Determinants of Non-Tariff Measures in Agricultural Trade

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Abstract

Over the past few decades a great deal of effort has been made to facilitate the markets access. This effort has attempted to reduce tariff in particular. Resulting from the reduction in tariffs, the significance of an interest in Non-Tariff Measures (NTMs) has increased. In this paper we address certain hypotheses on the factors that contribute to explain the extent of the use of NTMs and their number related to Sanitary and Phytosanitary Regulation. One hypothesis we want to test relates to the existence of “policy substitution” between tariffs and NTMs. The second is the hypothesis that “path dependence” can affect the number of food alert notifications at the borders.

Keywords: policy substitution, path dependence, agrifood trade, alert notification, RASFF

Introduction

It is generally understood NTMs can be understood as effective tools to address economic and social inequalities and to achieve optimal public policy objectives, not likely to be achieved by the free play of market forces (Bagwell and Staiger, 2001; Staiger and Sykes, 2011). Other studies have concluded that NTMs have the potential to correct market asymmetries and favor trade (Disdier et al., 2014). This perspective differs from Von Lampe and Jeong (2013) who test the hypothesis that these regulations potentially hinder trade. Recent literature, less opti-minst, clearly illustrated the trade restrictiveness effect of NTMs (Hoekman and Nicita, 2008; Lloyd et al., 2009; Manole and Spatareanu, 2010). Regarding the interests on the pursue or the impacts generated using the NTMs in sensitive areas such as sanitary and phytosanitary measures it is no surprising that some questions arise.

In this paper we address certain hypotheses on the factors that contribute to explain the extent of the use of NTMs and their number. One hypothesis we want to test relates to the existence of “policy substitution” between tariffs and NTMs. The second is the hypothesis that “path dependence” can affect the number of food alert notifications at the borders. These hypotheses will be tested separately.

Methods and data

Relations between NTMs and tariffs have been subject to controversy. Kee et al. (2009) suggested a possible trade-off between tariff and non-tariff barriers. Going deeper into the subject, results by Gourdon, J., et al (2012) suggest the presence of correlation between the use of NTMs and traditional forms of trade protection policies.

The existence of policy substitution is examined considering Egypt, Jordan, Morocco and Tunisia, which have undertaken various degrees of trade liberalization. The products include the whole range of agri-food products at the 6-digit level of the Harmonized System (HS chapters 01 to 22). The Ad Valorem Equivalents (AVE) protection provided by the NTMs is from Kee et al., (2009). Most Favoured Nation (MFN) applied tariffs at the HS 6-digit level were collected from the World Integrated Trade Solution (WITS) database, corresponding to the same periods for which the AVE were available.

First we identified as AVE and tariff ‘peaks’ those greater than 75%. According the combination of high tariffs and AVE peaks, products can be classified into four categories: high protection (high proportion of
AVE and tariff peaks), disguised protection (low proportion of tariff peaks, high proportion of AVE peaks), low protection (low proportion of AVE and tariff peaks) and transparent protection (high proportion of tariff peaks, low proportion of AVE peaks). Multiple regression between and tariffs and tariffs change as an explanatory variable and AVE as a dependent variable helps to test the hypothesis of policy substitution in the selected South and East Mediterranean Countries (SEMCs).

The second issue addressed in the paper is path dependence: does "reputation" affect the number of alert notifications at the border? We evaluated whether food product alert notifications in the previous year affect the number of notifications in the current one, and whether such path dependence, if it exists, depend on the product, sector, and countries of origin and destination. Firstly, a great deal of work was allocated to the design and building of a database that transforms Rapid Alert System for Food and Feed (RASFF) data into notifications classified by HS code. An Excel lexicographic tool was defined to facilitate the conversion of 74,589 observations related to alerts which occurred between 2000-13. Secondly, a model was specified to explain product-country-year notifications as a function of previous product notifications, sector notifications, country notifications, import volume, import change and per capita GDP, the three last presented in log terms. Thirdly, a Negative Binomial (NB) and a Zero-Inflated Negative Binomial (ZINB) in R-language was applied. Finally, the analysis was also conducted subdividing observations into two sub-periods (2001-07 and 2008-13), in order to explore the evolution, if any, of path dependence effects overt.

Spain, Italy, Germany, France, Netherlands and United Kingdom were selected as the importing countries. Products include the whole range of agri-food products at the 4-digit level of the HS, for chapters 07, 08 and 20 (fresh fruits, fresh vegetables and processed fruits and vegetables). We considered notifications on exports originated in the top 23 world exporters of fruit and vegetables, representing 90% of world exports of the sectors studied.

Results

Summarizing the main results, the first element to point out for the analysis of the ‘policy substitution’ effect in SEMCs is that in the preliminary descriptive analysis performed most products lie on the category of low level of both tariff and non-tariff protection. However, we also identified a disguised protection group (this means: high AVE of the NTMs and low tariffs). This can be explained by the fact that 47.8% of products studied present AVE peaks (a value greater than 75%). These AVE peaks take place mostly in products in chapters 02 (meat), 08 (fresh fruits) and 20 (processed fruit and vegetables). This indicates that, in the presence of a reduction of the frequency of tariff peaks, NTMs keep a significant role in restricting market access in a number of cases.

The second step in this analysis was based on a cross-section analysis of AVEs of NTMs as a function of a set of variables, including tariffs and tariff changes. Our findings indicate that for some products in Egypt, Tunisia, Algeria and Morocco there is “policy substitution” between NTMs and tariffs. The policy substitution is "dynamic", in the sense that higher AVEs of NTMs are determined by reductions in the tariffs, rather than by their current levels.

The second analysis addressed the path dependence by exploring the implementation of SPS regulations through alert notifications on fruit and vegetables imports registered by the RASFF at the border of the six selected EU countries on their imports from the top 23 supplying countries.

Our findings suggest that, first, the EU cannot be considered as a single unit when the implementation of non-tariff measures at the border are considered, although there are signs that country behaviors are becoming more uniform in more recent years; and, second, the number of alert notifications in previous years have a greater influence over the product dependence than over sector and country dependence. On the contrary, little correlation emerges between food alert notifications and import volumes.
Conclusions

For SEMCs a taxonomy the dominant category observed is low protection. However, a relatively high level disguised protection is also present. NTMs seem to affect particularly imports of products such as fresh fruits, meat, and processed fruits and vegetables. Our findings indicate also that in Egypt, Tunisia, Algeria and Morocco for some of the products considered there is dynamic policy substitution between NTMs and tariffs. Nevertheless significant country differences exist. SEMCs are in a different stage with respect to the harmonization of their standards, probably as a result of their different stages in the process of accession to WTO. Further research is needed in this field to complete our understanding of the relations between NTMs and tariffs.

Regarding the analysis of the factors influencing the implementation of SPS measures for fruit and vegetables at the border of six EU MS, our results show that there is no clear common behaviour on their part. Control measures are implemented by national authorities, with differing interpretations and, possibly, efforts, so that the harmonization process remains imperfect.

Our findings uphold the idea that at the EU border product path dependence matters, supporting the evidence found by Jouanjean et al. (2012) with reference to US SPS border controls, although in our study country and sector path dependence effects were found to be of lower intensity. It seems that in the EU case the notion of collective path dependence must be qualified by the ability of a sector, or an exporter, to react to notifications and be able to reduce the probability of them occurring again the following year.

Finally, the low statistical significance of the estimated parameters related to the volume imported and its change overtime would suggest that food alert notifications may be influenced by path dependence but do not result from a substituting behavior between tariffs and NTMs, so a protectionist approach does not seem to motivate the outcomes of safety controls in the studied EU MS.

We acknowledge the exploratory character of the research performed so far and presented in the paper. Nevertheless, we believe it may provide useful information that helps understand some of the economic factors which explain the use and implementation of NTMs related to SPS regulations.

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References


