



Tariffs versus anti-dumping duties[☆]

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ABSTRACT

Tariffs and anti-dumping duties are two important tools used to protect industries from foreign competition and to generate revenue. While the two tools have been studied extensively in separate contexts, little is known about their comparative effects. This paper compares their effects on prices, profits, government revenue, industry protection, and welfare in a two-country framework where a dominant firm in one country exports to the other inhabited by an oligopoly. Conditions under which one tool dominates the other for a given criterion are provided.

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1. Introduction

Tariffs and anti-dumping duties are two important tools that can protect industries from foreign competition and generate revenue to countries initiating them. The two tools have been studied extensively in separate contexts.¹ However, except for a limited effort, a detailed comparison of them has not been carried out, unlike, for instance, in the case of tariffs and quotas.² This paper compares tariffs and anti-dumping duties with respect to their effects on domestic and import prices, industry protection, exporting firm's profits, and domestic and foreign welfare using a dominant firm-oligopoly model. The goal is to explore conditions under which one tool is superior to the other in terms of a well-defined objective, such as improving domestic industry protection or welfare. If the superiority of one tool can be established for a given objective, measures can be adopted to promote the use of that tool to achieve that objective.³

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¹ For work either on tariffs or anti-dumping duties, see, e.g., Bhagwati and Kemp (1969), Leith (1971), Brander and Krugman (1983), Reitzes (1993), Anderson, Schmitt, and Thisse (1995), Blonigen (2002), Blonigen and Prusa (2003), and Bown and Crowley (2007). See Yang, Peng, and Li (1996) for a comparison of uniform and discriminatory tariffs in the framework of third-degree price discrimination.

² See, e.g., Hay (1971), McCulloch (1973), Panagariya (1980), Itoh and Ono (1982), Alam (1988), and Reitzes (1991) for a comparison of tariffs and quotas.

³ For instance, if an anti-dumping duty is more effective than a tariff in industry protection under certain conditions, the process for filing an anti-dumping duty petition can be made easier.

A basic comparison of the two tools is relevant in view of the recent trends. Reliance on tariffs has receded globally in recent years. Instead, use of anti-dumping duties has been on the rise. Over the period 1980–2003 the number of countries with an anti-dumping law went from 36 to 97.⁴ The increasing reliance on anti-dumping duties is pronounced especially in certain developing countries such as Turkey, where the number of anti-dumping cases filed has almost tripled over the last decade. While there may be several other reasons, such as political considerations, for these trends, whether the trends reflect an economic rationale associated with the underlying superiority of one tool over the other in certain dimensions is a key open question.

The lack of a comparative analysis of the two tools is in part due to the fact that tariffs and anti-dumping duties differ in the ways they are usually treated in theoretical work. A tariff is typically designed to maximize either domestic revenue or domestic welfare. An anti-dumping duty, on the other hand, is usually set to make up for the difference between a foreign firm's price at home and the price of its exports, provided that the latter is lower.⁵ In other words, an anti-dumping duty serves the purpose of industry protection, and also produces revenue as a by-product, but it is not designed to maximize protection, revenue, or welfare. Consequently, unlike a tariff, an anti-dumping duty is not typically posed as a solution to an optimization problem. This discrepancy in theoretical treatments renders the comparison of the two tools challenging.

In practice, too, there are several differences between the implementation of the two tools. Tariffs are usually imposed uniformly on all foreign firms exporting a given good to a domestic market. Anti-dumping duties, on the other hand, target a specific foreign firm or a group of firms which are claimed to be dumping, that is, selling at prices deemed “unfair”. The goal is to restore fair pricing, where the yardstick of fairness is usually the price prevailing in the foreign market. The tools differ also in terms of the institutional and political process they need to go through to be initiated. Furthermore, there are cases where anti-dumping duties are introduced in an industry already protected by tariffs. These differences and complications in practice notwithstanding, how each tool fares with respect to the other when used alone to intervene in a free trade environment demands a basic theoretical investigation. Such an investigation also supports empirical work on the performance of the two tools.

This paper offers a basic framework to compare the two tools in detail. In carrying out a comparison, it is important to note that tariffs and anti-dumping duties are not necessarily designed or viewed as strict substitutes in trade policy. Yet, it stands relatively unexplored whether one tool, when used alone, can achieve most of the objectives of the other and still do better also in other dimensions that are deemed to be important by policymakers. For this reason, it is useful to envision a world in which only a single tool is in effect. The first approach of this paper is therefore an “as is” comparison of the two tools, in which each tool is defined in its usual theoretical form, but mutually exclusively of each other: a revenue- or a welfare-maximizing tariff versus an anti-dumping duty that is designed to restore fair pricing. However, more flexible comparisons are also considered. Because a tariff can take on several values other than just the ones that maximize revenue or welfare, in theory it can also be used to match certain aspects of an anti-dumping duty.⁶ For instance, a tariff can theoretically be set to achieve the main objective of an anti-dumping duty, which is the restoration of fair pricing. A tariff can also be set to provide the same protection to the domestic industry or the same revenue to the government as the anti-dumping duty does. Thus, some alternative choices of tariffs are also investigated and compared with the revenue- and welfare-maximizing tariffs in terms of their effects compared to an anti-dumping duty. Finally, the effects of the joint use of the two tools are also studied and are compared with the effects of the use of either tool alone.

For the purposes of comparing the two tools, a static model of trade between two countries is developed. Using the model, a free trade regime, a tariff regime, and an anti-dumping duty regime are defined and analyzed. The three regimes are then compared in terms of equilibrium levels of prices, domestic industry protection, domestic welfare, government revenues, and foreign firm's profits.

In the model, there are two substitutable goods, one produced domestically, and the other in a foreign market. The foreign good is exported to the domestic market, in addition to being consumed in the foreign market. The elasticities of demand and the efficiencies of production technologies differ across the foreign and domestic markets. The structures of domestic and foreign markets in the model are based on key observations from a large subset of U.S. anti-dumping cases. A majority of the cases filed in the U.S. between 1979 and 2003 involve dumping allegations against a single, and often large, foreign firm, which is frequently the dominant producer in its home country. It is not surprising that foreign monopolies or dominant firms are more frequently the subject of an anti-dumping scrutiny. All else equal, the foreign price tends to be higher the less intense the competition in the foreign market. The gap between the foreign price and the export price therefore also tends to be higher. To incorporate this observation in a basic form, the foreign industry in the model consists of a single firm.⁷ This choice approximates a foreign market structure where a dominant firm with a large market share has some degree of market power and can set price in its home market. The findings are robust if the foreign firm faces competitors at home.

On the domestic country's side, the filing of an anti-dumping petition or lobbying for a tariff generally requires some degree of coordination among domestic firms. Such coordination is more easily attained in markets with a relatively small number of firms. To reflect this observation, the domestic industry is represented by an oligopoly with an exogenously fixed number of firms, which can range from two (i.e. duopoly) to an arbitrarily large integer, which approximates the case of a perfectly competitive industry.

⁴ See Zanardi and Vandenbussche (2008).

⁵ See the most widely used measure of dumping and dumping margin in page A-4 of the US ITC Antidumping and Countervailing Duty Handbook, 12th edition, April 2007.

⁶ An anti-dumping duty, by definition, has a more rigid structure and can only be set to restore fair-pricing, even though “fair-pricing” can be defined in different ways in practice.

⁷ A single-firm representation of a market is not uncommon in related research. See, for instance, parts of Brander and Krugman (1983).

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