

A Practical Guide to Trade Policy Analysis



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What is *A Practical Guide to Trade Policy Analysis*?

A Practical Guide to Trade Policy Analysis aims to help researchers and policymakers update their knowledge of quantitative economic methods and data sources for trade policy analysis.

Using this guide

The guide explains analytical techniques, reviews the data necessary for analysis and includes illustrative applications and exercises. An accompanying DVD contains datasets and programme command files required for the exercises.

Find out more

Website: <http://vi.unctad.org/tpa>

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Contributing authors

Marc Bacchetta

Economic Research and Statistics Division, World Trade Organization

Cosimo Beverelli

Economic Research and Statistics Division, World Trade Organization

Olivier Cadot

University of Lausanne, World Bank and Centre for Economic Policy Research

Marco Fugazza

International Trade in Goods and Services and Commodities Division, UNCTAD

Jean-Marie Grether

University of Neuchâtel

Matthias Helble

Economic and Regulatory Affairs Directorate, International Bureau, Universal Postal Union

Alessandro Nicita

International Trade in Goods and Services and Commodities Division, UNCTAD

Roberta Piermartini

Economic Research and Statistics Division, World Trade Organization

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The production of this book was managed by Anthony Martin (WTO) and Serge Marin-Pache (WTO). The website and DVD were developed by Susana Olivares.

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Foreword

This book is the outcome of joint work by the Secretariats of UNCTAD and the WTO. Its six chapters were written collaboratively by academics and staff of the two organizations. The volume aims to help researchers and policy-makers expand their knowledge of quantitative economic methods and data sources for trade policy analysis. The need for the book is based on the belief that good policy needs to be backed by good analysis. By bringing together the most widely used approaches for trade policy analysis in a single volume, the book allows the reader to compare methodologies and to select the best-suited to address the issues of today.

The most innovative feature of the book is that it combines detailed explanations of analytical techniques with a guide to the data necessary to undertake analysis and accompanying tutorials in the form of exercises. This approach allows readers of the publication to follow the analytical process step by step. Although the presentations in this volume are mostly aimed at first-time practitioners, some of the most recent advances in quantitative methods are also covered.

This book has been developed in response to requests from a number of research institutions and universities in developing countries for training on trade policy analysis. Despite the growing use of quantitative economics in policy making, no existing publications directly address the full range of practical questions covered here. These include matters as simple as where to find the best trade and tariff data and how to develop a country's basic statistics on trade. Guidance is also provided on more complicated issues, such as the choice of the best analytical tools for answering questions ranging from the economic impact of membership of the WTO and preferential trade agreements to how trade will affect income distribution within a country.

Although quantitative analysis cannot provide all the answers, it can help to give direction to the process of policy formulation and to ensure that choices are based on detailed knowledge of underlying realities. We commend this guide to those engaged in creating trade policy and we hope that by contributing to the understanding of state-of-the-art tools for policy analysis, this guide will improve the quality of trade policy-making and contribute to a more level playing field in trade relations.



Pascal Lamy
WTO Director-General



Supachai Panitchpakdi
UNCTAD Secretary-General

INTRODUCTION

I Supporting trade policy-making with applied analysis

Quantitative and detailed trade policy information and analysis are more necessary now than they have ever been. In recent years, globalization and, more specifically, trade opening have become increasingly contentious. Questions have been asked about whether the gains from trade exceed the costs of trade. Concerns regarding the distributional consequences of trade reforms have also been expressed.

It is, therefore, important for policy-makers and other trade policy stakeholders to have access to detailed, reliable information and analysis on the effects of trade policies, as this information is needed at different stages of the policy-making process. During the early stages of the process, it is used to assess and compare the effects of various strategies and to develop a proposal. When the proposal goes through the political approval process, this information is required in order to be able to conduct a policy dialogue with all stakeholders. Finally, information and analysis are necessary for the implementation of the measures.

General principles are not enough. Multilateral market access negotiations focus on tariff commitments, but commitments to reduce so-called bound rates may or may not affect the tariff rates that a country actually applies to imports, depending on the gap between the bound and the applied rate. A careful examination of the proposals is thus necessary to assess the effect of tariff commitments on market access. Similarly, the effect of preferential trade agreements on trade and welfare depends on the relative size of trade creation and trade deviation effects. Policy-makers preparing to sign a preferential trade agreement should have access to an assessment of the likely effect of the agreement, or at least to analyses of previous relevant experiences. While the effects of tariff changes are relatively straightforward, the effects of non-tariff measures depend on the specific measure and can vary substantially depending on the circumstances.

It is a long way from the tariffs and quotas contained in international economics textbooks to the jungle of real world tariffs and non-tariff measures, and analyzing the effects of changing a tariff in an undistorted textbook market is very different from responding to the request of a minister who envisages opening domestic markets and who wants to know how this will affect income distribution. Thus, the objective of this book is to guide economists with an interest in the applied analysis of trade and trade policies towards the main sources of data and the most useful tools available to analyse real world trade and trade policies.

The book starts with a discussion of the quantification of trade flows and trade policies. Quantifying trade flows and trade policies is useful as it allows us to describe, compare or follow the evolution of policies between sectors or countries or over time. It is also useful as it provides indispensable input into the modelling exercises presented in the other chapters. This discussion is followed by a

presentation of gravity models. These are useful for understanding the determinants and patterns of trade and for assessing the trade effects of certain trade policies, such as WTO accessions or the signing of preferential trade agreements. Finally, a number of simulation methodologies, which can be used to “predict” the effects of trade and trade-related policies on trade flows, on welfare, and on the distribution of income, are presented.

II Choosing a methodology

The key question that a researcher is faced with when asked to assess the effects of a given policy measure is deciding which methodological approach is best suited to answer the question given existing constraints. At this stage, dialogue between researchers and policy stakeholders is crucial as, depending on the circumstances, researchers may help policy-makers to determine relevant questions and to guide the choice of appropriate methodologies.

The choice of a methodology is not necessarily straightforward. It involves choosing between descriptive statistics and modelling approaches, between econometric estimation and simulation, between ex ante and ex post approaches, between partial and general equilibrium. Ex ante simulation involves projecting the effects of a policy change onto a set of economic variables of interest, while ex post approaches use historical data to conduct an analysis of the effects of past trade policy. The ex ante approach is typically used to answer “what if” questions. Ex-post approaches, however, can also answer “what if” questions under the assumption that past relations continue to be relevant. Indeed, this assumption underlies approaches that use estimated parameters for simulation. Partial equilibrium analysis focuses on one or multiple specific markets or products, ignoring the link between factor incomes and expenditures, while general equilibrium explicitly accounts for all the links between sectors of an economy – households, firms, governments and the rest of the world. In econometric models, parameter values are estimated using statistical techniques and they come with confidence intervals. In simulation models, behavioural parameters are typically drawn from a variety of sources, while other parameters are chosen so that the model is able to reproduce exactly the data of a reference year (calibration).

In principle, the question should dictate the choice of a methodology. For example, computable general equilibrium (CGE) seems to be the most appropriate methodology for an ex ante assessment of the effect of proposals tabled as part of multilateral market access negotiations. In reality, however, the choice is subject to various constraints. First, methodologies differ significantly with regard to the time and resources they require. Typically, building a CGE model takes a long time and requires a considerable amount of data. Running regressions require sufficient time series or cross sections of data, while the calibration of a partial equilibrium model only requires data for one year. There are, however, relatively important sunk costs and thus large economies of scale and/or scope. Once a CGE has been constructed, it can be used to answer various questions without much additional cost. More generally, familiarity with certain methodologies or institutional constraints could dictate the use of certain approaches.

Methodologies can also be combined to answer a given question. In most cases, it is sound advice to start with descriptive statistics, which, besides paving the way for more sophisticated analysis, often go a long way towards answering questions that one might have on the effects of trade

policies. Similarly, when assessing the distributional effects of trade policy, it can be useful to combine approaches. The effect of changes in tariffs on prices is estimated econometrically, while the effect of the price changes on household incomes is simulated.

Different methodologies or simply different assumptions may lead to conflicting results. This is not a problem as long as differences can be traced back to their causes. The difficulty, however, is that policy-makers do not like conflicting results. This leads us to another important point, which is the importance of the packaging of results. Presenting and explaining results in a clear and articulate way, avoiding jargon as much as possible, is at least as important as obtaining those results. It is also crucial to spell out clearly the assumptions underlying the approach used and to explain how they affect the results.

III Using this guide

This practical guide is targeted at economists with basic training and some experience in applied research and analysis. More specifically, on the economics side, a basic knowledge of international trade theory and policy is required, while on the empirical side, the prerequisite is familiarity with work on databases and with the use of STATA software.¹

The guide comprises six chapters and an accompanying DVD containing empirical material, including data and useful command files. All chapters start with a brief introduction, which provides an overview of the contents and sets out the learning objectives. Apart from the chapter on CGE (Chapter 5), each chapter is divided into two main parts. The first part introduces a number of analytical tools and explains their economic logic. In Chapters 1, 2 and 6, the first part also includes a discussion of data sources. The second part describes how the analytical tools can be applied in practice, showing how the raw data can be retrieved and processed to quantify trade or trade policies or to analyse the effects of the latter. Data sources are presented and difficulties that may arise when using the data are discussed. The software used for trade and trade policy quantification, gravity model estimation and analysis of the distributional effects of trade policies (Chapters 1, 2, 3 and 6) is STATA. In the chapter on partial equilibrium simulation, several ready-made models are introduced. While the presentation of these applications in the chapters can stand alone, the files with the corresponding STATA commands and the relevant data are provided on the DVD. The CGE chapter (Chapter 5) differs from the others in that it does not aim to teach readers how to build a CGE but simply explains what a CGE is and when it should be used.

Datasets and program files for applications and exercises proposed in this guide can be found on the accompanying DVD and on the *Practical Guide to Trade Policy Analysis*' website: <http://vi.unctad.org/tpa>. A general folder entitled "Practical guide to TPA" is divided into sub-folders which correspond to each chapter (e.g. "Practical guide to TPA\Chapter1"). Within each of these sub-folders, you will find datasets, applications and exercises. Detailed explanations can be found in the file "readme.pdf" available on the website and in the DVD.

Endnote

1 A considerable amount of resources for learning and using STATA can be found online. See: <http://vi.unctad.org/tpa>.