



Introduction

For the rational study of the law the black-letter man may be the man of the present, but the man of the future is the man of statistics and the master of economics.

US Supreme Court Justice Oliver Wendell Holmes¹

A lawyer who has not studied economics ... is very apt to become a public enemy.

US Supreme Court Justice Louis Brandeis²

I THE RESEARCH QUESTION AND SCOPE OF THE STUDY

“Identifying market boundaries is as much an art as it is a science.”³ Lawyers and judges, however, are uncomfortable being either artist or scientist. Nevertheless, the question of which products are sufficiently comparable to constitute a relevant market is central to the two legal disciplines of antitrust law and international trade law under the World Trade Organization’s (hereinafter WTO) General Agreement on Tariffs and Trade (hereinafter GATT).⁴

The legal requirement to compare and distinguish products gives rise to a controversial interaction between law and economics in these two fields.⁵ In US antitrust law, defining markets has been recognized as

¹ Holmes, “The Path of the Law,” *Harvard Law Review*, 10 (1897), 457, 469.

² Brandeis, “The Living Law,” *Illinois Law Review*, 10 (1916), 461.

³ Geroski and Griffith, “Identifying Antitrust Markets,” in Neumann and Weigand (eds.), *The International Handbook of Competition*, pp. 290, 294, (2004).

⁴ With the inception of the WTO in 1994, GATT 1947 was incorporated into the WTO legal regime which refers to the articles of GATT 1947 as articles of GATT 1994.

⁵ Glassman, “Market Definition as a Practical Matter,” *Antitrust Law Journal*, 49 (1980), 1155: “The definition of relevant product and geographic markets in antitrust litigation requires the marriage of the economic and legal disciplines. The marriage is at best a troubled one, and divorce seems always imminent.”

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“in essence, an economic task put to the uses of the law,” for which reason the “analysis perforce is directed to basic economic precepts.”⁶ United States antitrust law has hence developed into an arena for economists, with economic analysis successively penetrating all issues.⁷ Posner even went as far as to suggest that antitrust law has become “a branch of applied economics.”⁸ While EU antitrust policy has ostensibly started to interact more heavily with economic theory, it does not match the long-standing history and tradition of economic analysis in the United States. Within EU antitrust law particularly, the “more economic approach” denotes the process of increasing influence of economics on all antitrust issues. It originated from market definition, and over the last decade has become a key talking point in European antitrust circles. It implies an evolution from a form-based tradition to an increasing focus on economic effects. It is also characterized by the expanding use of economic models and quantitative methods of analysis. Quantitative methods, also loosely described as econometrics, designate statistical techniques, such as regression analysis, applied to empirical data in order to obtain economically meaningful results.⁹ Quantitative analysis is playing an increasingly important role also in court proceedings, most recently in the *Ryanair/Aer Lingus* case, where the General Court¹⁰ did not hesitate to conduct an unusually exhaustive evaluation of the econometric analyses, more precisely the regression analyses, that were put forward by the Commission and the parties.¹¹

⁶ *United States v. Grinnell Corp.*, 384 US 563, 587 (1966) (Justice Fortas dissenting) and *SmithKline Corp. v. Eli Lilly & Co.*, 575 F.2d 1056, 1063 (3d Cir. 1978).

⁷ The term “antitrust” is derived from US law. In Europe, the term “competition law” is usually used, with “antitrust” denoting more specifically non-merger analysis. For reason of simplicity, the term “antitrust” will be used here as a generic term that comprises all areas of legal rules on competition policy.

⁸ Posner, *The Problematics of Moral and Legal Theory*, p. 229 (1999).

⁹ This type of analysis is located at the intersection of statistics, mathematics, and economic theory. It looks “at relationships between explicit numbers such as prices, sales, or market shares,” while qualitative analysis evaluates similar relationships from a non-numerical, descriptive perspective: Coate and Fischer, “A Practical Guide to the Hypothetical Monopolist Test for Market Definition,” *Journal of Competition Law & Economics*, 4 (2008), 1031, 1054. See also European Commission, *XXIVth Report on Competition Policy 1994*, p. 280 (1995): “Qualitative methods could, for example, include the examination of product characteristics and the intended use of a product by consumers, whereas quantitative methods could involve the examination of price trends and the estimation of cross-elasticities using econometric methods.”

¹⁰ Formerly known as the Court of First Instance (CFI).

¹¹ Case T-342/07, *Ryanair v. Commission* [2010] C221 55, paras. 139–195.

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Greater emphasis on economics in the exercise of defining markets has thus catapulted economics to the forefront in the two antitrust jurisdictions. Economic, and in particular econometric, analysis has even developed into what some now perceive as “a useful servant, but a terrible master.”¹²

In GATT, the market definition problem surfaces in the context of the interpretation of “like” products or “directly competitive or substitutable” (hereinafter DCS) products; concepts that are central to the operation of the non-discrimination obligations. As a result, this “determination is one of the thorniest in WTO/GATT jurisprudence!”¹³ For decades, trade scholars have asked the pertinent question: “If, therefore, trade lawyers must decide ‘likeness’ before applying GATT law, what test must they use?”¹⁴ But neither jurisprudence nor doctrine has yet given a coherent answer. To say the least, this area is plagued by overwhelming confusion. With its infamous metaphor of the “like” definition stretching and squeezing like an accordion, WTO dispute settlement bodies appear to prefer the art of music over the science of economics.¹⁵ Still, the absence of a coherent theory of interpretation has led to a hermeneutic cacophony. The interpretative pendulum in case law and scholarly literature has oscillated between three approaches. The dominant approach in case law and scholarship has been one of legal formalism based on qualitative criteria. A second approach has been a subjective and contextual aims-and-effects theory, allowing for regulatory purpose to enter the determination of whether products are “like.” Although this approach was only a short episode in case law, it has received considerable support by important scholars. Also only of a temporary nature in case law, an economics-oriented approach sought to assess the competitive relationship of the products under scrutiny by additionally employing quantitative criteria. More recently, this last approach has seen a renaissance among several commentators.¹⁶

¹² Kroes, European Commissioner for Competition, “Exclusionary Abuses of Dominance: The European Commission’s Enforcement Priorities,” Fordham University Symposium, New York (2008), available at: <http://europa.eu/rapid/pressReleasesAction.do?reference=SPEECH/08/457&format=HTML&aged=0&language=EN&guiLanguage=en>. All internet addresses in this book were last accessed on January 31, 2012.

¹³ Matsushita, Schoenbaum, and Mavroidis, *The World Trade Organization*, p. 158 (2003).

¹⁴ Bhala, *Modern GATT Law*, para. 1-003 (2005).

¹⁵ Appellate Body Report, *Japan – Taxes on Alcoholic Beverages* (hereinafter *Japan – Alcoholic Beverages II*), WT/DS8/AB/R, WT/DS10/AB/R, WT/DS11/AB/R, adopted November 1, 1996, at 21.

¹⁶ Most notably Choi, “Like Products” in *International Trade Law: Towards a Consistent GATT/WTO Jurisprudence* (2003); Emch, “Fiscal Discrimination in WTO Law and EU Law,”

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The WTO is avowedly an economic institution.¹⁷ That is why it is surprising that economics has only recently become increasingly involved in the analysis and litigation of WTO matters that call for economic interpretation and quantification. The use of sophisticated economic evidence and quantitative models by Panels has evolved from general reluctance to a growing willingness in recent times to embrace these types of evidence and methods.¹⁸ For instance, economic analysis has played a more prominent role where, on occasion, a WTO discipline requires the analysis of the effects of a trade measure.¹⁹ Quantitative methods have also figured more frequently in WTO arbitrations in order to calculate the maximum allowable level of retaliatory countermeasures.²⁰ These developments signal that there is a “systemic need for trade lawyers and economists to cooperate” in WTO legal practice.²¹ But it is not clear what economics can, and cannot, do in WTO disputes that touch on the “like” and DCS definitions. Between 1996 and 2000, three landmark WTO Panel Reports introduced an economic approach to product comparison, also extending the assessment to quantitative methods, in particular, cross-price elasticities (hereinafter CPE)²² of demand. Since then, economic analysis

Legal Issues of Economic Integration, 32 (2005), 369–415; Goco, “Non-Discrimination, ‘Likeness,’ and Market Definition in World Trade Organization Jurisprudence,” *Journal of World Trade*, 40 (2006), 315–340; Diebold, *Non-Discrimination in International Trade in Services: A Contextual and Comparative Analysis of “Likeness” in WTO/GATS* (2010).

¹⁷ The WTO is the “common institutional framework for the conduct of trade relations,” Article II:1 of the 1994 Marrakesh Agreement Establishing the World Trade Organization (hereinafter WTO Agreement).

¹⁸ For early reluctance on the use of statistical evidence see GATT Panel Report, *Treatment by Germany of Imports of Sardines*, BISD 1S/53, adopted October 31, 1952, para. 9 and GATT Working Party Report, *Netherlands Action under Article XXIII:2 to Suspend Obligations to the United States*, BISD 1S/62, adopted November 8, 1952, para. 4. For an overview of recent cases see WTO World Trade Report, *Quantitative Economics in WTO Dispute Settlement*, 2005, pp. 171–211, available at: www.wto.org/english/res_e/booksp_e/anrep_e/world_trade_report05_e.pdf.

¹⁹ For instance, econometric simulation models were first used for the quantification of the effect of subsidies under Article 6.3 of the Agreement on Subsidies and Countervailing Measures (hereinafter SCM Agreement) in Panel Report, *United States – Subsidies on Upland Cotton*, WT/DS267/R, adopted March 21, 2005, paras. 7.1202–7.1209.

²⁰ See, e.g., *United States – Continued Dumping and Subsidy Offset Act of 2000 (EC) – Recourse to Arbitration by the United States under Article 22.6 of the DSU*, WT/DS217/ARB/EEC, adopted November 26, 2004, paras. 3.80–3.151.

²¹ Keck, Malashevich, and Gray, “A ‘Probabilistic’ Approach to the Use of Econometric Models in Sunset Reviews,” *World Trade Review*, 6 (2007), 371.

²² For the moment it suffices to say that CPE is an economic measure of substitutability and that it is the ratio of the percentage change in demand for one product over the percentage change in price of another product.

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has disappeared from the dispute settlement bodies' radar. Until very recently, the impression was that economics had been only a temporary episode for the "like" and DCS issue. But in mid 2011, two Panel Reports once again turned to quantitative methods for the assessment of product comparability, thus giving the discussion on an economic approach new and unexpected momentum.²³ Commentators have in fact been split on the issue of introducing economics into the determination of likeness and DCS. There are voices that strongly advocate an economic approach, but, beyond the argument for greater emphasis on economics, jurisprudence and scholarly work have revealed little regarding how to design the analytical framework for an economic approach that fits into the larger GATT framework. Moreover, those who advocate an economic approach have rarely looked at its limitations, and the question of how to implement an economic approach on a methodological level has been left open.

Against this background, the central theme of this thesis is to develop an economic approach to GATT market definition. This study explores how legal analysis can be guided by economic theories and insights on this topic. But the issue is not only merely one of *more* or *less* economics, but also of *how* economic analysis should be used, that is, how to integrate economics and law.²⁴ Thus, the aim of this book is a better integration of economic and legal analysis in the GATT market definition exercise, especially since economics has not been a familiar tool with which to analyze legal issues in international trade law.

Economics provides three things in this study: first, it provides the necessary underpinning for antitrust and international trade policy (Chapter 1); second, it gives a proper theoretical and conceptual framework on which to base the concept of market definition (Chapter 4), and, third, it provides a way of accessing appropriate evidence in order to implement the conceptual framework (Chapter 5). The second and third aspects are important because this study distinguishes between two levels for an economic approach to trade market definition: an overarching analytical framework based on economics and its implementation on a methodological level. On the first level, economics *frames* the analysis. It provides the design of a theoretical and conceptual framework within

²³ Panel Report, *Thailand – Customs and Fiscal Measures on Cigarettes from the Philippines* (hereinafter *Thailand – Cigarettes*), WT/DS371/R, adopted July 15, 2011; Panel Report, *Philippines – Taxes on Distilled Spirits* (hereinafter *Philippines – Distilled Spirits*), WT/DS396/R, WT/DS403/R, adopted January 20, 2012.

²⁴ Röller, "Economic Analysis and Competition Policy Enforcement in Europe," in van Bergeijk and Kloosterhuis (eds.), *Modelling European Mergers*, p. 13 (2005).

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which the market definition analysis takes place. The framework designates what the necessary conditions are for a relevant market. It identifies the key factual issues that must be proven in order to support a legal finding of likeness, or DCS. On the second level, economics provide the (quantitative) tools that *drive* the analysis. Economics can be used to gather and evaluate evidence and thus to ascertain whether the conditions set by the framework are met.

The thesis of this book is twofold. On the first level, an overall conceptual framework based on economics is necessary for trade market definition. On the second level, economic methods, and in particular empirical methods, are useful, but they are not a panacea – and may sometimes even be a false friend.

With regard to the first level – the conceptual framework – the central insight has been adapted from antitrust law that market definition is not an aim in itself. Instead, the market definition inquiry must be guided by its underlying purpose. For the international trade law context, this means that the market definition paradigm must be based on the economic objective of preventing domestic protectionist measures. This paradigm draws inspiration from the modern antitrust approach. Yet this economic approach to international trade market definition is an approach specific to trade law, conceptually different from the antitrust model.

The call for an economic approach in the international trade law context has met widespread and intense opposition among scholars and adjudicators. One reason is the profound political dimension of the WTO, which seems to be irreconcilable with the strictures of economic analysis. Another is that economics is equated with the preeminence of quantitative methods, in particular CPE of demand. Quantitative methods are often labeled an obscure and cryptic discipline by the legal profession.²⁵ A lack of familiarity and understanding of such methods may be at the heart of the discomfort with an economic approach. On the second methodological level, this study therefore sheds light on the econometric estimation of CPE of demand. The most widespread statistical method used

²⁵ Note that the former president of the German antitrust agency, himself an economist, warned against the primacy of econometrics as “tantamount to a ‘horror scenario’ of competition law enforcement: some number-crunching economists feeding their computers with data of dubious quality, and finally presenting one single figure to serve as a lead”: Heitzer, *Economic Assessment in Competition Enforcement: Developments in France and Germany – Statement for the Panel*, CRA International, Annual Conference “Economic Developments in European Competition Policy” (2008), p. 7, available at: www.bundeskartellamt.de/wDeutsch/download/pdf/Diskussionsbeitraege/081203_CRA.pdf.

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for this purpose, multiple regression analysis, is presented as an approach that has already been applied in WTO case law on the definition of DCS on two occasions. A comparative analysis with regard to the antitrust experience allows for a much more nuanced picture of the virtues and vices of quantitative methods. The study underscores that quantitative analysis is an important, yet imperfect, tool that complements, but cannot replace, qualitative evidence. The conclusion is that a conceptual framework based on economic insights will not automatically lead to the sole reign of economic and econometric methods.

In addition to what role quantitative methods can play substantively, this study acknowledges that economic or quantitative evidence, usually introduced into litigation through expert economic testimony, also raises institutional and procedural issues. Thinking about an economic approach requires exploring whether the judicial system has the capabilities to handle sophisticated economic evidence. To put it bluntly, the issue is for adjudicators to remain undeceived by biased expert economic testimony. Again, the antitrust experience will be illuminating.

Ultimately, the analysis of both the substantive role of quantitative methods and the procedural handling of this evidence contributes to a better comprehension of the role economics can play in the definition of “like” and DCS.

The scope of analysis in this study is limited in two ways. First, it concentrates on one specific instance of product comparison in GATT. There is a multitude of provisions in GATT and WTO law more generally that prescribe an inquiry into the similarity of products (or services).²⁶ Yet this study is not an attempt to explore all these concepts. These concepts vary from provision to provision. They must be assessed on a case-by-case basis according to the text, structure, and purpose of each individual provision. Instead, the aim of this study is to examine the concept of product comparability in the non-discrimination provision of Article III of the GATT, which embodies the National Treatment (hereinafter NT) obligation. It is this provision that has been at the center of judicial and scholarly attention, and thus generates the most case law and scholarly debate.

The scope of analysis is limited in a second respect: the concepts of likeness and DCS are part of the legal elements of the non-discrimination obligations in Article III of the GATT. As such, they are closely intertwined and interdependent with the remaining elements of these

²⁶ For an overview of these provisions see *infra*, Ch. 2, fnn. 46 and 47.

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obligations. Consequently, a particular interpretation of one element may require a specific interpretation of another element. An integral view would account for the interpretation of one legal element within the interpretation of another. This is a task of such complexity that numerous attempts by scholars have given rise to an equally large number of propositions.²⁷ For reasons of simplicity in an area that is known for its complexity due to the multitude of approaches, this thesis will break down the non-discrimination obligations of Article III of the GATT and focus exclusively on developing an *economic* interpretative approach to likeness and DCS.

As a consequence, this thesis leaves aside several interpretative issues that arise in the larger context of Article III of the GATT. First, it is not a further treatment of the linkage between trade liberalization and regulatory autonomy. This relates to the issue of whether or not to adopt an interpretative approach to the definition of likeness and DCS that accounts for the regulatory purpose of the disputed governmental measure.²⁸ Second, the thesis does not elaborate on the interaction between trade and other non-economic policy considerations, such as human rights, the environment, or labor standards.²⁹ Thus, it will not be discussed whether, for example, foreign products that do not comply with certain domestic human rights, labor, or environmental standards are “like” or DCS domestic products that adhere to these standards.

Article III market definition has in fact been discussed mainly with regard to the fundamental tension between trade liberalization and regulatory autonomy or other non-economic policy values. This is a highly controversial debate on the proper function of Article III of the GATT. Scholarship has already treated this topic comprehensively without bringing it nearer to a definite resolution.³⁰ This study acknowledges and briefly describes regulatory purpose and compliance with non-economic standards as alternative, non-economic approaches to market definition. But it does not take a position from a normative or hermeneutic perspective on which approach and therefore on which fundamental understanding of Article III of the GATT should prevail. The reason is that this has become

²⁷ The latest instance in scholarship is Diebold, *Non-Discrimination in International Trade in Services*. See also *infra*, Ch. 2, fn. 94.

²⁸ For an overview see Trebilcock and Howse, *The Regulation of International Trade*, pp. 108–111 (2005).

²⁹ On this conflict see, e.g., Cottier, Pauwelyn, and Bürgi, *Human Rights and International Trade* (2005); Vranes, *Trade and the Environment: Fundamental Issues in International Law, WTO Law, and Legal Theory* (2009).

³⁰ For references to the literature see *infra*, Ch. 3, fnn. 148 and 149.

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a purely theoretical debate confined to the scholarly world. The Appellate Body has clearly and in a definite manner rejected the mentioned alternative regulatory purpose approaches to market definition. In today's world of WTO dispute settlement, trade law practitioners do not advise clients or argue before WTO dispute settlement bodies on the basis of those alternative approaches. Practitioners argue the issue of product similarity solely on the basis of the traditional approach. Acknowledging this reality of litigation, this study moves forward and sets aside the vexatious and complex questions associated with regulatory purpose and compliance with non-economic standards. Given the modern state of case law, the research question in this book focuses on whether an economic approach to product comparison can be developed as an alternative to the traditional approach.

II PRACTICAL RELEVANCE OF THE RESEARCH QUESTION

An economic approach does not necessarily lead to different results in defining markets than those provided by a non-economic approach. It does, however, certainly change the operational modes of professionals concerned with market definition. The immediate practical relevance of a well-designed economic approach lies in enhancing the predictability, transparency, and consistency – recognized objectives of the WTO legal system³¹ – in the application of the relevant provisions. Ultimately, it thereby increases the acceptability and accountability of the WTO dispute settlement system. An economic approach based on quantitative methods will improve predictability, transparency, and consistency because it permits the formalization of a coherent methodology, generates reproducible and (even numerically) comparable results, and provides measures of precision and reliability. This makes it possible to discuss and evaluate the methods and models employed, and to follow a structured set of principles in the analysis.

On a more general level, the issue of market definition can be understood as exemplary for the interaction between law and economics. Taking the antitrust experience as a model, one may forecast that economic analysis and the use of econometric tools might also become central in

³¹ Compare Article 3.2 of the Understanding on Rules and Procedures Governing the Settlement of Disputes, Annex 2 of the WTO Agreement (hereinafter DSU).

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shaping lawyers' arguments and legal decision making in WTO disputes. Like antitrust lawyers, trade lawyers will therefore interact to an increasing degree with economists and statisticians.³² Cynics may argue that the legal profession confronts this growing influence of economists with suspicion precisely in the manner of a monopolist fearing to lose its market. But the prime reason why economics often remains anathema to lawyers and judges is that while legal professionals traditionally demand "bright-line" tests – simple step-by-step rules – economic reasoning is perceived as inconclusive, incomprehensible, and inaccessible.³³ With the increasing use of economic concepts and the ensuing prevalence of economic and technical terminology, a language barrier arises that not only obstructs the dialogue between economists and lawyers, but also adds further complication to the lawyers' already existing daily problem of explaining legal "jargon" to their clients. Manifestly, without some understanding for the economics presented to them, lawyers and judges will likely ignore economic evidence, or refrain from giving it much weight. Thus, the priority for an efficient use of economic evidence is that economic presentation and arguments must be readily understandable and accessible to lawyers and adjudicators. Instead of remaining an independent subset of the legal inquiry from which the legal profession is excluded by language and lack of understanding, economics must become part of the legal proceedings through a dialogue with the economic expert. At the same time, where the discipline of *forensic* economics develops and gains increasing importance in legal decision making, the discussion also turns to the requisite standards for economic analysis in the legal context.³⁴ Against this background, this book has an interdisciplinary vocation. By virtue of a non-technical and accessible presentation of, in particular, econometrics, this book aims to contribute to the fruitful interaction of economic and legal analysis generally and, more specifically, to show that economic analysis is beneficial in order to put some science to the legal art of defining markets.

³² See Desai, "The European Commission's Draft Notice on Market Definition: A Brief Guide to the Economics," *European Competition Law Review*, (1997), 473, 477.

³³ Fisher, "Economic Analysis and 'Bright-line' Tests," *Journal of Competition Law & Economics*, 4 (2007), 129–130.

³⁴ This can be observed in Germany, where the discussion on standards of forensic economics has now come to the fore following the recent publication of guidelines on expert economic testimony by the Federal Cartel Office, see Ewald, "Ökonomie im Kartellrecht: Vom more economic approach zu sachgerechten Standards forensischer Ökonomie," *Wirtschaft und Wettbewerb*, (2011), 15–47; Christiansen and Locher, "Die neuen Standards des Bundeskartellamts für ökonomische Gutachten in der Kartellrechtsanwendung," *Wirtschaft und Wettbewerb*, (2011), 444–453.