

Trade Related Institutions and Development

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Abstract

The paper focuses on the role played by Trade Related Institutions (TRIs) in shaping trade flows and their development impact in low-income countries and how these TRIs are shaped by international trade. Three types of TRIs are examined: i) trade agreements; ii) trade promotion organizations; and iii) private TRIs, i.e. fair trade labelling, trading platforms and reputation mechanisms. Recent research reviewed for each type of TRI is then followed by suggestions for further work.

Keywords: Trade related institutions; Development.

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1. Introduction

It is only a slight exaggeration to say that until the publication of two papers in 1995, trade economists were comfortable in saying that international trade was largely governed by differences in endowments and productivity especially so since the ongoing worldwide reductions in barriers to trade were erasing borders. Trefler (1995) convincingly showed that accommodating home market bias in consumption and differences in technology trump factor endowment differences as determinants of trade patterns. McCallum (1995) showed that borders matter considerably more than predicted even for highly integrated countries like the US and Canada. Since then trade economists have turned their attention to the role of institutions in explaining the pattern of trade. Inspired by the work on institutions and development by North and colleagues (Milgrom et al 1990) and by the institutions-and-growth-literature (Acemoglu et al. (2005)), Nunn (2007), Levchenko (2007), Chor (2010) and others have argued and given evidence that current-day trade is largely co-determined by the quality of contracting institutions and the traditional technology and endowments environments. This literature is surveyed by Nunn and Trefler (2015), both historically and more narrowly focusing on the sources of manufacturing comparative advantage.

From a developing-country perspective, the takeaway is that domestic institutions are needed to solve contract problems to get the economy to diversify towards the production of more sophisticated productivity-raising goods but also that initial conditions, some deeply rooted in history, have been determinant in the pattern of trade and subsequent path of domestic institutions. While market failure due to the lack of contract enforcement is no doubt important for low-income countries, other obstacles are equally important. These include those associated with externalities, information asymmetries, and coordination failures and are the subject of this survey.

This survey focusses on trade-related institutions (TRI) as they affect trade (and are affected by trade) in developing countries. To try and limit institutions to those that are more directly targeted to traded activities we focus on 'new' market failures that may appear as firms and consumers reach international markets. Domestically these may be related to the changing nature of the relation of transactions (e.g. related to arm's length transactions like reputation, contractibility) or existing market failures that may be exacerbated by trade (e.g. regional public goods, property rights for common pool resources may be exacerbated by the opportunity to trade).

To set this focus in perspective, section 2 recalls very briefly the deep long-run factors that have been identified as having an influence on the contemporary trade-institutions relation as captured by macro performance indicators. The extensive cross-country literature on growth, trade and institutions has been unable to bring convincing evidence to confirm three often-cited anecdotal conjectures: that countries with better 'institutions' and countries that trade more grow faster; and that countries with better institutions tend to trade more.

The survey then concentrates on three categories of TRIs. Section 3 starts with trade agreements— regional and multilateral agreements-- that shape the developing countries' position in the World Trading System. Section 4 surveys what we know about Trade Promotion Organizations (TPOs) that have been set-up to help firms participate in international markets by confronting the widespread externalities they face (lack of information about foreign markets, discoveries by pioneer exporters, coordination failures or the absence of private insurance schemes). Section 5 examines private TRIs: labelling, fair trade, consumer boycotts, and trading platforms as transmitters of reputation mechanisms. The issue here is the extent to which private sector interests can be aligned with broader development objectives since in the presence of not only market failures, but also government failures, private-sector institutions may provide an alternative to public institutions.

Each section is organized into two subsections. In a first subsection the focus is on what we have learned about each of these selected issues in the existing literature, focusing where possible on low-income countries. In a second subsection, we suggest areas and we then turn into what we would like to know about each of these issues and their impact on development in the literature ahead. Throughout, the focus is on lessons from empirical contributions. Section 6 concludes.

2. Trade, Growth, and Institutions: From deep to shallow determinants

A growing literature on the deep determinants of development has explored the role of biological and cultural factors in long term development outcomes. Long-term historical factors, as captured by relative genetic distance and cultural differences have been found to predict population levels around 1500, and more recently, income per capita. In Africa, Michalopoulos and Papaioannu (2013, 2014) show that national institutions have little effect on economic performance of homogenous ethnic groups separated by national borders and 'dual' economic-institutional infrastructures co-exist with customary rules being dominant in the countryside and colonial-national institutions becoming relevant for regions closer to the capitals. Long term differences in technology and productivity hold at the level of populations rather than locations. Spolaore and Wacziarg (2009) find that that the persistence in comparative development outcomes across populations is strongly correlated with the relative genetic distance to the technological frontier so that populations that are historically farther from the innovators tend to face higher costs to imitate and adopt new technologies. The implication is that to understand differences in trade outcomes one must not only consider differences in geography, policies, and institutions (e.g. relation-based or rule-based institutions) but also the transmission of biological and cultural factors. The findings of this literature, summarized in Spolaore and Wacziarg (2014), are beyond the

scope of this survey but should be kept in mind when studying the trade-institution nexus in low-income countries.¹

Initial conditions and comparative advantage have also been found to play an important role in the historical development literature on domestic institutions reviewed by Nunn and Trefler (2015). The rise of the three-corner Atlantic trade (exports of slaves from Africa, commodities from the Americas and manufactures from Europe) following the discovery of America supports the view that endowments and initial conditions determined comparative advantage. In turn, the resulting distribution of income subsequently shaped long-lasting institutions. To this day, less trust pervades societies involved in transatlantic slave trade that required insecurity of property rights and disrespect of human rights. Likewise, specialization in plantation in South America resulted in comparative advantage that generated a very unequal distribution of income that allowed the elites to establish growth-retarding institutions to protect their dominant position (Engerman and Solokoff, 1997 and 2000, and Dell, 2010).² In those environments, positive terms-of-trade shocks in coercive societies led to increased coercion rather than wage increases. Contemporary evidence on oil discoveries suggests they causally move regimes away from democracy (Tsui, 2011). Nunn and Trefler (2015) conclude "...conjecturing that the impact of international trade on domestic institutions is the simple most important source of the long-run gains from trade."

Moving to the contemporary trade-growth-institution link, for a long time, trade economists have been confounded by the trade-income link: is trade an engine of growth or a handmaiden of growth? In an early influential contribution, that addressed the two-way causality between export growth and GDP, Feder (1982) set up a model in which the marginal productivity of capital could be higher in export sectors. He found support for this conjecture in a sample of semi-industrialized countries over the period 1974-73. But the subsequent extensive cross-country literature on growth, trade and institutions has been unable to bring convincing evidence to confirm three

¹ Genetic distance refers to differences across populations and genetic diversity to heterogeneity within populations. Genetic diversity (highest among African and lowest among Amerindian populations) should be productivity-enhancing and costly because it may reduce trust and coordination among individuals. Cultural diversity and patterns of cultural transmission are also important on long term development outcomes. Spolaore and Wacziarg (2014) summarize this large literature that points to the persistence culture traits through intergenerational transmission. Guiso et al. (2009) find that somatic distance between European populations is negatively correlated with bilateral trust and, in turn, with bilateral trade. Felbermayer and Toubal (2010) find that one third-of the trade-cost channel in bilateral European trade is attributable to cultural distance. Maystre et al. (2014) find that cultural values, as captured by the World Value Surveys exhibit high frequency variation in response to trade shocks.

² In Europe, the growth of long-distance medieval trade triggered a shift from relation-based to rule-based trade with higher fixed costs but lower marginal costs. The long history of Venice's Republic saw the rise of a merchant class that pushed for modern innovations in contracting institutions (i.e. the commenda) while shifting power in their favour that they then used to set up a coercive apparatus to suppress opposition (Puga and Trefler (2012)). In their review of the historical literature, Nunn and Trefler (2015 section 5) report more evidence that historically trade and comparative advantage have been key in the development of domestic institutions.

often-cited anecdotal conjectures: that countries with better ‘institutions’ and countries that trade more grow faster; and that countries with better institutions also tend to trade more.³

Two studies leading to contrasted conclusions illustrate the difficulties confronting cross-country macro-level studies. Using an event-analysis in which they identified significant breaks in the trade regime by inspection of trade policy reports, Wacziarg and Welch (2008) found that countries liberalizing trade for at least eight years experienced an increase in investment rates and growth accelerations following the trade liberalization. These results are subject to confounding influences, as trade liberalization was usually part of broader reform packages and were subject to reverse causality. Using tariff data for a cross-section of 63 countries over the 1972-2000 period, Nunn and Trefler (2010) uncover a strong correlation between aggregate growth and a country’s tariff structure that protects disproportionately skill-intensive sectors (a proxy for R&D spending) where a cut-off was used to separate high and low-skill intensive sectors. To get at causality, they add an industry dimension (18 sectors) and find that a skill-biased tariff distribution causes a differential expansion of skill-intensive industries which is beneficial for growth. But this mechanism only explains 25 percent of the correlation between growth and the skill bias of tariffs. They then add six standard indicators of governance from the World Bank to control for the omission of the institution channel on the grounds that it is countries with better institutions that protect skill-intensive sectors. Adding these variables nibbles another 35-40% of the correlation still leaving 40 percent of the correlation to be explained. Remarking that these governance indicators supposedly focus only on corruption and illegal rent-seeking, on the basis of correlations of the skill-bias of tariffs with new measures of political connections and diplomatic tickets, Nunn and Trefler stretch their argument to say that the remaining correlation can be explained by purely legal and socially acceptable rent-seeking activities (see their figure 3) that enter prominently in the political economy models of trade policy to conclude that the skill-bias of protection might be an improved measure of rent-seeking activity.

Much work has also been carried out on trade costs for macro studies. Exploiting the closing of the Suez Canal for 8 years-a truly exogenous shock-Feyrer (2009) estimates an elasticity of trade to distance about half the typical value of cross-section estimates suggesting that the typical cross-country estimates are capturing the effects of omitted variables. He then uses the predicted trade volumes to identify the effect of trade on income, obtaining plausible estimates of the effects of trade in goods on income that are not subject to the omitted variable bias of the Frankel and Romer (1999) study. Also, in spite of progress, this literature still has to solve the “distance puzzle”

³ Dollar and Kraay (2003) is an example of that literature. See Pritchett’s (2003) comments on how the authors are unsuccessful in their “torture test” causality. François and Manchin (2013) also deal with 5-year panel data in a gravity model. They try to disentangle the effects of differences in the quality of infrastructure and institutions on bilateral trade using a structural gravity model. Their two-stage estimations take zero trade flows into account but their attempt to account for the endogeneity of infrastructure and institutional quality had to resort to lagged principal components of various measures of infrastructure and institutional quality.

for low-income countries first uncovered by Leamer and Levinsohn (1995).⁴ Bergstrand et al. (2015) do find evidence of decreasing international trade costs relative to internal trade costs for 40 (mostly developed) countries and 8 manufacturing sectors. Persisting high internal trade costs in low-income countries are likely to hamper their participation in international trade in spite of falling international trade costs. As an example, based on micro consumer price data, Atkin and Donaldson (2015) estimate that the log of distance on internal trade costs is about four times higher in Ethiopia and Nigeria than in the US and that all the benefits from a reduction in price goes to intermediaries rather than to the final consumers. For low-income countries, more reliable estimates of trade costs may be obtained by disaggregated estimates at the sectoral level as in Bergstrand et al. (2015) but further insights on trade costs from gravity-based estimates of trade, will have to await until we have better estimates of internal vs. external trade costs.

In sum, usually lacking a convincing counterfactual, macro evaluations of trade costs, most based on the gravity model, cannot escape the problem of attribution as they generally lack a convincing counterfactual macro evaluations of trade costs. The studies have also had difficulty disentangling the different components of trade costs (hard or soft infrastructure, at or behind-the-border policies) and the links with the institutional environment. Reviewing the evidence, Goldberg and Pavcnik (2016) conclude that the growing perception that trade policy is no longer relevant is largely due to our inability to measure the various forms of non-tariff barriers that have replaced tariffs as the primary tools of policy including in many developing countries.

Finally, more directly linked to our preoccupations, a large literature establishes that domestic contracting institutions have a strong impact on the current pattern of comparative advantage across manufacturing sectors. As an indication of the overall importance of contracting institutions on the pattern of comparative advantage, Nunn and Trefler report results on the correlates of bilateral trade in manufactures at the 2-digit ISIC level for a group of 83 countries. The regressors include the traditional Heckscher-Ohlin determinants of bilateral trade along with indicators of the contract-intensity (product-market, labor market, and financial markets) of sectoral production. When entered interactively with indicators of governance as captured by the rule of law of Kaufmann et al. (2003), these indicators of contract-intensity all enter significantly. Several indicators of contract intensity are as important quantitatively as the traditional indicators of

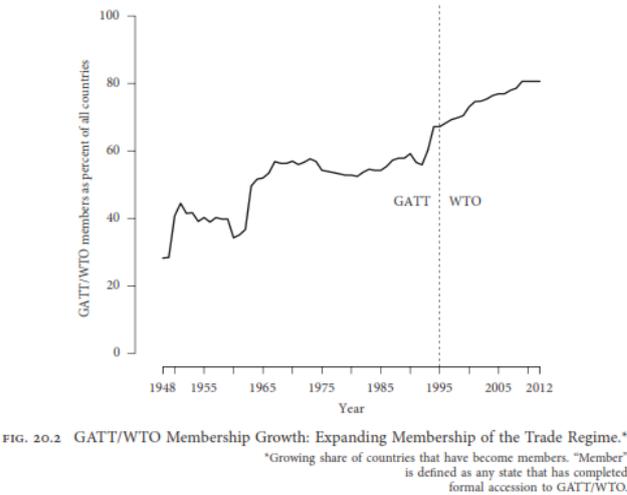
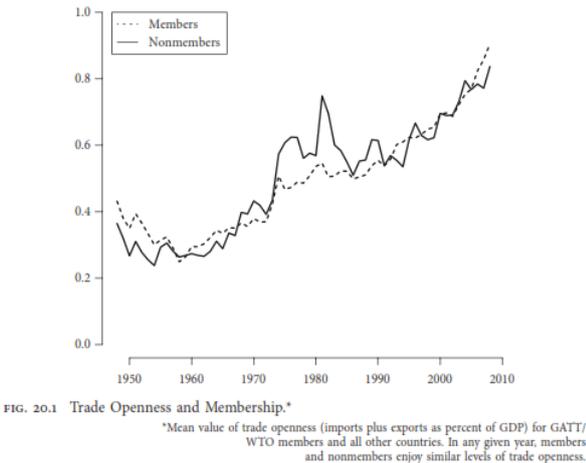
⁴ Leamer and Levinsohn noted that contrary to expectations from a 'death of distance' (in which international trade costs fall more rapidly than internal trade costs), in repeated estimates of the gravity equation, the estimate of the distance coefficient usually failed to fall (and sometimes increased) in value. Many explanations have been put forward, none fully, satisfactory since the puzzle seems to persist for low-income countries (see Carrère et al. (2013)). Calibrations of the gravity equation à la Novy (2012) by Arvis et al. (2013) also find that the gap in trade costs between low-income countries and other country groupings have not fallen over the 1995-2012. An exception is Yotov (2012) who finds that the estimate of the coefficient of distance falls over the period 1965-2005 when external trade costs are correctly measured relative to internal trade costs.

comparative advantage (see their table 4).⁵ One would also expect that the quality of contracting institutions matters for the observed concentration of exports in low-income countries and probably also matters for the short life of their exports.⁶

3. Trade Agreements

Trade agreements are the most common TRI. When the General Agreement on Trade and Tariffs (GATT) started multilaterally regulating international trade relations in 1947, it only had 23 members. A large majority were high income countries with a few middle income countries and no low-income country. Today GATT’s successor, the World Trade Organization (WTO), has 164 members (as of July 2016) with another 16 countries currently negotiating accession. This leaves only 17 countries outside the WTO system, of which the largest are Ethiopia, Eritrea, North Korea, Somalia, and Turkmenistan. Figure 1(a) shows that trade openness has grown equally among members and non-members and figure 1(b) shows a growth in membership following the creation of the WTO.

Figure 1: Openness (1a) and Membership Growth (1b) in the GATT/WTO



Source: Johns and Peritz (2015)

⁵ The quality-of-institutions indicators are: product-markets (relationship-specificity of inputs, Herfindhal index of concentration of inputs, job complexity all multiplied by an indicator or rule of law); labor-market (sales volatility X labor-market flexibility); and financial market (external finance dependence X financial dependence). Industry measures are taken from the US Regressions include country and industry fixed effects. See table 5.4, p.287. Nunn and Trefler discuss reverse causality, omitted variable bias and benchmarking bias from using US data for all countries. All said and done, the robust conclusion is that contracting institutions matter for comparative advantage.

⁶ Hausman, Hwang and Rodrik (2007) develop an indicator of the income level of a country’s exports that could be correlated with the indices of the contract intensity of production. In a sample covering 1985-2005 that includes 22 low-income countries, Brenton et al. (2010) find a lot of heterogeneity in survival rates at the HS-4 level and that regional and product-specific experience count most for export survival for low-income countries.

Preferential Trade Agreements (PTAs) have also proliferated since the early 1990s.⁷ Table 1 shows the current landscape of PTAs. One sees a very large number of PTAs among developing countries (henceforth South-South) in both goods and services. Interestingly, membership has expanded beyond regional or ‘natural’ partners.⁸ Since the signing of NAFTA in 1994, PTAs between developed and developing countries (henceforth North-South) have also become more common as can be seen in Table 1.

Table 1: Number of active PTAs, Goods, Goods and Services, and regional type, 2010

	Goods	Goods & Services
Developed-Developed	13	9
Developed-Developing	36	40
Developing-Developing	145	41
Bilateral	104	64
Plurilateral	38	11
Plurilateral (At least 1 party is a PTA)	52	15
Intra-regional	110	33
Cross-regional	84	57

Source: WTO (2011, table B5). Active PTAs

The rapid increase in WTO membership by developing countries and their rapidly growing participation in South-South and North-South PTAs are likely to have affected their development prospects through the insertion of their economies in global markets. Development prospects must have probably evolved also through the change in domestic institutions imposed by trade agreements, in particular after the creation of the WTO at the end of the Uruguay Round and the rapid growth in North-South trade agreements.

Indeed, until the completion of the Uruguay Round in 1994, international trade relations were largely governed by the GATT in a ‘live and let live’ environment where disputes were resolved through diplomacy rather than rules-based dispute settlements. Low-income members in

This surge in PTAs largely coincided with the launch of a continental FTA across the Americas in 1991 as the US was turning away from multilateralism under the fear that the Uruguay Round negotiations would not conclude. For the EC, the spread was ongoing anyway. In his review of the political economy of EC regionalism, Sapir (1998) notes that regionalism, especially trade preferences, have always been the principal instrument of foreign policy of the EC. The proliferation might have also been reinforced by the fact that the portfolio for foreign relations was divided among four EC commissioners. He also notes that the US opposed the EC having reciprocal FTAs with ACP countries until it also moved away from championing multilateralism.

A literature has developed that because proximity supposedly results in lower transport costs, regional PTAs are more likely to be welfare increasing. The debate is unsettled, though for the US over the period 1965-95, Krishna (2003) finds no evidence to support the thesis that the welfare effects of preferential trade with geographically close partners is welfare increasing.

particular did not participate in the negotiations and could opt out of agreements.⁹ Then, the primary function of the GATT was a forum to bring members to negotiate reciprocal tariff reductions (i.e. 'shallow' integration) among members.

The advent of the WTO brought the single undertaking (i.e. all members including those wishing membership had to sign all disciplines) and with it the obligation to grant not only trade concessions in goods (GATT), but also services (GATS), trade-related investment measures (TRIMS), intellectual property (TRIPS), customs procedures, sanitary and phito-sanitary measures (SPS), and a dispute settlement understanding (DSU). The objective was to bring greater transparency in measures affecting trade and to house a forum to help resolve trade disputes among members. This new environment implies a much deeper integration among WTO members which imposes a new set of rules and institutions, particularly among developing countries. The fact that the number of developing country members kept growing is an indication of the applicants' perceived gains of membership in this new environment, and this, in spite of the more stringent accession requirements.¹⁰

This growing application for membership could also reflect a "domino effect" first conjectured by Baldwin (1995) in the case of the successive enlargements of the EC. Being left out could result in less advantageous market access (i.e. facing a more elastic demand curve) or more difficulty in obtaining the required unanimity approval for WTO membership.

Similarly, in their review of regionalism at the time, Melo and Panagariya (1992) conjectured that, as opposed to the first wave of North-North and South-South RTAs (where most South-South RTAs were not implemented) during the 60s and 70s, the new wave of RTAs, many of the North-South type were likely to be welfare improving. Drawing on the stylized outcomes of multilateralism under the GATT, Ethier (1998), sketches a theory confirming this conjecture. According to Ethier (1998) the second wave of North-South RTAs has allowed the reform-minded developing countries to buy deep links with large countries and has been complementary to multilateralism. On the other hand, several authors have raised concerns about the possibility that the institutional changes and regulations imposed by the Northern on their Southern partners may not be adequate to their level of development (Disdier et al. 2015, or Wade, 2003).

⁹ Historically, until they gained in importance in world trade and their import-substitution-led development strategies were shown to be dominated by the export-led strategies of some Asian countries, developing countries, especially low-income countries were either outside the GATT or they were by-standers throughout the GATT rounds. Developing countries were peripheral to the WTS, relying on non-reciprocal preferences from industrial countries (the Generalized System of Preferences--GSP) and on a first wave of South-South reciprocal Regional Trade Agreements (RTAs). First in 1971, then in 1979, the LDC category (set up in 1971) established the 'enabling clause' providing the legal basis for Special and Differential Treatment (SDT) and the very lenient treatment until the establishment of the WTO (see Ornelas, 2016).

¹⁰ Under the GATT, article 33 on accession required a 2/3 majority to accept the applicant and was usually left to a working party with few votes taking place in practice. However, article XXVI granted membership automatically on the basis of sponsorship that was usually obtained by the former colonial power. Under the WTO, the accession process (now article 12 of the WTO Agreement) is formally the same, though all applicants have to go the process that includes a longer list of required agreements to negotiate (GATS, TRIMS, TRIPS...) as well as the prevalence of WTO+ requirements that go beyond the obligations of established WTO members that do not have to change their commitments.

In the next sub-section we would look at what we know about the impact that both the WTO and RTAs have had on the development prospects of low-income countries. Both directly on their trade flows with other countries, but also indirectly through changes in rules, institutions and rent-seeking in low-income countries. We then turn to what we would like to know about the impact of the WTO and RTAs on the development prospect of these countries.

3.1. Trade Agreements (TA): what do we know?

Interdependence in the trading system implies that a government's actions affects outcomes abroad and each government would like others to take its concerns into account when setting policy. Such an outcome can only occur if there is all-around willingness to cooperate. The dominant literature about TAs, especially when it comes to empirical support, is that they are about correcting the damage (externalities) that countries' inflict on their partners; call it terms-of-trade (TOT) manipulation or denial of market access.¹¹ Developed by Bagwell and Staiger (1999, 2002, 2010), it delivers two important results. First it shows that absent cooperation, countries will be caught in a prisoner's dilemma as they will seek to maximize their TOT. Second, reciprocity and MFN, the two pillars of the GATT/WTO are sufficient to remove this externality, even if countries have other motives than maximizing welfare as would be the case if the government's objective includes a certain distribution of income. In that case, by removing the terms-of-trade externality, reciprocity and MFN will deliver the politically optimum trade policy for each country.¹²

The TOT rationale for trade agreements has been confronted to the data and has found empirical support. Broda, Limão and Weinstein (2008) find that over the period 1993-2000, non-GATT members impose higher tariffs where they have market power confirming the first result above. Simulations by Ossa (2014) also suggest that the observed tariff reductions under GATT/WTO are compatible with the TOT rationale for trade agreements. Indeed, Ossa (2014) calculates that the median Nash equilibrium in a multisector 7-region model would be as high as 58 percent, which corresponds to the magnitudes observed during the tariff wars of the 1930s when there was clearly no cooperation in tariff setting. Bagwell and Staiger (2011) provide evidence that the use of market power is neutralized upon WTO accession, which provides support for the second result above.

¹¹ Other reasons for a TA beyond those examined below include profit-shifting via firm-delocation which could be another beggar-thy-neighbour motive for trade policy that could be internalized by a TA. Ossa (2011) develops a monopolistic competition where protection attracts foreign firms to the home country resulting in a welfare loss (gain) for the (foreign) home country. A TA would then internalize this externality. In a model with fragmentation of production and offshoring with trade in intermediate inputs where prices are determined by bilateral bargaining between buyers and sellers, Antràs and Staiger (2012) show that a hold-up problem occurs when relationship-specific investments are required when contracts between buyers and sellers are incomplete. Then a TA will help raise an inefficiently low level of investment under free trade. Using the value-added content of exports for 14 major economies over 1995-2009, Bown et al. (2016) find that final goods tariffs are decreasing in the foreign content of domestically-produced final goods and also when domestic content of foreign goods is high. Grossman (2016) reviews these theoretical contributions on the rationale for trade agreements as well as international agreements to protect intellectual property.

¹² The third result is the "subsidy puzzle", i.e. that the GATT should encourage countries to use subsidies to reduce the externality they inflict on partners. Since subsidies are prohibited by the GATT, this result sits poorly in the dominant theory. Maggi (2014) and Grossman (2016) discuss the subsidy puzzle and conditions needed to solve it.

One could conclude from this literature that the WTO has been successful at internalizing TOT externalities. Two recent papers, however, suggest that TOT may not yet be fully internalized in the WTO leaving room for further cooperation. Using a model with many exporters to a given market, Ludema and Mayda (2013) show that WTO importers may still be able to use their market power when setting tariffs. Free-riding by some exporters in tariff negotiations will result in MFN tariffs not being fully internalized. They empirically show that WTO members MFN tariffs exhibit their market power, particularly when they are facing exporters which are not heavily concentrated. Nicita, Olarreaga and Silva (forthcoming) use the fact that WTO members negotiate maximum tariffs (called tariff bindings) above which they cannot set their applied tariffs to show that whenever there is a difference between the tariff binding and the applied tariff (labelled tariff water), WTO members set their tariffs non-cooperatively. Given that tariff water exists in more than three quarters of WTO members tariff lines, this suggests that tariffs are rarely set cooperatively in the WTO. Bown (2015) further shows that future WTO accessions also lead to a reduction in applied tariffs for acceding and WTO members. These three papers tend to suggest that there is significant room for further internalizing TOT among WTO members. This is the view adopted by Bagwell, Bown and Staiger (2015) in their survey of the TA literature.

The potential for low-income countries to further internalize their TOT is particularly large since the extent of tariff water in their WTO schedule is much larger. As Table 2 illustrates, the amount of tariff water in low-income countries is on average 5 times larger than in high income countries. For manufacturing goods, it is 7 times larger and tariff water is 72 percent for agricultural goods in low-income countries. So, in principle, there is still significant scope for bringing low-income countries closer to a more cooperative behavior within the rules set by the WTO.

Table 2: Tariff Water in the WTO

	All goods	Agriculture	Manufacturing
All countries	0.11	0.26	0.09
High income countries	0.07	0.25	0.05
Middle income countries	0.16	0.23	0.16
Low-income countries	0.36	0.72	0.33

Source: Foletti et al. (2011)

The problem with this view is that it implicitly assumes that low-income countries have market power. The empirical literature reviewed earlier tends to show that when low-income countries have market power they will use it to set tariffs non-cooperatively if they are outside the WTO or if there is water in their tariff schedules. But using the estimates of export supply elasticity of the rest-of-the-world, Nicita, Olarreaga and Silva, estimate that for the twelve low-income countries in their sample, the average optimal non-cooperative tariff is 0.9 percent –much smaller than the 53

percent estimated for major trading partners by Ossa (2014).¹³ The internalization of the externalities caused by the use of such small market power is unlikely to provide a rationale for low-income countries to participate in trade agreements. So, to a large extent the mainstream theoretical and empirical literature for the existence of TAs seems orthogonal to the rationale for low-income countries to participate in TAs. Indeed, much of the growing evidence in testing the TOT theory of TAs reviewed by Bown (2015) relates to developed countries.

Among the other rationales for a TA, the commitment theory appears most applicable to developing countries. Initiated by Staiger and Tabellini (1987), the main contribution is by Maggi and Rodríguez-Clare (1998) who view TAs as a commitment device for governments vis-à-vis domestic lobbies. In a model where governments cannot credibly commit to the socially optimal policy, over-investment by producers in import-competing sector will lead in equilibrium to overprotection of import-competing sectors. A TA then provides a credible commitment device through which governments tie their hands when facing import-competing lobbies.

To our knowledge, there is little empirical evidence supporting these predictions a reflection that the predictions have not been confronted to the data so far.¹⁴ There is however indirect evidence suggesting that the commitment theory may be the driving force. From an examination of data for all developing countries between 1980 and 2001, Tang and Wei (2009) find that GATT/WTO accession tends to raise income temporarily (growth and investment accelerate for 5 years leading to an economy permanently larger by 20%), but only for those countries with poor governance, results supportive of the commitment explanation of TAs.

Extending the results of Tang and Wei (2009), Allee and Scalera (2012) examine the effects of different types of GATT/WO accession negotiations on trade flows after classifying countries into three groups: early accession (33 members), automatic accession under the GATT for former colonies (65 members) and rigorous accessions (50 members) over the period 1950-2006.¹⁵ In a panel in which exports are correlated with per capita GDP and other controls, they find robustly that countries that engaged in the greatest amount of accession-driven trade liberalization experience the greatest amount of trade increases after joining while those that made little commitment to liberalization experience no trade increase. In all cases, trade gains decline over

¹³ The optimal non-cooperative tariff is simply given by the inverse of the export supply elasticity faced by each importer. The larger is the elasticity (i.e., the more elastic is the supply of the rest-of-the-world) the smaller is the optimal tariff. The twelve countries are Benin, Burkina Faso, Central African Republic, Madagascar, Malawi, Mali, Niger, Rwanda, Uganda and Togo. See Table 1 in Nicita et al. (2015).

¹⁴ Maggi (2014) reviews the evidence of the commitment theory: Staiger and Tabellini (1987) for the US, and Liu and Ornelas (2014) that a TA serves as a commitment device for fragile democracies. An exception is Arcand, Olarreaga and Zoratto (2015) who show that trade agreements are more likely to be signed by governments which do not give either too much or too little weight to social welfare in their objective function which is one of the predictions in Maggi and Rodríguez-Clare (1998). The reason for this is that governments that give a lot of weight to social welfare will not be sensitive to lobbying by import-competing producers, and those that give too little weight to social welfare and put all their weight on the lobbying rents will have no incentive to pre-commit to free trade through a TA.

¹⁵ Indicators of rigor of accession include the number of working party members, the number of years, the number of rounds of questions, the change in applied tariff from the year of application to the year of accession.

time. While the identification strategy deserves further scrutiny (endogeneity of GDP, omitted variable bias), their robustness to the measures of stringency of accession suggest that the modalities of GATT/WTO membership may be evidence of the importance of institutions on trade outcomes.

There is a conceptual problem with the theory that sees TA exclusively as a commitment device. It is not clear what would be the incentives for the trading partner to enforce the agreement. This is partly solved in Maggi and Rodríguez-Clare (2007) that put together the two rationales for TA: the TOT and the commitment device.¹⁶ There remains however a puzzle: what about low-income countries with very little market power? The credibility problem clearly gives this type of country incentives to sign TA with partners that have large market power and that would sanction them if they were to deviate from their commitments. But it is difficult to see the incentives for the large trading partner to enforce these agreements if the low-income country has no market power. And without credible enforcement by the large trading partner, there is no credibility gain for the low-income country from the TA.¹⁷

However, it could be that the Northern partner in a North-South TA would have an incentive to enforce the agreement with a low-income partner if the Northern partner wishes to build up a reputation with a view to establish future TAs with other Southern partners that also look for a TA as a commitment device. The Northern partner may then have an incentive to build a such a reputation because it would allow it to build a “hub-and-spoke” network of TAs from which it could extract trade rents from the collection of smaller Southern partners. The many FTAs signed by the US, each with its different set of rules of origin, and to a lesser extent with the EU FTAs, may fit this description.¹⁸

Note that this puzzle is stronger for multilateral TAs than for PTAs which can explain why the WTO's Doha Round has made little progress with developing countries often blocking progress or the negotiation of new agreements. In the case of PTAs, countries that have little market power in global markets may have stronger market power in regional markets. Broda, Limão and Weinstein (2008) provide indirect evidence for this showing that market power increases with the remoteness of the importer. More remote countries may trade in more segmented regional markets which may give them some regional market power even though at the global level they do not enjoy much market power. The proliferation of South-South and North-South PTAs could then be explained by the combination of credibility and TOT arguments as in Maggi and Rodríguez-Clare (2007).

Fiorini and Lebrand (2016) also develop a commitment motive for a TA in services through commercial presence because of the complementarity between services and non-services inputs in downstream production of goods.

Schiff and Winters (2003, chapter 4) expressed reservations along these lines, pointing out that in North-South agreements, the Northern partner often lacks the incentive to enforce. More recently, this can be seen in the Economic Partnership Agreements (EPAs) signed by the EU with ACP countries which have not lived up to the initial intention of the agreements at their launch (see Melo and Regolo (2014)).

We thank Thierry Verdier for this suggestion.

Other factors have been important in the proliferation of South-South PTAs. In the first wave of PTAs in the 1960s and 1970s the rationale for exploiting economies of scale through an exchange of market access to overcome the very small domestic market was important.¹⁹ These early attempts at exchanges of market access through PTAs failed to fulfill expectations because of the lack of complementarities across partners and the lack of compensation funds at the regional level for adjustment among partners with very different levels of development (Foroutan, 1992).²⁰ And for Sub-Saharan Africa, newly acquired political independence and the quest for consolidating national sovereignty were also strong.²¹

Table 3 describes the main RTAs currently active in Africa along with the membership and objectives stated in the treaties. As pointed by skeptics of the main theories of TAs discussed above, none of the economic rationales discussed above (TOT or market access, enhanced credibility) are mentioned. Rather, political motives and 'deep integration' appear among the most cited motives.²² The membership shows a sharp heterogeneity in geographical and economic characteristics (resource-rich and resource-poor, landlocked and coastal, large and small).

¹⁹ Melo, Rodrik and Panagariya (1992) review the theory at the time emphasizing that economies of scale could be a reason for integrating but that this gain would also be available on a multilateral basis. From a cross-section of 101 countries with 78 developing countries, by two sub-periods (1960-72 and 1973-85), Melo, Montenegro and Panagariya (1992) failed to find any effect on growth for dummy variables capturing North-North and South-south PTAs.

²⁰ Moncarz, Olarreaga and Vaillant (2016) provide evidence that tariff preference within Mercosur and its common external tariff were used by its larger member (Brazil) to move its production bundle towards more sophisticated products.

²¹ Fernandez and Portes (1998) and Schiff and Winters (2003) review the 'non-traditional' motives for RTAs among developing countries. By 'non-traditional' is meant effects other than exchange of market access and concerns about the trade diversion and trade creation effects discussed by Viner.

²² Regan (2015) and Ethier (2013) argue that the TOT theory of PTAs does not correspond to what politicians have in mind when they negotiate TAs and argue that trade prospects could trigger participation of export interests- Grossman (2016) reviews their critiques concluding that research is needed to see if PTAs might bring dormant export interests into the political process.

Table 3: Main Preferential Trade Agreements in Africa

Abbreviation	Name of RTA	Type of Agreement	Members	Year Originated	Year Agreement Signed	Objective
AMU	Arab Maghreb Union	Free Trade Area	Algeria, Libya, Mauritania, Morocco, Tunisia	1988	1989	- Economic and political unity among Maghreb countries.
Agadir	Agadir Agreement	Free Trade Area	Egypt, Jordan, Morocco, Tunisia	2001	2004	- Establish an FTA among members prior to a Euro-Mediterranean FTA as envisaged in The Barcelona Process. - Boost competitiveness of their products into European Union (EU) markets; expand cooperation, commercial exchange and free trade between members. - Agadir Agreement spectrum includes customs, services, certificates of origin, government purchases, financial dealings, preventive measures, intellectual property, standards and specifications, dumping and mechanisms to resolve conflicts.
EMCC/CEMAC	Economic and Monetary Community of Central Africa	Customs & Monetary Union	Cameroon, Central African Republic (L), Chad (L), Congo, Equatorial Guinea, Gabon	1959 ¹	1994	- Create a common market based on the free movement of people, goods, capital and services. - Ensure a stable management of the common currency. - Secure environment for economic activities and business in general. - Harmonize regulations of national sectoral policies.
COMESA	Common Market for Eastern and Southern Africa	Customs Union	Burundi (L), Comoros, DR Congo, Djibouti, Egypt, Eritrea, Ethiopia (L), Kenya, Libya, Madagascar, Malawi (L), Mauritius, Rwanda (L), Seychelles, Sudan, Swaziland (L), Uganda (L), Zambia (L), Zimbabwe (L)	1965 ²	1993	- Achieve sustainable economic and social progress in all Member States through increased co-operation and integration in all fields of development particularly in trade, customs and monetary affairs, transport, communication and information, technology, industry and energy, gender, agriculture, environment and natural resources.
EAC	East Africa Community	Customs Union	Burundi (L), Kenya, Rwanda (L), Tanzania, Uganda (L)		1999	- Widen and deepen co-operation among Partner States in, among others, political, economic and social fields for their mutual benefit. To this extent the EAC countries established a Customs Union in 2005 and a Common Market in 2010. Enter into a Monetary Union and ultimately become a Political Federation of the East African States.
ECOWAS	Economic Community of West African States	Trade, Currency, Political Union	Benin, Burkina Faso (L), Cape Verde, Cote d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali (L), Niger (L), Nigeria, Senegal, Sierra Leone, Togo	1965 ³	1975/1993	- Achieve a common market and a single currency. Provide for a West African parliament, an economic and social council and an ECOWAS court of justice to replace the existing Tribunal and enforce Community decisions. The treaty also formally assigned the Community with the responsibility of preventing and settling regional conflicts.
PAFTA	Pan-Arab Free Trade Area	Free Trade Area	Bahrain, Egypt, Iraq, Jordan, Kuwait, Lebanon, Libya, Morocco, Oman, Palestine, Qatar, Saudi Arabia, Sudan, Syria, Tunisia, United Arab Emirates, Yemen		1997	- Elimination of customs duties and other fees and duties having similar effects. - Eliminate all non tariff barriers, including Administrative, Monetary, Financial and Technical barriers. - Preferential treatment for least developed member states.
SACU	Southern African Customs Union	Customs & Monetary Union	Botswana (L), Lesotho (L), Namibia, South Africa, Swaziland (L)	1910 ³	2002	- Facilitate the cross-border movement of goods between the territories of the Member States. - Create effective, transparent and democratic institutions to ensure equitable trade benefits to Member States. - Promote conditions of fair competition in the Common Customs Area and investment opportunities.
SADC	Southern African Development Community	Free Trade Area	Angola, Botswana (L), Lesotho (L), Malawi (L), Mauritius, Mozambique, Namibia, South Africa, Swaziland (L), Tanzania, Zambia (L), Zimbabwe (L)	1980 ⁴	1996	- Enhance growth and poverty alleviation; support the socially disadvantaged through Regional Integration. - Evolve common political values, systems and institutions; Promote and defend peace and security. - Promote self-sustaining development on the basis of collective self-reliance and the inter-dependence of Member States. - Achieve complementarity between national and regional strategies and programmes. - Achieve sustainable utilisation of natural resources and effective protection of the environment. - Strengthen and consolidate historical, social and cultural affinities.
WAEMU /UEMOA	West African Economic and Monetary Union	Customs & Monetary Union	Benin, Burkina Faso (L), Côte d'Ivoire, Guinea-Bissau, Mali (L), Niger (L), Senegal, Togo		1994	- Increase competitiveness through open markets; rationalize and harmonize the legal environment. - Convergence of macro-economic policies and coordination of sectoral policies; create a Common Market. - The coordination of sectoral policies.
GCC	Gulf Cooperation Council	Political & Economic Union	Bahrain, Kuwait, Oman, Qatar, Saudi Arabia, United Arab Emirates		1981	- Formulate similar regulations in religious, finance, trade, customs, tourism, legislation and administration. Establish a common currency.

Source: WTO RTA database

Note: 1. Creation of Equatorial Customs Union; 2. Creation of Preferential Trade Area for Eastern and Southern Africa; 3. First agreement signed; 4. Creation of Southern African Development Community; (L) for landlocked members

Source: Melo and Tsikata (2015, table 1)

In principle these sharp geographical disparities signal a potential for large benefits from economic integration. At the same time, with a very heterogeneous membership, there is a trade-off between the benefits of common policies which depend on the extent of cross-border policy spillovers and their costs, which depends on the extent of policy preference differences across member countries. Common decision-making internalizes the spillovers but it moves the common policy away from its preferred national policy (i.e. a loss of national sovereignty). In Africa, spillovers are important as transport and communications infrastructure are under-provided, but the ethno-linguistic diversity across ‘artificial’ borders suggests strong differences in policy preferences hindering the supply of public goods through the adoption of common regional policies.

The new South-South and North-South PTAs launched since the Uruguay Round have gone deeper and have tried to address the lack of complementarities and lack of compensation funds of the early South-South PTAs of the 70s and 80s. They also seem to have been somewhat more successful at promoting intra-regional trade than the early PTAs.

Table 4 classifies South-South PTAs along two dimensions: depth and breadth following the lines in Horn et al. (2010b) who distinguish between provisions covered by the WTO (called WTO+) and undertakings that extend beyond WTO provisions (called WTO-X). For both, they distinguish if the coverage is likely to be legally enforceable or not, which they call ‘legal inflation’. Whereas their classification cover EU and US PTAs and lead them to conjecture that these PTAs are a way to impose their regulatory standards on Southern partners (see below), table 4 only reports measures for PTAs involving a small sample of 21 South-South PTAs.

Table 4: Depth and Breadth of Measures in a Selection of Developing-country RTAs

		Breadth					<i>All</i>
		Type of trade		Technology	Factors of production		
		Goods	Goods & services	Innovation & IPR	Investment & Capital	Labor	
Depth	Tariffs (τ)	1.00	0.48	0.57	0.62	0.38	0.33
	τ & NTBs	1.00	0.48	0.57	0.62	0.38	0.33
	τ & BTB policies	0.90	0.47	0.58	0.63	0.37	0.32
	τ & other policies	0.38	0.75	0.88	0.88	0.88	0.75
	<i>All</i>	0.33	0.71	0.86	0.86	0.86	0.71

Source: Authors calculations from data in the WTO Trade Report (2011)

Notes: Share of Agreements that cover different combinations of depth (columns) and breadth (rows) measures. An RTA covers a type of measure if at least one of the measures in that category is covered. NTB= Non-tariff barriers (export taxes, SPS, TBT, STE, AD, CVM); BTB= Behind-the-border (state aid, government procurement, TRIMs, TRIPs, competition policy). Technology (TRIPs, IPR, Innovation policies, Research and Technology). Labor (Labor Market regulation, Social matters, illegal immigration, visa and asylum) Other policies: see Maggi (2016, table A1).

Sample: 21 South-South trade agreements selected on the basis of per capita income

The table shows that, on paper at least, objectives extend beyond the 'shallow' integration objectives of removing tariffs with half including market access in Services markets as well.²³ An interesting issue is whether this taxonomy can inform on how breadth and depth interact and if those interactions are different across different types (North-North, North-South and South-South) PTAs. Is the depth of policy cooperation deeper when the agreement is broader? The sample is too small to answer such a question, but there is a need for a better understanding of the interaction between depth and breadth in the design of South-South and North-South TAs as well as their development impact.

The rapid increase in PTAs since the 1990s has led to an extensive literature on the impact that their growth has on the GATT and WTO. At a time when the Uruguay Round negotiations were stalled and the US had just started entering the fray of Regional Trade Agreements (RTAs), Bhagwati (1992) launched a 'stumbling block vs building block' literature. For developing countries that are the main beneficiaries of an open trading system, so far at least, if the proliferation of (successful?) RTAs may have slowed down (halted?) multilateral negotiations, they have not led to an increase in protection against non-members (Freund and Ornelas (2010) and Baldwin (2013)). Most studies have concluded that RTAs have not been a stumbling block.²⁴

The issue however is what role is left for multilateralism and the WTO in this new environment. Baldwin (2014) suggests that there is a need for new rules for cooperation in the WTS that will lead to deeper constraints on national policies (and hence on national sovereignty) than those under the WTO. PTAs or issue-oriented plurilaterals would then be the best avenue for carrying out this task as agreement on these deeper constraints is more likely to be reached among a smaller number of negotiating members.²⁵ The risk with the development of PTAs and issue-oriented plurilaterals to tackle deeper issues such as investment, labor, social and environmental clauses that are outside the WTO system is that they may leave low-income countries on the sidelines, which may hurt their development prospects or lead them to upgrade their regulatory standards to the Northern's partners at the expense of trade with non-bloc southern partners (see below).

The development impact of TAs

With the Single Undertaking, the creation of the WTO signaled a clear break from the "live and let live" days of the GATT, a kind of natural experiment on institutional development for developing countries as they acquired rights and had to take on obligations although they usually did not have to reduce tariffs substantially upon joining the WTO. A large literature has tried to detect a

²³ The linear integration model (goods markets followed by factor markets) has often been criticized as failing to exploit the high integration benefits from integration in services markets (see Melo and Tsikata (2015) for further discussion).

²⁴ Freund and Ornelas (2010) review the literature. Krishna (2013) and Limão (2006) and Karacaovali and Limaõ (2008) find evidence that PTAs may still be a stumbling bloc for the EU and the US.

²⁵ In the context of climate-related negotiations, Victor (2015) suggests six tasks that climate clubs could perform better than the multilateral system in coordinating measures to deal with climate change. See also Nordhaus (2015) and Mavroidis and Melo (2015).

GATT/WTO effect in gravity models, and of participation in PTAs mostly using a dummy for participation in the TA (GATT/WTO or PTA), often yielding mixed results. We review the main findings below referring to Limão (2016) for more detailed discussion.²⁶

Using a panel gravity specification with multilateral resistance terms, Subramanian and Wei (2007) looked for breaks in the data upon membership to the WTO. They found that the WTO resulted in a large, but uneven impact on world trade with the developed countries that participated more actively in reciprocal negotiations than developing countries gaining the most. Not surprisingly, manufacturing exporters were also found to benefit more than agricultural exporters as import barriers in agriculture were subject to "dirty" tariffication resulting in very little actual liberalization for agricultural goods during the Uruguay Round.²⁷ Eicher and Henn (2011) reclassified the dummy variables to distinguish WTO membership from PTAs, both among WTO members and among non-members. They also found heterogeneity in the WTO effects with modest effects of WTO accession for countries that had higher imports and thus higher potential market power and initial tariffs. Limão extends the data to 2010 also separating WTO and PTA membership. In all estimates reported in his table 2, the WTO effect remains positive, though it is reduced when controlling for bilateral PTAs. He also obtains that the estimated effects of all PTAs and WTO membership are significantly larger after 10 years (about twice as large). So the latest theory-consistent gravity model estimates deliver an estimate that belonging to GATT/WTO reduces trade costs.²⁸

Turning to PTA membership, Maggi (2016 table 2) reports high average trade cost reduction estimates of 15% given that WTO (2011) estimates average preferential margins at 2.1%. Taking into account the AVE of NTBs, he shows that the estimates are still on the high side and sees a trade elasticity puzzle. He then convincingly argues and gives evidence that this puzzle can be partially accounted for once we take into account the uncertainty that PTAs (or WTO's tariff bindings) solve. Handley and Limão (2015) provide evidence of the quantitatively large impact associated with the reduction of the uncertainty brought by PTAs and tariff bindings in the case of Portugal's and

²⁶ Limão (2016) reviews the shortcomings of what Head and Mayer (2014) refer to as the 'naïve' gravity model estimates that fail to take into account multilateral resistance terms. Theory-consistent gravity models still face three problems: small sample size in a cross-section, choice of controls (multiple atheoretical controls) and omitted variable bias as countries could be simultaneously pursuing unilateral trade liberalization. Up until the 1990s no data is available on bilateral tariffs, so the models capture the WTO/PTA effect by a dummy variable so these models have the properties of an average treatment effect in which the control group shares all of the same characteristics for all covariates except membership. Among others, this implies that members and non-members share the same trade cost elasticity, ε , usually estimated in the range in the range $3 < \varepsilon < 7$. Using Limão's notation, this implies that the average estimated ad valorem trade cost reduction from the PTA/WTO membership is given by $PTA^{ave} \equiv \varphi / \varepsilon$ where φ is the fixed effect coefficient estimate. In this regard, reviewing carefully the evidence on North-South and South-South reciprocal PTAs up until the middle 90s, Foroutan (1998) documents that during the 80s and 90s much reduction in protection in developing countries took place among countries that were not members of a PTA and that in Latin America, trade liberalization was taking place simultaneously with PTA membership so the gravity estimates suffer from a time-varying omitted variable bias in addition to time-invariant unobserved variables that can be handled by FEs (See Baier and Bergstrand (2007)). Limão (2016 table 2) reports estimates covering the period 1960-2010 that show that the PTA coefficient estimates, φ are reduced by half when controlling for all FE.

²⁷ Dirty tariffication was defined as the transformation of non-tariff barriers into tariff barriers as decided during the Uruguay Round, but at levels of protection much higher than those imposed by the non-tariff barriers.

²⁸ All these estimates are "average treatment effects" raising the issue of the appropriate control group. See Egger and Tarlea (2017).

Spain's accession to the EC. Interestingly, when they distinguish between reciprocal and non-reciprocal PTAs like the GSP, they find no effect for the non-reciprocal PTAs that are typically shrouded by uncertainty.²⁹ So the conclusion of these gravity results is that the estimated increases in trade reflect other PTA-related effects like a reduction in trade policy uncertainty that go beyond reduction in tariffs and NTBs.

As discussed above the creation of the WTO and the new South-South and North-South PTAs since the mid-1990s have also gone much deeper in terms of commitments which imply not only changes in trade policies (e.g. removal of NTBs like voluntary export restraints), but also a costly-to-implement change in domestic institutions for low-income countries since the agreements under the Single Undertaking of the WTO were largely at the insistence of developed countries (see estimates in Finger (1999) and Finger and Shuler (2000)). Deep PTAs also imply institutional changes. We review both, starting first with the WTO agreements.

The multilateral Customs Valuation Agreement (CVA) is an institutional development that aims at curbing tax evasion and corruption at customs. The links between trade policy and customs corruption have been studied extensively though no general conclusion emerges from the studies reviewed here. Gatti (1999) and Fisman and Wei (2004) show how tariff dispersion helps corruption. Using answers on bribes from a random sample of shipments to ports in South Africa (Durban) and Mozambique (Maputo) Sequeira and Djankov (2014) show that the probability (and amount) of bribes is higher in Maputo where there is interaction between clearing agents and customs officials than in Durban where there isn't any. They distinguish between cost-reducing 'collusive' bribes that reduce uncertainty and cost-raising 'coercive' bribes resulting from having to pay for access to a port service. In a follow-up study drawing on Mozambique's tariff reform, Sequeira (2016) shows that the reform reduced the probability of collusive bribes relative to coercive bribes that were still possible because of the monopsonistic position of clearing agents. Jongs and Bongman (2011) show that general corruption reduces trade, but that corruption at customs helps trade (greasing wheel effect). Dutt and Traça (2009) show that corruption helps trade when tariffs are high. Anson, Cadot and Olarreaga (2006) show that pre-shipment inspections may increase corruption as it provides information to corrupt customs officials (also see Yang, 2004). Javorcik and Narciso (2013) show how the CVA led to a shift in tax evasion and corruption from under-invoicing to a reclassification of goods. Thus, the general conclusion from the literature suggests that, while the CVA has addressed some of the problems associated with customs corruption, it may have created others.

Other WTO agreements, such as the Trade-Related Investment Measures (TRIMS) or Trade-Related Intellectual Property (TRIPS) have put constraints in terms of the type of industrial and protection

²⁹ Qualification for US AGOA preferences is contingent on governance indicators and so is qualification for GSP+ preferences of the EU. GSP preferences can be terminated at the discretion of the grantor. Unilateral trade preferences may also be counterproductive for exporters who will not wish to incur lobbying costs to get access to foreign markets as argued by Ozden and Reinhardt (2005) and Conconi and Perroni (2012,2015). See the discussion in Ornelas (2016).

policies countries can use to protect intellectual property. In the case of TRIMS local content requirements are banned where some may argue that in some industries (renewable energies) some degree of local content can help with technology transfers. The TRIPS agreement has also aimed at enforcing more stringent intellectual property laws in developing countries and an important literature has explored the impact of TRIPS signing and how these new WTO agreements have shrunk the "development space" of developing countries as countries are faced with a smaller of policies to choose from (Wade, 2003, and Fink and Maskus, 2005, Finger and Shuler, 2004).

Another important development of the WTO is the creation of a strong dispute-settlement mechanism that could, in principle, be favorable to developing countries as the trading system is moving away from a power-based resolution of conflicts towards a rule-based regime. Bown (2009) reviews bilateral trade disputes over the period 1995-2011. Compliance with rulings has been very high. The WTO has thus "...established itself as one of the most, if not the most, successful international organization in terms of enforcement and dispute settlement" (Maggi, 2014). This is important because, if credibility is the motive for low-income countries to join the WTO, a strong enforcement mechanism is necessary. At the same time, it is noteworthy that in their review of the trade dispute settlements over 1995-2009, Bown and Reynolds (2015) find that they concur with the TOT theory for high-income countries leading them to ponder "...what specific purposes developing countries have in mind when they sign onto Trade Agreements like the WTO."

Labor, social and environmental clauses in TAs can also have consequences on the development prospects of low-income countries. Developing countries have historically been hostile to the introduction of labor and environmental standards in the WTO because of the induced reduction in competitiveness for their exports, and the risk of labor, social or environmental clauses being used as a protectionist instrument by more advanced members. This line of reasoning is based on a static view of comparative advantage and institutions that ignores the two-way causality between comparative advantage and institutions. More stringent labor, social and environmental regulation in low-income countries "imposed" by a TA can help shift their comparative advantage toward sectors with higher growth potential.

If developing countries have been reluctant to embrace labor, social and environmental regulations at the multilateral level, they have been introduced in North-South PTAs. Since NAFTA, many PTAs involving the QUAD have included labor, social and environmental clauses as well as investment and sometimes competition agreements.³⁰ As documented by Horn, Mavroidis and Sapir (2010), the depth of integration in the EU and US PTAs have extended well beyond negotiations at the WTO often on North-South basis. South-South PTAs have also grown rapidly,

³⁰ GSP programs also now provide additional preferential access to developed country markets conditional on labor and environmental standards.

but the delegation of authority necessary to support 'deep' integration that would contribute to institution building has not occurred.³¹

Beyond the potentially positive impact that these clauses may have on the shift of comparative advantage of low-income countries, they can also help unblock the political equilibria imposed by a strong political minority. Polaski (2004) provides an interesting example of how the labor clause in the US-Cambodia Trade and Investment Framework Agreement was used by the government of Cambodia to introduce more labor-friendly legislation in terms of working conditions and minimum wages against lobbying by owners of large Cambodian firms in the apparel sector. Interestingly the US-Cambodia agreement offered stronger tariff preferences into the US market for Cambodian firms that satisfy social and labor regulations. Thus, instead of sanctioning Cambodian apparel exporters for not complying with the social and labor clauses, it provided more generous preferences to those who complied. Whether to rely on carrots or sticks to enforce institutional decisions is deserves further attention. The issue of whether sectoral or economy-wide regulations should be imposed should also be further investigated. It is unclear which is preferable. In the presence of sectoral social and labor clauses there is a risk of worsening labor conditions in other sectors. In the presence of economy-wide labor and social clauses there is the risk of sanctioning firms and sectors with adequate work conditions for the exploitation of workers in other firms or sectors.

In the last 50 years environmental issues have emerged globally to the point that the original Bretton Woods architecture (GATT/IMF/World Bank) and environmental issues are now inextricably linked. In a linked climate-trade-finance global policy coordination structure, climate and more generally the sustainability of the environment (e.g. biodiversity, deforestation) now need to be added to the global policy bargaining set. A shift at the WTO from a negative contract to a positive contract offers the prospect of potentially stronger trade disciplines (for instance through the setting up of plurilateral trade agreements).³² These institutional challenges are beyond the scope of this survey but deserve attention.

Differences in property rights regimes are an externality that can be a source of comparative advantage. The opportunity to trade can also influence the quality of institutions and, as in all cases of second-best, the opportunity to trade can be welfare-reducing. In the vein of Chichilnisky (1994), in a model where property rights are endogenously determined and depend on enforcement policies, Copeland and Taylor (2009) show that the opportunity to trade can alleviate or worsen the

³¹ In their review the challenges facing regional trade agreements in Africa, Melo and Tsikata (2015) note that the great disparities across partners (resource-rich and resource-poor, coastal and land-locked, large and small) combined with the lack of compensation hamper progress. On delegation of authority versus representation of national interests in regional institutions see Melo, Panagariya and Rodrik (1992) and Spolaore (2012).

³² Victor (2015) calls these 'climate clubs' noting six tasks they could perform from designing smart border measures to deal with carbon leakage to crafting conditional commitments. Using a calibrated world trade model with CO2 emissions, Nordhaus (2015) shows that across-the-board tariffs in a 5%-20% range to non-participants in a carbon club is incentive-compatible and could avoid free-riding. Required changes in the GATT rules to deal with the climate change problem are discussed in Melo and Mavroidis (2015).

tragedy of the commons. They show that in general an opening to trade will lead to an enforcement of property rights as the opportunity cost of labor engaged in the extraction of natural resources goes up. Depending on the pattern of technological progress in resources extraction and in the technology for monitoring illegal harvesters, resource depletion may increase or fall. They give several examples of both instances.³³

Environmental degradation and conflict are clearly linked to trade in weak institutional environments and with the opportunity to trade, a topic that will presumably be covered in other contributions to this project. (See Collier (2010) and Berman et al. (2014)). Collier and Venables (2010) and Ruta and Venables (2013) review the institutional reforms at the multilateral level that would improve the protection of natural resource assets in weak institutional environments.

Finally there is growing literature on the impact of TAs on conflict and war. It is well-known that the original motives behind the creation of the European Community after WWII were to diffuse the threat of future military conflicts. Low-income countries, many abundant in natural resources, are prone to conflicts and political cooperation has also been high among the objectives of these regional trade blocs (see table 3).³⁴ The experience of RTAs around the world supports the view that economics and politics are complements (rather than substitutes as argued by the defenders of multilateralism). RTAs reduce the probability of war through two channels. First, trade-creating exchange takes place, increasing the opportunity of war. Second, as political scientists have argued, sufficiently 'deep' RTAs reduce information asymmetries as partners know each better. Then incentives for countries not to report their true options in an attempt to extract concessions are reduced. Discussions among members spill over to political issues diffusing political disputes that could escalate into political conflicts. These two channels reduce the probability of costly conflicts. By the same token, globalization which involves a shift of trade towards distant partners reduces this opportunity cost increasing the likelihood of conflicts.

Martin et al. (2008) build these insights in a bargaining model where rational states will enter into an RTA if the expected economic gains from trade creation and the security gains resulting from the decrease in the probability of disputes degenerating into war exceed the political costs of entering the RTA. Using data covering the 1950-2000 period, they find support for the hypothesis that increased bilateral trade deters bilateral war because it increases the opportunity cost of war while multilateral openness has the opposite effect. In subsequent work based on the same data, Martin et al. (2012) find support for their theory of PTA formation: country-pairs with large economic gains from RTAs and high probability of conflict are more likely to sign an RTA.

³³ As evidence of the interaction of trade and property regimes, Xu (2015) studies trade in virtual water via its embodiment in agricultural products. She finds support for the hypothesis that countries with weak property rights regimes have greater volumes of embodied water in their exports. Evidence on the importance of environmental policies on comparative advantage is also strong for trade in virtual carbon (the pollution-haven hypothesis) and for trade in products that degrade the environment from countries with lax environmental policies towards countries with more stringent standards. Fischer (2010) surveys the literature.

³⁴ Melo and Tsikata (2015, table 1) lists the objectives of RTAs in Africa. Cooperation and security matters are almost always cited among the main objectives.

3.2. Trade Agreements and Development: what we would like to know?

The survey of the literature on TAs and development in the previous section suggests at least five avenues for future research. First, with border protection levels having fallen worldwide, regional integration is no longer about an exchange of market access (at the expense of outsiders) but about 'deep' behind-the-border reforms leading to increased integration. Labor, social and environmental standards, competition and investment policies and institutions are increasingly what are at stake in particular when looking at North-South trade agreements where the potential for external enforcement is probably larger. A better understanding and assessment of the trade and development implications of these deeper agreements is needed. Are labor, social and environmental clauses "imposed" for protectionist reasons in North-South agreements? How do they impact domestic institutions in low-income countries? And do they help the development prospects of low-income countries by shifting their comparative advantage towards sectors with higher growth potential?

Second, with a stalled Doha Round of trade negotiations in the WTO, it is clear that RTAs have become the more dynamic institution regulating international trade, even though the dispute settlement mechanisms of the WTO have also been very active. A first issue of interest is whether or not, as questioned by Bagwell, Bown and Staiger (2016) the WTO is 'passé' and, if not, what can the WTO do for low-income countries that they cannot get (or get better than) through their membership in PTAs. Another is a finer knowledge of the landscape of these PTAs extending the methodology of Horn et al (2010b) to the large sample of South-South PTAs. How does the depth and breadth tradeoff affect the impact of PTAs in low-income countries?³⁵ In their review of the bilateral PTAs of the EU and the US with Southern partners, after controlling for 'legal inflation' in the EU PTAs, Horn et al. (2010b) conjecture that the ground-breaking provisions (i.e. their WTO-X provisions not included in the agenda of the WTO negotiations) relate to regulatory issues suggests that these agreements are about exporting their regulatory approaches to their PTA partners.³⁶ Disdier et al. (2015) give evidence that the harmonization of technical barriers to trade by the Southern partner to the Northern's partner's standards increases its exports to the North and leads to trade deflection with the South. We need to know more about whether harmonization to less costly to implement international (rather than to Northern regional) standards would likely be preferable for Southern partners who would then avoid getting trapped in a hub-and-spoke structure with the Northern partner. An in depth analysis of the consequences of dispute settlement bodies in bilateral and regional TAs is also missing. In particular the proliferation of State-Investor arbitration courts, where foreign firms can challenge governments outside the national judicial system, need to be examined. They clearly protect foreign investors, and provide a clear legal framework, but there is anecdotal evidence that these arbitrators associated with

³⁵ With an extended codification of the depth of PTAs, will the larger estimates of the ATE effect of FTA participation for deep FTAs in Maggi's (2016, table 2) carry over to this data set?

³⁶ In the EU 'ground-breaking' provisions relate to competition policy and in the US to environmental and labour standards.

bilateral trade or investment agreements have often overruled national regulators and legislators (Estache and Phillippe, 2016).³⁷ The extent to which these arbitration courts provide an opportunity for legal forum shopping and an associated increase in judiciary uncertainty deserves further study.

Third, while we have a relatively good handle on the motivations for trade agreements among large developed countries, it is less so for small developing countries. The credibility and commitment channel of Maggi and Rodriguez-Clare provides a promising avenue for understanding their participation in TAs, but we have little empirical support for its predictions that would help us assess the importance of this channel, and in which type of countries/situations/institutions they are more likely to play a more important role. Also while the theory explains why the developing country wants to commit to a TA, it is unclear why the developed country participates at all in the agreement. Other papers have explored this issue through linkage (Limao, 2007) where the North has non-economic objectives (fight against terrorism or drugs), but it still does not explain why the North may want to enforce the agreements for other trade-related policies. Without any credible enforcement from the North, the South will not solve its time-inconsistency problems with a TA. This sits at odds with the rapid growth in low-income country membership in the WTO in spite of accession requirements becoming tougher. Signaling, fear of domino effects, and the role that uncertainty may play in the decision to join a TA are probably interesting research avenues in this area.

Fourth, if most of the evidence on PTAs and trade policies towards non-members seems to support the view that PTAs are complementary to multilateralism, this evidence hardly covers low-income countries. Thus in Africa, when ECOWAs recently moved to a CU, at the insistence of Nigeria, a 5 band tariff-structure was adopted suggesting a protectionist stance especially in view of the tariff overhang among members. Studies on the consequences of integration on trade policy towards non-members along the lines of those reviewed above are needed for low-income countries.

Fifth, we now have over two decades of experience with reciprocal North-South PTAs and only a few evaluations.³⁸ None are on reciprocal PTAs with low-income countries. The EU's current negotiations go beyond the Deep and Comprehensive FTAs (DCFTAs) currently under negotiation between the EU and Southern and Eastern neighbors: they also include the Economic Partnership Agreements (EPAs) with ACPs. For most members, the EPA partnerships apparently bring little. There is no market access for LDCs, rules of origin are still complex and they include some 'deep' provisions beyond multilateral negotiations, and are these provisions legally enforceable, or do they mostly reflect 'legal inflation'? Is institution-building really among the motivations for these

³⁷ The Uruguay-Phillip Morris dispute over the legislation banning smoking in enclosed public spaces passed in 2006 in Uruguay is an example of such a case. The international arbitration under the Uruguay-Switzerland bilateral investment agreement has decided to go ahead with the multi-million dollar claim by Phillip Morris that such a ban has hurt the companies' value in Uruguay where it had previously invested.

³⁸ NAFTA has been the subject of tenth and twentieth anniversary assessments. The EU has also just concluded DCFTAs with its Eastern neighbours (Ukraine, Georgia, Moldova) and is currently negotiating DCFTAs with its Southern Mediterranean neighbours.

agreements as often claimed? Did the costs associated with negotiating the deep African RTAs (SACU, CEMAC and UEMOA) which were borne by colonizers laid the foundations for more intensive trade later on? Increased trade among members would have raised the opportunity cost of future wars among members by increasing their inter-dependence along the lines suggested by Martin et al. (2008, 2012), Mayer and Thoenig (2016). At the same time, much trade in Africa involves insecure goods that require resource-using protection altering the usual calculus of the gains from trade. In that environment as shown by Garfinckel et al. (2015), autarky may be preferred to free trade.

4. Trade Promotion Organizations

Important externalities are associated with the gathering of foreign market information related to consumer preferences, business opportunities, quality and technical requirements, etc. Private firms alone will not provide sufficient foreign market information, as companies hesitate to incur research and marketing costs that can also benefit competitors. The same logic applies to pioneer exporters, who make a considerable investment in attempts to discover what works in foreign markets, cultivating contacts, establish distribution chains and other costly activities that can be directly or indirectly used by their rivals (Hausmann and Rodrik, 2003). The uncertainty associated with trading across markets with different regulations, weak institutions, and the overall lack of familiarity with foreign markets hurt exporters (Araujo, Mion and Ornelas, 2015). Trade promotion Organizations (TPOs) can provide this information without having each firm paying the cost of acquiring the necessary information.³⁹ In small developing countries, being able to fulfill the large and diversified demand of importers in world markets will require some form of coordination across firms. Especially in low-income countries where credit constraints are significant, TPOs can help small and medium size firms cooperate to satisfy large demands in world markets.⁴⁰

Whether market failures come from externalities associated with foreign market information, discoveries by pioneer exporters, the absence of private insurance schemes, or coordination failures, they all support the case for government intervention to help domestic firms fully participate in international markets (Copeland, 2008). Since the beginning of the 20th century governments have addressed this type of market failure with TPOs that mainly aim at internalizing information spillovers and solving coordination failures.

While some of these market failures could be privately addressed through intermediaries or privately funded agencies, the presence of positive externalities that can go beyond the group of

³⁹ The literature also refers to Export Promotion Agencies (EPAs). TPOs and EPAs will be used interchangeably

⁴⁰ There is also an important literature looking at how the sophistication of the export bundle can help export growth. Hausman, Hwang and Rodrik (2007) originally provide evidence of this across countries, whereas Jarreau and Poncet (2012) and Poncet and Sarosta (2013) provide evidence within China and show that the sophistication of the export bundle matters for growth, but only when considering the export bundle of domestic (not foreign firms) which do not participate in export processing programs. This hints to the limits these programs in helping spur growth.

firms that directly benefit from their programs imply that, if left to the private sector, the type of services offered by these TPO will be underprovided. A private association of exporting firms will address the market failure associated with information spillovers for firms within the association, but when spillovers affect firms outside the association it will be again the source of inefficiencies. Here we focus on government sponsored TPOs. Section 5 addresses the role of private TRIs.

The early literature in the late 1980s and early 1990s was quite critical of TPOs. Kedia and Chhokar (1986), for example, found that export promotion programs in the United States have little impact, largely because of a lack of awareness in the private sector of the services that were offered by these government agencies. Keasing and Singer (1991) conducted a series of extensive interviews with senior officials at the ITC, European Commission, the Export Marketing Development Division of the Commonwealth Secretariat and numerous TPOs in developing and developed countries. The conclusion was that TPOs had failed in promoting exports, except in a few East Asian countries (Singapore, Hong Kong, Korea and Taiwan). The main reasons for this failure according to those interviewed by Keasing and Singer was the strong anti-trade bias embedded in most countries trade regimes, the bureaucratic nature of these agencies that lacked client orientation and that were staffed with civil servants who were out of touch with their clients in the private sector, as well as their lack of leadership and adequate funding. The few successful cases of trade promotion (Singapore, Hong Kong, Korea and Taiwan) all adopted more supply and enterprise-oriented strategies, as well as a more overall open trade regime.⁴¹

By the late 1990s the strong bias against exports had vanished for most developing countries as trade reforms were put in place. This led many prominent development economists to adopt a more benign view of TPOs. In a study of how governments can promote non-traditional exports in Africa, one of Helleiner's main recommendations was to create an adequately funded TPO to help exporters overcome the costs and risks of entering unfamiliar and demanding international markets (Helleiner, 2002). We now survey the more recent studies highlighting what we know before turning to knowledge gaps to be filled.

4.1. Trade Promotion: what do we know?

The recent literature on the impact of trade promotion can be divided into studies that use country level information, and studies that use firm-level data. We review both starting with the macro level studies.

Macro-econometric studies

Rose (2005) uses a gravity framework where exports are explained by the traditional geographic determinants as well as by the presence of a diplomatic representation in the destination market. He convincingly argues that over the last decades diplomatic representation has had a strong

⁴¹ This is an example of the two-way causality between policies and institutions.

commercial component as other motives decline due to the falling communication costs. Whereas before many political decisions were made by embassies, nowadays the speed of communication leads to a much more centralized decision-making process where the most important decisions are made in capitals and less politically-oriented work is undertaken in embassies. Using an IV estimator where the presence of a diplomatic representation is instrumented using the country's importance as measured by proven oil reserves and its diplomatic attraction measured by the number of nice restaurants and sights, Rose finds that a consulate can increase bilateral exports by 6 to 10 percent.⁴²

Following Rose (2005), several papers have tried to focus more directly on export promotion rather than embassies and look at the impact of export promotion agencies' representation abroad on exports. Volpe Martincus et al. (2010) use information on the location of branches of TPOs for several Latin American and Caribbean countries over the period 1995-2004 and find that the presence of these branches is associated with higher exports of differentiated goods. Hayakawa et al. (2011) also find large effects for export promotion branches of Japan's and South Korea's TPOs.

But export promotion goes beyond office representation abroad. In fact only a fraction of TPOs have offices abroad. A World Bank TPO survey of 2010 reveals that only 41 percent of TPOs have offices abroad, and among low-income countries the share drops to 21 percent. There are many other large differences between low- and high-income countries' TPOs. In high-income countries, the median TPO budget represents 0.037% of GDP and 0.021% in the median low-income country. The median TPO employs 191 workers in high-income countries and only 50 in the median low-income country.⁴³ In both income groups, the lion share of funding comes from the government with a small share from bilateral and multilateral donors in the low-income group.

Spending patterns are similar across both income groups, the largest share going to marketing (trade fairs and missions) with 10-25% of the budget allocated to export support services, country image, and market research. TPO budgets are also allocated to the same type of firms across both groups with a greater focus on small and medium size firms relative to large firms. In both groups of countries, TPOs also tend to spend a larger share of their budget on established exporters rather than on non-exporters or new exporters and the relative importance given to established exporters is slightly higher in low-income countries.

Using the survey implemented by the World Bank in 2005 Lederman, Olarreaga and Payton (2010) estimate an export equation with TPO's characteristics as explanatory variables. After instrumenting the export promotion budget with the number of years until the next election and the number of years since the TPO was created, and controlling for GDP per capita, trade

⁴² These results are subject to the criticisms of Baier and Bergstrand (2007) mentioned above who show that panel data methods control better for omitted (time-invariant) endogeneity bias.

⁴³ The institutional structure of TPOs tends to be more similar across income groups (about 50% are either an autonomous or semi-autonomous government agency, and the Executive Board seats in the hands of the private sector is around 50 percent in both income groups)

restrictiveness at home and abroad, exchange rate volatility, and geography determinants of exports, they estimate that the marginal impact of the export promotion budget on exports is around 0.04. Thus, in this cross-section, a 1 percent increase in export promotion budgets leads to a 0.04 percent increase in exports. At the sample mean, 1 dollar spent on export promotion leads to 40 dollars of additional exports. Interestingly, export promotion delivers larger gains where most needed, i.e., when facing stronger market access barrier abroad (tariff and non-tariff barriers) or when exporting differentiated products rather than homogeneous goods.

In a panel from a follow-up survey conducted by the World Bank and by the European Trade Promotion Organization in 2010 and 2015, Olarreaga, Sperlich and Trachsel (2016) control for unobserved heterogeneity by using country and year fixed effects. They estimate that, on average, a 1 percent increase in export promotion budgets results in an increase in exports of 0.074 percent, which is higher than the returns estimated by Lederman et al (2010). At the sample mean an additional dollar spent on export promotion yields 87 dollars of exports.⁴⁴

Next, they use a semi-parametric model where the coefficient measuring the returns to export promotion budgets depends on TPO characteristics to estimate which among the observable TPO characteristics yield larger returns. They found that having a larger share of private sector seats in the executive board, and a focus on established exporters and large and medium size (rather than small) firms tend to raise export returns. A larger share of the budget funded by the government also tends to increase returns, except when it is getting close to being fully publicly funded. These results would suggest that for programs to be visible and generate externalities, they should probably be targeted to large established exporters even if these may be the firms which may least need assistance. As noted below, these exploratory results call for a better understanding of the tradeoff between helping firms' needs and maximizing spillovers from TPO programs and are an avenue for future research if we want to understand how TPO programs should work.

Since the ultimate objective of export promotion is not to increase exports per se, but rather to increase economic and social well-being by addressing market failures associated with export activities, are the returns to export promotion in terms of GDP as large as the returns in terms of exports? Extending their semi-parametric model, Olarreaga et al. (2016) estimate the returns in terms of GDP per capita rather than exports. They find that on average a 1 percent increase in export promotion budgets generates a 0.065 percent increase in GDP per capita. These are very

⁴⁴ At the sample mean, in an early cross-section on a smaller sample, Lederman et al. (2012) estimate that 1 dollar spent on export promotion leads to 40 dollars of additional exports. Interestingly, export promotion delivers larger gains where most needed, i.e., when facing stronger market access barrier abroad (tariff and non-tariff barriers) or when exporting differentiated products rather than homogeneous goods. One reason why the returns may be higher in the panel when endogeneity is better addressed could be reverse causality: countries with larger export promotion agencies are those that tend to have lower exports.

large returns.⁴⁵ At the sample mean, 1 dollar spent on export promotion generates 384 dollars in terms of GDP.

To explain such large returns one probably needs to move beyond learning-by-doing or learning-by-exporting for firms benefitting from the export promotion programs. Some sort of externality is needed where the benefits from export promotion are not limited to treated firms, but also affect firms which do not directly benefit from the program. Learning from the experiences of successful and unsuccessful exporters that benefit from export promotion programs can be one important mechanism through which non-exporters or exporters to other markets (or exporters of other products) can indirectly benefit from export promotion. In this case small amounts in export promotion can have a large impact in terms of export growth. The even larger returns in terms of GDP could also partly reflect learning-by-doing. Firms benefitting from the program become more productive, and their growth does not only translate into larger exports, but also larger domestic sales.

Learning-by-doing or by-observing is not necessarily specific to the supply side: it can also occur on the demand side. As exporting firms become more successful in the export market, in the presence of asymmetric information about the quality of products, observing provides valuable information to domestic consumers regarding the quality and reputation of the firm and therefore increases the domestic demand for the products of exporting firms as shown by Shy (2000). Note that, as underlined by Copeland (2008), it is not clear that in such a setup export promotion is welfare-increasing as there is probably too much exporting in the asymmetric information equilibrium. Therefore understanding whether learning-by-observing occurs on the demand or supply side in the domestic economy has important welfare implications for export promotion that so far have not been explored.

To check if the very large returns could be driven by very large returns in high income countries, we run the same specification as in Olarreaga et al. (2016) but in a sample of low and middle income countries (with a GNP per capita in 2005 dollars below 12,736 dollars). Results are reported in table 5. We obtain returns as large as in the full sample if not larger. Indeed the export returns in the low and middle income sample in column (2) are larger than those in column (1), and the GDP per capita returns are very similar in the two samples when comparing columns (7) and (6). However, when we test for difference in returns by interacting a low and middle income country dummy with the TPO budget in the full sample we tend to obtain smaller returns in low and middle-income countries regardless of whether or not we instrument the TPO budget with TPO characteristics (share of public funding and share of seats in the executive board held by the private sector) as can be seen in columns (3), (5), (8) and (10).

⁴⁵ They also explore the heterogeneity of impact across different agency characteristic and found that agencies that tend to spend a larger share of their budget on marketing activities tend to generate larger gains in terms of GDP. Note that interestingly, they do not find that the determinant of export returns are the same as the determinants of GDP returns, which suggest that programs and agencies' characteristics need to clearly define their objectives.

Table 5: Returns to export promotion in low-income countries

	Log of Exports of Goods and Services					Log of GDP				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Log of TPO Budget	0.051*	0.072**	0.061**	0.101**	0.086**	0.057**	0.056**	0.061**	0.051*	0.066**
	(0.022)	(0.027)	(0.022)	(0.031)	(0.020)	(0.014)	(0.017)	(0.013)	(0.023)	(0.028)
Log of Population	2.119**	1.666**	2.392**	1.780**	2.496**		0.223	0.853**	0.027	0.753**
	(0.507)	(0.503)	(0.507)	(0.434)	(0.441)		(0.342)	(0.284)	(0.299)	(0.241)
Log of TPO Budget*LIC			-0.13**		-0.14**			-0.07**		-0.07**
			(0.004)		(0.004)			(0.002)		(0.001)
# obs.	530	326	530	302	505	549	340	549	316	524
R ²	0.997	0.996	0.997	0.995	0.994	0.997	0.993	0.997	0.993	0.997

Source: Author's estimations.

Note: All regressions have country and year FE. Columns (1) to (3) and (6) to (9) are estimated using ordinary least squares. Columns (4) to (5) and (9) to (10) are estimated using the share of the executive board seats in the hands of the private sector and the share of public funding, as well as their interaction as instruments. Columns (1), (3), (5), (6), (8) and (10) used the entire sample. All other columns include only low and middle income countries (LIC) with a income per capita below USD 12,736. Robust standard errors are in parenthesis; * stands for significance at the 5 percent level and ** for significance at the 10 percent level.

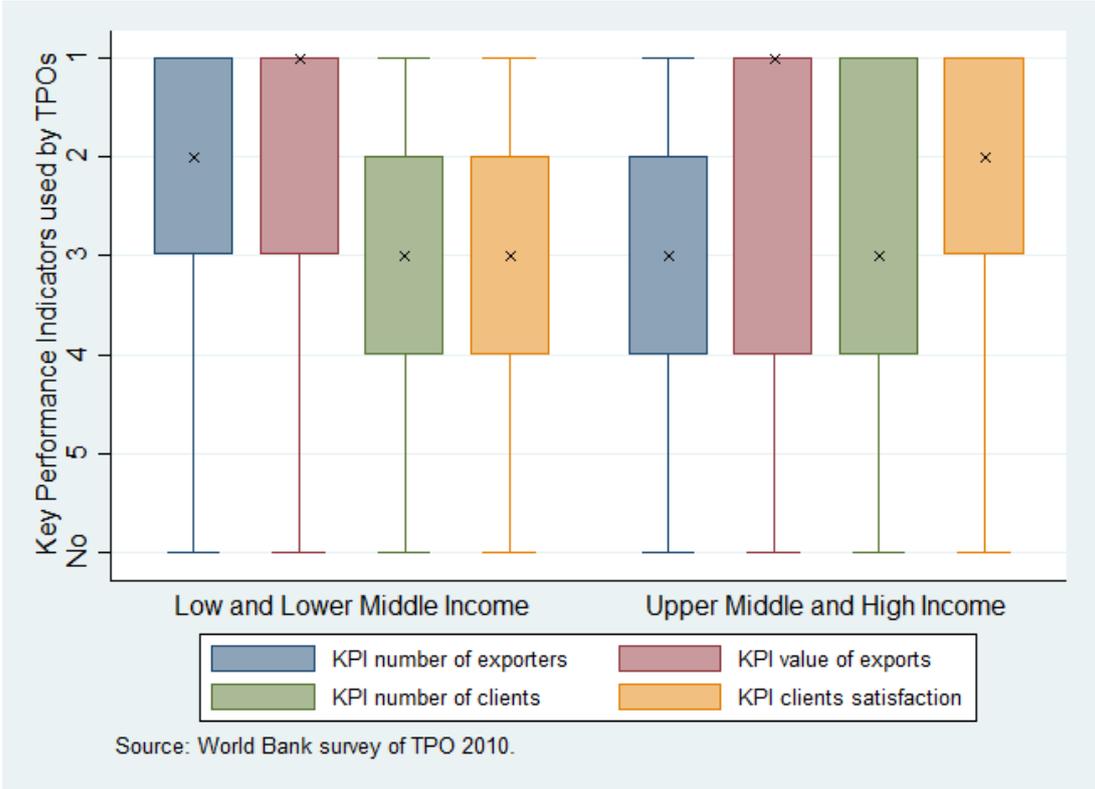
Thus, returns to export promotion are on average lower in low and middle income countries although the differences in average returns between high income, and low and middle income countries is not very large. According to the IV estimates in columns (5) and (10), GDP per capita returns are on average 11 percent smaller, and export returns 16 percent smaller in low and middle income countries. One would expect higher returns in low-income countries. Attenuation bias, different characteristics of the export bundle resulting from weaker domestic institutions could explain these results. It could be that the returns to TPO funding are highest for middle-income countries with more contract intensive export bundles. Note that these results are also limited by the sample size for low-income countries so that one cannot label this a “TPO puzzle”, but rather view these results as a call for further work before suggesting that there is room for improvement in TPO activities in low-income countries.⁴⁶

It could also be that low-income countries TPO programs are not as efficient as their high income countries counterparts. Figure 2 contrasts the performance indicators used in the two groups of countries. In low-income countries, performance is evaluated in terms of the number of exporters and the value of exports while in high income countries the number of clients and client

⁴⁶ Olarreaga et al. (2016) found that the TPO characteristics that matter for export returns do not necessarily matter for GDP per capita return. For example a focus on a few targeted sectors rather than all sectors yield larger export returns, but it does not affect the returns in terms of GDP per capita. And some characteristics that tended to yield larger returns in terms of exports yield lower returns in terms of GDP per capita. This is the case for example of the share of funding coming from public sources, which tends to increase export returns, but reduces GDP per capita returns. These results are important, because they suggest that what may matter for export returns may not work if the TPO objective is to increase income per capita. Thus, putting objectives and evaluating the performance of TPOs in terms of export growth may be counterproductive when the ultimate objective is to increase economic well-being.

satisfaction surveys are used more frequently. Note that 96 percent of TPOs in high income countries have formal client follow up routines, whereas this is the case in only 72 percent of TPOs in low-income countries. Given that as discussed above a focus on exporters and export growth may be misleading when the ultimate objective of export promotion is income growth, a shift in low-income countries to the performance evaluation methods used in high income countries may be desirable.

Figure 1: Distribution of TPO measures of performance by Key Performance Indicator



Note: The median is indicated by x. The top of the box provides the 75th percentile of the distribution and the bottom of the box the 25th percentile. The top and bottom whiskers provide the adjacent values to the 75th and 25th percentiles.

While the evidence of macro-studies suggests that there may be large gains from export promotion both in terms of exports and real income, they clearly face the problem of omitted confounding factors which must certainly contribute to the large estimates reported in these studies. Moreover, it is almost impossible for these studies to identify the mechanisms through which these gains and externalities operate. Studies using firm level data can deal better with confounding factors than macro studies and provide greater internal validity.

Micro-econometric studies

With greater internal validity, micro-econometric studies are complements to the macro-studies. They help identify the externalities suggested by the large return estimates from the macro studies reviewed above and, more generally, identify the mechanisms through which different programs operate. They can also (at least sometimes) allow for a clearer identification strategy of the causal

links between export promotion and exports or income growth. Most literature at the firm level has also found a positive impact of export promotion on exports. The early firm level literature has used customs data and has found that firms that benefit from export promotion programs see improvements in their extensive margins as they export a larger number of products to a larger number of countries.

Volpe and Carballo (2008) use a matching difference-in-difference estimator in a sample of Peruvian exporting firms (customs data) and find that export promotion affects exports mainly through firm's extensive margin in terms of both new export markets and new products, but has little impact on the intensive margin.

Volpe and Carvallo (2010) go beyond average effects of export promotion programs on exports and disentangle the impact of Prochile's programs on exports of Chilean exporting firms across their size distribution. They found that small firms benefit more than large firms. Among small firms the effect is driven by the intensive rather than extensive margins. This result is also confirmed in a sample of Argentinean exporting firms in Volpe, Carballo and Garcia (2012).

Van Biesebroeck, Konings and Volpe (2015) show that export promotion has helped Belgian and Peruvian firms survive in export markets that were more hardly hit by the great recession, leading also to higher sales along the intensive margin as sales were 20 percent higher for firms that benefitted from the program. Note that as pointed out by the authors this does not mean that programs need to be scaled up, as it is not clear what will be the effect of these programs if they were to be provided to all firms. Note also that the fact that there is a large impact on exports does not justify the use of these instruments from an economic point of view. One would need to identify the externalities associated with these programs before deciding it to scale them up.

Cadot, Fernandes, Gourdon et Mattoo (2015) focus on the impact of a Tunisian export promotion program on exporting firms behavior and found using a difference-in-difference estimator that firms benefitting from the program increase their exports along the extensive and intensive margin, but that the impact disappears after three years. Their result is very interesting for at least two reasons. First, the fact that the impact disappears can be due to the uncertainty associated with the institutional environment in Tunisia which raises interesting questions regarding the effectiveness of export promotion programs similar to the critiques addressed in the early literature to programs that were operating in an environment with a strong anti-export bias. Second, and perhaps more interestingly, the economic case for export promotion relies on the existence of spillovers from firms benefitting from the program to firms that are not directly benefitting from the program. Yet, all of the literature surveyed so far assumes that there are no externalities, and looks at the impact on exporting firms. The fact that after three years the impact vanishes in Tunisia

could be due to the presence of strong externalities which supports the case for export promotion.⁴⁷

Another problem with the micro-economic studies surveyed so far is that they rely on customs data, rather than on firm-level data, so they cannot examine the firm extensive margin, i.e., the decision for firms to start exporting. In order to address this type of questions and the externalities that may exist between exporting and non-exporting firms, one must match customs-level data with firm-level data. This has been done in the studies surveyed below.

Cruz (2014) matches firm and customs data in Brazil and provides evidence of export promotion services helping Brazilian medium-size firms enter the export market. So combining this result with the results of Volpe et al. (2010) and Volpe et al. (2012) suggests that export promotion helps medium size firms enter export markets and small exporting firms diversify across products and markets.

Lederman, Olarreaga and Zavala (2016) show in a sample of Latin American firms that export promotion helps firms enter into and survive in export markets, but participation in export promotion programs has little impact on the intensive margin. Schminke and Van Biesebroeck (2015) also show that export promotion works mainly through the extensive margin in a sample of Belgian firms, but in the case of experienced exporters they also observe increases in their intensive margin. Drawing on firm individual export flows at a very disaggregated level, Koenig et al. (2010) detect export spillovers on the extensive margin but not on the intensive margin, a result that they interpret as suggesting that spillovers operate mostly via fixed costs. The spillovers on the decision to start exporting are strongest when they are specific, by product and destination, and are not significant when considered on all products-all destinations.

More recently, randomized experiments at the firm level have shown that the returns to export promotion can be large. Atkin, Khandelwal and Osman (2014) conduct an experiment where they offer to a random set of firms the opportunity to export high quality carpets to retailers in the United States and Europe. They found that treated firms had an increase in profits of around 20 percent and larger increases in the quality of goods they produced, which is consistent with learning-by-exporting.

Breinlich, Donaldson, Nole and Wright (2015) also conduct a controlled trial by providing targeted information to a randomly selected set of firms regarding the benefits and costs of exporting. Their objective is to assess the role that information plays on the perceptions that firms have about costs and benefits of selling in international markets. They found that treated non-exporters become less likely to export, whereas treated exporters become more likely to export, suggesting that the provision of information can have an impact on firms' behavior.

⁴⁷ Cadot et al. (2015) do not find evidence of spillovers in their paper although they recognize that not finding some type of spillover precludes the absence of other types of spillovers. Cruz (2014) finds strong evidence of spillovers from export promotion programs in Brazil.

Using data for Colombian firms, Volpe and Carballo (2010b) show that the bundling of TPO services provides larger returns. Through difference-in-difference and propensity matching methods, they identify that a combination of counselling, trade agenda and trade missions and fairs provide larger returns for targeted firms than the sum of actions in isolation. Much more of this type of work is needed to guide TPOs in their interventions. For example, are trade fairs as effective as trade missions? Which fair? Which type of trade mission? Is Colombia special? We do not know the answers to these questions.

A growing literature is focusing on the identification of positive externalities from exporting to non-exporting firms suggested by the macro results described above. Using an employer-employee dataset for Portugal Mion and Oromolla (2014) find that there is a wage premium for managers associated with their previous experience as managers in firms that were exporting to similar markets. This wage premium is as large as the one associated with the firm's productivity. Similarly Fernandes and Tang (2014) show that Chinese firms learn from the export experience of their neighbors and that this is particularly helpful in entering export markets. Wei, Wei and Xu (2015) using a structural model of incentives to export and become a "pioneer" found that there are spillovers associated with the discovery of new export markets (export "pioneers") as well as important costs, but that their size may not necessarily justify government intervention because of the importance of first-mover-advantages, and the fact that as long as "pioneer" profits are larger than the discovery costs, there is no market failure even in the presence of positive spillovers across firms.⁴⁸

4.2. Trade Promotion and Development: what we would like to know?

We have surveyed the literature on the impact of TPO on exports and development and have identified several areas for future research.

First, and perhaps most importantly, we need more evidence on the extent of information and other spillovers associated with trade promotion. Their existence is an important precondition for export promotion.⁴⁹ The pure economic case for export promotion relies on the presence of information externalities from firms being treated by the program to other firms who benefit indirectly from the program. The evidence on this type of learning-by-observing is small and ambiguous. Clerides et al. (1998) find that the probability of becoming an exporter is positively affected by the share of exporters in the local industry. Greenaway and Kneller (2003) find similar results in a sample of UK firms. On the other hand Bernard and Jensen (2004) found no impact in a sample of US firms and Aitken et al. (1997) find that there exist spillovers but only from foreign

⁴⁸ Indeed the presence of externalities is not a sufficient condition for a market failure. For a market failure to occur one would need that the cost of entering new markets is smaller than the profits for the discoverer, and the latter become larger in the presence of strong first-mover-advantages.

⁴⁹ One could think justifying export promotion along the lines of a club good, where there is non-rivalry in the consumption of information and knowledge obtained in foreign markets. However, the way this information is generated by TPOs implies externalities, as the information is obtained with the help of successful and not so successful exporting firms in different markets.

multinationals (MNEs), and not from general export activity. To our knowledge the only study that looks at how export promotion spillovers to other firms is Cruz (2014) (and to some extent Cadot et al., 2015) who explores how the share of treated firms in a region and industry affects the export behavior of non-treated firms. This implicitly assumes that externalities happen within and not across regions and industries. This may be a strong assumption. As an alternative and using matched employer-employee data, Cruz is able to track the movement of workers from exporting to non-exporting firms and observes the impact on the export behavior of non-exporting firms.

The recent literature on identifying export externalities (Fernandes and Tang, 2014, Mion and Opromolla, 2014, Wei et al., 2015) can provide a good starting point to examine the impact of export promotion on firms that are not directly targeted by the program. Importantly, when spillovers are present, the methodologies used to measure of the impact of TPO programs need to be adapted to control for these negative or positive externalities. To understand how TPO programs should be designed, we need a better understanding of the tradeoff between helping firms' needs and maximizing spillovers from TPOs' programs.

Second, and as argued earlier, learning-by-doing or learning-by-exporting does not provide a justification for export promotion by itself. It may explain the large returns and the larger GDP than export returns, but it does not provide a justification for intervention without some other market failure. For example, there may be a case for intervention in the presence of learning-by-doing if access to credit is limited which does not allow firms to invest in learning-by-doing (Copeland, 2008). Note that this is more likely to be the case in low-income countries with weak market institutions.

The literature on learning-by-exporting tends to suggest that there is very little learning-by-exporting in developed countries and that the fact that more productive firms tend to export is due to selection rather than learning-by-exporting. However, recent evidence tends to suggest that this may not be so in a developing country context. Blalock and Gertler (2004) provide evidence for Indonesia, Van Biesebroeck (2005) for nine Sub-Saharan African countries,⁵⁰ and Foster et al. (2014) for half of Sub-Saharan African countries. Thus, more studies that look at the extent to which credit constraints (and other market failures) are preventing low-income countries' firms to benefit from learning-by-exporting are needed. Identification is needed of which type of firms suffers the most from credit constraints (or other market failures) and simultaneously which types have the largest potential for learning-by-exporting. This set may be empty, but one could conjecture that small firms are precisely those that meet the two conditions (stronger credit constraints and larger potential for learning-by-exporting). But, if as argued earlier, learning occurs when products are sold in the domestic market, then there may be too much exporting, and export promotion could be counterproductive. Sorting out the source of these learning externalities is crucial to improve our understanding of how TPO activities work.

⁵⁰ The nine countries are Burundi, Cameroon, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Tanzania, Zambia, and Zimbabwe

Third, the literature on which are the best instruments available to TPOs to address different types of market failures is scant although the theory delivers clear messages on the question of in-kind assistance versus subsidies. Blackorby and Donaldson (1988) show that the latter will affect firm behavior and lead to inefficient outcomes, where firms would show interest in exporting only to benefit from the subsidy, whereas a training program has no commercial value. However, when firms are credit constrained, the more efficient instrument may indeed be financial assistance. Likewise, we know very little about the employment effects of TPOs, an issue of importance in low-income countries.⁵¹ More generally, the link between the market failure justifying intervention and the instruments being used has not been explored empirically. This would help get closer to the elusive welfare implications of TPO programs.

5. Private Trade Institutions

Market failures across international markets can sometimes be corrected by private institutions and in the area of environmental economics, particularly climate change, it is increasingly recognized that private authority—both delegated and entrepreneurial—is taking on the role of regulation to implement and enforce rules to manage global environmental problems (Green 2014). Whether it is information externalities that are corrected by private certification schemes rather than by government setting of standards, or excessive market power that are corrected by "Fair Trade" type mechanisms rather than (domestic or international) competition policy, or Walmart deciding to go green, there is a crucial distinction between public and private trade institutions that makes the study of the latter more complex. By definition, private institutions set voluntary schemes, and participation by foreign or domestic firms is often conditional on satisfying a set of requirements either in terms of product characteristics or of the production process itself.

We restrict our review of the literature on private institutions in two dimensions. First, we only review the literature on private trade institutions, i.e., those that affect international trade flows across countries. Second, we focus on the impact of private trade institutions on social and economic outcomes in low-income countries. Do "fair trade" mechanisms help poor farmers in low-income countries? Do consumer boycotts in the North help improve workers conditions or the environment in the South? As we will see, sometimes apparently well-designed private institutions may give rise to unexpected outcomes.⁵²

⁵¹ Using firm-level data, Munch and Schaur (2015) find that export promotion positively affects employment in small firms.

⁵² For some, the development of 'private authority' is essential especially in the design of public good policies like climate policies (See Green, 2013). Probably tangential to this project except insofar as it relates to SDGs in developing countries.

5.1. Private Trade Institutions: what do we know?

Missing domestic institutions may be the most important hurdle for producers (especially small producers) in low-income countries wishing to export. Negri and Porto (2016) study burley tobacco that accounts for close to 60% of Malawi's export earnings. Using household survey data, they compare the performance of producers belonging to burley tobacco clubs with non-members. The clubs have written documents that define rights and rules. These clubs perform collective action, ease access to auction floors and provide other services, all of which contribute to lower transaction costs. Negri and Porto establish that club membership causes a significant increase in output per acre and in sales per acre, and that the difference in yields and sales generated by club membership is equivalent to increases in tobacco prices of between 37 and 54 percent. One cannot generalize from this case study, though it suggests that in the low-income environment of the majority of LDCs where the bulk of activity is in rural areas, local nonmarket institutions can play a major role in facilitating crop production associated with exports. In effect the lack of domestic institutions is a significant barrier for agricultural producers to get goods to local markets and intermediaries, and from there, to export.

Asymmetric information regarding product, seller, or production processes characteristics can jeopardize markets with high-costs characteristics. As in the classic lemon's market problem that focuses on product characteristics, the markets for environmentally safe or socially responsible products may not exist if producers cannot credibly convey to consumers who care about the production processes they employ that they satisfy certain requirements. These information asymmetries tend to be exacerbated by borders, ethnolinguistic diversity that become larger with differences in regulations and their enforcement across countries. Labeling and third party certification schemes are the private sector response to these potential market failures.

Another related important objective of labeling schemes is to introduce economic incentives for firms in domestic and foreign countries to adopt production processes that are more respectful of workers, the environment and other socio-economic objectives. This idea is not new and can be traced back to at least the slave abolitionist in the United States and the "free produce" movement, which introduced in the early XIX century "free labor" stores in the United States. As discussed by Glickman (2004) these stores only sold goods that were produced without slavery. While the movement was not economically very successful, it did introduce the idea that this type of scheme can help consumers have both a more responsible consumption, but also help change the way goods are produced. Labelling has a dual role, as certification of products through tests and as a setter of standards. First, it ensures that the market for products that may be more costly to produce is able to exist and therefore ensures consumer gains. Second, it creates incentives to produce goods in a more socially or environmentally responsible manner.

The theory of labelling tends to suggest that it is welfare improving as the provision of information in a world with asymmetric information will increase welfare. Podhorsky (2013) develops a two-country model with differentiated products and imperfectly-informed consumers. Consumers in

both countries value the quality (think production process) of goods, but cannot discern across different types of goods without certification. Firms in each country differ in their abilities to produce quality, and the distribution of technological ability is superior in the home country. Podhorsky shows that even in the case where the certification program is partly set for protectionist purposes (to improve the home-country terms-of-trade) welfare is higher both at home and abroad because of the gains associated with the information provided to consumers.⁵³

But assuming that global demand for certified products is large enough is not a sufficient condition for these certification schemes to achieve their economic and social outcomes in the South. The most studied certification schemes are Fairtrade programs. Fairtrade programs ensure that the price paid to certified producers (p^{FT}) is always above the world price (p^W), and never below a certain minimum price (\bar{p}):

$$p^{FT} = \max(p^W; \bar{p}) + \text{social premium}$$

In the case of coffee, the Fairtrade minimum price (\bar{p}) is USD 1.40 per pound of washed Arabica, and the social premium is USD 0.20, which ensures a minimum Fairtrade price of USD 1.60 per pound.⁵⁴ This also ensures that Fairtrade farmers always receive a price that is higher than the world price by the equivalent of the social premium.⁵⁵

There is a large empirical literature suggesting that the price received by farmers participating in Fairtrade certification schemes is indeed higher, and that the quality of products and production processes is improved. However, most existing studies suffer from identification problems as they compare before and after outcomes for certified farmers only without any control group, or they compare certified and non-certified farmers in a cross-section.

There are a few noteworthy exceptions. Dragusanu, Giovanucci and Nunn (2014) provide evidence for coffee producers in Costa Rica using a difference-in-difference estimator. Balineau (2013), using panel data, shows that Fairtrade had a significant impact on the quality of cotton produced by certified Malian growers and that the quality produced by noncertified but geographically close producers also increased via spillover effects, while also controlling for selection bias and the

⁵³ This result relies on the assumption that preferences are identical in both countries, i.e., consumers care in the same way about the "quality" of the products being certified, an assumption that is unlikely to hold when considering standard setting between the North and the South. Also, a labelling scheme on socially responsible products may end up having no impact at all if at the existing equilibrium price without information the demand for socially responsible products is smaller than the existing supply of socially responsible products. In this case, the (disequilibrium) price of socially responsible products would be smaller after certification which implies that the new and old equilibrium price will be identical for all goods (Mattoo and Singh, 1994).

⁵⁴ See <http://www.fairtrade.net/products/coffee.html> for up to date information on minimum prices and social premiums. Note also that since 2014 the world price for mild Arabica coffee has been above the minimum price of USD 1.40 per pound.

⁵⁵ To benefit from these higher prices, farmers need to comply with some minimum standards for workers' conditions (no forced or child labor, no gender discrimination and wages that respect labor laws), environmental standards, and be organization in producer cooperatives where decisions are made democratically and the benefits from the social premium are invested in socially and environmentally desirably projects. The cost of certification is around USD 1500 and USD 2000.

possibility of a mean reversion process. As with export promotion, the importance and size of spillovers from certified producers deserves more attention to better establish causality since, in the presence of contagion between the treated and the control group, it becomes trickier to measure the impact of treatment.⁵⁶

Learning externalities as in Balineau (2013) are one reason why there may be contagion. But simpler market forces can also lead to biased estimates. In a theoretical analysis of Fairtrade programs, Podhorsky (2015) introduces monopsonistic intermediaries in these markets. The introduction of the Fairtrade scheme creates an alternative distribution channel that bypasses intermediaries. Podhorsky shows that the Fair Trade program reduces the market power of oligopsonistic intermediaries, which not only makes farmers benefiting from the program better off, but also farmers excluded from the program who now face less powerful intermediaries and benefit from higher prices. On the other hand, Baland and Duprez (2007) show that the introduction of this type of scheme in the presence of insufficient demand for certified products will lead to winners and losers. This suggests that any attempt at measuring the impact of Fairtrade certification on prices received by farmers needs to take into account the impact of the introduction of the scheme on the degree of competition in the market for non-certified products.⁵⁷

There is also an important literature suggesting that labeling and in particular Fair Trade programs may not necessarily be welfare-increasing. Fairtrade mechanisms that aim at improving the livelihood of poor workers in a sustainable manner may end up bringing little gains to participating farmers in the presence of free entry, as rents get dissipated in a system where higher prices are set, but quantities are fixed (de Janvry et al., 2014). Indeed, certified Fairtrade farmers are not allowed to sell all their production at the higher price offered by the label. They can only sell the share of their production that is required by the Freetrade buyer. As more farmers enter the Fairtrade program attracted by higher prices, the quantity that each farmer is allowed to sell at the Fairtrade price is reduced, and the benefit of participation in the program for the certified farmer is reduced. de Janvry et al. show that expected profits from participation in a Fairtrade coffee cooperative in Central America are close to zero when taking into account farmers' output that is certified but not sold at Fairtrade prices. The realized profits for participating farmers are even negative when the world price is above \bar{p} .

There are also critiques regarding the long term incentives that these types of schemes create in low-income countries. Collier (2007) questions the dynamics benefits of Freetrade certification which provides benefits to farmers only so long as they keep on producing the same products that

⁵⁶ On the basis of an examination of 92 randomized control Trials published in top journals over 2009-14, Peters et al. (2015) warn that the papers do not discuss the hazards of external validity nor do they provide information to assess potential problems.

⁵⁷ Note that it is not clear that the result in Podhorsky (2015) is robust to the introduction of intermediaries facing downward sloping demand curves. In her paper intermediaries are price takers. It seems that the introduction of downward sloping demand curves may actually lead to lower prices for non-certified producers. In any case what matters for identifying the impact of certification is to account for the externality regardless of whether the externality is positive or negative.

left them in poverty and that world prices for these products remain low. In such a setup there are probably more efficient ways of addressing poverty concerns that do not create incentives to keep on producing the "wrong" bundle of goods.

On eco-labelling, Fischer and Lyons (2014 and 2015) study the impact on environmental quality of competition between NGO-sponsored labels and industry-sponsored labels in a model of credence goods (where the consumer cannot assess if the product is environmentally friendly). When labelling is multi-tiered, deterioration in environmental quality is unambiguous.

Another source of private external enforcement are consumer boycotts in the North that responds to environmental, labor or human rights violations in developing countries, and may help developing countries engage in institutional reforms. The literature has highlighted that these types of initiatives can backfire as they address distortions only indirectly. For example, Basu and Zarghamee (2009) have shown that consumer boycotts based on child labor violations in the South can lead to more, not less child labor, as it hurts not only firms using child labor, but also the families of working children. Baland and Duprez (2007a) also illustrate how replacement of child workers by adult workers in the export sector and the shift of child workers to the non-traded sector due to boycotts in the North can result in lower levels of welfare in the South as well as increases in child labor. Targeting poverty and increasing the incentives to attend school with conditional cash transfer programs may be a more efficient way of addressing child labor issues than restrictions on international trade.⁵⁸

Shifting consumer preferences in the North under globalization are also a source for the growth of private institutions. Consumers in Northern countries care increasingly about the ethical implications of their consumption decisions which often cannot be inferred from the characteristics of the goods they consume ('credence goods'). If the goods were produced in Northern countries, regulation could correct the information asymmetry between firms and consumers. With globalization triggering delocalization to the South where production is cheaper and regulation is weak, consumers in the North will be ready to finance NGOs that will help correct "the governance deficit" emerging under globalization (Gereffi and Mayer (2006)). Krautheim and Verdier (2016) develop a two-country model that broadens our perspective on global production chains and international NGO activism which has an impact on both the socio-economic environment of international corporations and the incentives for governments in the South to invest in regulatory capacity. Further research is needed to better understand the role of international advocacy by NGOs and their effects on offshoring patterns between the North and the South.

⁵⁸ See also the Bharadwaj, Lakdawala, and Li (2014) study of the child labor ban legislation passed in India in the 1980s that evidences that poor families were worse off after the ban.

Trading platforms and reputation mechanisms

The literature on intermediaries in low-income countries focuses on their market power, often at the expense of small farmers –notably for marketing boards and stabilization funds, although predatory pricing may also have other causes.⁵⁹ Small producers face relatively high costs of entering international markets, and when they enter them they will often face much larger intermediaries that will exploit their market power. The advent of the internet and online markets such as eBay, Amazon and Alibaba is changing the landscape for both manufacturing and agricultural firms. Their presence drastically reduces the costs of entering international markets and helps bypass large intermediaries altogether to directly reach international consumers in very distant markets.

Lendle et al. (2015) show how online markets help match buyers and sellers far apart through a reduction in search costs. They estimate that the effect of distance on international trade flows is 65 percent smaller on eBay than on offline markets. This means that transactions that would have never taken place in offline markets because buyers and sellers were too far apart are made possible in online markets. Interestingly the distance-reduction effect of online platforms is stronger where most needed. Indeed, the reduction is larger in low-income countries that import differentiated goods (with more information requirements), when trading partners speak a different language, and when corruption, income inequality and uncertainty avoidance are high in the importing country.

Access to international markets has also been made more democratic by online platforms. Lendle et al. (2013) show that contrary to what is observed offline, almost all US firms selling on eBay in the domestic US market also sell in international markets. The share of exporters is 84 percent among US firms selling on the eBay platform which is several orders of magnitude larger than what is generally observed offline for US firms (see Bernard et al, 2012). Among low-income countries this is even more striking with almost all firms in low-income countries selling on eBay in the domestic market also exporting (see Figure 3). They also tend to export to many more markets than their offline counterparts (Lendle and Vézina, 2015).

⁵⁹ Case studies on cash crops by Mc Millan et al. (2003) on cashew nuts in Mozambique and Melo et al (2000) on vanilla in Madagascar give support to Olson's Logic of Collective Action (2005), i.e. a case of exploitation of the many (small farmers) by the few (intermediaries). Melo (2010) compares the two case studies providing counterfactual simulations of the distributional impact of raising the number of traders. From a sample of 6 cash crops in Africa, Mc. Millan (2001) gives evidence that predatory taxation and the inability of governments to commit to low taxes is due to sunk costs and low discount factors rather than to marketing boards. The political-economy literature on trade policy is not reviewed here..

Figure 3: Online platforms and the cost of entering export markets



Source: Lendle and Vézina (2015)

Interestingly these exporting firms also tend to be much smaller than their offline counterparts, suggesting that the fixed costs necessary to access international markets via online platforms are much smaller than offline. This is important because tackling growing within-country income inequality is a challenge facing policymakers. Large reductions in trade costs through the development of online platforms can help democratize access to global markets and therefore contribute to reductions in income inequality through better access to international larger markets for small and less productive firms (see Helpman et al. 2010, and Helpman et al., 2014). Thus, instead of having only large firms benefitting from access to thick international markets, online platforms allow small and low-productivity firms in low-income countries to also benefit from being able to sell in these thick international markets, but also to access niche markets that may be a better match for some small firms.

A reason why entry costs are particularly small in online platforms is that they provide a relatively costless means for establishing reputation as a reliable seller of good products, even when located in a region or country with bad reputation or institutions. This is because the feedback mechanisms of both buyers and sellers provided by most online platforms may provide sufficient trust for trading relationships that would not have occurred otherwise (Lendle et al., 2015).

Interestingly the feedback provided by online platforms is more useful when it is most needed. Agrawal, Lacetera and Lyons (2015) using data from o-Desk, an online job platform, show that the information provided by the worker's previous experience on the platform disproportionately helps workers from developing countries find new contracts at higher wages. The prospects (and limitations) for the internet to overcome institutional and government failures, and perhaps foster institutional improvements is intriguing. It deserves further attention.

5.2. Private Trade Institutions and Development: what we would like to know?

The review of private TRI and development above identifies several research avenues. First, the existence of private trade institutions such as labeling and certification schemes is justified by the presence of information asymmetries. Addressing these market failures and allowing markets that would not have otherwise existed to prevail through labeling and certification is a desirable answer by the private sector from a global perspective. From the perspective of small producers in low-income countries, the evidence so far suggests this may not always be the case. More work is needed to better understand which schemes are more likely to achieve their development objectives (for example Fairtrade schemes with fixed quantities are unlikely to do so). Also, the consequences of industry-driven versus NGO-driven labelling whose objectives are orthogonal deserve further exploration.

Second, in their review of the Fairtrade literature, Dragusanu, Giovanucci and Nunn (2014) call for a tightening of the methodologies used so as to control for contagion through learning by non-participating farmers and general equilibrium effects in local markets (stronger or weaker monopsony power for intermediaries for example). The impact evaluations should also compare the characteristics of farmers that participate in these schemes with those that remain outside, as non-participants may be poorer as they might be unable to pay rapidly rising certification costs.

Third, some initiatives may also be too small to matter. Fairtrade labeling that aims at reducing poverty by providing minimum prices to farmers as well as a social premium evaluated represents only 0.005 percent of world trade as can be seen in Table 6. Even for coffee which represents 55 percent of total Fair Trade sales, the share of Fair Trade products in total world trade is barely 1.4 percent.⁶⁰ For all other products it is significantly below 1 percent. For these initiatives to have an impact in working conditions and promote environmentally friendlier production processes in developing countries there is a need to scale them up. The extent to which they can be scaled up, and the desirability of scaling up some of these initiatives have been challenged by the work of de Janvry et al. (2014) and others. These are areas that need to be further explored.

⁶⁰ Note that we are only taking the sales under the Fairtrade label. This is the main Fair Trade certification mechanism, but there are others which account for a smaller portion of Fair Trade sales.

Table 6: Importance of Fair Trade Exports in Total World Trade, 2013.

Product	HS codes	FT sales (million EUR)	FT sales (million USD)	Share in Total FT	World Trade (million USD)	Share of FT in world trade
Coffee	0901	519	692	55%	38453	1.3497%
Bananas	0803	137	183	15%	17552	0.7805%
Cocoa	1801	96	128	10%	11333	0.8471%
Sugar	1701	62	83	7%	29595	0.2095%
Flowers and plants	0602; 0603	47	63	5%	17293	0.2718%
Fresh and dried Fruit, and nuts	08 ex 0803	26	35	3%	121532	0.0214%
Tea, herbs and spices	09 ex 0901; 0910	24	32	3%	38175	0.0629%
Cotton and Quinoa	5201; 121299	14	19	1%	18260	0.0767%
Honey	0409	6	8	1%	2435	0.2464%
Other	Other codes	13	17	1%	19985372	0.0001%
Total sales		944	1259	100%	20280000	0.0047%

Source: Authors calculations using UN's Comtrade for world trade data (available through wits.worldbank.org), Fairtrade (2014), Fair Trade Monitoring Trade and Benefits for fair trade sales, and FAO (2014), International Quinoa trade (<http://www.fao.org/3/a-i4042e/i4042e20.pdf>). Data is for year 2013 (except world trade in quinoa which is for 2012).

Fourth, an important related issue on which more work is needed is the proliferation of Fairtrade labels, but also other types of labeling. Differing interests lead to competition between labelling groups. Ibanez, L. and G. Grolleau (2008), Mason (2013) Fischer and Lyons (2013) develop the theory. Balineau (2013) and de Janvry, McIntosh and Sadoulet (2014) give evidence on cotton and coffee respectively. It seems that agency problems may grow as the number of Fair Trade labels increases. It may not be in the interest of private certifying agencies to fully enforce certification requirements. This in turn creates problems for the consumer, who does not know whether to trust the certification and the value of the schemes may dissipate. One common critique is that there is not much more than a bit of marketing behind some of these certifying schemes which benefit from the willingness to clear the consciousness of consumers in more developed countries. There is also a need for a better understanding of the financing of many of these certification institutions. Many are financed by the fees collected from the firms they are supposed to certify (e.g., Fair Trade or Fair Labor Association). This can lead to conflict of interests which can jeopardize their effectiveness and can lead to deterioration in the trust put by consumers in these schemes.

Fifth, another problem raised by Dragusanu, Giovanucci and Nunn (2014) in their survey of the economics of Fair Trade is that in certified cooperatives the trust that farmers have on the cooperative and its leader is smaller than in non-certified cooperatives. This is apparently largely due to the use of the social premium that gets paid to the cooperative by the buyer and whose allocation is not always clear to the individual farmer who is a member of the cooperative.

Sixth, regarding online platforms the extent to which online platforms have helped small producers circumvent monopsony power by offline intermediaries is an area that remains largely

unexplored.⁶¹ Doing so would require the matching of online and offline sales at the firm level which has proven difficult to do so far, though it is technically not impossible if statistical offices and firms are willing to lift the confidentiality of the name of each firm. Otherwise pseudo-panel techniques could be used.

More generally, the matching of online and offline data at the firm level will help address concerns regarding self-selection biases. Indeed firms participating on online markets may be very different from firms not participating in online markets which may explain part of the existing results in the literature. For example, distance may matter less online not because it reduces search costs, but because of the preferences of owners and managers of online firms that are more open to remote international markets.

Last, but not least, providing access to online platforms can also be an efficient tool to promote exports as almost all firms participating in online markets also export. An impact evaluation of programs providing access to online markets on the export behavior of treated firms and the extent to which there are spillovers to other firms seems an interesting research avenue for understanding how export promotion can help small firms. The role of hard and soft infrastructure (roads, transport and postal services) in making these schemes efficient should also be carefully evaluated.

6. Concluding Remarks

The relationship between domestic institutions—mostly contracting institutions—and trade has been recently covered and surveyed by Nunn and Trefler (2015). Here we have concentrated on less-covered trade-related institutions (TRIs). We have surveyed the literature on Trade Agreements (TAs), Trade Promotion Organizations (TPOs) and private Trade Related Institutions (TRIs) to suggest what type of TRI is more likely to help the development prospects of low-income countries. Throughout the survey, we highlight the tension between the more micro-focused contributions that are closest to dealing with the attribution problem at the cost of external validity and the more macro cross-country studies that face the problem of confounding influences. Sections 3.2, 4.2 and 5.2, discuss the specific areas we believe need more work to ascertain the impact of TA, TPOs and private TRIs on development in low-income countries. Below we recapitulate the research areas that appear the most promising.

Regarding TAs, many issues require further work and are discussed in section 3.2. Some research avenues have been however long due. We need a better understanding of the rationales behind the participation of low-income countries in TAs. Time inconsistency in government policies is probably a good candidate, but the existing models cannot really explain why there is enforcement if low-income countries have no market power. Combining the time-inconsistency rationale with

⁶¹ Access to mobile phones has also been shown to encourage political mobilization during economic downturns in Africa (Manacordi and Tesi 2016)

models of profits-shifting as in Mrázová (2015) or production relocation as in Ossa (2011) could provide a way out.

Second, with PTA agreements covering greater provisions (e.g. labor and environmental clauses, regulatory measures), we need to understand how the increase in breadth affects the depth of these agreements (i.e. full elimination of NTBs) and how domestic supporting institutions are impacted.

Third, are PTAs complementary to multilateralism when it comes to PTAs among low-income countries. Almost all existing evidence is on developed countries or Latin America and East Asia. Do results extend to Sub-Saharan Africa and South Asia?

The second type of TRI we examine are TPOs. They should have a leading role to address the multiple market failures faced by firms in low-income countries. Research from macro and micro studies suggests that they have a large and positive impact on exports and GDP. However, from a welfare perspective the case for export promotion relies on the existence of spillovers from firms benefiting from the programs to other firms. There is little direct evidence on how widespread these spillovers are, and what are their determinants. We need more evidence on how externalities spread across firms.

Second, learning-by-doing or learning-by-exporting can also provide a justification for export promotion but only in the presence of some market failure like a credit constraint. This is more likely to be observed in low-income countries. A better understanding of the profile of firms that are more likely to be simultaneously subject to learning-by-exporting and the likelihood that they are negatively affected by market failures would help understand the welfare implications of export promotion programs.

A better understanding of what type of export promotion program are more effective in low-income countries (in-kind assistance versus subsidies, participation in fairs versus technical assistance, etc.) is also needed. More generally, the link between the market failure justifying intervention and the instruments used has not been explored empirically.

As to the literature labelling and certification, causal impacts of adoption need to be identified more carefully. As with export promotion programs, externalities from participation in the program are likely to be very large. Identifying these externalities is important to correctly evaluate the impact of different programs. This raises the question of the need for scaling up some of these programs that are too small to matter is important.

Last, but not least, the extent to which online platforms may help small producers circumvent monopsony power by offline intermediaries is a promising research area. An impact evaluation or randomized control trial of programs providing access to online markets on domestic and foreign sales of treated firms and the extent to which there are spillovers to other firms would deserve

attention. Understanding the heterogeneity of the impact in different geographic, institutional and infrastructure environments is also deserving of further investigation.

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