

**Trading with conditions:
the effect of sanitary and phytosanitary measures on lower income countries’
agricultural exports[°]**

Marina Murina[×] and Alessandro Nicita[⊗]

Abstract

Market access for agricultural products has become increasingly determined by compliance with a wide array of regulatory measures. From a trade perspective one of the most important aspects of such regulatory measures is their potential distortionary effect as their cost of compliance is often asymmetrical across countries. This paper investigates the effect of the European Union’s sanitary and phytosanitary (SPS) measures across 21 broad categories of agricultural goods. The findings indicate that SPS measures result in relatively higher burdens for lower income countries but that membership in deep trade agreements seems to reduce the difficulties related to compliance with SPS measures. Overall, the additional trade distortionary effect of the European Union SPS measures is quantified in a reduction of lower income countries’ agricultural exports of about 3 billion \$US. These results are consistent with the hypothesis that while many middle and high income countries have the internal capacity to comply with SPS measures, lower income countries do not.

JEL Classification: F13, O24.

Keywords: International Trade; Non-Tariff Measures; Comparative Advantage; Developing Countries; Technical Regulations.

[°] The views expressed in this paper are those of the authors and do not necessarily represent the views of the United Nations Conference on Trade and Development (UNCTAD) Secretariat or of UNCTAD Members.

[×] UNCTAD - Division of International Trade in Goods, Services and Commodities. Palais des Nations CH-1211 Geneva, Switzerland. Email: marina.murina@unctad.org. Tel: +41 -229175671

[⊗] Corresponding author. UNCTAD - Division of International Trade in Goods, Services and Commodities. Palais des Nations CH-1211 Geneva, Switzerland. Email: alessandro.nicita@unctad.org. Tel: +41-229175685

1. Introduction

Agriculture plays a fundamental role in the development prospects of many developing countries, especially those at the lower end of the development process and which export earnings are largely related to the export performance of their agricultural sector. Although the last few decades have been characterized by progressive trade liberalization in regard to traditional policy instruments, market access for agricultural products has become increasingly determined by compliance with a wide array of regulatory measures. These regulatory instruments are generally referred to as sanitary and phytosanitary (SPS) measures and include many diverse conditions such as import licenses, inspection requirements, testing and certification requirements, labeling and packaging requirements, and quarantines. The increase in the use of such measures has largely been driven by non-trade policy objectives such as the increase in consumers' demand for the quality and safety of products and the needs of agri-food businesses to streamline food production chains. Still, SPS measures have a critical role in determining market access conditions as compliance with them is necessary for entering developed countries markets.¹

From a trade perspective one of the most important aspects of SPS measures is their potential distortionary effect. SPS measures are generally applied in a nondiscriminatory manner as they usually target products regardless of their origin. However, regulatory and procedural requirements are of particular relevance for poorer countries' exports for two main reasons. First, regulatory measures fall disproportionately in sectors on which poor countries are dependent (i.e. agriculture). Second, compliance with SPS measures is asymmetrical because it requires technical know-how, production facilities, and an infrastructural base that, while usually available in developed and emerging markets, is often lacking in many lower income countries (Athukorala and Jayasuriya, 2003).

The distortionary and trade-restrictive effects of SPS measures are among the most important reasons why SPS measures are increasingly addressed in trade agreements. At the multilateral level SPS measures are governed by the broad guidelines set in the World Trade Organization (WTO) Agreement on the Application of Sanitary and Phytosanitary Measures (the SPS Agreement). The fundamental tenet of the SPS Agreement is the principle of non-discrimination

¹ UNCTAD (2012).

for which SPS measures should be applied in order to limit unnecessary distortions in international trade.² The restrictive effects of SPS measures are increasingly addressed in regional and bilateral trade agreements. The inclusion of provisions on SPS measures together with those on technical barriers to trade (TBT) is motivated by a desire to remove barriers to deeper economic integration through mutual recognition or the harmonization of each party's regulatory system and by facilitating compliance through the means of technical assistance programs and other trade facilitation mechanisms. Still, the actual effectiveness of trade agreements with regard to addressing the effects of SPS measures is debatable. This effectiveness greatly depends on the implementation of a cooperative work program aimed at reducing the discrepancies among different regulatory systems and on the actual realization of technical assistance programs aimed at reducing compliance costs.

The literature on the effects of SPS on international trade has shown that SPS measures often have both restrictive and trade diverting effects. The rationale is that the presence of regulatory measures imposes country and sector specific compliance costs that alter export competitiveness. These diverse costs ultimately reflect in the structure of international trade flows. Among the various studies on the topic, Disdier *et al* (2008) find distortionary effects resulting from SPS measures applied by OECD members on their agricultural and food exports. Using a gravity model framework, Disdier *et al* findings indicate that SPS measures significantly reduce developing countries' exports to OECD countries, while not affecting trade between OECD members. Athukorala and Jayasuriya (2003) also look at the export responses to regulatory measures in countries with different levels of. Their study finds that many developing countries face considerable problems in meeting even basic food hygienic requirements. However, they also find that the level of compliance increases for more developed partners. The study by Essaji (2008), which uses the US data on agricultural, mining and manufacturing imports to examine the impact of regulatory measures on trade patterns, also suggests that foreign regulations significantly impinge on developing countries' export capacities by providing incentives to firms with less advanced production processes to specialize away from sectors with regulatory burdens.

² The WTO SPS Agreement stipulates that SPS measures should be based on international guidelines and common risk assessment techniques and encourages standards based on participation and consensus. However, the Agreement permits Members to introduce or maintain measures which result in a higher level of protection than would be achieved by measures based on the relevant international standards, guidelines or recommendations, if there is a scientific justification.

This in turn affects developing country export patterns and the probability to export to highly regulated markets. Distortionary effects of SPS measures are also found in sector specific studies. For example, Tran *et al* (2011) find similar results in a case study on the impact of imposing stricter drug residue standards on crustacean imports to Canada, the European Union, Japan, and the United States. These authors show how stricter standards result in uneven responses by countries with different levels of development. Maskus *et al* (2004), using firm-level data generated from 16 developing countries, show that the exporters from developing countries encounter significant additional costs while adapting their production processes to comply with foreign regulatory measures. Maskus *et al* argue that these costs stem from developing countries' lack of administrative, technical and scientific capacities to comply with foreign standards. Further, they argue that even if the relative impact of compliance costs is small on average, the supply response by enterprises in developing countries' is often more sensitive and thus such firms might tend to avoid higher-cost markets while favoring markets and products with a lower regulatory burden. Similarly, Chen *et al* (2006), using firm level data on export performance of 17 developing countries, find that regulatory measures do affect export decisions. Particularly, these authors find that testing and inspection procedures by importers reduce exports by 9% and 3%, respectively, and that foreign standards overall impede exporters' market entry by reducing the likelihood of exporting in different markets. Furthermore, Chen *et al* demonstrate that the difference in standards across foreign countries impedes the economy of scale for producers and thus has a negative impact on decisions about whether to enter export markets.

The present paper contributes to the discussion above by investigating and quantifying the effect of SPS measures in a highly regulated market, the European Union (EU), on lower income countries' exports. As the EU is by far the largest importer of agricultural products worldwide, its regulations have large repercussions for developing countries' exports. The empirical analysis utilizes econometric methods and relies on the UNCTAD's TRAINS non-tariff measures (NTMs) database. The data covers EU imports across 21 broad categories of agricultural goods. The main finding of the paper is that the EU's SPS measures have distortionary effects against lower income countries.

The remainder of the paper is organized as follows. Section 2 describes the EU regulatory framework on agricultural products. Section 3 presents the estimating framework to assess the

impact of the EU's SPS measures on lower income countries and discusses the results. Section 4 concludes.

2. European Union regulatory framework

The stated objective of the EU regulatory framework with respect to agricultural imports is to minimize related risks and to guarantee a high level of safety for food products marketed within the EU. For this purpose the EU relies on a regulatory regime that comprises a complex and comprehensive set of SPS measures. The overreaching regulatory framework laying down the EU's agricultural SPS measures resides in the General Principles of Food Law (EC) № 178/2002 which was adopted in January 2002 by the European Parliament and the Council. The EU regulations define principles and obligations covering various stages of food production and distribution. These principles are harmonized among the EU member states and apply both to food products produced within the EU and those imported from third countries.³

The EU regulatory framework is generally more comprehensive and stringent than frameworks implemented in many other countries, especially in those where health-related priorities are different and where consumers' advocacy is less established (Henson, 2006). The widespread use of SPS measures by the EU derives from the adoption of the precautionary principle (i.e. the EU takes an active stance on managing uncertainty and risk rather than limiting itself to implementing regulatory policy only when harm is proved) and from the fact that the EU regulatory framework takes into account diverse pre-existing national frameworks (Wiener and Rogers, 2002). In practice, even though the EU food law is based on international standards, the EU regulatory framework often adopts more specific and stringent regulations, when international standards "would be an ineffective or inappropriate means for the fulfillment of the legitimate objectives of food law or where there is a scientific justification, or where they would

³ Foreign foodstuffs may also be sold in the EU market under the conditions that the pertinent foreign food safety requirements are recognized by the EU to be at least equivalent to its own. To facilitate this, the EU legislation also provides for the establishment of bilateral agreements between the EU and third countries that may set specific requirements for compliance between the parties to such agreements. Art 11 of Regulation (EC) № 178/2002

result in a different level of protection from the one determined as appropriate in the Community"⁴.

The comprehensiveness of the EU regulatory framework, as well as its higher stringency vis-à-vis frameworks implemented by trading partners, act as an important market access barrier as compliance with such standards requires production processes and quality controls that are not easily available on a cost effective basis in many developing countries. Indeed, the disproportionate effect of the EU regulations related to agricultural products on the exports of developing countries is recognized within the EU regulatory framework. In this regard, EU Regulation № 882/2004 acknowledges the special needs of developing countries, in particular of the least developed countries, and furthermore a need for technical assistance to help developing countries to comply with the EU regulations. Still, the EU legislation with respect to the preferential treatment of developing countries in the field of food safety is relatively limited and the above-mentioned regulation is an example of a rather finite package of provisions devoted to this issue.⁵ In practice the EU regulations regarding developing countries' needs to facilitate compliance with SPS measures are often vague, not binding and without firm commitments or precise mechanisms to facilitate regulatory convergence.

Issues related to developing countries' compliance with the EU SPS measures are more precisely addressed in bilateral preferential trade agreements (PTA). Such agreements usually incorporate specific clauses on SPS measures with the purpose of either harmonization or mutual recognition of standards between the PTA members as well as technical assistance programs, which essentially are aimed to build the capacity of the EU PTA's partners to apply the EU regulations. For instance, the EU-Morocco agreement specifically calls for wider use of the EU technical rules and regulations for agricultural products and certification procedures by the Moroccan exporters.⁶ Similarly, the EU-Mexico agreement calls for the harmonization of health, plant-

⁴ Art 5.3 of Regulation (EC) № 178/2002

⁵ For example, the Regulations (EC) № 852/2004, № 853/2004 and № 854/2004 (which together with Regulation 882/2004 make up the so-called "hygiene package") make no reference to developing countries. On the contrary, Regulation 852/2004 in Article 10 provides that third country food business operators exporting to the European Community shall comply with the Community's substantive hygiene requirements (from Bromberg, M. (2009)).

⁶ Article 40.1 of the Euro-Mediterranean Agreement establishing an association between European Communities and the Kingdom of Morocco.

health and environmental standards between the parties.⁷ In the EU-CARIFORUM agreement, the EU pledges to "assist CARIFORUM States in establishing harmonized intraregional sanitary and phytosanitary measures also with a view to facilitating the recognition of equivalence of such measures with those existing in the European Community Party"⁸ as well as to "assist CARIFORUM States in ensuring compliance with SPS measures of the European Community Party".⁹ The EU-Chile PTA assumes "technical assistance for strengthening of sanitary and phytosanitary control systems, with a view to supporting as far as possible the promotion of equivalence and mutual recognition agreements". This agreement also calls for implementing "specific projects aimed at supporting sanitary, phytosanitary, environment and food quality measures, taking into account legislation in force for both Parties, in compliance with WTO rules and other competent international organizations".¹⁰ The EU-Egypt agreement aims at "upgrading the level of Egyptian conformity assessment bodies, with a view to the establishment, in due time, of mutual recognition agreements in the area of conformity assessment".¹¹ The EU-South Africa Trade and Development Cooperation Agreement is another illustration of the EU's commitment to "facilitate technical assistance for Southern African capacity-building initiatives in the field of accreditation, metrology, and standardization"¹², as well as to "developing practical links between the South African and European standardization, accreditation, and certification organizations"¹³. Overall, the provisions and technical assistance projects that are present in the EU PTAs surely add an incentive to cooperate in streamlining the regulatory policies on the application of SPS measures between the PTA members. Still, the effectiveness of technical assistance in addressing SPS related issues is debatable as it depends on how such assistance is allocated (Wiig and Kolstad, 2005).

⁷ See Article 21.2 (a) of Economic Partnership, Political Coordination and Cooperation Agreement between the European Community and the United Mexican States

⁸ See Article 53 (c) of Economic Partnership Agreement between the CARIFORUM States and the European Communities.

⁹ See Article 53 (d) of Economic Partnership Agreement between the CARIFORUM States and the European Communities.

¹⁰ See Article 24.2 (a) and (g) of Agreement establishing an association between the European Communities and Chile.

¹¹ See Article 47 (b) of Euro-Mediterranean Agreement establishing an association between the European Communities and the Arab Republic of Egypt.

¹² See Article 47(d) of the Agreement on Trade, Development and Cooperation between the European Communities and the Republic of South Africa.

¹³ See Article 47 (e) of the Agreement on Trade, Development and Cooperation between the European Communities and the Republic of South Africa.

3. *Empirics*

The aim of this paper is to identify any distortionary effects that SPS measures may have on lower income countries.¹⁴ The empirical approach consists of investigating whether products that are subject to a large number of regulatory measures are also products for which trade flows tend to be relatively smaller for lower income countries. The rationale is that since regulations result in additional and exporter-specific costs to trade (due to different compliance capacity), one would expect that the trade of products subject to regulation would be biased against exporters for which cost of compliance is larger (i.e. lower income countries).

The initial step in analyzing the effects of regulatory measures on trade is to construct an index of regulatory intensity. For this purpose we use data from the UNCTAD's TRAINS¹⁵ database on NTMs on a subset of SPS measures applied by the EU. In particular, we use measures that fall under tolerance limits, hygienic requirements, production requirements and conformity assessments. All these measures comprise about 17 different types of SPS measures.¹⁶ UNCTAD raw data is synthesized into an index of regulatory intensity by taking the number of SPS measures applied to each HS 6 digit line. Then, to construct the broader aggregates (at the HS 2 digit) we use trade-weighted means. For example, a regulatory intensity index of 5 implies that there are about five different SPS measures that are applied on average to imports of that particular goods category. Such an index has the advantage of taking into account both the number of different SPS measures and the frequency of their use across the various goods in each product group. The empirical analysis covers the EU imports across 21 broad categories of agricultural goods and is based on data for the year 2010.

One important issue to consider is that the intensity of the regulatory framework is specific to the

预览已结束，完整报告链接和二维码如下：

https://www.yunbaogao.cn/report/index/report?reportId=5_5096

