

Discussion Paper for the G20
Prepared by OECD, World Bank and WTO

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(The views expressed in this paper do not necessarily represent those of G20 members.)

G20 DISCUSSION PAPER ON MONITORING AND REDUCING TRADE COSTS

At the First Trade and Investment Working Group meeting in Beijing on January 28-29, 2016, the G20 members asked the International Organizations to conduct joint research in 2016 on the various types of trade costs and their determinants with a view to assisting the G20 in formulating a G20 action plan to reduce such costs. In the material below the International Organizations provide a summary of their current research findings related to trade costs.

The G20 remains committed to opening, integrating and speeding up world trade. As the global economy becomes more interconnected, a wide range of factors – from tariffs and customs procedures, to regulations and standards, to "hard" and "soft" infrastructure – impact the cost of goods and services trade. Collectively and individually, G20 members will take concrete steps to continue lowering trade costs and promoting trade growth, including by committing to ratifying the WTO Trade Facilitation Agreement (TFA) this year, working to secure its early implementation by all WTO members, and by helping to bring the Environmental Goods Agreement negotiations to a successful conclusion.

Proposal for G20 policy action

The estimates of trade costs affecting goods and services trade provided in this report are substantial. Even when one takes into account some of the reservations and methodological challenges identified in Section II of this report of measuring trade costs and the determinants, reducing trade costs should figure prominently in the priorities of policymakers.

Recent surveys on measuring the impact of reducing trade costs suggest that a 1% reduction in trade costs has the potential to increase bilateral trade by between 2.79% and 4.51%. Substantial increases in trade can be expected when G20 members reduce their trade costs. Given the analysis of trade costs and their determinants described below in this report, a number of concrete actions could be recommended to the Trade and Investment Working Group.

First, as the implementation of the WTO Trade Facilitation Agreement is estimated to reduce trade costs by a significant amount, and not all G20 members have ratified the TFA[1], those G20 members who have not yet done so should ratify the TFA before the end of this year.

Second, given some of the methodological issues in measuring trade costs and their determinants, the Trade and Investment Working Group could task the International Organizations to conduct further work on developing and improving existing methodologies and indicators of trade costs and their determinants and track progress and trends in these determinants.

Third, updated trade cost estimates on the basis of these improved methodologies and indicators should be provided to G20 members on a regular basis.

Fourth, on the basis of the findings of this report, consider formulating a quantitative target and time-frame to reduce trade costs and discuss possible policy actions to achieve these objectives.

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[1] Among the G20, only the following members have ratified the WTO Trade Facilitation Agreement as of 30 March 2016: Australia, Brazil, China, the European Union (France, Germany, Italy and the United Kingdom), Japan, the Republic of Korea, Turkey and the United States.

I.   Introduction

Reducing trade costs of G20 members, which by most estimates remain very high, is important in the current slow growth economic environment to stimulate trade and spur economic growth. This report intends to use current data and methodologies to assess the magnitude of trade costs and identify their main sources. It will also propose a course of action that will allow G20 members to achieve an improved understanding of trade costs and their determinants so as to assist them in formulating a feasible quantitative target and time-frame for global trade cost reduction. The report is organized as follows. Section II explains what trade costs are, how they are measured or estimated, and the challenges involved in this. Section III provides current estimates of overall trade costs of merchandise goods and services and the contributions made by a number of determinants to these magnitudes. As G20 members are also WTO members who decided on the Trade Facilitation Agreement (TFA), Section IV assesses how much implementation of the TFA could reduce trade costs. Section V concludes with a number of recommendations to the G20.

II.   Definition and measurement of trade costs

A.   What are trade costs?

Differences in economic size and endowments are not the only reason why some countries trade more than others, or trade with a wider range of partners. The intensity of trade between countries is also dependent on many other factors that capture the degree of separation between them. One way of thinking about these factors is as the "friction" associated with trade, or the set of economic forces that tends to reduce trade. Paul Samuelson's famous image sees trade flows being reduced by frictions in the same way that an iceberg melts while moving through the sea (Samuelson, 1954).

An effective way to capture this effect is in terms of trade costs between partner countries. Most theories of international trade include trade costs as the set of factors driving a wedge between export and import prices. Trade costs are the price equivalent of the reduction of international trade compared with the potential implied by domestic production and consumption in the origin and destination markets. Higher bilateral trade costs result in smaller bilateral trade flows.

In an increasingly globalized and networked world, trade costs matter as a determinant of the pattern of bilateral trade and investment, as well as of the geographical distribution of production. Although tariffs in many countries are now at historical lows, evidence suggests that trade costs remain high. One well-known estimate based on an exhaustive review of research findings suggests that representative rich country trade costs might be as high as 170 percent ad valorem—far in excess of the portion accounted for by tariffs (Anderson and Van Wincoop 2004).

Trade costs have two main categories of sources. The first has to do with entirely bilateral factors of separation between the exporter and the importer that are more dependent on exogenous factors than particular policy choices. Examples include:

- Geographical distance
- Transportation costs or the lead time associated with transportation
- Common features between trading partners, such as language, common history, sharing a common border, or participation in the same economic community

The second category of trade cost sources includes endogenous trade costs, which are factors specific to the origin or destination, and which represent the "thickness" of their borders. Examples include:

- Tariffs
- Nontariff measures
- Trade policy uncertainty
- Logistics performance (cost, delay, and reliability) and trade facilitation bottlenecks (such as border controls and transit systems with third countries)
- International connectivity, such as the existence of regular maritime, air or terrestrial services, notably in view of the hub-and-spoke organization of international transportation

Given the all-inclusive nature of this classification, trade costs in the developing world should be expected to be significantly higher than those for rich economies. Tariffs and nontariff barriers remain high in developing countries. Other sources of trade costs also represent significant obstacles to greater export and import volumes, particularly because of poor infrastructure and greater imperfections in transport and logistics services markets.

Trade costs are an intermediate outcome linking a number of policies, especially connectivity, or given factors, such as geography, to wider effects such as consumer's or producer's surplus (welfare or productivity effects), or eventually trade growth (see Figure 1).

Targets for trade costs reduction and trade growth: what can we say?

Recent research allows us to better capture the magnitude of trade costs, including at the country level and over time. However, this is still an area of active research requiring a lot of caution. It is logical to use observed trade costs as an intermediate outcome of a series of trade and other policies that affect competitiveness. At that stage, not enough may be known to understand how observed changes in trade costs are a result of changes to policies versus other factors such as changes in demand or the sectoral composition of trade, or even some form of endogeneity with trade growth. The fact that trade costs are actually a relative concept –showing the costs of international commerce relative to domestic commerce - is another complication.

It would be tempting, and easy, to extrapolate the trends from the last 20 years as targets for the medium term. The percentage reduction from the current level, rather than absolute levels would make more sense, given the strong core-periphery effects. However, in the current state of knowledge it is not certain that this makes sense and that for instance trade costs would not level off in the future. For instance Hummels (2007) showed that this happened with intercontinental freight costs after a very long period of decline.

Another technical challenge is to relate changes in trade costs with trade growth. It is important to acknowledge that there is no mechanical relationship between the two. This relationship is typically captured within an extended gravity model including sources of trade costs variables. Unfortunately, there is suspicion that this traditional approach is not consistent with the theory and concept of trade costs (Arkolakis et al, 2012). There are two effects: First, a change in trade costs means that the geographical composition of supply and demand in traded goods is changed. A reduction of international trade costs implies less trade with self (the missing diagonal of the trade matrix) and more international trade. The second effect is that a change in the composition and a reduction of trade costs create consumer and producer surplus.

B.   Methodologies/indicators to measure trade costs

The measurement of trade costs in goods as well as services is based on two distinct but complementary approaches. First, the magnitude of overall trade frictions can be inferred indirectly from observed trade patterns. One advantage of the indirect method is the greater availability of data on trade flows which allows estimates of trade costs to be made for a large number of countries and years. The most straightforward starting point to estimate the total trade cost between a given pair of countries is to compare how much they trade with each other to how much is traded within each country. Tariff equivalents are then derived using a formula developed by Novy (2013). This methodology is particularly well-suited to track the evolution of overall trade costs over time or their relative sizes across countries and sectors. The resulting trade cost estimates encompass both policy-related and non-policy frictions such as the costs of overcoming geographical barriers, obtaining information about suppliers and customers in foreign markets, or dealing with cultural differences. The indirect measurement of trade costs thus leaves open the question of what their actual determinants are, and in turn the scope for policy actions to enhance trade.

An alternative approach, or a next step, is to use information on specific impediments to trade so as to assess their contribution to trade costs. In the case of goods, these impediments could be applied tariffs or non-tariff measures such as a technical regulation or SPS measure. Ad valorem equivalents of known sources of trade costs can be estimated using an economic model of trade would be in a completely open policy environment. The leading framework for this purpose is the gravity model, which predicts trade flows between any two countries based on their respective economic size as well as the geographical and cultural distance between them. While consistent with a wide range of theories of trade, this methodology yields tariff equivalents of policy indicators that may be sensitive to assumptions made about the reaction of import demand to price changes.

Beyond trade flows, outcomes related to domestic competition and prices ("price gap method") can be used to assess the magnitude of trade costs. Just like tariffs and non-tariff measures drive a wedge between domestic and international goods prices, services trade costs are reflected in the extent to which domestic firms are insulated from external competitive pressure. Many services are highly differentiated, which creates scope for local firms to take advantage of market power and charge higher mark-ups in the absence of foreign competitors. The costs associated with specific trade policy impediments take the form of price increases for consumers. They can be assessed by estimating econometrically the contribution of those policy measures to price-cost margins at the enterprise level.

C.   Shortcomings of current methodologies, gaps in knowledge and possible remedies

There are data limitations and methodological challenges that are common to estimating trade costs of goods and services trade. However, other challenges are more severe or specific to services, requiring innovative methods to estimate the magnitude and sources of trade costs. The list of challenges discussed below is not meant to be exhaustive.

If one uses the price gap method to measure the trade costs associated with a non-tariff measure, the appropriate prices to compare are the invoice (c.i.f.) price of the imported good and the price of the domestic alternative (Deardorff and Stern, 1998). However, goods that are imported into a country are seldom identical to "like" goods produced domestically. Second, many factors unrelated to the nontariff measure also affect costs and prices, including monopoly power in the domestic market. For instance, the 'free-on-board' (f.o.b.) price at the point of export includes the cost of transport to the point of export as well as the costs of loading the goods, while the 'cost-insurance-freight' (c.i.f.) price also includes the cost of international transport and insurance.

Using the difference between actual and predicted imports in a gravity model to infer the impact of a measure can sometimes be problematic because it can be difficult to disentangle its effect from others when more than one measure is in place.

Another challenge occurs in aggregating trade protection information (e.g. tariffs and ad-valorem equivalents of non-tariff measures) available at a very detailed level of disaggregation (e.g. HS10 digit) to apply to some broader product category (e.g. HS6 digit). Commonly used aggregation procedures in these cases are the simple average, import-weighted average and frequency and coverage ratios. However, there are shortcomings with each one. When import-weighted averages are used to estimate the average level of protection in a certain country, tariff lines with very high levels of tariffs will have a low weight because imports subject to high protection rates are likely to be small thereby understating the actual level of protection.

It is possible to address this problem using Anderson and Neary's (2005) theory-based measure of the level of trade protection. This has been implemented empirically by Kee, Nicita and Olarreaga (2009) who measure the effect of a given trade policy on the domestic price using the tariff trade restrictiveness index (TTRI) and the overall trade restrictiveness index (OTRI). These indexes represent the uniform tariff that would keep imports at the desired level of aggregation constant. However, this approach requires having on hand estimates of demand and supply elasticities.

Challenges more specific to services trade

Data availability and quality is the most prominent challenge. International organisations and national statistical institutes have been active in their efforts to improve statistics on international trade in services, but these data remains limited when looking into the details of who trades which services with whom, and even more so to distinguish between different modes of supply. Many countries lack information on the partner detail or the sectoral structure of their services trade. In addition to missing data, inconsistent reporting of the same flows between the importer and the exporter is frequent. Compared to goods, another difficulty comes from the fact that quantities traded and prices cannot be recorded separately for services, so that new methods – or new assumptions – are required to translate sources of trade costs into monetary units.

A more conceptual challenge relates to identifying what the sources of trade costs are. In services, actionable trade costs largely stem from regulatory measures that increase the cost for foreign firms of entering a market and doing business abroad. Such measures are typically enforced not at the border but "behind the border" in sectoral regulations. Identifying the nature of policy-induced trade costs requires a comprehensive analysis of business models and regulatory frameworks in each service sector. Trade-relevant services regulation may serve multiple purposes, from consumer protection to universal service provision or financial stability. Services regulations also come in bundles, so that the impact of policy actions to open up a service sector is likely to depend on which other impediments may remain in place. An effective reduction in trade costs is not only about removing obstacles to trade but rather about finding the least trade-restrictive way of achieving policy objectives.

The nature of trade costs in services is linked to how firms choose to trade. Establishing a commercial presence in the target market is a common way of trading services. As a result, trade costs and investment barriers are hard to disentangle. Part of the cost induced by trade-restrictive policies may lie in distorting the choice of mode to supply a market, as trade barriers steer firms away from the most efficient business model. A new layer of data issues then arises as a comprehensive analysis of trade costs requires comparable data on both cross-border trade and affiliate activity in services, as well as an underlying model of how trade and investment interact.

Lastly, policy-related trade costs in services often take the form of entry barriers and fixed costs, rather than recurrent costs incurred for every service sold abroad. While an active research literature has explored how to estimate variable trade costs due to non-tariff measures, much less attention has been devoted to measuring the magnitude of entry costs. For this purpose, firm-level datasets on cross-border trade and affiliate sales in services are likely to be a promising and so far under-exploited additional source of information. A first step is to analyse how known sources of trade costs affect not

only the volume of trade once a relationship is established but also the probability that trade linkages exist in the first place and the dynamism of new firm creations and exits. More advanced methods will need to be developed to go one step further and estimate the costs of entering a market in monetary terms.

III. Current estimates of trade costs and their determinants

This section provides a survey of existing estimates of trade costs and their policy-related sources. It begins with overall estimates of merchandise and services trade costs and is followed by a discussion of specific determinants of these trade costs and associated indicators for mapping such determinants.

A. Aggregate merchandise and services trade costs

Merchandise trade

A collaborative project between UNESCAP and the World Bank has produced bilateral trade costs data for 167 countries, from 1995-2012, differentiating between trade in agricultural products and in manufactured goods (updated annually with a lag due to data reporting schedules). Trade costs are reported in ad valorem equivalent terms, as the ratio of international to domestic trade costs, and are bilaterally symmetrical. The Bank is now extending this work to generate aggregate trade costs measurements for individual countries, including the G20.

Based on this data, trade costs in low-income countries exceed 200% in manufactured goods and are over 300% in agricultural goods.[2] Figures 2 and 3 show trade costs in manufacturing and agriculture for G20 and non-G20 members, while Figure 4 shows the evolution in trade costs since 1996 by region (note this is an index so it shows evolution over time, not relative costs).

Trade costs measured in this way are highly informative for policy purposes, and produce not only the same information on the relation with policy variables but allow for a very direct and practical reading of the situation to specific countries. For example, the relatively high costs faced by low-income countries are clear, as is the higher level of trade costs in agriculture, than in manufacturing.

Analysis can show the key policy variables affecting the overall level of trade costs – for example, helping ask the question of what the key drivers of higher trade costs in low-income countries, compared with high-income countries, are. Figures 5 and 6 provides a snapshot of the extent to which aggregate trade costs are affected by changes in specific policy and other variables. Although some of these are fixed – e.g. distance – many are attributable to policies, with an impact almost as great as geography. For example, reforms to improve logistics performance, investments to increase maritime connectivity, or reforms to improve the overall business climate can have a significant impact on trade costs.

Further analysis could be undertaken for the G20 using the updated aggregate trade costs database, as well as indicators from international organizations of specific variables shaping aggregate trade costs, to provide more robust monitoring of the key factors shaping trade costs, and how they are evolving over time.

Services trade

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[2] Trade costs measured in this way are relatively large numbers (range of 50% to 350%), a result which is in line with the concept of an ad valorem mark-up between domestic and international trade (PPP coefficients are in the same order of magnitude). Trade costs measured in this way are obviously not monetary expenses such as freight costs or duties, but include a full set of factors which explains the preference for nearby markets and suppliers.

Existing estimates of services trade costs focus on cross-border supply, as little work has so far been undertaken to quantify the costs of trading services through commercial establishment or the temporary movement of natural persons and their policy determinants.

Overall international trade costs are high in services; on average twice as much as in goods in ad valorem equivalents (see Figure 7). The total cross-border trade costs for final services were estimated to be 277% ad valorem in 2011 for final services, and 194% for intermediate services (Miroudot and Shepherd, 2014). The largest trade costs are found in construction services and the lowest in transport services, with finance, communication and business services taking intermediate values. While trade costs in goods have declined over the last 20 years, it has not been the case for services where the reduction has been marginal. The fact that trade costs are and stay large in services highlights the large potential scope for gains from reducing those costs. Taking action to effectively reduce services trade costs however requires a better understanding of their main determinants and where policies have the best potential to boost trade and growth.

High services trade costs may in part be explained by some services being inherently less tradable than goods for reasons unrelated to policy. Less is known about the determinants of trade costs in services than in merchandise trade. In principle, physical distance does not matter where information and communication technologies enable services to be seamlessly traded in real time. Informational barriers, cultural differences and consumer preference for local services may nonetheless play a prominent role for highly customised services. Measuring the incidence of such factors is a challenge that largely remains to be addressed.

Going forward, the OECD is undertaking further work to estimate trade cost equivalents, by country and sector. Analysis based on micro-data will go beyond ad valorem variable cost equivalents to explore how policy determinants affect the entry costs into export markets. It will also evaluate the extent to which policies distort the choice of mode of supply to a given destination between trading on a cross-border basis and selling through local affiliates, and whether the burden created by regulatory restrictions falls more heavily on specific categories of firms such as SMEs. Looking at trade costs through the lens of prices charged for services in different markets, additional analysis will quantify the impact of services trade restrictions on firms' price-cost margins. The findings will help countries target priority areas of action to reduce trade costs.

B.   Specific trade costs determinants and variables

In some areas, we have sufficient information to provide estimates of how much these determinants (many of which are policy related) raise trade costs. These can often be disaggregated by country groups as well as commodity or services sectors.

Tariffs

The average applied MFN tariff of WTO members is 9% (8.1% for G20 members) having fallen by nearly a third since 1998 (see Table 1). The average applied MFN tariff is much higher for agricultural goods 14.9% than it is for non-agricultural goods 8.1%.

Non-tariff measures: Evidence from Specific Trade Concerns (STCs)

WTO (2012) reported evidence of increased use of non-tariff measures by WTO members over the period 1995-2010. The report tapped several sources of information, including WTO notifications, NTB data from the UNCTAD TRAINS database and WTO Specific Trade Concerns (STCs).

In the light of that report, an important question to address is whether the use of non-tariff measures increased during the last half decade. In this report we provide descriptive evidence from the WTO

Specific Trade Concerns (STCs) database.[3] STCs may be brought forward by any WTO member who considers its exports to be negatively affected by an SPS or a TBT measure applied by a WTO trading partner. An STC basically consists of a discussion in the relevant WTO committee, where one member (or several) raises its concerns, explaining why the measure (or proposed measure) is problematic. Other members may then speak to indicate that they share the concern, and the member maintaining the measure provides a response. Often this public exchange in the committee meeting is accompanied by bilateral discussions on the margins of the meeting. They are "soft law" mechanisms to deal with NTMs based on peer review by technical experts rather than adjudication.

The advantage of considering STCs over WTO notifications[4], the TRAINS or Perinorm[5] data, is that they identify measures that are perceived by exporters and/or governments as major obstacles to trade. In this context, "major obstacles" mean that they are important enough that countries whose exports are affected raise a "concern" to the SPS or the TBT committee of the WTO. By way of contrast, "traditional" nontariff measures do not distinguish between technical regulations that restrict trade and measures that may even facilitate trade, or that create opportunities for increased trade, such as those addressing problems of asymmetric information or network externalities. As Beghin et al. (2014) show, almost 40% of the product lines affected by NTMs according to the NTM global database (Kee et al., 2009) are actually trade-facilitating measures rather than trade-restrictive ones. Another disadvantage of notification-based information is the underlying mechanism (increasing number of measures or increased compliance with WTO obligations) cannot be clearly identified.

Complaint-based information contained in the Specific Trade Concerns Database is shown in Figures 8 and 9. Figure 8 reports the overall number of newly raised STCs in the SPS committee and Figure 9 in the TBT committee. The figures are disaggregated by the income group of the "maintaining" country (i.e., the country imposing the measure being challenged by a given exporter in the relevant WTO committee).

Three main messages emerge. First, most measures involve G20 countries. This is certainly due to their high share of world imports. Second, in the case of TBT STCs, there was a peak in 2009. This could be explained by a variety of causes: the protectionist use of TBT STCs in the aftermath of the financial crisis, exporting countries were more likely to raise concerns because their exports were being affected by the financial crisis, or WTO members were focusing on the regular committees because of what was (or wasn't) happening in the negotiations. Third, no clear upward trend can be discerned during the last half decade, neither in the case of SPS nor in the case of TBT.[6]

Overall Trade Restrictiveness Index

As noted in Section II, there are drawbacks in using simple or weighted averages of tariffs or non-tariff measures. The World Bank Overall Trade Restrictiveness Index (OTRI) summarizes the trade policy stance of a country by calculating the uniform tariff that will keep its overall imports at the current level when the country in fact has different tariffs for different goods (see Figure 10). In a nutshell, the OTRI is a more sophisticated way to calculate the weighted average tariff of a given country, with the weights reflect the composition of import volume and import demand elasticities of each imported product.

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[3] Information presented in this section has been retrieved from the SPS and TBT Information Management Systems (SPS IMS: http://spsims.wto.org; TBT IMS: http://tbtims.wto.org).

[4] For an overview and detailed listing of WTO NTM notifications see the WTO Integrated Trade Intelligence Portal: http://i-tip.wto.org/goods/. This database also covers SPS and TBT STCs.

[5] PERINORM is a bibliographic database of national, European and international standards from more than 200 standards publishing organizations in 23 countries, with a total of more than 1,400,000 records.

[6] Note, however, the increasing number of TBT STCs involving non-G20 countries between 2010 and 2014.

Tariff and trade policy uncertainty

An important component of trade costs that is often neglected is trade policy uncertainty. Exporters evaluate the risk associated with the possible increase in barriers to trade in the destination market when deciding whether to export, and delay exports to risky destinations. Studies have shown that trade policy uncertainty hinders trade and that advantages provided by lower applied tariffs can be limited in the presence of uncertainty.[7]

Trade policy uncertainty can be measured directly and indirectly as an ad-valorem tariff equivalent. A direct measure of trade policy uncertainty is the so called "tariff water"-the gap between the bound and the applied tariff rate (see Table 1 to see the difference between applied and bound rates). This definition acknowledges that the level of the tariff bound under WTO commitments is a direct determinant of the level of trade policy uncertainty. Therefore, lower the bound rate –even without reducing the MFN applied rate- may induce significant gains in terms of trade policy predictability, trade, investment and ultimately growth. But, reducing the applied tariff without lowering the corresponding bound rate will increase trade policy uncertainty.

In order to understand the trade restrictiveness of a certain level of water, it is necessary to calculate its ad valorem equivalent. Using 2011 data, Osnago, Piermartini and Rocha (2015) have estimated the valorem equivalent of water greater than 10 percentage points to be 2.6% for G20 versus other G20 members and 8.8% for G20 countries versus non-G20 members. Note that the tariff equivalent of a certain level of water depends on the country-pair trade. This is because countries trade goods that respond differently to a change in trade restrictions.

Trade remedy measures

The best documented trade barriers are trade remedy policies such as antidumping (AD), global safeguards (SG), and countervailing duties (CVD). Information on these measures is regularly and comprehensively notified to the WTO.[8] It is also independently collected and reported in the context of the semi-annual WTO Trade Policy Monitoring exercises as well as in the World Bank Temporary Trade Barriers Database (TTBD).[9] The latter contains data on more than thirty different national governments' use of trade remedies and China-specific transitional safeguard (CSG) measures. The information provided in this detailed data base covers over 95% of the global use of these particular import-restricting trade remedy instruments. Figure 11 shows the use of temporary trade barriers from 1990-2013.

Trade facilitation

The OECD Trade Facilitation Indicators (TFIs) cover the full spectrum of border procedures and are strongly linked to the WTO Trade Facilitation Agreement (TFA) provisions. They measure the actual extent to which countries have introduced and implemented trade facilitation measures in absolute terms, but also their performance relative to others, using a series of quantitative measures on key areas of the border process. The TFIs have proven to be an important tool in supporting countries to identify their strengths and weaknesses and track their progress in implementing trade facilitation

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[7] Handley (2014) and Handley and Limão (2013).

[8] For an overview and detailed listing of trade remedy measures see the WTO Integrated Trade Intelligence Portal: http://i-tip.wto.org/goods/.

[9] For the WTO Trade Monitoring Database see: http://tmdb.wto.org/ and for the WB Temporary Trade Barriers Database see: http://econ.worldbank.org/WBSITE/EXTERNAL/EXTDEC/EXTRESEARCH/EXTPROGRAMS/EXTTRADERESEARCH/0,,contentMDK:22561572~pagePK:64168182~piPK:64168060~theSitePK:544849,00.html

measures. Estimates based on the indicators can provide a basis for governments to prioritise trade facilitation actions in a more targeted way.

Future work will be focusing both on extending the TFIs monitoring capacity as well as their analytical uses. In this sense, the OECD is further conceptually refining different aspects of the indicators in order to reflect specific implementation challenges and deeper analysis of measures (e.g. border agency co-operation). Such an implementation-oriented set of TFIs will provide a more targeted and practical diagnostic tool. At a quantitative level, work will be conducted to incorporate the TFIs into the OECD METRO trade model. The aim is to provide potential TFA impacts on trade and production by broad commodity and country groups, as well as assessing welfare implications.

<u>Logistics performance Index</u>

The Logistics Performance Index (www.lpi.worldbank.org) ranks 160 countries on six dimensions of trade -- including customs performance, infrastructure quality, and timeliness of shipments -- that have increasingly been recognized as important to development. The data used in the ranking comes from a survey of logistics professionals who are asked questions about the foreign countries in which they operate. LPI data is available from 2007-2014, with the 2016 edition to be released in the coming months. Figure 12 shows the overall LPI scores by income group from 2007-2014, while Figure 13 shows an example of LPI results by income group on issues related to the efficiency of border clearance.

<u>Doing Business</u>

The Doing Business indicators (doingbusiness.org) track performance by countries on a number of dimensions of the business environment that affect trade costs, helping assess the link between these "behind the border" issues related to trade. For example, Figures 5 and 6 below show a link between the ease of starting a business and higher trade costs.

Doing Business also includes a direct assessment of trade facilitation-related costs through the "trading across borders" indicator. Under the new methodology introduced this year, *Doing Business* measures the time and cost (excluding tariffs) associated with three sets of procedures—documentary compliance, border compliance and domestic transport—within the overall process of exporting or importing a shipment of goods. Table 2 shows regional averages for Doing Business on the components of the "trading across borders" indicator. Individual country scores are also available, along with subnational data in a number of countries.

IV. Estimates of trade costs reductions from the full implementation of the TFA

This subsection reviews estimates of the reduction in trade costs that could be achieved if all countries fully implement the provisions of the TFA. The WTO (2015), using disaggregated results obtained by Moïsé and Sorescu (2013), reports that full implementation of the TFA could reduce trade costs by between 9.6% and 23.1% with an average reduction of 14.5%. The average decrease in trade costs for manufactured goods would be 18% and 10.4% for agricultural goods. Not surprisingly, economies with the biggest pre-implementation deficiencies in trade facilitation standards are set to reap the greatest reductions. Of all geographic regions, Africa is expected to experience the biggest trade costs reduction (16.5%). Comparisons of the anticipated impact of TFA implementation on different income groups suggest that least-developed countries (LDCs) will see the biggest reduction in trade costs (16.7%). Finally, the report notes that full implementation of the TFA will have an even bigger impact on trade costs than reducing all most-favoured nation tariffs (currently estimated to average around 9%) to zero.

These estimates can be refined further by considering various TFA implementation scenarios, distinguishing the impact on G20 and on non G20 members, observing which specific areas of trade facilitation could have the strongest potential to reduce trade costs, and employing the latest OECD TFI data. The calculation of the potential impact of TFA implementation[10] is based on two scenarios: a) a "full" implementation scenario where countries implement all the options contained in the Agreement, including those formulated on a "best endeavours" basis; and b) a "limited" implementation scenario where countries implement only the mandatory provisions contained in the agreement, but taking into account that some of the best endeavours measures have already been

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[10] These assessments of the potential impacts of implementing the measures included in the TFA are based on regressing cost estimates from the ESCAP-World Bank Trade Costs Dataset against the 2015 OECD Trade Facilitation Indicators.

implemented by some of these countries. These two scenarios provide upper and lower bounds of potential trade cost reductions likely to be obtained by implementing the TFA. The impact will be strongly influenced by the way developing countries categorise various measures and by the timeframes they adopt for implementation. The potential cost reduction from a "full" implementation of the TFA is estimated at 14.1% of total costs for G20 members and 15.4% for other countries (see Figure 14); 16.5% of total costs for low income countries, 17.4% for lower-middle income countries, 14.6% for upper-middle income countries; and 11.8% for OECD countries. Countries which implement the TFA in full will reduce their trade costs by between 1.4 and 3.9 percentage points more than those that do only the minimum that the TFA requires. The opportunity costs are particularly high for the low and lower middle income country groups.

Improvements in the area of formalities (simplification of trade documents; streamlining of border procedures; and automation of the border process) appear to have the greatest impact on trade costs, generating cost savings of 2.8% to 4.2% depending on the level of development. Other policy areas that have an important potential for cost reductions are the availability of trade-related information and the possibility to request advance rulings.

V.   Summary

The estimates of trade costs affecting goods and services trade provided in this report are substantial. Even when one takes into account some of the reservations and methodological challenges identified in Section II of this report of measuring trade costs and the determinants, reducing trade costs should figure prominently in the priorities of policymakers.

The recent survey by Head and Mayer (2014) of gravity-model estimates of trade cost elasticities, which determines how much bilateral trade will change with a fall in trade costs, shows they are large in magnitude with the average value of the trade cost elasticity at -4.51 (the median value is -3.19), although the estimates vary immensely. Other recent work gives a similar range — between -2.79 and -4.46 (Simonovska and Waugh, 2014). Taken together, these estimates imply that a 1% reduction in trade costs has the potential to increase bilateral trade by between 2.79% and 4.51%. Thus actions taken on reducing trade costs are expected to have significant positive effects on increasing trade flows.

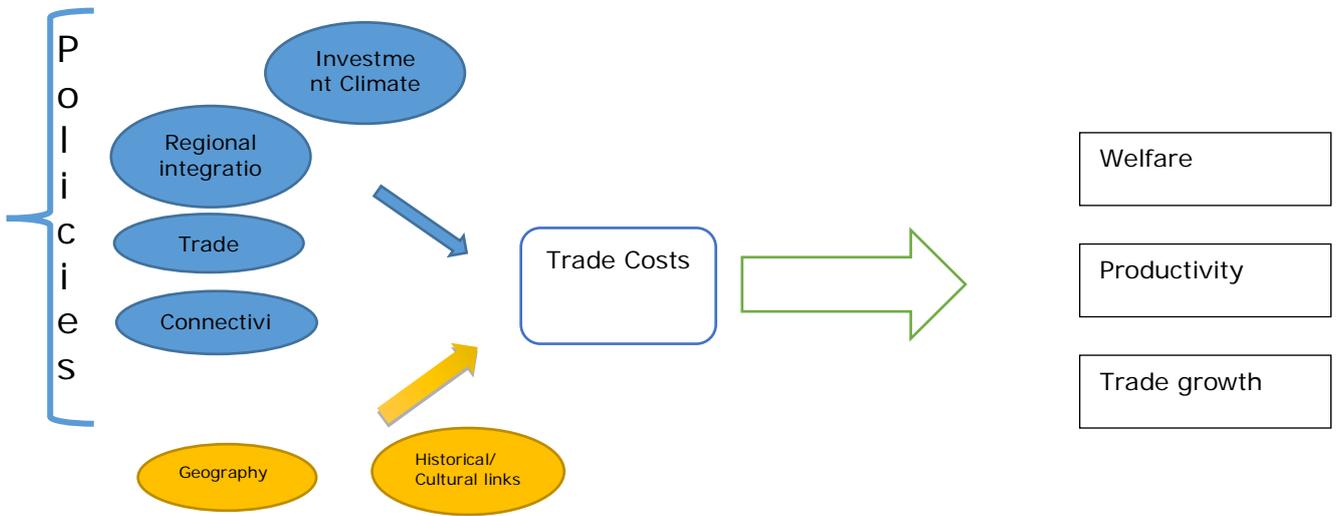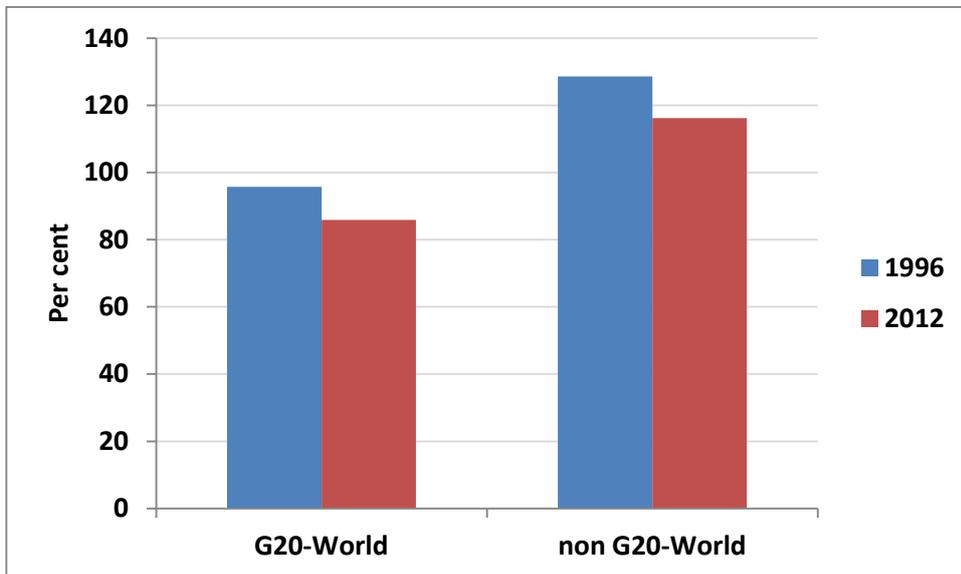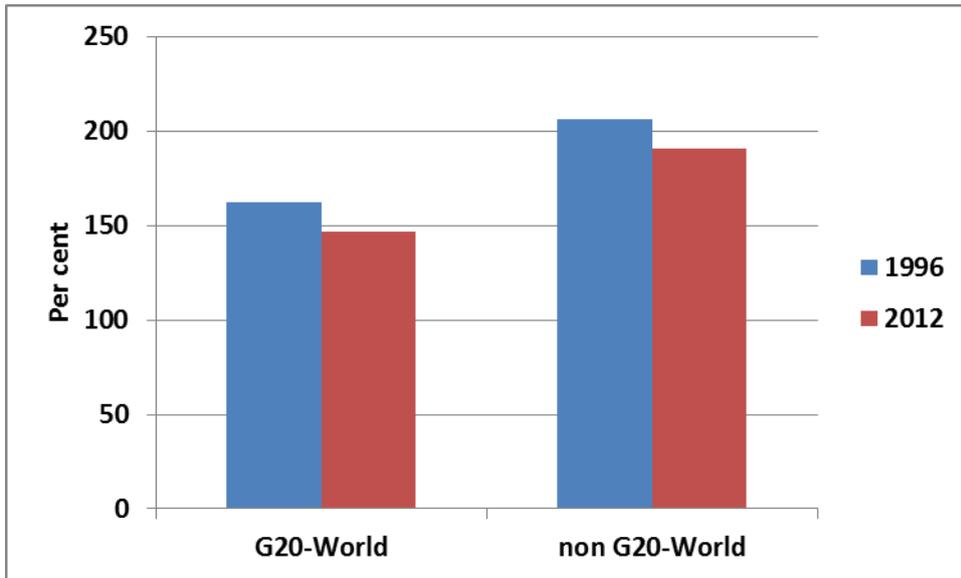## Figure 1: Trade costs as an intermediary outcome

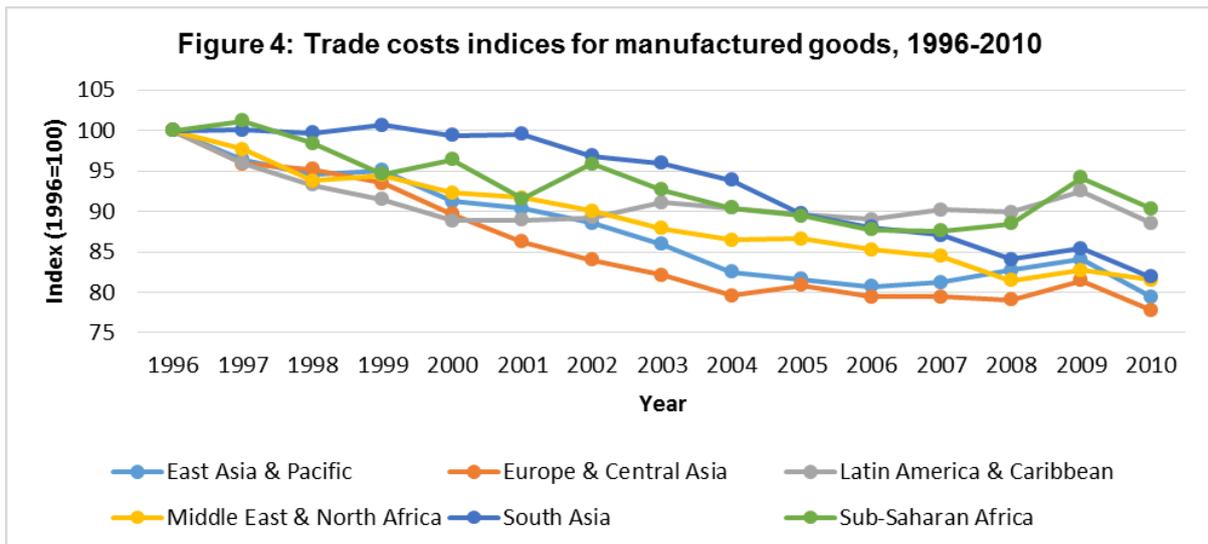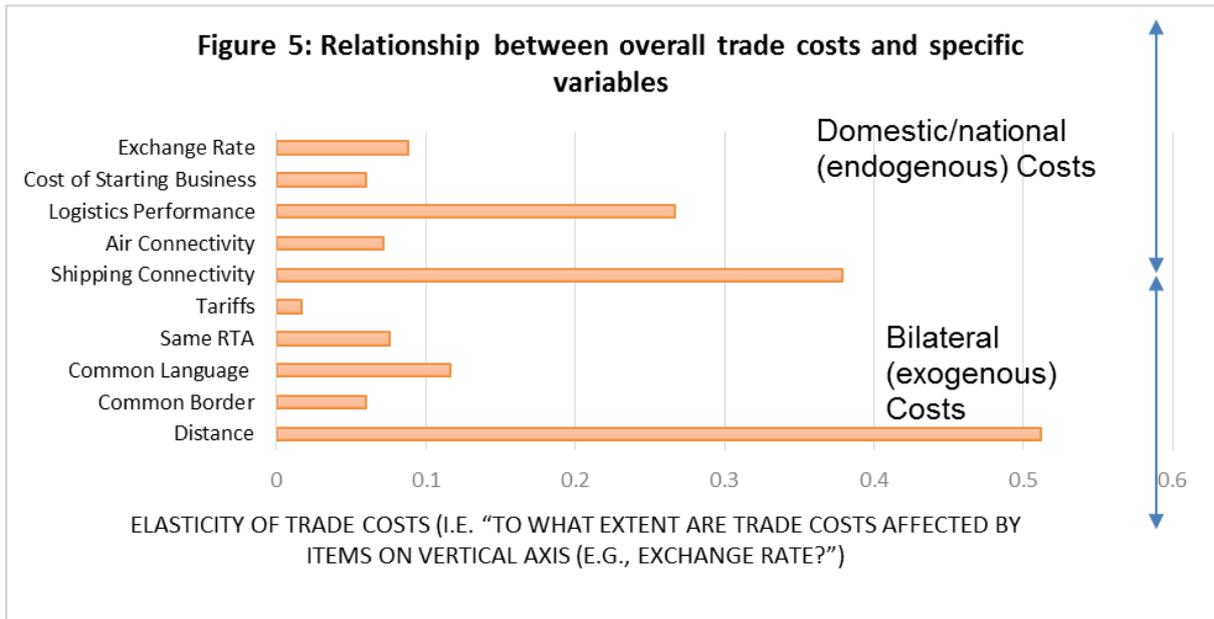## Figure 2: Trade costs in manufacturing, 1996 and 2012

Source: World Bank.

Figure 3: Trade costs in agriculture, 1996 and 2012
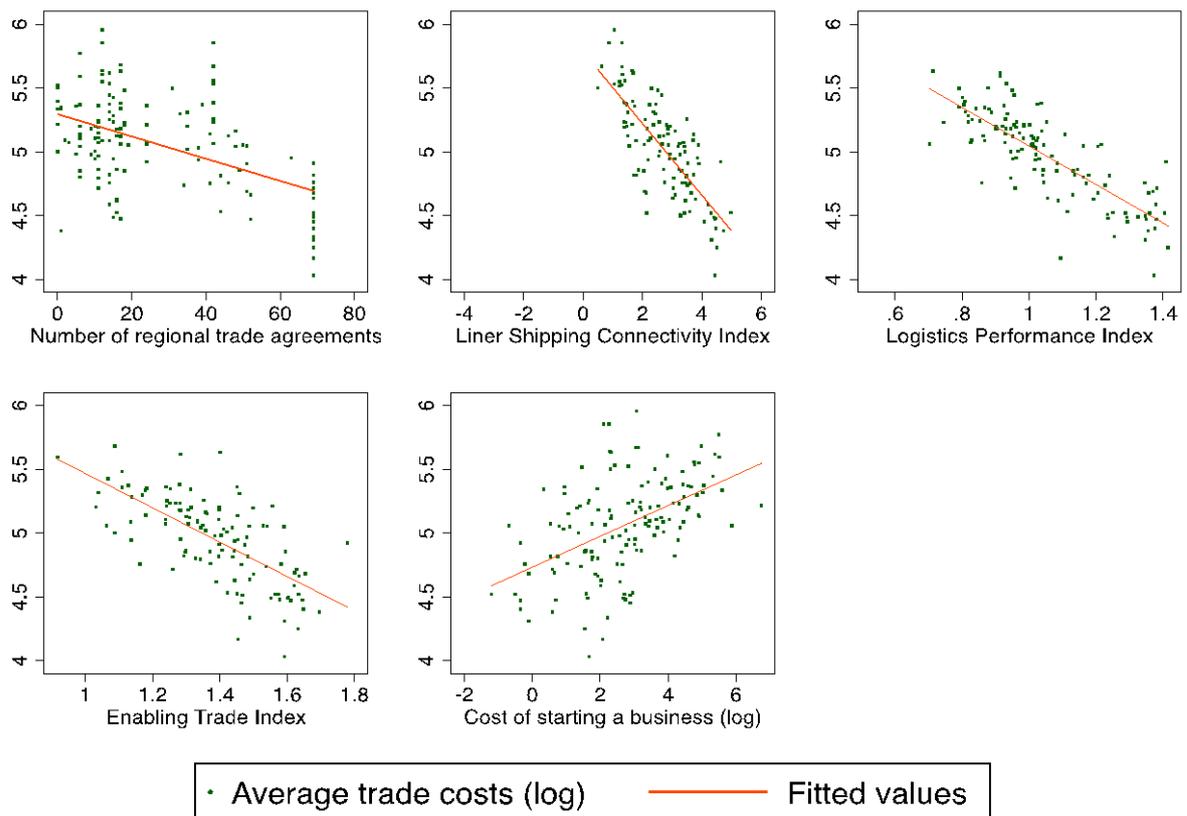

Source: World Bank.

Figure 4: Trade costs indices for manufactured goods, 1996-2010

Source: World Bank.

Figure 5: Relationship between overall trade costs and specific variables
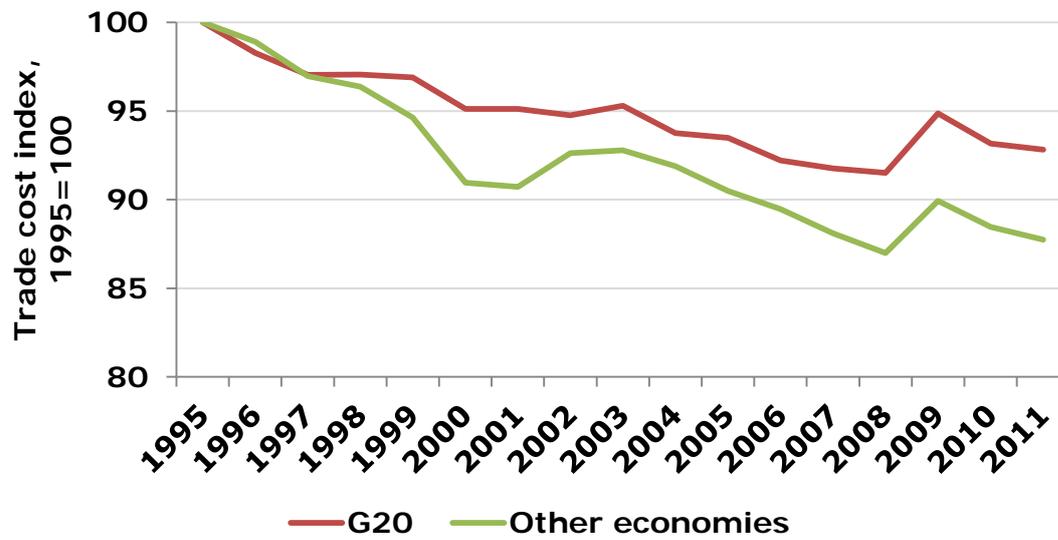
Source: World Bank.

Figure 6: Relationships between selected policy variables and trade costs

Source: World Bank.

Figure 7: Services trade cost index, 1995-2011

Source: OECD.
Note: "G20 economies" do not include Argentina and Saudi Arabia. "Other economies" includes 22 non-G20 economies and a rest of the world aggregate.

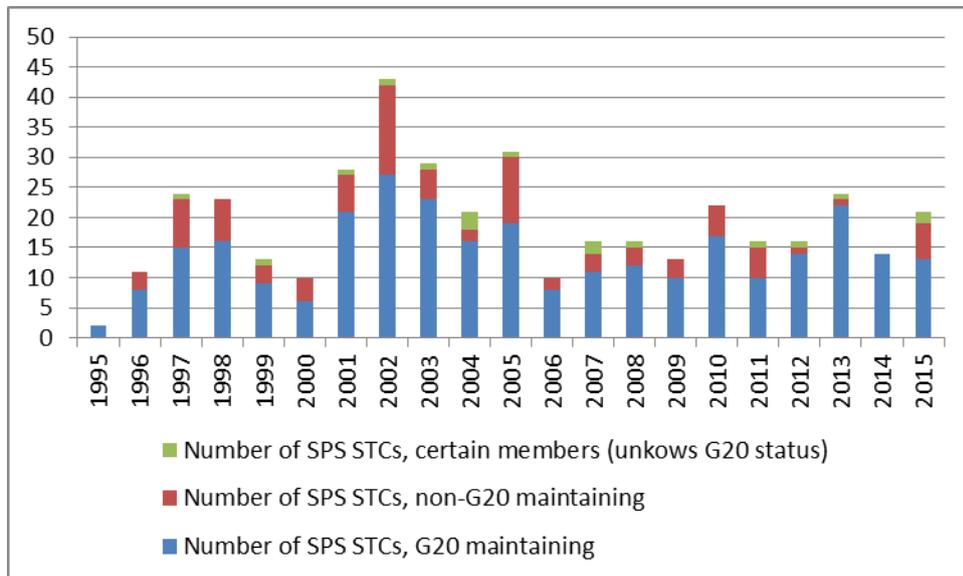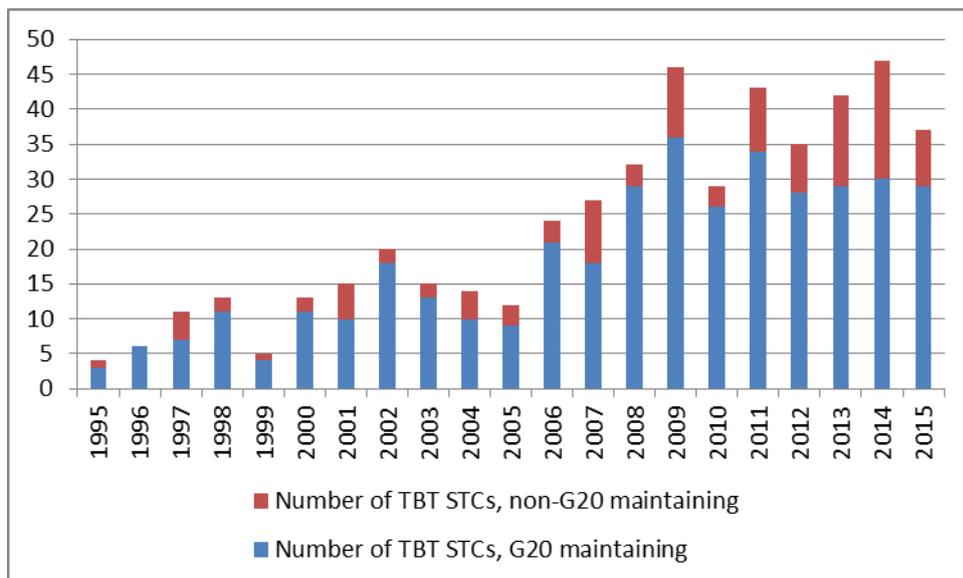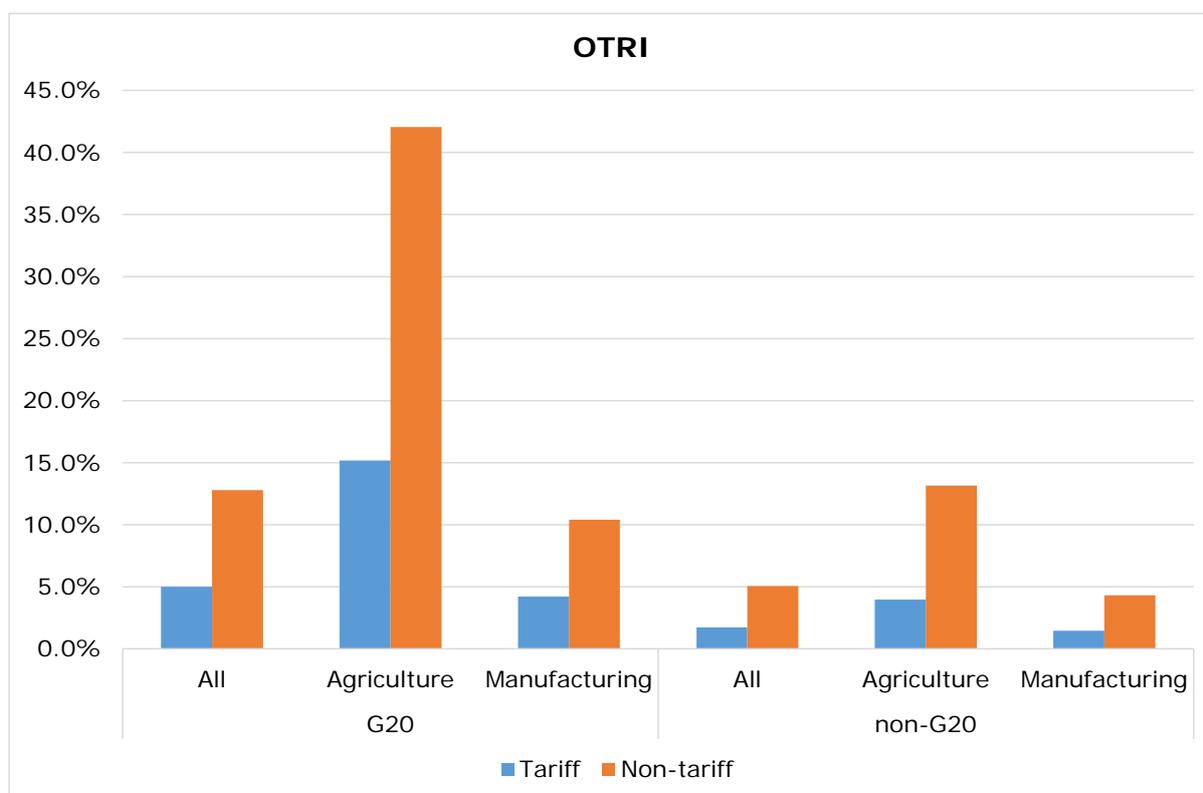**Figure 8: New SPS specific trade concerns, 1995-2015**
(Number of concerns)

Figure 9: New TBT specific trade concerns, 1995-2015
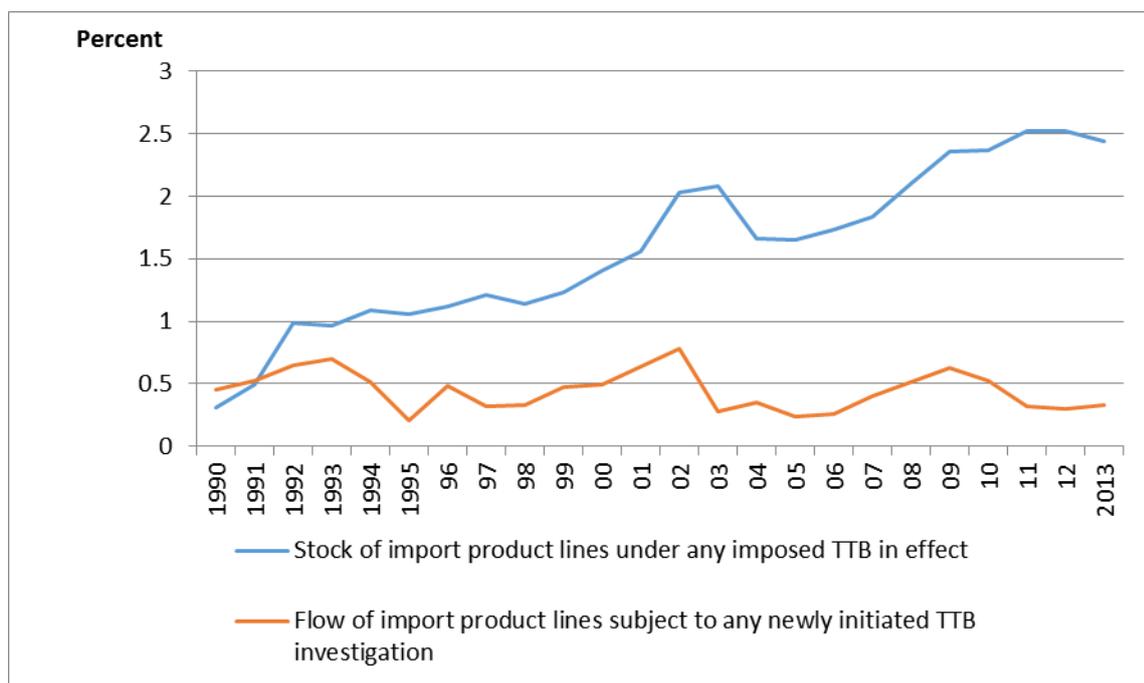

Source: WTO SPS IMS (upper panel); WTO TBT IMS (lower panel).

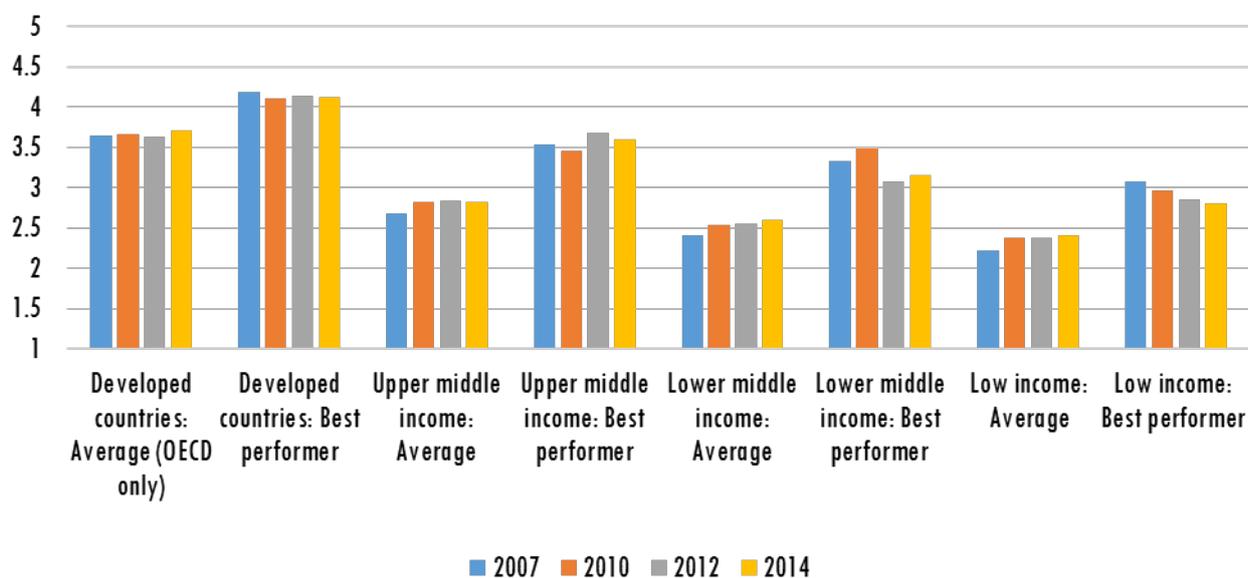**Figure 10: Overall Trade Restrictiveness Index**

Source: World Bank.

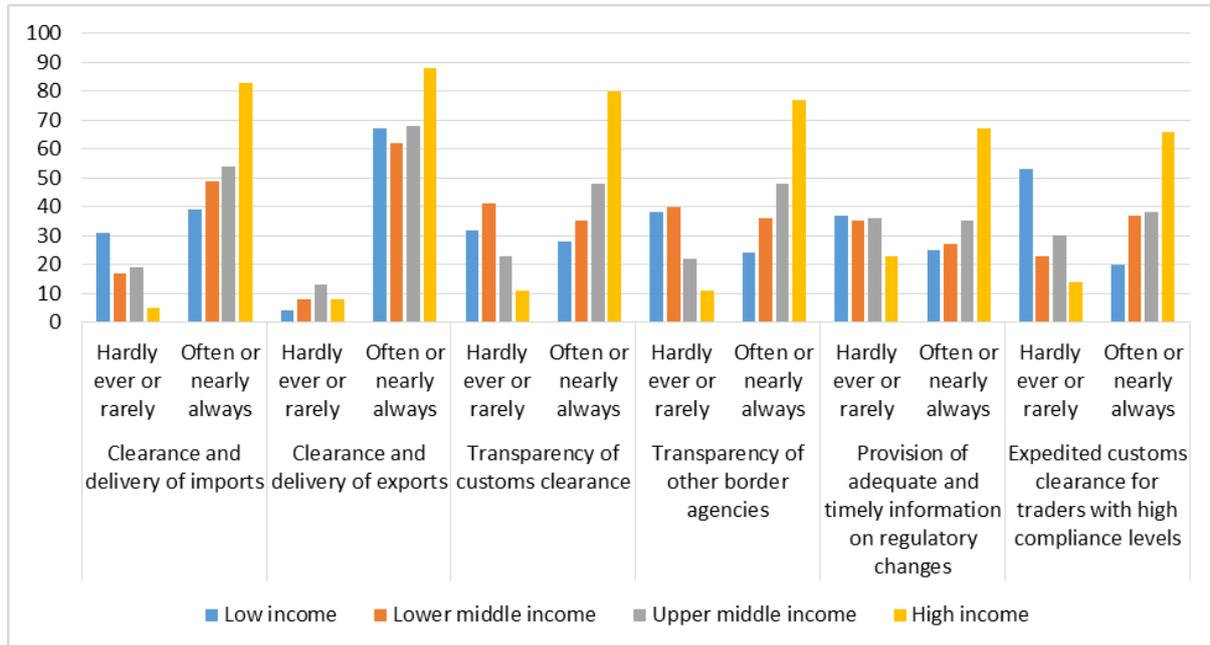**Figure 11: G20 use of temporary trade barriers, 1990-2013**

Source: World Bank.

Figure 12: LPI scores by income group 2007-2014

Source: World Bank.

Figure 13: LPI example – Results by income group on key efficiency measures

Source: World Bank.

Figure 14: Potential reduction in trade costs (%) in a TFA full implementation scenario
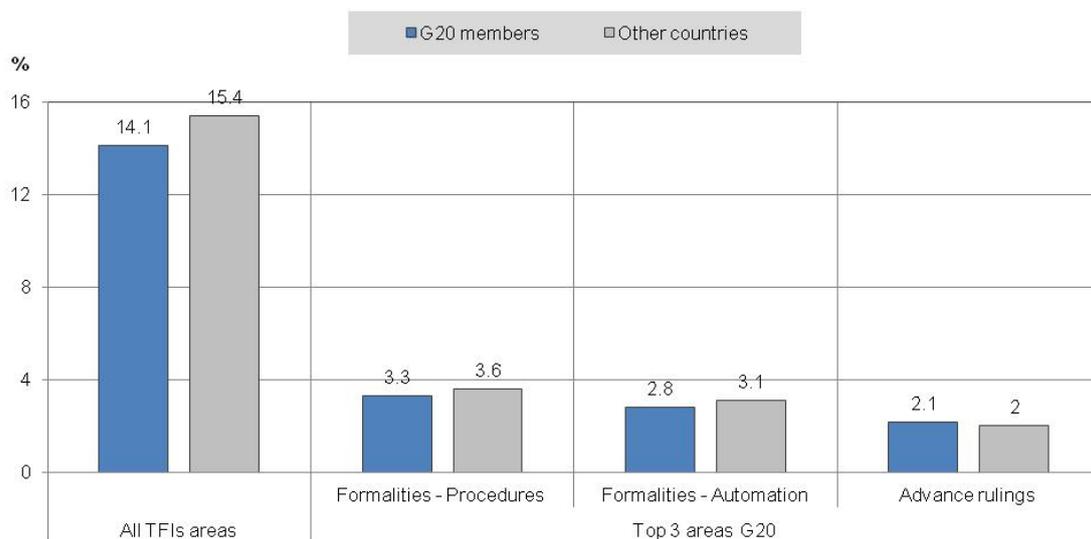
Table 2: Applied and Bound MFN Tariffs

Group	ALL MERCHANDISE GOODS				
	Applied MFN			Bound Tariffs	
	Average 2012-2014	Decrease from 1998 [a]/		Average Duty	Binding Coverage
All WTO	9.0	3.9		38.8	79.5
G20	8.1	3.2		19.2	94.3
Others	9.1	4.1		41.2	77.7

Group	AGRICULTURE				
	Applied MFN			Bound Tariffs	
	Average 2012-2014	Decrease from 1998 [a]/		Average Duty	Binding Coverage
All WTO	14.9	2.9		55.7	100
G20	16.3	0.9		33	100
Others	14.7	3.4		58.4	100

Group	NON-AGRICULTURE				
	Applied MFN			Bound Tariffs	
	Average 2012-2014	Decrease from 1998 [a]/		Average Duty	Binding Coverage
All WTO	8.1	4.1		29.6	76.4
G20	6.7	3.7		16.4	93.4
Others	8.2	4.2		31.2	74.3

[a]/ Percentage points
Since some EU members are part of G20 and others are not,
  EU tariffs were included in the calculation of both groups.

Sources:
World Tariff Profiles, various issues.
WTO, Integrated Database

Table 2: Doing Business 2016 Trading Across Borders results, regional averages

Region	Time to export: Border compliance (hours)	Cost to export: Border compliance (USD)	Time to export: Documentary compliance (hours)	Cost to export: Documentary compliance (USD)	Time to import: Border compliance (hours)	Cost to import: Border compliance (USD)	Time to import: Documentary compliance (hours)	Cost to import: Documentary compliance (USD)
East Asia & Pacific	51.4	395.7	74.7	166.9	59.3	420.8	69.7	148.1
Europe & Central Asia	27.6	219.2	30.7	143.8	23.2	202.4	27.4	108.1
Latin America & Caribbean	86.1	492.8	68	134.1	106.8	665.1	93.3	128.1
Middle East & North Africa	65.4	445.1	78.8	351.1	119.7	594.3	104.7	384.6
OECD high income	15.2	159.9	4.5	35.6	9.4	122.7	3.9	24.9
South Asia	60.9	375.6	79.8	183.9	113.9	652.8	108.1	349.3
Sub-Saharan Africa	108.2	542.4	96.6	245.6	159.6	643	123	351.3

Source: World Bank.

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