Chapter 11
An Economical Model For Dumping by Dumping in a Cournot Model

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Abstract We consider an international trade economical model where two firms of different countries compete in quantities and can use three different strategies: (i) repeated collusion, (ii) deviation from the foreigner firm followed by punishment by the home country and then followed by repeated Cournot, or (iii) repeated deviation followed by punishment. In some cases (ii) and (iii) can be interpreted as dumping. We compute the profits of both firms for each strategy and we characterize the economical parameters where each strategy is adopted by the firms.

11.1 Introduction

In an international trade where one firm from the home country is competing with another firm from a foreign country, the phenomena of dumping happens often for several reasons. The foreign firm profit increases in the periods of dumping while
the home firm profit decreases. As a response, the domestic firm can try to impose a penalty by lobbying its government to impose a tariff on the foreign firm. There are two ways in which the domestic firm can induce its government to impose a tariff. First, the domestic firm can strategically alter its behavior (trying to make the foreign firm deviate) and thereby influence antidumping outcome in the second stage of the game. Ethier and Fischer [6], Fischer [14], Staiger and Wolak [24] and Reitzes [22] mention this ‘behavioral’ aspect of the domestic firm. Second is by mounting political pressure. For instance, Moore [17, 18], DeVault [3], and Hansen and Prusa [15,16] have shown that industries with production facilities in the districts of legislators fare are better in terms of receiving antidumping protection.

In this work, we will study three different strategies taken by the home firm and the foreign firm in an infinitely repeated game. The first strategy involves collusion, where both firms cooperate in every period of the game, to their mutual benefit. However, after a period of collusion the foreign firm may decide to dump, thereby deviating from the collusion equilibrium. As a consequence, the foreign firm realizes a higher profit compared to collusive profit and the home firm realizes a smaller one. Hence, the home firm can lobby its government to impose a punishment tariff on the foreign firm, in the period after the deviation. These two periods of deviation-punishment can be repeated forever or can be followed by a Cournot competition, where each firm plays to maximize its own profit.

11.2 The Duopoly Model

We consider an economy consisting of a duopoly in which both firms, $F_1$ the domestic and $F_2$ the foreign firm, compete on quantities rather than price [23] of production for a certain good. Let $q_i$ denote the produced quantities for firm $F_i$, $i = 1, 2$, and $p_i$ the selling prices. We suppose that the utility function is quadratic [25]

$$U(q_1, q_2) = \alpha_1 q_1 + \alpha_2 q_2 - \frac{1}{2} \left( \beta_1 q_1^2 + 2\gamma q_1 q_2 + \beta_2 q_2^2 \right)$$ (11.1)

giving the linear inverse demand functions [4, 5]

$$p_1 = \alpha_1 - \beta_1 q_1 - \gamma q_2$$
$$p_2 = \alpha_2 - \gamma q_1 - \beta_2 q_2.$$ (11.2)

We consider that $\beta_i > 0$ and $\beta_1 \beta_2 \geq \gamma^2$. The value of $\gamma$ is the measure of the substitutability of the produced goods. These can be substitutes, independent, or complements according to whether $\gamma > 0$, $\gamma = 0$ or $\gamma < 0$. The goods are identical if $\alpha_1 = \alpha_2$ and $\beta_1 = \beta_2 = \gamma$. When the goods are nonidentical, the firm with the net absolute advantage in demand will enjoy of a higher $\alpha_i$ value. We assume that