WP-05-2016.E

ITC WORKING PAPER SERIES

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October 2016

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TRADE IMPACT FOR GOOD

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HOW DO NTMS AFFECT COUNTRIES' PARTICIPATION IN INTERNATIONAL VALUE CHAINS?[1]

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October, 2016

Abstract[2]

This paper examines the effects of Non-Tariff Measures (NTMs) on countries' participation in international value chains (IVCs) by using a multi-country product-level regulatory database compiled by the ITC, UNCTAD and World Bank. We first present descriptive statistics on absolute and relative measures of NTMs and argue that the latter, in the form of the regulatory heterogeneity index, should be used as a proxy for the potentially distortive effect of trade policies. We then separate goods by end use and analyse the relationship between the regulatory distance on imported intermediates and export values of goods within the same value chain. The rationale for doing so is that IVCs naturally have both an import and an export component and we are interested whether intervention on the import side has "knock-on" effects on forward participation in the value chain. Preliminary results suggest a negative correlation between the regulatory distance on the import of intermediates and export of final goods within the same value chain. This can best be interpreted as evidence that NTMs can affect trade at different stages of the international value chain.

JEL Classification: F14, L23, D23

Keywords: International Value Chains, Non-Tariff Measures (NTMs),

[1] The authors are grateful for the valuable comments provided at the PRONTO annual Conference on Quantifying Non-Tariff Barriers to Trade in February 2016 as well as the Dynamics, Economic Growth and International Trade (DEGIT) conference in September 2016

[2] The authors would like to stress that this is preliminary work which should therefore not be cited in any way

1.0. Introduction

Recent technological advancements and reductions in trade tariffs have made it increasingly profitable for firms to separate their production chain into individual tasks. These tasks can then be sourced internationally to firms in countries which have a comparative advantage in executing this specific task, giving rise to international value chains. However, as trade tariffs are being reduced, non-tariff measures are becoming more important and prevalent. Indeed, the number of NTMs reported to the WTO has tripled from 1995 to 2010 and has quadrupled until 2012 (Grübler et al., 2015). This does not only affect trade in final goods but also in intermediate goods and can therefore affect countries' participation in international value chains. We follow the definition by Hummels et al (2001) and Baldwin and Lopez-Gonzalez (2012) that a country is engaged in international value chains if it exports goods that are partly produced using foreign intermediates. Therefore, there is both an import and an export component to IVC participation. The aim of this paper is to investigate whether trade policy measures targeted at the import component can affect a countries' participation in value chains via change in export values of goods within the same value chain.

This paper uses a novel approach to measure the impact that NTMs can have on countries' value chain participation. Namely, rather than using absolute proxies of NTMs such as the frequency, coverage and prevalence ratio (See e.g. Gourdon et al, 2014), we follow Cadot et al. (2015) and Knebel et al. (2016) in using a relative proxy of NTMs. Specifically, we will use the regulatory distance indicator, which measures the difference in trade policies between a home country and its trade partners. The reason we use this relative, rather than an absolute proxy for the impact of NTM on IVC participation is twofold.

Firstly, we follow the rational first stated by Kox and Lejour (2005, 2007) which argues that regulatory heterogeneity in trade policy measures rather than the presence of NTMs themselves affect firms' internationalization. This can best be explained intuitively as follows. For a firm to be active in a particular market, it necessarily has to comply with domestic market regulation. Further, it is of key importance to note that this regulation applies equally to domestic and foreign firms[3]. After the home country has imported inputs, the next step is processing them further and exporting them to a third country. Market regulations in the form of NTMs levied at the imported inputs are only a barrier if the import partner does not already apply the same regulation to its trading partners and domestic producers. If, however, the import partner applies the same regulation to its partners, i.e. the regulatory distance is zero, then it is already complying with the trade regulation of its export partner and there should be no barriers to provide intermediate inputs.

To put it more formally, if a domestic firm is already operating in a market, it has already paid the lump sum, fixed, entrance costs. It only has to pay an additional entrance cost if the regulation in the export market is different from the one that it is already complying with. This adds to the fixed costs of internationalisation as defined by Melitz (2003).

The second reason we use a relative rather than absolute measures of NTMs has to do with the endogeneity of trade policies. Namely, if we would observe a negative correlation between, let's say, the coverage ratio of NTMs and the trade values of that good, the relationship can be two ways. While it is possible that NTMs serve as barriers to trade, it is also possible that goods that are traded less will also be less subject to trade regulation. When we instead proxy for trade restrictiveness with the heterogeneity index, this two way relationship is less likely. Namely, a negative correlation could be explained by a divergence in trade policies, but low trade values are unlikely to lead to a divergence in trade policies.

We hypothesize that the regulatory distance affects IVCs. As we will show in the next section, this effect can be either positive or negative. We will test this formally via a reduced form empirical model where we regress the regulatory distance the import of intermediate goods on the export values of final goods. We use a novel cross sectional dataset compiled jointly by the ITC, UNCTAD and the

[3] This is true for all of the SPS and TBT measures *except* for the conformity assessments. Indeed, it is often the case that there is an additional border check that foreign firms have complied with SPS and TBT regulation. Therefore, we filter out conformity assessments in both SPS and TBT regulations so that the remaining NTMs apply equally to domestic as foreign firms.

World Bank, covering 53 countries[4] in the year 2014[5]. Preliminary results show that the regulatory distance on the import of intermediates is negatively correlated with export values of goods within the same value chain, proxied by the HS section. We interpret this as evidence that NTMs can be a barrier to trade if the trade policy of the home country diverges from the trade policy of the import partner. When this is the case, the import partner has to first comply with additional regulations, which seem to have knock on effects on the export values of goods within the same value chain.

The structure of this paper is as follows. The next section will review the literature on the effect of NTMs on trade, both via value chains and outside of value chains. Section 3 will present the data, empirical methodology and results while the final section will conclude.

2.0. Literature review

The reduction in formal tariffs along with a reduction in information and transportation costs has contributed to the rise in international value chains. However, as import tariffs are being reduced, non-tariff measures are becoming more important and prevalent. This does not only affect trade in final goods but also in intermediate goods and can therefore affect countries' participation in international value chains. Namely, if a country that imports metal to produce car engines finds it harder to import this critical input due to a NTM, this might affect how much engines it can export and therefore alter its participation in the international value chain of car production.

This effect does not necessarily need to be negative. The hypothesized effect depends critically on the motive for putting in place the NTM. There is a literature that argues that NTMs are used merely as substitutes for formal tariffs (Moore and Zanardi, 2011, Ghodsi, 2015, Tudela-Marco et al., 2014) or policy retaliation (Vandenbussche and Zanardi, 2008, de Almeida et al., 2012). In this case, it is most likely that NTMs will negatively affect trade values and IVC engagement, as found for example by Kee et al. (2009) and Disdier et al. (2008). When NTMs are designed to achieve legitimate objectives, they can facilitate and therefore increase trade by reducing informational asymmetries, enhancing consumer trust and decreasing transaction costs (Bratt, 2014, Blind et al., 2013, Beghin et al., 2014).

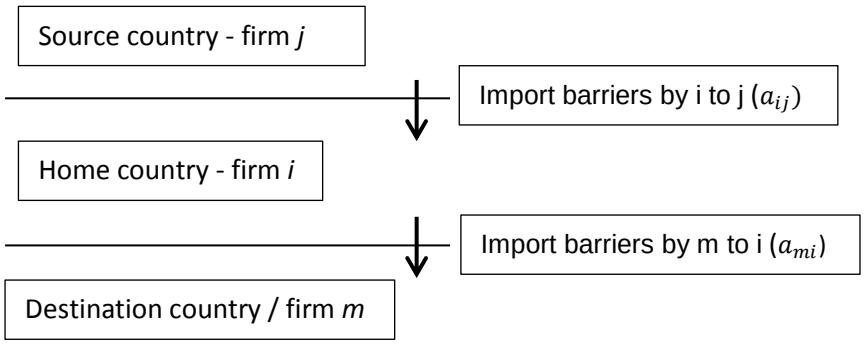
An interesting finding in the literature is that SPS and TBT requirements, which is the focus of this paper as well, tend to decrease trade on the extensive margin, but increase trade on the intensive margin (Crivelli and Gröschl, 2012, Bao and Qiu, 2012) and even the overall performance of industries (Ghodsi and Stehrer, 2016).This makes sense from the perspective that NTMs can act as a barrier to enter foreign markets, but once a firm complies with the standard, the positive quality signal can ensure increase trade values (Beghin et al., 2012).

However, before one can formally measure the effect of trade policies, it is important to first agree on how we can quantify their impact. To that extent, Nordås and Kox (2009) provide an overview of quantifying regulatory barriers to services trade. They built on work by Kox and Lejour (2005) and Nordås and Kox (2007) to measure the difference in NTMs between trading partners, rather than the presence of NTMs themselves. Similar argument have been applied to goods in Cadot et al (2015) and Knebel et al (2016).

We can explain the IVC participation rationale by using a schematic overview of a value chain, following the definition of Hummels et al (2001) and Baldwin and Lopez-Gonzalez (2012). We define a home country/firm *i* as being engaged in IVC if it imports intermediates from a source country *i* and simultaneously exports goods to a third country, being the destination country *m*.

[4] Treating the European Union as 1 country, as they have identical trade regulations.
[5] See Appendix A for a full overview of the data dimensions

Figure 1 A schematic overview of an International Value Chain



Let's assume we are interested in the effect of import barriers in the form of NTMs applied by country *m* to country *i*, noted a_{mi}, on the export values from *i* to *m*. One could simply insert a_{mi}, measured for example by the coverage, prevalence or frequency ratio, into a gravity equation predicting the trade between *i* and *m*. However, if country *i* has applied the same regulation to *its* trading partners, captured by a_{ij}, i.e. $a_{mi} = a_{ij}$, then a_{mi} is no longer a barrier, because country i has already complied with $a_{mi} = a_{ij}$ at home[6]. However, if they are different, then complying with a_{mi} poses an additional constraint in the form of a fixed entry cost.

Note that if $a_{mi} = a_{ij}$, the regulatory distance is zero. The regulatory distance between country *m* and country *i* can be formally defined as:

$$RD_{im} = \frac{1}{p} * \sum_l |n_{imp} - n_{jip}| \quad (1)$$

Where n_{imp} is a dummy variable taking the value 1 if country m applies an NTM to product p against country i and 0 if it does not.

To that extent, Nordas and Kox (2009) find that regulatory heterogeneity decreases services trade by 13 – 30 percent, depending on the country. Similarly, Nordas (2016) finds that regulatory heterogeneity has a negative impact on services trade flows, *over and above* the impact of service trade restrictions themselves. Similarly, Winchester et al (2012) show that stringency HIT reduce exports of plant products from country that has stricter regulation. This can best be explained in the sense that overcoming policy measures entails information costs only if the home country does not already apply the same policies.

[6] As noted in the introduction, there is one exception which is the conformity section for TBTs and SPS. Therefore, we take these out of our empirical analysis.

3.0. Empirical framework

This section will present the data employed for this project, some descriptive statistics on the absolute and relative presence of NTMs, the empirical methodology employed and finally the results of this analysis.

3.1. The data

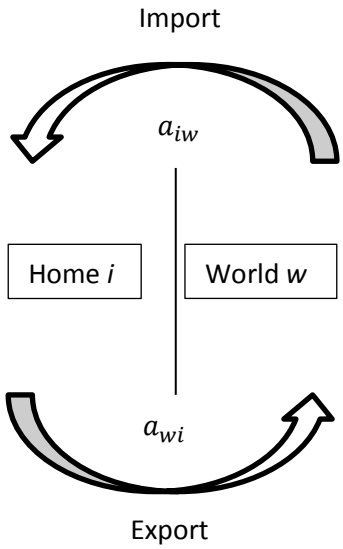
This paper makes use of a large dataset compiled by ITC, UNCTAD and the World Bank. The database identifies countries' regulatory laws that could potentially have an effect on trade. The database does not take stand on whether the NTM has positive or negative effect and aims at having a complete coverage. Besides a "world" category, it also specifies NTMs that are only apply to specific partner countries. This regulatory dataset is therefore different from, for example, the WTO Integrated Trade Intelligence Portal (I-TIP) database which consists of data on notifications by WTO members on other countries applying NTMs to their exports. The WTO I-TIP database is therefore likely to contain the NTMs that have a negative effect.

The dataset includes 53 countries in the year 2014 (see Appendix A). This is merged with trade data, also on the product level, to make inferences about the effect of NTMs on trade via value chains. Further it is important to note that we filter out NTM chapters A and B only. The next section will provide some descriptive statistics of this data.

3.2. Measuring Regulatory distance in International Value Chains

We follow the rationale as outlined in section 2.1. but change it on one important account. Namely, as NTMs are largely applied on an MFN basis, we aggregate the partner dimension so that we look only at trade between the home country and the rest of the world. Figure 2 shows how this modification applies the rationale explained earlier.

Figure 2 An illustration of the regulatory distance where the partner is aggregated to the world



Where a_{iw} (a_{wi}) represents trade policy measures in the form of NTMs applied by the home country (the world) to the world (the home country). As stated before, it is critical to note that both a_{iw} and a_{iw} apply equally to foreign firms as they apply to domestic firms. Therefore, we argue that a_{iw} will only be a barrier for foreign firms if they have not already applied the same regulation, captured by a_{wi}, in which case the regulatory distance would be zero.

That brings us to how we measured the regulatory distance. Specifically, we measure the regulatory distance per country *i,* sector *s*, and end-use *u* as:

$$RD_{isu} = \frac{1}{p*j} = \sum_p^P \sum_j^J |n_{ijspu} - n_{ijspu}| \quad (2)$$

That means that compared to (1), we aggregate partners. The rationale remains the same. Low regulatory distances should ease the critical import of export products.

3.3. Descriptive statistics

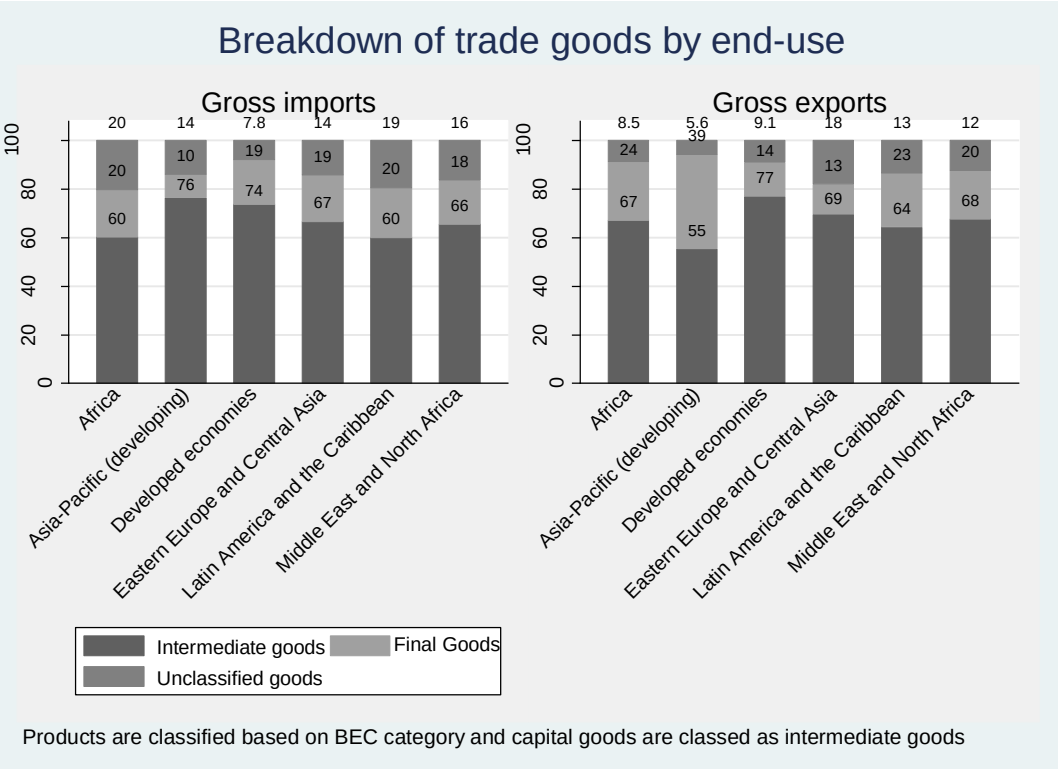
Before going to the empirical estimation, we can exploit the nature of our data by showing the type of goods that are traded, freely or under an NTM. This section will provide descriptive statistics on the type of goods (Intermediate or final) traded between countries. Secondly, it will provide some information on the absolute proxies for NTMs, using the frequency, coverage and prevalence ratio. Finally, it will provide information on the regulatory heterogeneity between home countries and their partners.

3.3.1. Types of goods traded

Firstly, Figure 3 gives a breakdown of the type of goods that are traded per ITC defined region, plus the European Union[7]. By breaking both gross imports and exports down to the Broad Economic Classification (BEC) of UN, we can get some indication to the extent that those regions are engaged in IVCs. BEC classifications provide a rough breakdown whether traded goods are used by industries for further production, or by households for final consumption[8]. This breakdown into intermediate vs final products can provide us with some measure of countries' involvement in IVCs as the former is often used as a proxy for this (Feenstra and Hanson, 1996, Hummels et al., 2001, Hijzen, 2005). Here we see that the trade in intermediate goods is very close to those numbers found by Johnson and Noguera (2012) for example, who estimate that trade in intermediates is roughly 65 percent. Clear deviations from these numbers are only found in the Caribbean, who tend to trade less intermediates on average, and Asia, who tend to import a lot more intermediates. Especially the latter region is interesting, as it tends to import a lot more intermediates than any other region but comes second last when it comes to exporting intermediates. This is indicative of Asia's role in many value chains, where countries such as China often specialize in the assembly activity of a value chain.

[7] See Appendix A for a full breakdown of the countries included per region.
[8] Note that in this analysis, we grouped capital goods along with intermediate goods.

Figure 3. A breakdown of Gross Exports according to BEC Classifications



Products are classified based on BEC category and capital goods are classed as intermediate goods

3.3.2. Absolute NTM proxies

Besides information on the types of good traded, it is also informative to investigate the trade policy of the main regions in our database. We do so by providing descriptive statistics on absolute measures of NTMs by providing the frequency, coverage and prevalence ratio, following e.g. Gourdon (2014).

3.3.2.1. Frequency ratio

The frequency ratio summarizes the percentage of products *p* to which one or more NTMs are applied by country i, or:

$$F_i = \left[\frac{\sum D_p M_p}{\sum M_p}\right] * 100$$

Where *Dp* is a dummy variable representing whether good *p* is NTMed or not and *Mp* indicates whether the good is imported or not. Since this paper investigates the NTM coverage per type of good, we can specify *Fi* on the product BEC classification *b*, which can be in an intermediate or final form:

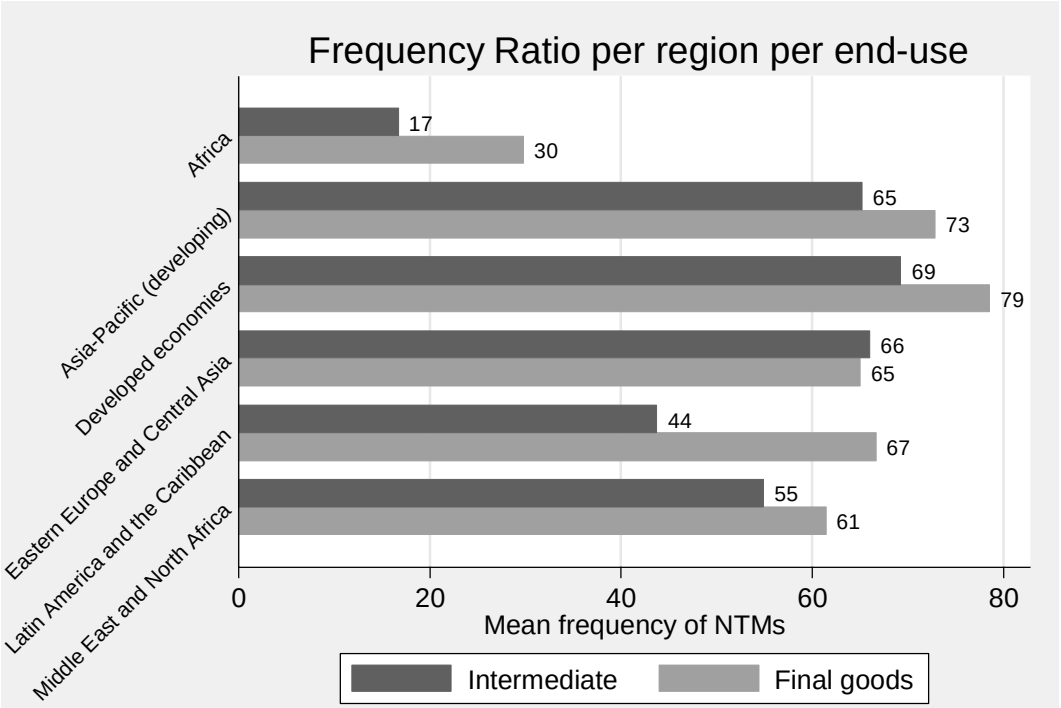
$$F_i = \left[\frac{\sum_{b=1}^{3}(\sum D_{pb} M_{pb})}{\sum M_p}\right] * 100$$

Where $\sum D_{pb} M_{pb}$ represents the total number of goods *Mpb* that experience at least 1 NTM, per type of good *b. Fi* then represents this total as a share of all goods imported. Using this measure, however, would overstate the NTMs levied on those type of goods that are heavily traded. Therefore, we should adjust the denominator to become BEC class specific as in:

$$F_{ib} = \left[\frac{\sum D_{pb} M_{pb}}{\sum M_{pb}}\right] * 100$$

Doing so, Figure 4 shows that final goods tend to have a higher percentage of goods that experience an NTM, across all regions[9]. We further see that developed economies have the highest frequency ratio for both final and intermediate goods, while Africa has the lowest. Indeed, in the former group, 79 percent of all final goods imported experience an NTM, while in Africa, only 17 percent of imported intermediate goods does so.

Figure 4 Frequency Ratio



3.3.2.2. Coverage ratio

Unlike the frequency ratio, the coverage ratio gives some indication of the importance of NTMs on overall imports as it measures the percentage of trade that is subject to NTMs for the importing country i, or:

$$C_i = \left[\frac{\sum D_p V_p}{\sum V_p} \right] * 100$$

Where *V* is the value of the imported product *p*. We modify this percentage again slightly to look specifically at the coverage ratio per type of good *c* as:

$$C_i = \left[\frac{\sum_{b=1}^{3} (\sum D_{pb} V_{pb})}{\sum V_p} \right] * 100$$

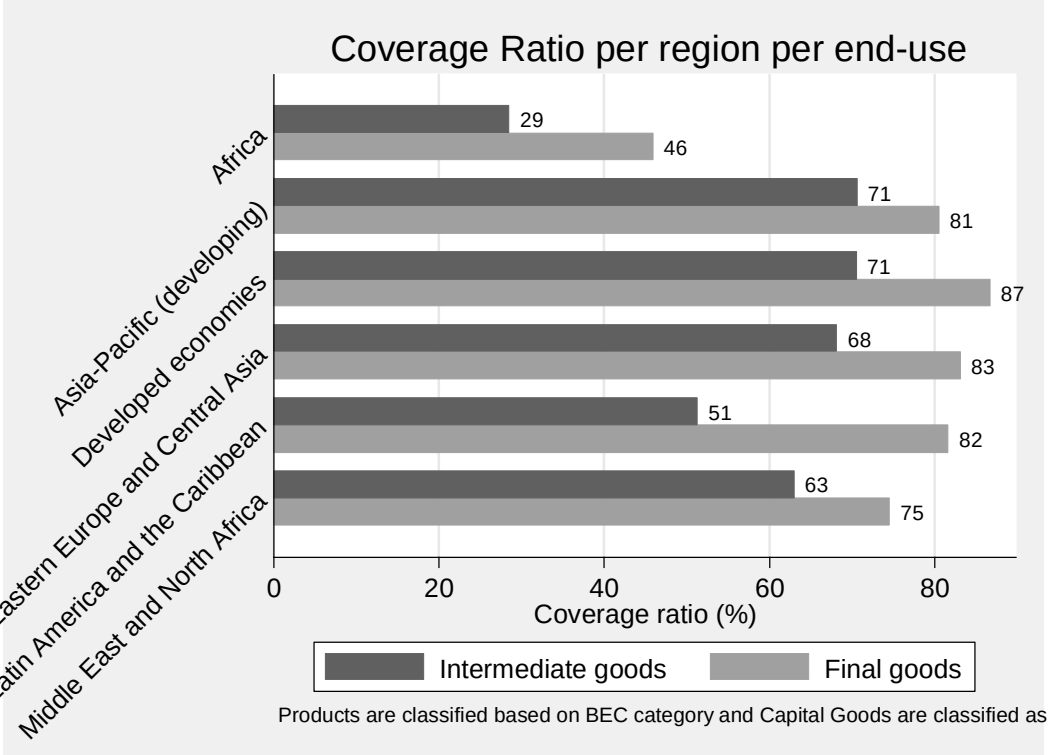
However, using this measure would overstate the NTMs used in those type of goods that are heavily traded. Therefore, as before, we should correct the measure and look at the coverage of NTMs per type of good along the lines of:

[9] Further note that we grouped capital goods under intermediate goods and left unclassified goods out of the calculations.

$$C_{ib} = \left[\frac{\sum D_{pb} V_{pb}}{\sum V_{pb}}\right] * 100$$

Doing so, Figure 5 below shows that the earlier seen Figure for the frequency ratio is largely confirmed with the coverage ratio. That is, final goods are once again regulated heavier than intermediate goods and the developed economies exhibit the strongest forms of regulation while Africa the least. In fact, 87 percent of the value of final goods that the developed countries imports is subject to an NTM. In Africa, only 29 % of the value of imported intermediates is subject to such regulation.

Figure 5 Coverage Ratio



3.3.2.3. Prevalence ratio

Unlike the frequency and coverage ratio, the prevalence ratio takes into account whether a good has more than 1 NTM levied on it, which is often the case. We find the prevalence ratio as the average number of NTMs on an imported product, or:

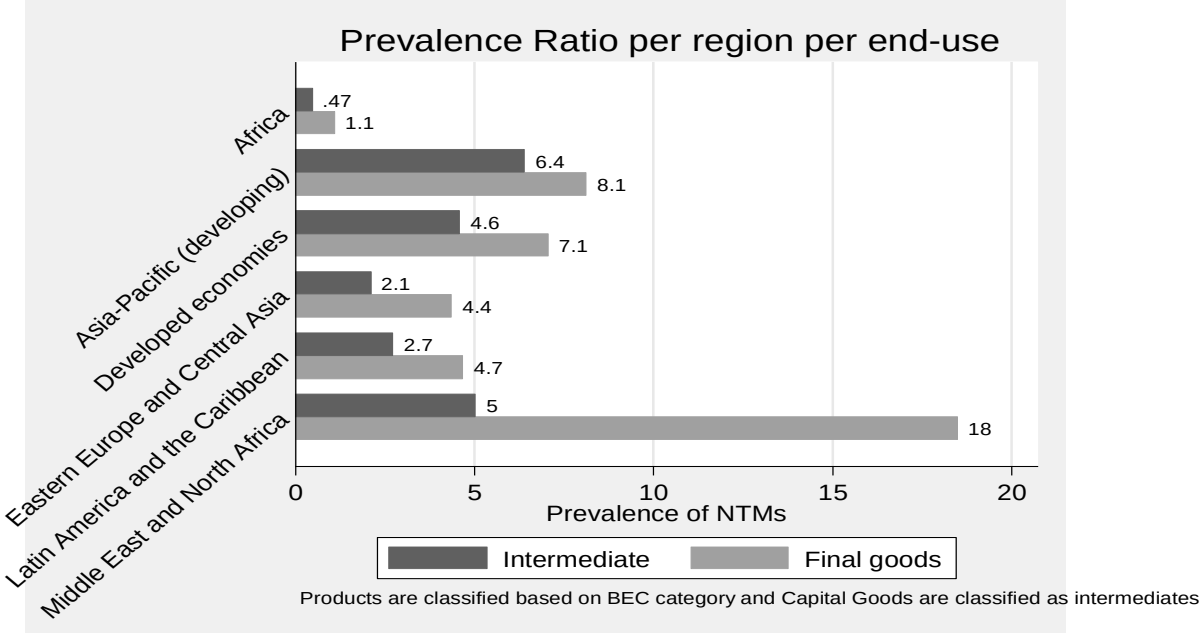
$$P_i = \left[\frac{\sum N_p M_p}{\sum M_p}\right]$$

Which, when applied to specific good classifications *b* can be specified as:

$$P_i = \left[\frac{\sum_{b=1}^{3} (\sum N_{pb} M_{pb})}{\sum M_p}\right]$$

And the results are shown in the Figure below. Once again, we see that final goods are heavier regulated than intermediate goods, ranging from an average of 18 NTMs per final good in the MENA region to 1.1 NTMs Africa. In comparison, intermediate goods only experience an average maximum of 6.4 NTMs in Asia-Pacific and 0.47 in Africa. We further see that this is the only proxy where the developed countries does not come out on top. Instead, it's MENA countries that levy most NTMs per final goods and Asian countries that protect intermediate goods most often.

Figure 6 Prevalence Ratio

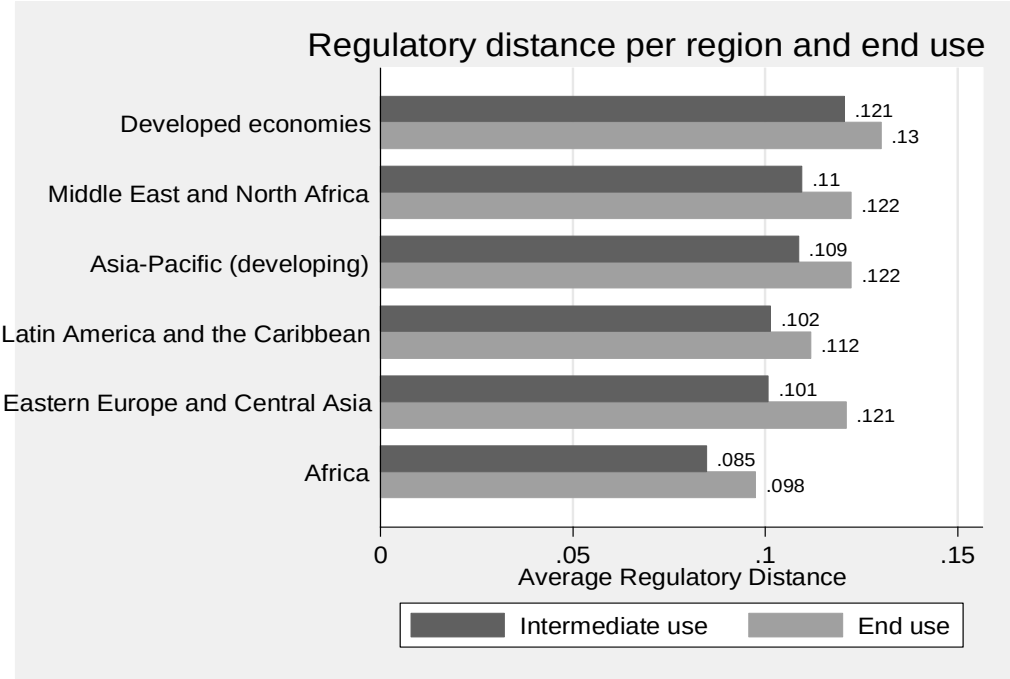


3.3.3. Regulatory heterogeneity

Although the absolute measures of NTMs are informative, we have argued that we should use the heterogeneity in these NTMs between countries as a proxy of their capacity to affect trade values.

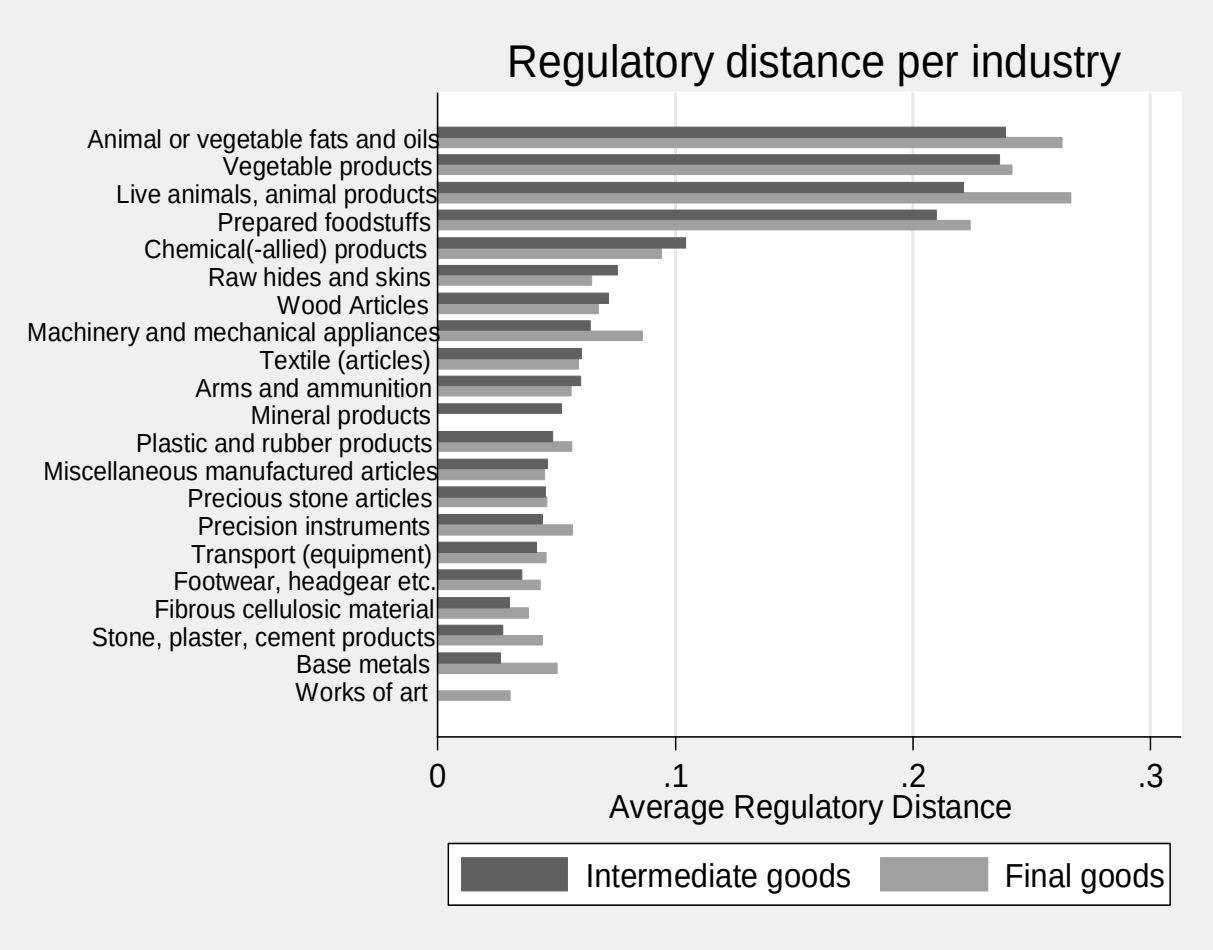
Firstly, Figure 7 provides the regulatory distance per region and shows that developed economies have the highest dissimilarity in regulation compared with its trading partners. This is in line with the findings by Knebel et al (2016), for example, and can be explained by the overall high regulation that those countries apply in general, as we have seen in the previous section. Thus, at first glance there seems to be a positive correlation between the level of development and regulatory heterogeneity in trade policies.

Figure 7 Regulatory distance



We can also investigate the regulatory distance per industry. Figure 8 shows that the food sector specifically seems to have significantly high regulatory heterogeneity. These results are in line with Knebel et al. (2016) who explain this by pointing to the fact that they are among those goods that are heaviest regulated in absolute terms. Thus, there seems to be a positive correlation between the level of regulation, and the heterogeneity of that regulation amongst trading partners

Figure 8 Regulatory distance per industry



3.4. Empirical methodology

The aim of this paper is to estimate the effect of trade policy measures levied on the import side of international value chains on the export of goods within the same value chain. To proxy for the value chain, we identify trade within the same hs2 section and look specifically at the import of intermediates and consequent export of final goods. Employing a reduced form regression model, we can state this relationship as:

$$\ln Efin_{is} = a_0 + a_1 \ln RDII_{is} + a_1 \ln RDFI_{is} + \delta_i + \varphi_s + \varepsilon_{is} \quad (3)$$

Where $\ln Efin_{is}$ is the logged export values of final goods in country *i*, sector *s*[10]. $RDII_{is}$ is the average regulatory distance on NTMs levied on intermediate goods (II) of country *i* compared to all of its trading partners, δ_i are country fixed effects and φ_s are sector fixed effects. Also note that we include a measure of the regulatory distance in terms of imported final goods $RDFI_{is}$. The rationale for this is that we want to be complete in our measure for trade policies that can affect the import of goods, either intermediate or final goods, and to isolate the effect of the trade policy regulating intermediates.

[10] The sector is identified at the HS2 level

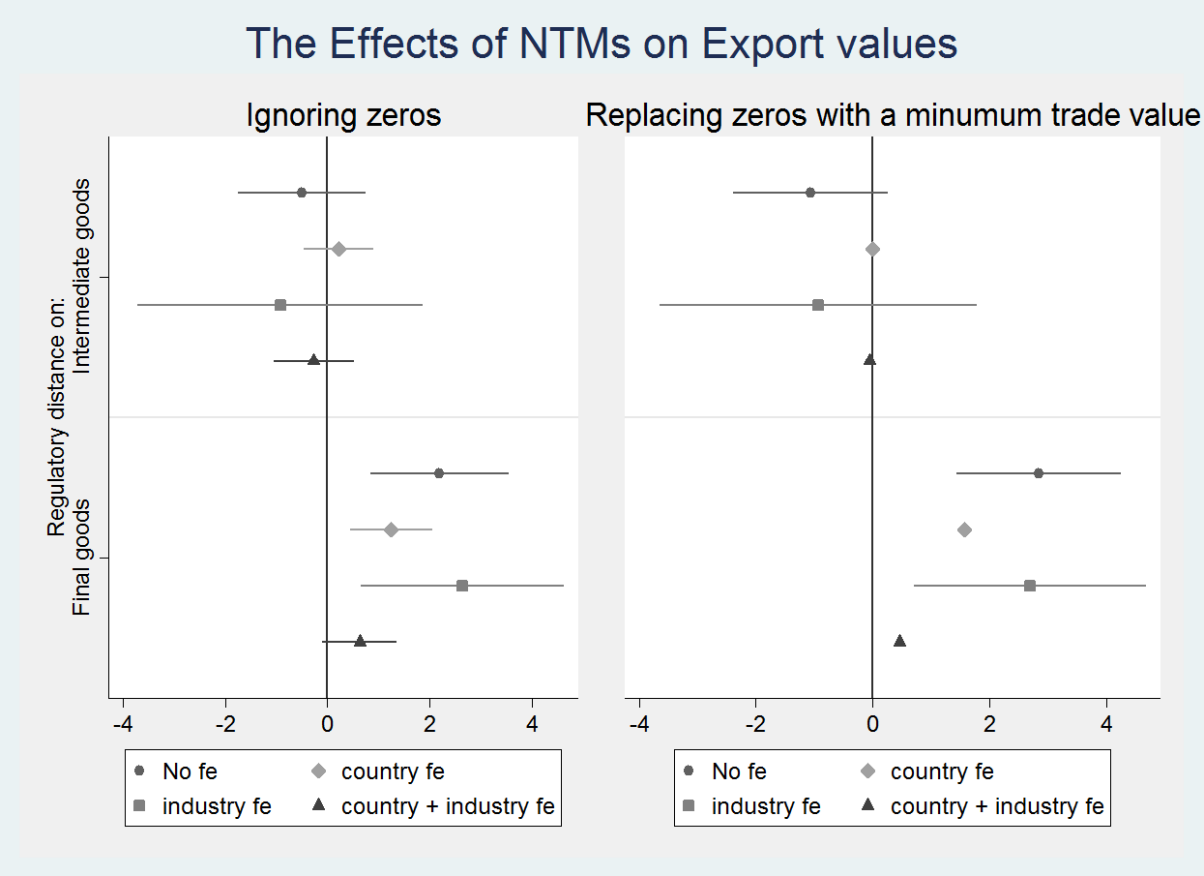
Although we have aggregated our data from the country-partner-product-level to the country-sector level, there are still a high number of zero trade values. This creates problems when we take the log of these trade values, as they will drop out. We deal with this problem in two different ways.

Firstly, we ignore zeros and allow them to drop out. Secondly, we add a small value to the zero trade flows. However, rather than taking a uniform constant of say, $1, to each trade flow, we follow Eaton and Kortum (2001) by applying the minimum observed level of trade between country c and its partners for product p. The approach is intuitive as the minimum trade flow for a specific product and importer can reflect differences in market size, competition, trade barriers, as well as reporting and measurement issues.

4.0. Preliminary Results and Conclusion

Figure 9 summarizes the empirical findings, which are presented in tabular form in Appendix B. Firstly; we see that regulatory heterogeneity on trade policies targeting the import of final goods tends to be positively correlated with export values of final goods of the same industry. We interpret this as evidence of a protection effect since the policy-targeted goods will be very similar to the goods exported. As a simple example, a country that would apply NTMs on the import of cars and consequently sees its own cars being exported more, is likely using this NTM as a protection measure. Our main variable of interest however, the regulatory distance on the trade policy on imported intermediates, shows less robust results. Namely, when ignoring zero export values, in which case they drop out, there seems to be no significant correlation. When we replace these zeros by a minimum trade value, following Eaton and Kortum (2001) for example, a significant relationship emerges. Namely, when using no fixed effects, country fixed effects or country and industry fixed effects, the correlation between the regulatory distance on the import of intermediates and the export values of goods within the same value chain becomes significantly positive. We interpret this as evidence that NTMs can be a barrier to trade if the trade policy of the home country diverges from the trade policy of the import partner. When this is the case, the import partner has to first comply with additional regulations, which seem to have knock on effects on the export values of goods within the same value chain.

Figure 9 Preliminary results



Additional work is needed however. The presented results are preliminary and we intend to investigate this relationship much further. For instance, we want to see what will happen once we expand the industry dimension to a more granular level, for example the HS2 code. In addition, we plan to use the PPML estimator as an additional method to deal with the zero trade flows.

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Appendix A: Overview of data

Arab states	Africa	Asia-Pacific (developing)	Latin America and the Caribbean	Eastern Europe and Central Asia (EECA)	Developed economies
Algeria	Burkina Faso	Afghanistan	Argentina	Kazakhstan	EU 25[11]
Bahrain	Cote d'Ivoire	China	Antigua and Barbuda	Russia	Hong Kong
Egypt	Cameroon	India	Bahamas	Turkey	Israel
Jordan	Senegal	Nepal	Barbados		Japan
Kuwait	Madagascar	Pakistan	Bolivia		
Lebanon	Malawi	Philippines	Brazil		
Mauritania	Rwanda	Sri Lanka	Costa Rica		
Morocco	Tanzania		Chile		
Oman	Namibia		Colombia		
Palestinian occupied territories	Mauritius		Dominica		
Qatar			Ecuador		
Saudi Arabia			Guatemala		
Tunisia			Guyana		
			Jamaica		
			Mexico		
			Paraguay		
			Peru		
			Suriname		
			Trinidad and Tobago		
			Uruguay		
			Venezuela		

[11] Austria, Belgium, Bulgaria, Cyprus, Czech Republic, Germany, Denmark, Estonia, Finland, Greece, Hungary, Ireland, Lithuania, Luxembourg, Latvia, Malta, Netherlands, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, United Kingdom.

Appendix B: Tabular regression output

Table 1 Ignoring zeros

VARIABLES	(1) no fe	(2) country fe	(3) product fe	(4) country and product fe
Dependent variable is export value of final goods				
Ln RD Intermediate goods	-0.501	0.227	-0.919	-0.261
	(-1.071)	(0.889)	(-0.882)	(-0.901)
Ln RD final goods	2.196***	1.254***	2.645***	0.635**
	(4.345)	(4.201)	(3.559)	(2.341)
Constant	15.46***			
	(19.49)			
Observations	877	876	877	876
R-squared	0.111	0.551	0.349	0.832

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 2 Replacing zeros with a minimum trade value

VARIABLES	(1) no fe	(2) country fe	(3) product fe	(4) country and product fe
Dependent variable is export value of final goods				
Ln RD Intermediate goods	-1.066**	-0.00492**	-0.924	-0.0510***
	(-2.076)	(-2.048)	(-0.879)	(-11.22)
Ln RD final goods	2.845***	1.574***	2.697***	0.460***
	(5.206)	(658.2)	(3.490)	(98.07)
Constant	15.08***	-4.446***	15.71***	0.359***
	(17.34)	(-392.0)	(8.811)	(52.12)
Observations	934	934	934	934

Robust t-statistics in parentheses
*** p<0.01, ** p<0.05, * p<0.1