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Complaints-Inventory**

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NON-TARIFF MEASURES AFFECTING EU EXPORTS: EVIDENCE FROM A COMPLAINTS-INVENTORY

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ABSTRACT/RÉSUMÉ

Non-tariff measures affecting EU exports: Evidence from a complaints-inventory

Evaluating the importance of non-tariff measures (NTMs) affecting imports remains a major challenge. This study reports evidence on the prevalence of NTMs based on an inventory of business complaints. This data source has the advantage of drawing on experiences of economic agents that are directly involved in trading activities, of containing information on "behind the border measures", and of covering procedural aspects of NTMs. The results suggest that natural resource based industries, such as agriculture and food, mining, and textiles, are most strongly affected by NTMs relative to their export volumes. Certification procedures, quantity control measures, and technical regulations are the types of NTM most frequently complained about. Complaints about domestic governance practices, such as impediments related to government procurement, investment restrictions, or insufficient intellectual property rights protection account for almost a third of all NTM observations and are in most cases not sector-specific, but of a general nature. These complaints are frequently associated with discriminatory practices or inappropriate regulations, while delays and obstructions are repeatedly mentioned in relation to customs and certification procedures and technical regulations. In any case, the findings in this study should be interpreted with care, as frequency ratios are sometimes poor indicators of the economic and trade effects that result from NTMs.

JEL Classification: Commercial policy; protection; promotion; trade negotiations (F130); Country and industry studies of trade (F140).

Keywords: Market access, non-tariff barriers, business concerns.

Mesures non-tarifaires affectant les exportations de L'UE: Evidence a partir d'un inventaire de plaintes

Évaluer l'importance des mesures non-tarifaires (MNT) affectant les importations demeure un défi majeur. Cette étude démontre, preuves à l'appui, la fréquence des MNT à partir d'un inventaire de plaintes commerciales. Ces données ont l'avantage de brosser un tableau des expériences des agents économiques qui couvrent les aspects procéduriers des MNT. Les résultats suggèrent que les industries basées sur les ressources naturelles, comme l'agriculture, l'alimentation, les mines et les textiles sont le plus fortement affectées par les MNT relativement à leurs volumes d'exportation. Les procédures de certification, les mesures de contrôle de quantité et les réglementations techniques représentent les types de MNT qui sont l'objet des plaintes les plus fréquentes. Les plaintes au sujet des pratiques administratives nationales, tels que les obstacles liés aux marchés publics, aux restrictions à l'investissement ou à la protection insuffisante des droits de propriété intellectuelle représentent presque le tiers des observations concernant les MNT, dans la plupart des cas, non pas sur des secteurs spécifiques, mais de façon générale. Ces plaintes sont fréquemment associées avec des pratiques discriminatoires ou des réglementations inadaptées alors que les délais et les obstructions sont très souvent mentionnées en relation avec les procédures douanières et de certification ainsi qu'avec les règlements techniques. En tout cas, les conclusions de cette étude doivent être interprétées avec prudence, puisque que les indicateurs de fréquence n'offrent pas toujours la meilleure indication des conséquences économiques et commerciales résultant des MNT.

Classification JEL : Politique commerciale, protection, promotion, négociations commerciales (F130) Pays et études du commerce industriel (F140).

Mots clefs : accès aux marchés, barrières non-tarifaires, intérêts commerciaux.

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NON-TARIFF MEASURES AFFECTING EU EXPORTS: EVIDENCE FROM A COMPLAINTS-INVENTORY

1. Background

After the success of earlier rounds of multilateral trade negotiations in significantly reducing the level of customs tariffs, increasing attention has focused on the impacts of domestic policies on international trade and the use of non-tariff measures (NTMs). Policies that are implemented to pursue domestic objectives can restrict market access for foreign producers, and sometimes do so to a considerable extent. One major challenge in this context is to determine the relative importance of different types of NTMs in order to be able to make recommendations on which measures policy makers might want to focus on when considering regulatory and trade policy reform.

There is a wide range of NTMs. Some are directly trade-related (e.g. import quotas, import surcharges, anti-dumping measures), others have a link to trade in as far as their implementation is monitored at the border (e.g. labelling, packaging, sanitary standards), while a third group arises from general public policy (e.g. government procurement, investment restrictions, extent of intellectual property rights protection). Methodologies for classifying and measuring the effects of NTMs have been discussed by Deardorff and Stern (1997), Roberts, Josling and Orden (1999), and Bora, Kuwahara and Laird (2002), but considerable problems of data availability and assessment remain (Maskus, Wilson and Otsuki, 2001).

Empirical analysis concerning the use of NTMs has often been based on qualitative and quantitative information drawn from inventories and surveys. Data on the prevalence of regulations, for example, has been used to derive simple indicators, such as frequency measures. The latter can be unweighted, as in the case of frequency ratios that correspond to the share of tariff lines subject to certain NTMs (Ndayisenga and Kinsey, 1994; Swann *et al.*, 1996; Brenton *et al.*, 2001, Nicoletti *et al.*, 2003), or weighted, as for import or export coverage ratios that measure the percentage of imports or exports subject to particular NTMs (Clark, 1992; OECD, 1997; Bora, Kuwahara and Laird, 2002).

While such frequency measures can be useful to provide information on the occurrence of different types of NTMs in a sector or economy, counting recorded regulations has some recognized shortcomings. The lists of regulations are generally not comprehensive and international comparisons are difficult as not all governments are equally careful in reporting changes in regulations, which might result in incomplete coverage of measures. Also, the nature and effects of regulations vary largely, so that the latter are generally not comparable, limiting the information value of frequency counts.

Business surveys or structured interviews represent another approach that has been used to obtain information on the importance of NTMs (Roberts and DeRemer, 1997; Henson and Loader, 2001; OECD, 1999 & 2003). Survey investigations have the advantage of using tailor-made questionnaires to collect data for a specific analytical purpose. In addition to information concerning the frequency of NTMs, they also make it possible to gather data on the relative importance of different measures, such as their trade restrictiveness or trade impact. However, surveys tend to be very resource-intensive to undertake, which often forces researchers to compromise on the scale of the investigation. This in turn limits the number of observations and the scope for statistical analysis. Also, while estimates of the trade restrictiveness of individual NTMs can provide useful information, survey responses to corresponding questions are to some extent subjective and possibly influenced by the presumed purpose of the survey, so that individual experts' estimates of trade impacts can vary considerably.

This paper reports information on the prevalence of NTMs from yet another information source, namely inventories of complaints from businesses about export impediments. Such listings are compiled and regularly updated by the European Commission Directorate-General for Trade.¹ Inventories of business complaints have the advantage of relying on information from entities that are directly confronted with non-tariff barriers in their business and export operations. Also, the simple fact that a firm has made the effort of filing a complaint with public authorities might be seen as an indication that the recorded entries correspond to "serious" impediments to trade. Moreover, unlike many other information sources on NTMs, the inventories also covers "behind the border barriers", such as impediments related to government procurement, investment restrictions, or insufficient intellectual property rights protection, report procedural problems associated with particular NTMs, and offer a relatively large number of observations, thereby reducing the influence of "outliers" on the statistical results.

Based on information in the EU inventory, this paper investigates the incidence of different types of NTMs encountered by EU exporters in different economic sectors and regions. Indicators of relative prevalence are derived and compared. In addition to the investigation of sectoral and geographical patterns of NTM prevalence, the study also explores procedural aspects of NTMs. Moreover, statistical analysis on the relationship between NTMs and importing country characteristics, such as the levels of tariff protection, income and trade, is conducted in order to assess whether there are common features of NTM occurrence across countries.

The remainder of the study is organised as follows. Section 2 presents a brief discussion of the data source and measurement issues. Section 3 then reports findings on the prevalence of NTMs encountered by EU exporters broken down by geographical region, sector, type of NTM and associated procedural barrier. In section 4, further analysis is carried out with respect to the relationship between NTMs and tariff levels across countries in order to test whether tariff and non-tariff protection are substitutes or complements. Finally, section 5 presents conclusions.

2. Business complaints about non-tariff measures

The European Commission's Market Access Database provides information on exporting from the European Union (EU) into non-EU countries. One part of this database consists of a listing of trade barriers that have been brought to the attention of the Commission by businesses. The aim of this inventory is to improve transparency in trade relations and inform exporting companies about impediments that other exporters have encountered when trying to enter particular markets. The material might also serve as background information for trade negotiations.

The recorded business complaints give indications of the type of the NTM, as well as the product category and country in which they were encountered, and sometimes include information on the procedural problems that have arisen. They do not contain information about the trade impact of particular measures or the costs associated with overcoming a barrier. However, the existence of a complaint suggests that some economic agents have perceived the measures to be unduly trade-restrictive.

1 . The Commission's Market Access Database can be accessed via the internet at <http://mkacddb.eu.int>. To some extent similar compilations of business complaints are also provided, for example, by the US Office of the Trade Representative ("National Trade Estimates Report of Foreign Trade Barriers"), Japan's Ministry of Economy, Industry and Trade ("Report on the WTO Consistency of Trading Policies by Major Trading Partners"), and Chile's Ministry of Economy ("Segundo Catastro Nacional Sobre Barreras Externas al Comercio y la Inversión").

While frequency counts of NTMs should generally be interpreted with care, some insights about the relative importance of different types of barriers can be gained from looking at the prevalence of NTM complaints. For example, the observation that there are no or only very few complaints about a particular type of NTM in a given sector might be taken as an indication that the trade barrier in question does not exist or is not impeding international commerce to a significant extent. Conversely, a large number of business complaints concerning a particular type of import barrier might suggest that further analysis on the underlying trade policy issue is warranted.

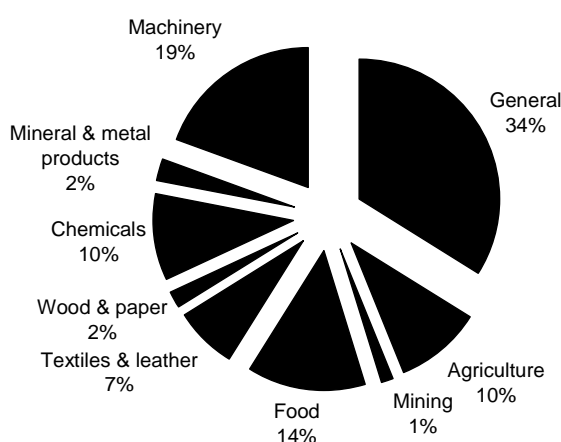
Yet, the data source has some drawbacks. The inventory of business complaints might not be fully representative, as the listing was produced for other purposes than analysis of non-tariff barriers. Also, it is not clear whether business complaints were always registered in a comprehensive and consistent manner, even though there might be no obvious biases apparent. Moreover, some business complaints might originate more from a subjective feeling of commercial injury than from unjustified or discriminatory regulation. With these caveats in mind, the subsequent analysis tries to establish which types of NTMs are most frequently encountered and which sectors are most often affected by NTMs.

3. Prevalence of non-tariff measures

The inventory as of April 2000 registered a total of 1708 business complaints about non-tariff measures in goods sectors. Complaints by EU businesses referred to NTMs in 46 different countries, with about 39 per cent of NTM-complaints concerning high-income countries and 61 per cent developing countries. More than 40 per cent of all NTMs were encountered by exporters trying to sell into East Asian and Pacific markets, followed by complaints about market access in Eastern Europe and Central Asia (23 per cent) and North America (14 per cent).

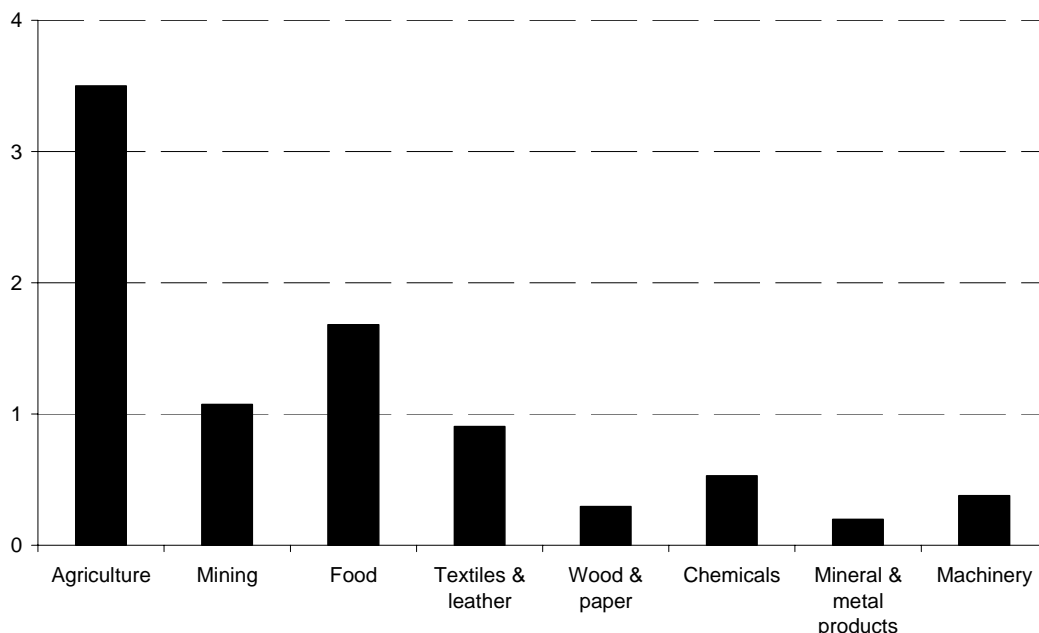
Machinery, food products, and chemicals are the sectors in which NTM-complaints are most prevalent (Figure 1). These three product groups account for 43 per cent of all inventory entries. In addition, a significant share of the complaints that do not mention any specific product group is likely to concern these three sectors. The absolute number of complaints is, of course, an imperfect measure of importance of NTMs across sectors, as the latter vary in economic size. If the number of complaints is related to sectoral export value, the agriculture and food sectors turn out to be the ones with the largest number of NTM-complaints in relative terms, followed by mining and textiles (Figure 2). In other words, exporters of natural resource-related products seem relatively frequently confronted with NTMs.

Figure 1. **Business complaints about non-tariff measures by sector**



Note: If a complaint mentioned more than one product, a weight of less than one was assigned to the individual products, such that the sum of product observations adds up to the total number of business complaints in the inventory.
Source: Authors based on EU market access database.

Figure 2. **Relative prevalence of business complaints about non-tariff measures by sector**
NTM-complaints per billion US dollars of exports



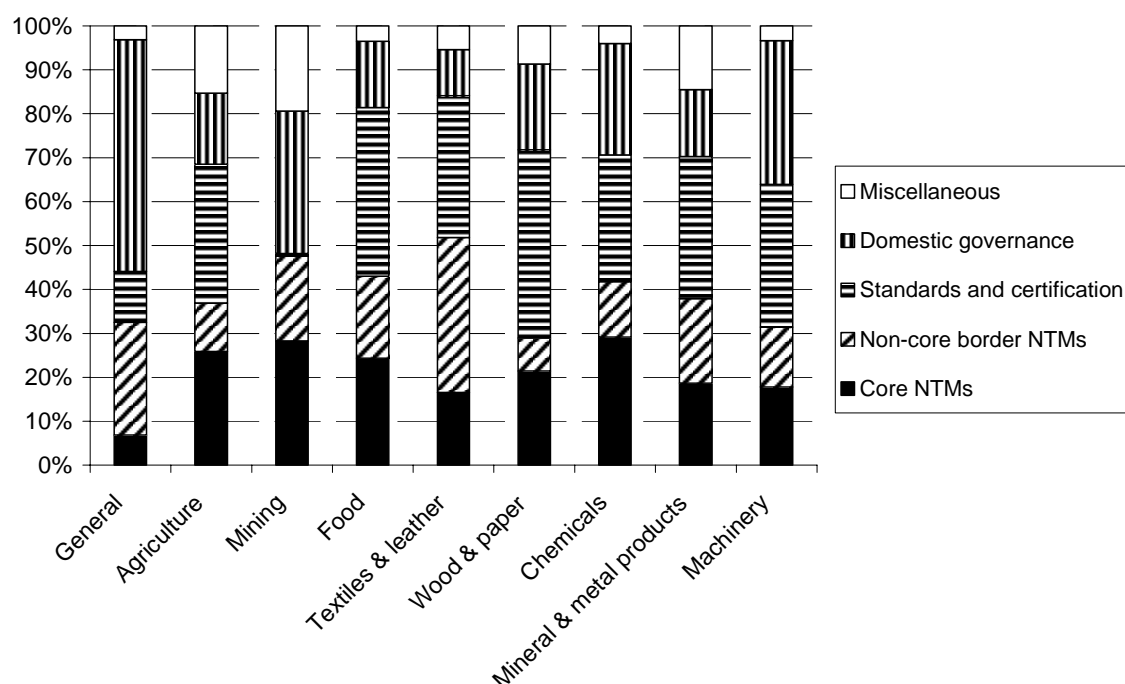
Source: Authors based on EU market access database.

A further breakdown by category of NTMs shows that the types of NTMs encountered in different sectors differs to some extent. The typology of NTMs used in this study is based on UNCTAD's classification of trade control measures, while providing in addition a more detailed representation for trade-impeding "domestic governance practices" concerning, for example, government procurement, foreign direct investment, or intellectual property rights (Annex table 1).² The classification relies on economic rather than legal criteria, so that the entries do not distinguish between GATT-consistent and inconsistent measures.

Measures that are sometimes referred to as "core NTMs" (OECD, 1997), i.e. quantity control and price control measures, account for about 17 per cent of all complaints, with these measures being relatively most prevalent for chemicals, mining and agricultural products (Figure 3). "Non-core border NTMs", such as customs procedures, are of frequent concern only in a few sectors, such as textiles, while standards and certification issues are the subject of a large number of complaints across almost all sectors. Indeed, certification procedures alone account for 15 per cent of all NTM-complaints and are thereby the single most prevalent type of NTM in the EU inventory. Domestic governance issues account overall for about a third of all complaints and are relatively most prevalent for exports of machinery and mining products. It is remarkable that core NTMs as well as standards and certification issues are relatively more frequently encountered as sector-specific issues, while complaints about non-core NTMs and domestic governance are often voiced as generic issues without reference to a particular export product or sector.

² Standards and certification procedures are also instruments of domestic governance, but are classified separately in this study because of the considerable importance of this NTM-category.

Figure 3. Relative prevalence of different types of non-tariff measures by sector



Note: “Core-NTMs” are price control measures and quantity control measures; “Non-core border NTMs” comprise para-tariff measures, finance measures, automatic licensing, monopolistic measures and customs procedures; “Standards and certification” concern technical regulations, as well as certification issues. “Domestic governance” comprises trade-impeding government assistance issues, public procurement issues, investment restrictions, distribution restrictions, transportation restrictions, lack of intellectual property rights protection and law enforcement issues.

Source: Authors based on EU market access database.

Table 1 gives a more detailed overview of the distribution of NTMs across sectors. Three levels of relative NTM-intensity are distinguished according to the share of complaints about a particular barrier in a particular sector relative to the corresponding share for all complaints. The thresholds of 25 per cent below and 25 per cent above all-complaints average were thereby established such as to generate a balanced distribution of items in the different intensity levels across NTM-types and sectors.

Table 1. Business complains about non-trade measures by sector and NTM type

	All sectors	Goods in general	Agriculture	Mining	Food	Textiles & leather	Wood & paper	Chemicals	Mineral & metal products	Machinery
	100%	34%	10%	1%	14%	7%	2%	10%	2%	19%
All non-tariff measures										
Core NTMs:										
Price control measures	3%	○	○	●	●	○	○	●	●	○
Quantity control measures	14%	○	●	●	○	○	●	●	○	○
Non-core border NTMs:										
Para-tariff measures	9%	●	○	○	○	○	○	○	○	○
Financial measures	1%	●	○	○	○	○	○	○	●	○
Automatic licensing measures	1%	●	○	○	○	●	○	○	●	○
Monopolistic measures	3%	○	●	●	●	○	○	●	●	○
Customs procedures	6%	●	○	○	○	●	○	○	○	○
Standards and certification:										
Technical regulations	11%	○	○	○	●	○	●	○	○	○
Certification	15%	○	○	○	●	●	○	○	●	●
Domestic governance:										
Government assistance issues	6%	○	●	○	○	○	○	○	●	●
Public procurement issues	6%	●	○	○	○	○	○	○	○	○
Investment restrictions	8%	●	○	○	○	○	○	○	○	○
Distribution restrictions	2%	○	○	○	○	○	○	○	○	○
Transportation restrictions	1%	●	○	○	○	○	○	○	○	○
Lack of IPR protection	8%	●	○	○	○	○	○	○	○	○
Law enforcement issues	1%	●	○	○	○	○	○	○	○	○

Note: "●": the share of complaints about the particular measure in all complaints encountered in the particular sector is at least 25 per cent higher than for all sectors.

"○": the share of complaints about the particular measure in all complaints encountered in the particular sector is at least 25 per cent lower than for all sectors.

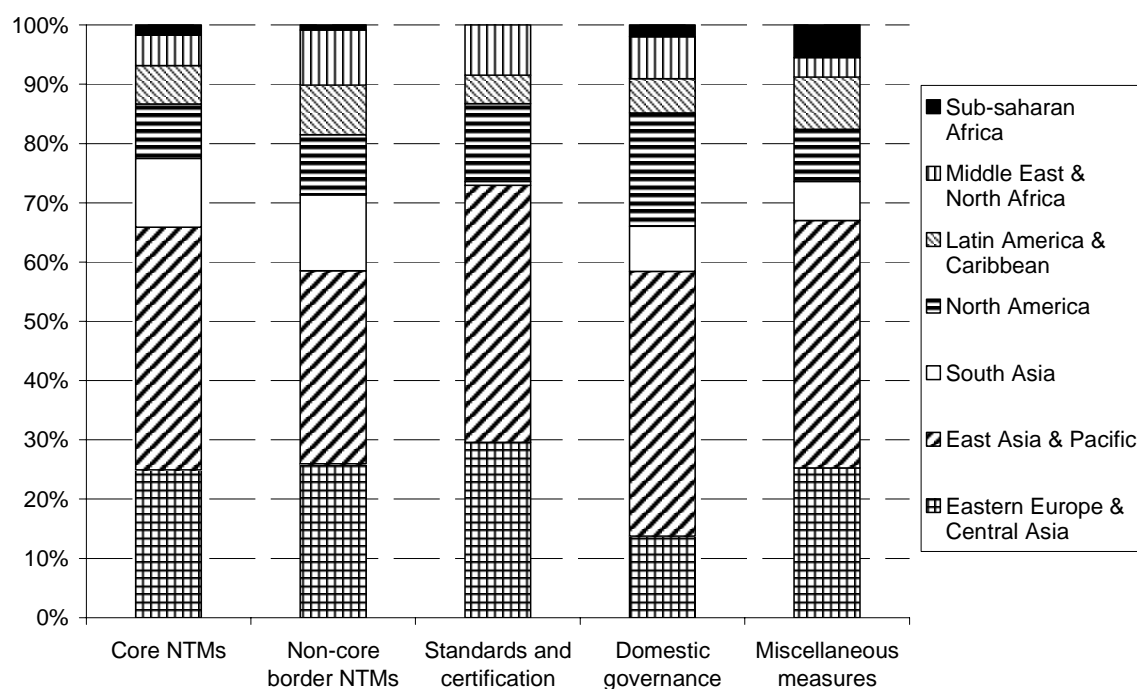
"○": the share of complaints about the particular measure in all complaints encountered in the particular sub-sector amounts to 75 to 125 per cent of the corresponding ratio for all sectors.

Source: Authors based on EU market access database.

It turns out, for example, that technical regulations, such as product specifications or pre-shipment inspection requirements, are relatively frequently a business concern for exporters of food and wood and paper products. Conversely, such measures are of relatively minor importance in the mining industry. In any case, it should be noted that for barriers, such as automatic licensing, or sectors, such as mineral and metal products, for which there are only a small number of observations in the data set, the information in Table 1 should be interpreted with care.

The use and the extent to which NTMs give rise to trade concerns differ, of course, across countries and regions. Figure 4 illustrates the share of complaints about particular types of NTMs in different regions. For example, EU-based companies exporting to countries in the East Asian and Pacific region complain relatively frequently about domestic governance issues, those trying to sell into Eastern European markets about issues related to standards and certification, while non-core border NTMs are often encountered by exporters in countries in the Middle East and North Africa as well as in Latin America and the Caribbean.

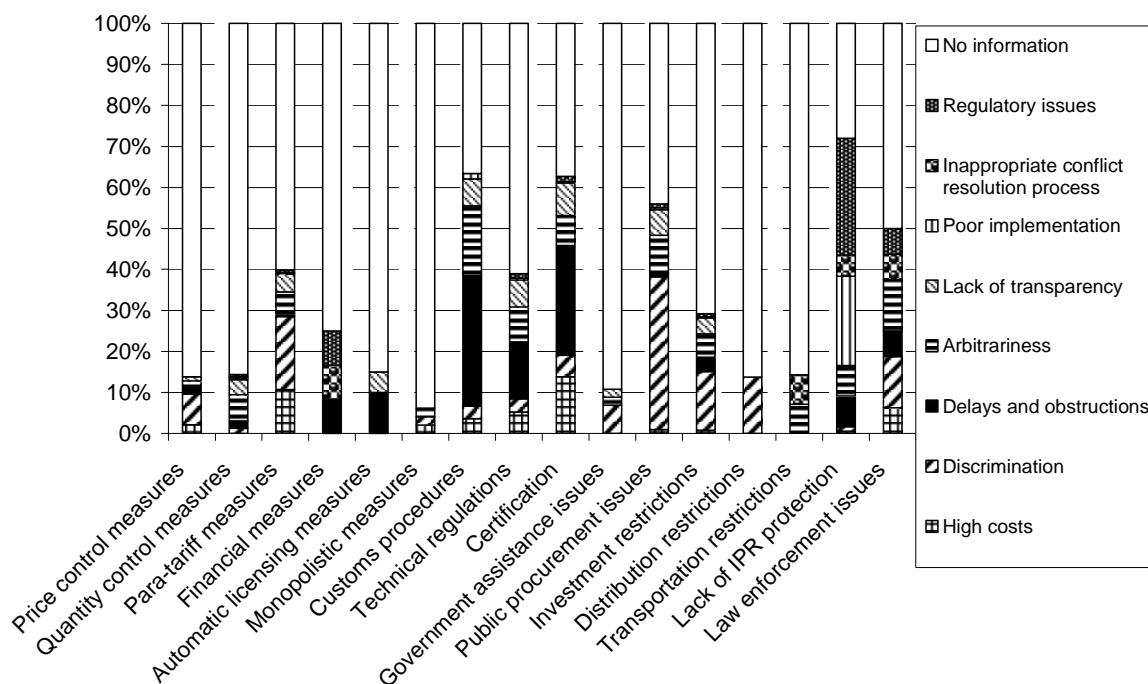
Figure 4. **Regional distribution of complaints by NTM-category**
Share of particular region in all complaints concerning a particular NTM category



Source: Authors based on EU market access database.

About 38 per cent of all business complaints in the inventory also report information on the procedural problems that are associated with particular trade impediments. Most often cited are problems of procedural delays or obstructions, followed by complaints about discrimination against imports and protests concerning arbitrariness. Delays and arbitrariness are repeatedly mentioned in relation to customs and certification procedures, while discrimination is frequently alleged in connection with para-tariff measures and public procurement (Figure 5). Given the attention devoted to notifications and information provision in the WTO context, it seems remarkable that although lack of transparency is mentioned in connection with several NTMs, it is never the most frequently voiced complaint concerning any of the NTMs.

Figure 5. **Procedural problems associated with NTMs**
Share of complaints mentioning particular problems



Source: Authors based on EU market access database.

4. The relationship between tariff and non-tariff measures

As tariffs have generally been subject to more stringent WTO disciplines and reduction commitments than NTMs, some observers have worried that countries might be tempted to replace declining tariff by more non-tariff protection. In this context, Fontagné and Mimouni (2001) found that countries that have relatively low agricultural tariff levels impose a large number of environmental measures on their imports. They suspect that in some cases stated environmental objectives are being abused for protectionist reasons.

In order to evaluate whether the relationship between tariff and non-tariff measures is indeed one of substitution rather than complementarity, the information in the EU's Market Access database on NTMs has to be matched with corresponding information on tariff levels. Estimates of average tariffs for a number of countries are contained in the GTAP database (Dimaranan and Dougall, 2002). Table 2 reports on the correlation between NTMs and tariffs for a sample of twenty countries for which information is available from the GTAP database and that were represented with at least 10 entries in the inventory of business complaints. It turns out that the correlation is negative for standards and certification, in conformity with the findings by Fontagné and Mimouni, while it is positive for other categories of NTMs. However, the correlation coefficients are very low, so that, given the limited sample size, no firm conclusions seem to be warranted.

Table 2. **Correlation among categories of NTMs and with importing country characteristics**

	All NTMs (*)	Core NTMs (*)	Non-core border NTMs (*)	Standards and certification (*)	Domestic governance (*)	Average tariff level	GDP per capita	EU export volume
All NTMs*	1.00	0.89	0.92	0.23	0.98	0.32	-0.51	-0.38
Core NTMs*		1.00	0.76	0.05	0.88	0.37	-0.60	-0.38
Non-core border NTMs*			1.00	0.20	0.85	0.37	-0.51	-0.32
Standards and certification*				1.00	0.14	-0.14	0.22	-0.10
Domestic governance*					1.00	0.28	-0.49	-0.35
Average tariff level						1.00	-0.78	-0.36
GDP per capita							1.00	0.59

Note: (*) per billion USD of exports.

Source: Authors.

Table 2 also shows the correlation between the four categories of NTMs, i.e. core-NTMs, non-core border NTMs, standards and certification, and domestic governance, which is positive and generally very high. Complaints about standards and certification procedures, which appear to be only weakly related to the frequency of other types of NTM-impediments are the exception. Furthermore, the table shows the relationship between NTM prevalence and, respectively, per capita GDP in the partner country and EU export volume. In both cases the correlation is in general negative, indicating that there are relatively fewer NTM-complaints per billion dollars of exports in EU trade with richer countries and countries with which the EU trades intensively. Again, standards and certification procedures do not conform to the overall pattern of NTM prevalence. For example, there is a positive correlation between complaints about standards and certification and per capita GDP. However, as in the case of the relationship between tariffs and NTMs, these results will need to be verified by careful econometric analysis, based on a larger sample of countries.

5. Conclusions and suggestions for further research

Obtaining consistent information on NTMs is a major challenge and even establishing lists of measures that can be used for quantification is cumbersome and time-consuming. This paper reported evidence on the prevalence of NTMs based on an EU inventory of business complaints. This information source has the advantage of drawing on experiences of economic agents that are directly involved in trading activities. Moreover, it contains information on "behind the border barriers" and procedural aspects of NTMs that is not available in many other large-scale surveys of non-tariff measures.

According to the EU inventory, the largest number of business complaints relative to the value of exports is observed for natural resource-based sectors, such as agriculture and food, mining and textiles. The types of NTMs most complained about are certification procedures and quantitative import controls. This finding is consistent with the results of other analysts, such as Ndayisenga and Kinsey (1994), who base their research on UNCTAD's database of trade control measures.

Domestic governance issues seem to pose problems for goods-exports in general but lead to relatively few sector-specific complaints. These barriers are frequently associated with discriminatory practices or inappropriate regulations, while delays and obstructions are repeatedly mentioned in relation to customs and certification procedures. On a country-by-country basis, a strong complementary relationship was found between three broad categories of NTMs, i.e. core-NTMs, non-core border NTMs, and domestic governance, while complaints about standards and certification procedures are only weakly related to the perception of other non-tariff barriers. No firm conclusions can be drawn from the available data on the relationship between NTM prevalence and importing country characteristics, such as tariff levels, income,

and intensity of existing trade relations. However, it seems remarkable that the pattern of correlation of the country-specific indicators with the prevalence of complaints about standards and certification procedures again diverged considerably from that for other categories of NTMs. In any case, the quantitative findings in this study should be interpreted with care, as frequency ratios are sometimes poor indicators of the economic and trade effects that result from NTMs.

In this context, analysis to complement frequency counts would, in particular, have to focus on the trade restrictiveness and impact of NTMs. Different measures can have strongly varying effects on groups of consumers, producers, and taxpayers. Roberts, Josling, and Orden (1999) propose an analytical framework for technical regulations that groups the impacts into three categories, namely the regulatory protection effect, the supply shift effect, and the demand shift effect. The regulatory protection effect refers to the restrictive impact of an NTM on imports that generates additional profits for domestic producers. The supply shift effect captures the expansionary impact of reduced imports for domestic supply, and the demand-shift effect accounts for the additional information that a regulation provides to consumers which in turn might increase their confidence in the product and as a result the demand for it.

Quantifying these effects is very data intensive, especially if the analysis is not confined to the particular occurrence of an NTM for which the specific details of its implementation are known, but rather aims to provide an economy-wide overview. Yet, conducting a broad assessment of NTMs has certain analytical advantages, such as making it possible to capture the interaction of several NTMs applying to a product, or to take into account multi-market and general equilibrium effects in cases where a measure applied to one product affects trade in another (Deardorff and Stern, 1997). Hence, there is a trade-off between information requirements and analytical comprehensiveness that has to be considered in the framework of on-going and future NTM-related research.

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Annex table 1: Classification of non-tariff measures

NTM category	Type of NTM	Example
Core NTMs	<i>Price control measures</i>	Administrative price fixing Variable charges Anti-dumping measures Countervailing measures
	<i>Quantity control measures</i>	Non-automatic licensing Quotas Prohibitions Export restraint arrangements
Non-core border NTMs	<i>Para-tariff measures</i>	Customs surcharges Additional charges Internal taxes and charges on imports
	<i>Financial measures</i>	Advance payment requirements Multiple exchange rates Restrictive foreign exchange allocation Terms of payment for imports Transfer delays/queuing
	<i>Automatic licensing measures</i>	Automatic licence Import monitoring
	<i>Monopolistic measures</i>	Single channel for imports Compulsory national services
	<i>Customs procedures</i>	Customs valuation Customs classification Customs clearance Rules of origin
Standards and certification	<i>Technical regulations</i>	Product standards Production standards Mandatory labelling Marking Packaging
	<i>Certification</i>	General certification Quarantine Inspection Testing
Domestic governance (other than standards and certification)	<i>Government assistance issues</i>	Production assistance Export assistance General preferences
	<i>Public procurement issues</i>	Tendering issues/systems Contract conditions
	<i>Investment restrictions</i>	Foreign equity restrictions Performance requirements/incentives Trade balancing
	<i>Distribution restrictions</i>	Wholesale restrictions Retail restrictions
	<i>Transportation restrictions</i>	Restrictive airport regulations Restrictive seaport regulations
	<i>Lack of intellectual property rights protection</i>	Copyright Trademark Patent
	<i>Law enforcement issues</i>	Lack of legal infrastructure Inadequate efforts on trade integrity
Miscellaneous measures		

Source: Authors, amended from UNCTAD (2000).

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