

A Practical Guide to the Economic Analysis of Non-Tariff Measures

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ABBREVIATIONS

AVE	Ad Valorem Equivalent
BACI	Base pour l'Analyse du Commerce International
CEPII	Centre d'Etudes Prospectives et d'Informations Internationales
FAO	Food and Agriculture Organization
GATT	General Agreement on Tariffs and Trade
GDP	Gross Domestic Output
HS	Harmonized System
ICP	International Comparison Program
LAIA	Latin American Integration Association
LDC	Least Developed Country
MAcMap	Market Access Map
MAST	Multi-Agency Support Team
NTM	Non-Tariff Measure
OECD	Organisation for Economic Co-operation and Development
PPP	Purchasing Power Parity
RTA	Regional trade agreement
SPS	Sanitary and Phytosanitary
TBT	Technical Barriers to Trade
TNT	Transparency in Trade
TRAINS	Trade Analysis Information System
UN Comtrade	United Nations Commodity Trade Statistics
UNCTAD	United Nations Conference on Trade and Development
WHO	World Health Organization
WTO	World Trade Organization

Note: This report covers the WTO's activities in 2018 and early 2019. The word "country" is frequently used to describe WTO members whereas a few members are officially "customs territories", and not necessarily countries in the usual sense of the word.

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¹ All details of the last version of the course are available at <https://vi.unctad.org/services/online-courses/980-virtual-institute-online-course-on-economic-analysis-of-non-tariff-measures-2018>

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INTRODUCTION

A. Understanding non-tariff measures and their impact

Non-Tariff Measures (NTMs) are all policy interventions other than tariffs that can potentially affect the quantities and the prices of internationally traded goods.² Their measurement is more complex than any other trade policy instrument such as tariffs given their variety and the difficulty of assessing their restrictiveness.

NTMs very often carry a negative connotation. It is still not unusual to hear even in well informed policy circles the use of the term barrier when referring to policy instruments that by nature are dedicated to the protection of the health of the human, animal or plant population of a country. Barrier may not sound correct if the original intent of the implemented regulation is not to affect trade but rather certify the quality health-wise of a product. This apparently innocuous mis-designation may undermine the importance of quality in framing trade relationships and lead to profound political misunderstanding and eventually mistrust amongst trade partners.

A more precise and possibly systematic appreciation of the different types of measures beyond tariffs but closely related to trade flows is needed. This could be made possible only by a better understanding of the impact of these different types of measures on both prices and quantities of traded products. While quotas are expected to represent an obstacle to the exchange goods affected, sanitary and phytosanitary measures (SPS) primary objective is not to affect imports or exports but to protect the health of the human, animal and plant populations residing in given region or country. Quotas clearly increase imports prices and reduce imported quantities. Using trade related measures to protect health may have some trade effects but the latter are not necessarily negative. For instance, consumers could respond positively to the introduction of some measures that guarantee the quality of a product by increasing their demand of that specific product. This could affect positively the demand for imports that comply with the new regulatory elements. Eventually both imports prices and imported quantities may increase and the barrier effect does not exist anymore.

To disentangle protectionist policy interventions from genuine health related measures, analysts and policy makers should acquire a proficient view of the range, complexity and diversity of NTMs in practice. In the above example, analysts could conclude that both quotas and SPS measures

² Non-tariff measures can also apply to services. However, the empirical assessment of their impact goes beyond the scope of that guide as it would require an empirical set up and approach specific to services trade flows. We refer the reader to the OECD Services Trade Restrictiveness Index project for a comprehensive presentation and extensive treatment of issues related to regulatory frameworks in services and their impact on trade.

represent an obstacle to trade by looking at their respective price effects. However, including the quantity effect could lead to the opposite conclusion. It is only by considering the full spectrum of combinations of price and quantity effects that the nature of the impact can be determined. In other words, the tendency to rely on price effects as a reflection of trade impeding effects (e.g. by calculating ad valorem equivalents (AVEs) based on value effects) may be misleading and needs reconsideration.

This practical guide introduces the main empirical approaches used to assess the impact of NTMs on bilateral trade flows and possibly shed some light on their policy nature. It is intended for use by researchers from universities, research centres, and governmental and non-governmental institutions involved in the research and teaching of international trade and trade policy, interested in enhancing their quantitative skills and conducting policy-relevant research on NTMs as they relate to their countries.

B. Using this Guide

This Guide is targeted at economists with training and experience in applied research and analysis. On the empirical side, the prerequisite is some familiarity with work on databases and with the use of STATA software.³ Some knowledge of modern trade theories would also facilitate the understanding of economic mechanisms framing the effects of NTMs on trade performance at the macro and micro level.

The Guide comprises five chapters. After a short introduction about the nature and scope of the NTMs that can be adopted by governments, we present some major sources of data on the various types of NTMs. We then take a close look at how the presence and incidence of NTMs can be measured. Following this discussion, we introduce some core econometric techniques that can be used to estimate the effects of NTMs on trade flows and prices at the country and sectoral levels. We also look at recent attempts to define and calculate the NTM trade restrictiveness indices based on estimated ad valorem equivalents. In recent years, the use of firm-level data has been facilitated by efforts by international organizations in collaboration with national authorities to collect information at a more micro level. We show how to use this type of data to assess the impact of NTMs on firms' export decisions and performance. The practical guide concludes with an illustration of how estimates of the impact of NTMs on trade flows and prices can be used, and how they can be complemented with health data to draw conclusions in terms of economic welfare. Chapters 2, 3 and 4 contain applications of the techniques discussed in the various sections using the Stata software. Exercises are also included to test the practical understanding of the reader. After reading this practical guide and after doing all practical exercises you will be able to perform an empirical analysis of the presence and incidence of NTMs and empirically assess their impact on the export performance and prices of traded goods at the country and firm level.

The software used to solve the proposed set of exercises is the STATA software. The files containing all STATA commands to solve these exercises of the practical applications are presented in the

³ The reader may refer to UNCTAD-WTO (2012) for an introduction to the use of the STATA software to empirical trade and trade policy analysis.

chapters. These files and the relevant data can be found on the Practical Guide to Trade Policy Analysis website: <http://vi.unctad.org/tpa> and on the UNCTAD Trade Analysis Branch website: <https://unctad.org/en/Pages/DITC/Trade-Analysis/TAB-Capacity-Building.aspx>. A general folder entitled "Practical Guide to the Economic Analysis of Non-Tariff Measures" is divided into sub-folders which correspond to each chapter (e.g. "Practical Guide to the Economic Analysis of Non-Tariff Measures \Chapter2"). Within each of these sub-folders, the reader will find datasets, applications and exercises. Detailed explanations can be found in the file "readme.pdf" available on the website.