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ITC'S ACTIVITIES ON NTMS

BUSINESS PERSPECTIVES ON OBSTACLES TO TRADE

Mondher Mimouni, Yvan Decreux, and Julia Spies

Abstract

The International Trade Centre (ITC) is currently collecting survey data on NTMs in more than 30 developing countries. In each country, a firm level survey with 150 to 1,000 phone screening and up to 300 face-to-face interviews is carried out in order to identify, at the product level, those measures that exporting companies perceive as barriers in their daily business. After giving an overview over the process of data collection, we will present some of the main findings, and point out directions for future usage of the data, including policy advisory and research.

Why do we need a business perspective on NTMs?

Despite the global decline of tariff rates to historically low levels, trade is far from being free. Other factors, such as technical regulations, product standards, and customs procedures, still prevent the limitless exchange of goods across countries. Such non-tariff measures (NTMs) are less visible and more complex than measures of tariff protection, and have proved particularly burdensome for companies in developing countries, which sometimes do not have the capacity to support their firms in complying with the imposed rules and regulations. The business sector as well as trade policymakers are therefore more and more concerned about the fact that NTMs can pose real obstacles to trade. Any preferential market access that firms from developing countries might enjoy on international markets could easily vanish without delivering the desired effect.

Existing studies on the impacts of NTMs use mostly official government data, as collected by UNCTAD and made available in the TRAINS database. Initially, the coverage with only one year, 2001, 100 countries, and basic types of measures (quantitative restrictions and price controls) was very limited, but has been considerably improved through joint efforts by UNCTAD, the World Bank and ITC. Importantly, a common and consistent nomenclature has been introduced which embraces novel measures, such as SPS and TBT measures. Yet, analyses based on these datasets suffer from certain constraints.

First, data at the country level do not reflect the experiences of exporters in their daily operations. Recent analyses of firm-level datasets have convincingly shown, however, that companies differ with respect to their international competitiveness, even when operating in the same country and sector. Whether a manager considers a measure to be burdensome or not depends to a large extent on the situation of the particular firm and hence, the incidence of a trade impediment may eventually be subject to firm-level characteristics.

Second, official data links NTMs with imports. Neither procedural obstacles nor the bilateral dimension are properly taken into account. In practice, however, exporters from one country may find a measure imposed by a market to be troublesome while exporters from another country may not. Furthermore, it is sometimes not the NTM itself causing the problem, but rather the procedures related to it. Since these procedures are many times applied domestically, official data give an incomplete and unprecise picture of trade obstacles.

Third, in the absence of other information, researchers rely on "coverage ratios", hence, on simple counts of the number of product lines that are covered by one or more NTMs. On the one hand, simply adding up all NTM-affected product lines contains the risk of overweighting small-volume product lines. On the other hand, using trade shares as weights introduces an endogeneity bias: for example, if a new NTM is applied which limits the trade of a certain product, the coverage ratio decreases even though NTMs have become more restrictive.

Against this background, the International Trade Centre (ITC) has started the initiative of conducting firm-level surveys on NTMs. In these surveys, trading companies in developing countries are asked about the barriers they face in their daily business, as well as the reasons that firms experience a measure as burdensome. The dataset is unique in that it provides comparable and consistent cross-country and cross-sector information on firms from developing countries as well as, at the product-level, the measures these firms perceive as barriers when doing business in their foreign markets. In the following, we will present the data as well as potential usages in the context of trade policy analyses.

Facts and figures on the NTM survey data[1]

The main objective of the NTM surveys is to capture how businesses perceive burdensome NTMs and other obstacles to trade at a most detailed level – by product and partner country. In what follows, we present the dataset in detail to give researchers and policy makers an accurate idea on how they might use it for their purposes.

How representative is the NTM survey data?

The ITC NTM surveys cover trade in goods. Data have already been fully processed and harmonized for 13 countries, although the initiative foresees a final inclusion of around 30 countries. In each country, between 150 and 1,000 telephone screening and up to 300 face-to-face interviews were carried out, sometimes representing the entire population of trading firms. The number of phone screens is mainly driven by the size and the structure of the economy, availability and quality of the business register and the response rate. The sample size for the face-to-face interviews depends on the number of affected companies and their willingness to participate in the face-to-face interviews.

The objective of the NTM survey is to interview a representative sample which allows for the extrapolation of the survey results to the country level. To achieve this objective, the NTM survey covers at least 90% of the total export value of each participating country. The economy is divided into 13 sectors, and all sectors with more than a 2% share in total exports are included in the survey.

The selection of companies for the phone screen interviews of the NTM survey is based on stratified random sampling. In a stratified random sample, all population units are first clustered into homogeneous groups ('strata') according to some predefined characteristics, chosen to be related to the major variables being studied. In the case of the NTM surveys, companies are stratified by sector, as the type and incidence of NTMs are often product-specific. Then simple random samples are selected within each sector.

Whereas for the export side, the sample size for the phone screens is determined independently for each export sector, for the import side, the sample size is defined at the country level. The sample size for importing companies can be smaller than the sample size for exporters, mainly for two reasons. First, the interviewed exporting companies are often import intermediaries and provide reports on their experiences with NTMs as both exporters and importers. Second, problems experienced by importing companies are generally linked to domestic regulations required by their home country. Even with a small sample size for importing companies, an effort is made to obtain a representative sample by import sectors and size of companies. The NTM survey sectors are defined as follows:

1. Fresh food and raw agro-based products
2. Processed food and agro-based products
3. Wood, wood products and paper
4. Yarn, fabrics and textiles
5. Chemicals
6. Leather
7. Metal and other basic manufacturing
8. Non-electric machinery
9. Computers, telecommunications; consumer electronics
10. Electronic components
11. Transport equipment
12. Clothing
13. Miscellaneous manufacturing

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[1] This section draws heavily on the Sri Lanka country report which has been prepared by Olga Skorobogatova and Christian Knebel under the supervision of Mondher Mimouni (ITC 2011).

Companies trading arms and minerals are excluded. The export of minerals is generally not subject to trade barriers due to a high demand, and the specificities of trade undertaken by large multinational companies. The export of arms is out of the scope of ITC activities. Furthermore, service activities are excluded as they face different NTMs whose recording would require a different methodology. Yet, the NTM surveys include companies specialized in the export-import process, such as agents, brokers, forwarding companies (referred to as 'trading agents' for brevity).

To identify companies that experience burdensome NTMs, the survey process consists of phone screens with all companies in the sample (step 1) and face-to-face interviews undertaken only with the companies that reported difficulties with NTMs during the phone screens (step 2). Please find below an overview of the number of firms included at the different stages.

Overview of surveyed firms

Country	Number of firms in the phone-screen interview	Number (share)* of firms facing NTMs	Number of firms in the face-to-face interview
Burkina Faso	442	103 (60%)	69
Egypt	869	328 (38%)	187
Jamaica	608	210 (35%)	122
Kenya	764	563 (74%)	286
Madagascar	393	210 (53%)	158
Malawi	140	93 (66%)	26
Mauritius	602	169 (41%)	112
Morocco	794	345 (43%)	256
Paraguay	406	246 (61%)	97
Peru	960	386 (40%)	119
Rwanda	354	246 (74%)	140
Sri Lanka	521	355 (70%)	107
Uruguay	458	247 (54%)	95

Note: * The share is calculated as the number of firms with NTMs over the total number of firms having replied to this question.

Which information is collected?

During the telephone screening stage, basic information about the firm is gathered, such as its address, its main export product and its status as an exporter, importer or two-way trader. In addition, some key variables about the structure of the firm are collected, such as its number of employees and the share of female employees. Most importantly, the firms are enquired about whether any of their products faced restrictive and burdensome regulations or obstacles to trade during the last 12 months.

At the end of the telephone screening stage, firms which report NTM-related problems are asked whether they would like to participate in the face-to-face stage of the interview. Face-to-face interviews go into much more detail. Their objective is to obtain a list of all types of burdensome NTMs and Procedural Obstacles (POs) by partner country and by exported product.

Face-to-face interviews consist of three main parts. The first part aims at collecting additional characteristics of the companies such as the turnover and share of exports in total sales. The second part is dedicated to the exporting and importing activities of the company, with all trade products and partner countries recorded. During this step, the interviewer also identifies all products affected by burdensome regulations and the countries applying these regulations. The third part of the interview investigates each problem in detail. A trained interviewer helps respondents to identify the relevant government-imposed regulations, affected products (6-digit level of the Harmonized System), the partner country exporting or

importing these products, and the country applying the regulation (which may be the partner, transit or home country).

Each burdensome measure (regulation) is classified according to the NTM classification, an international taxonomy of NTMs, consisting of over 200 specific measures grouped into 16 categories. The NTM classification is the core of the survey, making it possible to apply a uniform and systematic approach to recording and analyzing burdensome NTMs in countries with very idiosyncratic trade policies and approaches to NTMs. In addition, the questionnaire captures the nature of the problem (so-called procedural obstacles explaining why measures represent an impediment), the place where each obstacle takes place, and the agencies involved, if any.

The survey allows constructing frequency and coverage statistics based on *'cases'*. A case is the most disaggregated data unit of the survey. By construction, each company participating in a face-to-face interview reports at least one case of burdensome NTMs, and, if relevant, related procedural obstacles and problems with the business environment. Each case of each company consists of one NTM (a government-mandated regulation, for example sanitary and phytosanitary [SPS] certificate), one product affected by this NTM, and partner country applying the reported NTM.

Similar NTMs applied by several partner countries to the same company are recorded as several cases. However, if the NTM is applied by the surveyed exporting country, it will be recorded as a single NTM case even if the product is exported to several markets. When an interviewed company both exports and imports, and reports cases related to both activities, NTMs are recorded as two different cases: once for the analysis of exports and once for the analysis of imports. The distinction is summarized in the table below.

Dimensions of an NTM case

Dimensions / Country applying the measure	Home country (where survey is conducted)	Partner countries (where goods are exported to or imported from) and transit countries
Reporting company	X	X
Affected product (HS 6-digit code or national tariff line)	X	X
Applied NTM (measure-level code from the NTM classification)	X	X
Trade flow (export or import)	X	X
Partner country applying the measure		X

Source: ITC (2011).

Cases of POs and problems with business environment are counted in the same way as NTM cases. The statistics are provided separately from NTMs, even though in certain instances they are closely related (for example, delays can be caused by the pre-shipment inspection requirements). As many of the POs and problems with business environment are not product-specific, the statistics are constructed along two dimensions: type of obstacles and country where they occur, as well as agencies involved.

Things to keep in mind

The utmost effort is made to ensure the representativeness and the high quality of the survey results, yet several caveats must be kept in mind.

First, the NTM surveys generate *perception data*, as respondents are asked to report burdensome regulations representing *a serious impediment* to their exports or imports. The respondents may have different scales for judging what constitutes an impediment. The differences may further intensify when the results of the surveys are compared across countries, stemming from cultural, political, social, economic and linguistic differences. Furthermore, some inconsistency may be possible among interviewers (e.g. related to matching reported measures against the codes of the NTM classification) due to the complex and idiosyncratic nature of NTMs.

Second, in many countries a systematic business register covering all sectors is not available or not complete. As a result, it may be difficult to ensure random sampling within each sector, and a sufficient rate of participation in smaller sectors. Whenever this is the case, the survey limitations are explicitly provided in the corresponding report.

Finally, certain NTM issues are not likely to be known by the exporting and importing companies. For example, exporters may not know the demand-side constraints behind the borders, e.g. 'Buy domestic' campaigns. Furthermore, the scope of the survey is limited to legally operating companies, and does not include unrecorded trade, e.g. shuttle traders.

Past and future usage of the NTM survey data

A number of studies have so far been conducted with varying purposes. In what follows, we present examples of previous work that relied upon the NTM survey data before opening the discussion on how to use it in the future for trade policy advisory.

Examples of previous work

All surveys are based on a global methodology consisting of a core part and a country-specific part. The core part of the NTM survey methodology is identical across all survey countries and allows for cross-country analyses and comparison. The country-specific part gives flexibility in addressing the requirements and needs of each participating country.

The firm-level perspective

First of all, there is a series of national reports which directly addresses ITC's beneficiaries. The series gives a voice to the business communities in the countries in which the surveys were conducted. Such firsthand experience with trade impediments provides invaluable insights for trade support institutions and policymakers. At the country level, very detailed information on where the problem occurs and which types of firms are affected may be analyzed. To give an example, the share of companies with and without NTM-related problems can be compared according to the size class of the company or according to other firm-specific characteristics.

NTM affectedness of Sri Lankan agricultural exporters according to company size
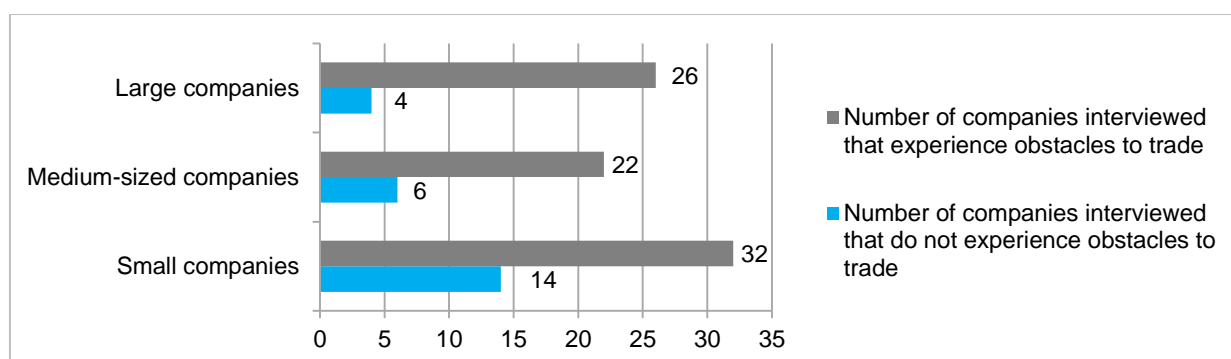
Source: ITC (2011).

Since data is to a great extent harmonized and consistent across countries, firm-level analyses can also be conducted including a number of countries. Probit regressions, for example, allow studying the incidence of NTMs according to individual characteristics of the firm while holding the sector and country affiliation fixed. Such results at the firm level may complement findings of previous studies conducted at the country or sector level. The finding of firm heterogeneity with respect to NTM-affectedness has important policy implications. A one-size-fits-all approach to mitigate NTMs does not seem to be sufficient; instead there is a need to design specific policies that fit different firm types.

The incidence of NTMs according to different firm characteristics

Firm characteristic	Base	Sector effects	Country effects	Sector & country effects
Size 2	−0.136	−0.151	−0.132	−0.148
	(0.147)	(0.147)	(0.153)	(0.152)
Size 3	0.051	0.033	0.116	0.102
	(0.155)	(0.155)	(0.16)	(0.16)
Size 4	0.21	0.205	0.297*	0.294*
	(0.162)	(0.163)	(0.174)	(0.174)

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Status	−0.089	−0.015	0.143	0.206*
	(0.103)	(0.107)	(0.112)	(0.115)
Location	0.107	0.093	−0.099	−0.109
	(0.097)	(0.097)	(0.104)	(0.105)
Activity	−0.281**	−0.216	−0.366***	−0.310**
	(0.137)	(0.139)	(0.141)	(0.144)
Constant	0.094	−0.081	0.761***	0.602***
	(0.162)	(0.176)	(0.188)	(0.204)
Agriculture		0.272**		0.247**
		(0.108)		(0.11)
Mauritius			−1.020***	−1.002***
			(0.165)	(0.166)
Egypt			−0.852***	−0.851***
			(0.13)	(0.131)
No. of obsservations	718	718	718	718
pseudo R^2	0.0106	0.0171	0.061	0.0661

Source: Spies (2012).

Note: Size class 1 (micro firms with < 11 employees) builds the reference group. Robust standard errors are reported in parentheses with significance levels *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

The regional perspective

The bilateral dimension of the data allows for regional analyses. Partner countries can be grouped and NTMs which are imposed inside the region may be compared to NTMs imposed outside the region. This offers a fresh look on regional integration going beyond 'conventional tariffs'. For example, when comparing the types of burdensome NTMs experienced by companies exporting agricultural products to League of Arab States (LAS) and non-LAS countries, substantial differences emerge. Rules of origin are more important for trade among LAS countries than for trade with the rest of the world.

Types of burdensome NTMs in intra- and extra-regional agricultural exports
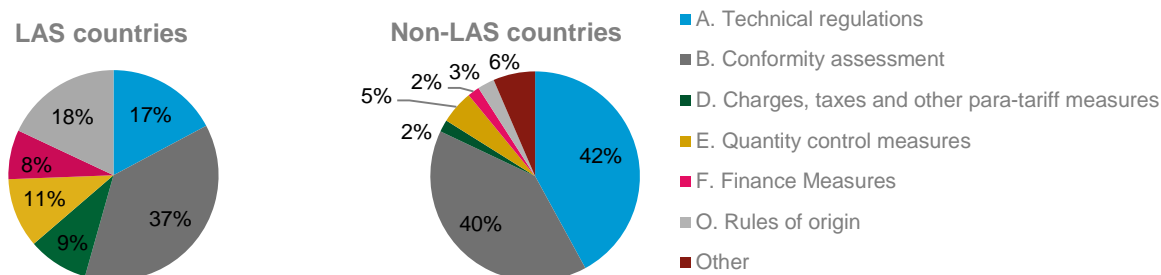

Note: ITC (2012b). Data comes from ITC NTM surveys in Egypt, Morocco and Tunisia. LAS: Simple average of types of challenging measures applied by LAS partner countries that were reported by companies in Egypt and Tunisia (no cases in Morocco); non-LAS: simple average of types of measures applied by non-LAS partner countries that were reported by companies in Egypt, Morocco and Tunisia.

The global perspective

Finally, the survey data may be used to make cross-country and cross-sectoral analyses. Correlating the share of affectedness with the export and import values reveals a negative relation. On average, where NTM shares are high, exports and imports are low and vice versa. The correlation is stronger on the export than on the import side. A more substantive analysis will certainly require controlling for other covariates, such as economic size, distance to the partner country, and tariffs amongst others.

The relation of NTMs to a country's exports and imports
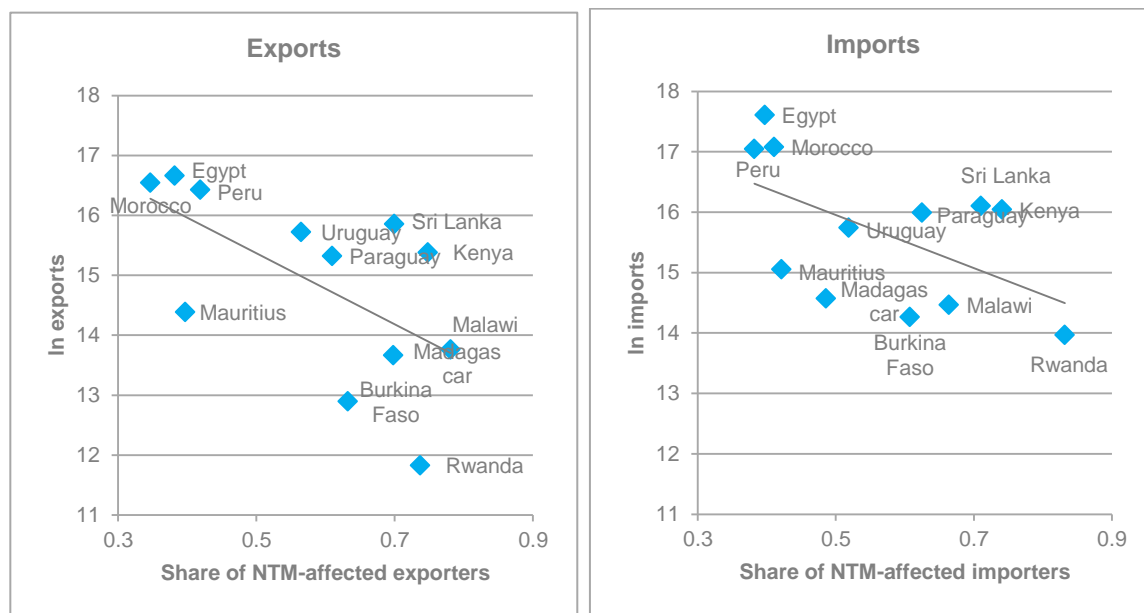
Source: Spies (2012).

NTM survey data in trade policy analyses

The magnitude of NTMs as a barrier to trade can be useful to simulate potential benefits from trade facilitation and rules' harmonization. To analyse how NTMs affect trade, production and welfare in importing and exporting countries, global economic models can be used to simulate scenarios with and without such barriers. In a recent work for the UNCTAD XIII conference in April 2012, a reduction of NTMs within the League of Arab States has been simulated, with a special focus on labour demand (ITC 2012b).

How are NTMs introduced in such models?

The existence of NTMs adds some costs to trade transactions, which can take various forms, depending on the product and the nature of the measure. For instance, they may imply additional administrative work, changes in the production process to match particular requirements, or changes in the sourcing of inputs. The content of this cost in terms of factors and inputs is not necessarily the same as the average production cost of the goods themselves. However, for the sake of simplicity, we assume in the Mirage model that NTMs can be modelled through the addition of an iceberg cost to the production cost. This corresponds to a rather neutral cost structure of the additional cost as compared to the production cost of the product itself.

How are iceberg costs quantified?

To incorporate iceberg cost in the model, we need to compute an ad-valorem equivalent (AVE) of NTMs. In the most recent studies, we used estimates computed by Kee, Nicita and Olarreaga (2009) at the HS 6- and importing country level. Estimation is based on the in-depth analysis of regulations applied by each market, but does not include any exporting country dimension. In the simulations themselves, an exporting country dimension is added as a consequence of the structure of the export baskets within the larger sectors distinguished by the model, but it is merely a composition effect.

Importance of using the right ad-valorem equivalents

While the reduction of iceberg costs will almost always bring a benefit to the import and export countries, impacts at sector level may vary a lot. The positive impacts on sectors can vary significantly from one to the other, while sectors compete for financial resources needed for their investments. The international

mobility of capital being actually limited, some sectors may be benefitting from efforts to reduce NTMs, but less than other sectors, and eventually invest less than they would if the other sectors had not improved their profitability.

NTMs are generally measured as impedimental, so that efforts to reduce their negative impacts on trade can have very significant impacts on firms' profitability and decisions. To precisely quantify which sectors are most affected by NTMs, it is therefore crucial to infer how a barrier to trade reduction would reshape the sector structure of economies.

Survey-based NTMs – an alternative data source to compute AVEs?

The use of survey data in quantitative trade policy analysis might be desireable for a number of reasons: it brings in the business sector's perspective, and will therefore allow for a more precise measurement of real obstacles to trade. It also accounts for the fact that NTMs imposed by one country do not affect all export countries in the same way. This bilateral dimension will allow for the simulation of trade facilitation also at the regional level. Currently, the coverage of ITC's NTM survey data is still limited, but efforts are made to increase the number of countries, thereby enabling global analyses.

Further reading

ITC (2011) Sri Lanka: Company Perspectives – An ITC Series on Non-Tariff Measures, Technical Paper.

ITC (2012a) Burkina Faso: Company Perspectives – An ITC Series on Non-Tariff Measures, Technical Paper.

ITC (2012b) League of Arab States' Regional Integration – Opportunities for Trade and Employment, background paper for UNCTAD XIII, forthcoming.

Kee, H., A. Nicita and M. Olarreaga (2009) Estimating Trade Restrictiveness Indices, Economic Journal, 119(534): 172-199.

Spies, J. (2012) Business Perspectives on Obstacles to Trade: Evidence from New Survey Data, Global Enabling Trade Report, World Economic Forum.