THE ANTICIPATED COMMERCIAL RATE OF COMPENSATION AS A BASIS FOR THE DEGREE OF OPENNESS OF ECONOMIES IN THE CASE OF A DISTORTION IN COMPETITION

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Abstract

In this study, we address the question: What should constitute the basis of the degree of openness of an economy when the domestic government anticipates a distortion in competition by the foreign government. Using the compensation item we propose and which we refer to as anticipated commercial rate of compensation, we base the degree of openness of the domestic economy on its ability to impose the repair of damages done on domestic companies (when the foreign government moves the Cournot-Nash equilibrium towards a Stackelberg equilibrium which is unfavorable to the domestic companies and favorable to foreign companies). This anticipated commercial rate of compensation will make it possible to impose a levy on part of the total revenue of the foreign company and bring it to the Stackelberg equilibrium when the foreign government generates a distortion (through subsidies granted to its local companies) to competition. This levy will make it possible to highlight the potential quota of production (degree

of openness) that the domestic government will have to grant to the foreign company if the domestic government anticipates a distortion to competition by the foreign government. We find that the basis for the degree of openness of the domestic economy depends on the level of subsidy implemented by the foreign government and on the relative competitiveness of the foreign company compared to the domestic company. The more this relative competitiveness is in favour of the domestic company, the lesser the domestic government will be tempted to open its economy (since the foreign government is obliged to practise high levels of subsidy to catch up with the domestic company). Conversely, the more this relative competitiveness is in favour of the foreign company; the more the domestic government will be tempted to open its economy.

Keywords: Domestic company, foreign company, distortion to competition, domestic government, foreign government, returns, production potential, subsidies, commercial rate of compensation

INTRODUCTION

A look at the world economy today reveals that many commercial conflicts[1] have been a main feature of international trade. Examples of these conflicts include: the commercial conflict between the United States and Europe (1962-1964) on chicken, the commercial conflict between the United States and Europe (1986-1987) on corn, the commercial conflict between the United States and Europe (1988-1999) on hormone treated beef, the commercial conflict between Europe and America (1993-2009) on banana, the commercial conflict on agricultural subsidies opposing the ACP[2] and South American countries to the United States and Europe (since 2003), the commercial conflict between the United States and Europe (2004) on «Foreign Sales Corporations» (« FSC »), commercial conflicts between the United States and China (2009) on certain anti-dumping measures on the import of certain tires for tourist vehicles and light trucks coming from China, the commercial conflict between the European Union and China (2010) on antidumping measures relating to certain shoes coming from China, the commercial conflict between the United States and China (2017) on intellectual property in which the United States accuses China to illegally copy the know-how of American companies.

Each of these conflicts was resolved in its on way. However, we notice that besides some conflicts which found a final solution within the Disputes Settlements Organ (ORD), others

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[1] The exhaustive list of the commercial conflicts since 1995 is in the website (www.omc.org) of the World Trade Organisation (WTO).
[2] Africa-Caribbean and the Pacific.

were resolved by unilateral measures. Certain conflicts have not yet found solutions (whether through a friendly discussion or not).

This analysis addresses the level of openness of the domestic economy in preparation of potential conflicts, especially if the domestic economy has already been faced with conflicts that were not resolved within the ORD.

Thus, when a country plans (ex ante) to open its economy to external actors because it (rightly) believes that more competition between all the actors generates benefits (higher global surplus) than less competition, one of the crucial questions that this country will have to answer is that of knowing what is the maximum level of production which it should grant to the external actor (foreign companies[3]).

The choice of the potential maximum production quota[4] that the domestic government should grant the foreign company should be based on a certain number of criteria or conditions. Several theories have addressed the issue of what should constitute the basis of the openness of economies; these theories are based primarily on the advantages of international economic activity or trade. In this line, we can cite the traditional theories of international trade like the theory of absolute advantage of Adam Smith (1776), the theory of the comparative advantage of David Ricardo (1817), etc. Other more recent theories focus on the political economy of commercial protection.

These theories encourage the application of custom duties and importation quotas in order to ensure, as Krugman and Wells (2009) put it, national security, the creation of jobs and the protection of infant industries.

The country that wishes to open its economy to foreign actors is faced with the question of knowing what would occur if the foreign actors adopt behaviors that are synonymous to a distortion to competition. Foreign companies with the help of their government can have strategies of lowering their production costs. For example, we can have governments that put in place policies of assistance to companies such as a favorable tax policy (reduction in the tax on turnover), a policy of low interest rates on loans (incentives to investment), a policy of subsidies to production and research and development.

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[3] A foreign company is a company having activities on the domestic territory and whose majority of shares are held by the external agents or foreigners. This means that the geographical localization of the head office of this company is not very important. This company can be inside or outside the home territory. A domestic company is an entity whose majority of shares are held by nationals.

[4] The potential quota of production is equal to the difference between the level of production of the foreign company at the Stackelberg equilibrium and the level of production of the foreign company corresponding to the levy which must be made by the domestic government on the income of the foreign company at the Stackelberg equilibrium.

These various policies of assistance are regarded as non-tariff barriers[5], and they aim to reduce competition by sending them out of the market; the result of such actions (distortions) is the reduction in the global surplus of the domestic economy which is however the main objective of the domestic government (in case it wishes to open its economy).

Within the framework of this study, the deviation (distortion to competition) which is retained is the granting of subsidies by the foreign government to foreign companies.

The domestic government could thus be confronted with future conflicts. Note that in the quest of solutions to such conflicts, the domestic country can chose to pass either by the Disputes Settlement Organ (ORD) of the World Trade Organisation (WTO) or by compensatory unilateral measures. We find that for a country that is faced with a distortion to competition, certain conditions make one solution or the other more or less efficient.

Faced with these conflicts, the domestic country should propose levels of production which are likely to repair the damages caused by distortions to competition to foreign companies.

This repair of damages can be done using a measure that we propose and call the anticipated rate commercial rate of compensation (TCCA) applied to the total revenue of the foreign company in case it deviates.

The main contribution of this study is to consider that the basis of the degree of openness of economies should be the ability to repair the damage caused by the distortion to competition caused by the foreign company.

To simplify the analysis, we consider that there are only four actors: the domestic government and domestic company on the one hand, and the foreign government and foreign company on the other. The analysis is within the framework of non co-operative game where each participant tries to maximize his profit given the strategy used by the competitor.

We also consider that the deviation or distortion to competition is caused by the foreign company via its government when the domestic government decides to open its economy.

The model used here is that of Brander and Spencer (1985) who show that the optimal policy of a government consists in subsidizing the production of the domestic company. This model shows that the existence of such nontariff barriers results in the movement from a Cournot type equilibrium (where none of the competing companies is subsidized nor protected

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[5]As regards non-tariff barriers met in international trade, we can for example cite export subsidies, import quotas, voluntary restrictions of exports (RVE), subsidies on export loans, public contracts, administrative barriers, subsidies granted to national companies in situation of natural monopoly, subsidies granted for research and development, etc…

by the means of economies of scale and R&D) to Stackelberg equilibrium where the subsidized or protected company plays the role of "leader" and the unsubsidized or unprotected one the role of "follower". Thus, the subsidized or protected company has an advantage over the unprotected or unsubsidized company.

We consider this model as being a one of *"deviation"* since it encourages deviation. It should be noted that in the Brander and Spencer model, the country which grants subsidies is the domestic one. In the rest of the analysis, we simply invert the indices of the foreign country and domestic countries by supposing that it is the foreign company which receives the subsidies from its government. The question is therefore that of knowing the potential share to grant to the foreign company in anticipation of future conflicts because of a distortion to competition (through subsidies granted by the foreign country).

Three main cases can be considered in the attribution of the potential quotas of production to the foreign company: a first case is where the domestic company has a production (marginal) costs that are higher than that of the foreign company; a second case is where the two competing companies have the same production (marginal) costs; and a last case where the domestic company has a production cost that is lower than that of the foreign company. The production costs of each of the two companies obey the traditional properties of decreasing returns: the average and marginal costs increase with the quantities produced. The market demand function is a traditional demand function: it is linear and the quantity and price variables are inversely related.

The question of the basis of the degree of openness of economies within the framework of a distortion to competition resulting in the determination of the maximum potential quota of production to grant to the foreign company enables us to reach the following results.

RESULTS AND POSTULATES
The following condition precedes results 1, 2, 3 and 4 below:

Minimum condition for the attribution of potential production quotas:
The domestic government will only set potential production quotas if the profit of the foreign company exceeds the level of profit corresponding to the shut-down point: in other words, when the foreign company has a profit lower than the inverse of its fixed costs, the domestic government will not impose any production quota (since it is not viable).

Result 1: Effects of the eviction policy used by the foreign government: eviction subsidy[6], optimal subsidy[7] and level of profit of the foreign and domestic company.

Result 1.1: The level of profit of the foreign company generated by the subsidy of eviction of the domestic company implemented by the foreign government is lower than the level of profit of the foreign company generated by the optimal subsidy.

Result 1.2: The profit of the foreign company drops if the foreign government makes the choice of a level of subsidy that is different from the optimal subsidy. This reduction of profit increases as the level of the subsidy increases.

Result 1.3: Any increase in the subsidy implemented by the foreign government is accompanied by an increase in the drop in the profit of the domestic company.

Result 2: Subsidies and the elasticity of the demand function.

Result 2.1: The higher the price elasticity of the demand function is, the lower the levels of optimal subsidies of eviction necessary to be implemented by the foreign government.

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[6] the eviction subsidy written $(s_E)^e$ is defined as the level of subsidy which yields a zero quantity produced by the domestic company at the Stackelberg equilibrium. The quantity offered by the domestic company at the Stackelberg equilibrium is such that: $x_D^S = x_D^{CN} - \beta s_E$. It should be noted that x_D^{CN} is the quantity supplied by the domestic company at the Cournot-Nash equilibrium, β is the effect of the subsidy s_E of the foreign government on the production of the domestic company. Thus, $x_D^S = 0 \Rightarrow (s_E)^e = \dfrac{x_D^{CN} - x_D^S}{\beta}$.

[7] The optimal subsidy $(s_E)^o$ of the foreign government to its company results from the maximization of its surplus G, i.e. the profit of its company Net of the granted subsidy, and is such that:

$$(s_E)^o = \frac{\left(\dfrac{dCT_E(x_E)}{dx_E} - f^{-1}(x_D + x_E)\right)\left(\dfrac{dx_D}{ds_E}\right)}{\dfrac{dx_D}{ds_E} + \dfrac{dx_E}{ds_E}}.$$ It should be specified that $\dfrac{dCT_E(x_E)}{dx_E}$ is the marginal cost of the

foreign company; E $f^{-1}(x_D + x_E)$ is the inverse demand function; x_D is the quantity of the good produced by the domestic company; D, x_E is the quantity of the good produced by the foreign company E, s_E is the unit subsidy to export granted to the foreign company E by the foreign government; $\dfrac{dx_D}{ds_E}$ is the effect of the subsidy of the foreign government E on the production of the domestic company D; $\dfrac{dx_E}{ds_E}$ is the effect of the subsidy of the foreign government E on the production of the foreign company E.

In other words, the optimal subsidy of the foreign government is equivalent a Stackelberg equilibrium between two companies without subsidy, where the domestic company is a leader and the foreign company the follower.

Result 2.2: The lower the price elasticity of the demand function is, the greater the level of optimal subsidies of eviction necessary to be implemented by the foreign government.

Postulate: Relationship between the anticipated commercial rate of compensation (TCCA) of the domestic government and the subsidy implemented by the foreign government

Any increase in subsidy by the foreign government leads to an increase in the rate of compensation by the domestic government.

$$\frac{d\left(\theta_D^E\right)}{ds_E} = j'(s_E) > 0$$

Formally, this is written: _. The subsidy and the anticipated commercial rate of compensation vary in the same direction. It should be noted that the anticipated commercial rate of compensation (TCCA) that the domestic government should apply to the deviating foreign company is written;_ $\left(\theta_D^E\right)$ _and_ $j'(s_E)$ _is the derivative of the function of subsidy granted by the foreign government to its company._

Result 3: The level of potential quotas of production granted to the foreign company (degree of openness of the domestic economy), the level of subsidies of the foreign government and the relative marginal costs in the case of diminishing returns.

Result 3.1. : In the presence of diminishing returns, _when the relative marginal cost of the foreign company compared to the domestic company increases_, (i.e. when the foreign company becomes less and less performing), the potential production quota granted by the domestic government to the foreign company decreases: in other words, the domestic government is less inclined to open its economy if the policy of subsidy (distortion) implementation by the foreign government concerns a foreign company that is not very competitive. The subsidy of eviction therefore becomes high.

CONCLUSION

The question we answer in this study is that of finding a basis for the degree of opening of a domestic economy when the domestic government anticipates a distortion to competition by the foreign government.

The search for an answer to this question leads us to base the openness of the economy on the capacity of the domestic government to impose the repair of the damages due to such a distortion. We propose a measure of compensation called anticipated commercial rate

of compensation that enables us to levy part of the total revenue of the foreign company in order to correct the difference in level of production between the production of the domestic company at the Cournot-Nash equilibrium and its level of production at the Stackelberg equilibrium.

The anticipated commercial rate of compensation enables us to associate to each level of subsidy (distortion) of the foreign government a potential quota of production which the domestic government should grant the foreign company.

We find that in the presence of diminishing returns and when the relative marginal cost of the foreign company compared to the domestic company increases, i.e. when the foreign company is less competitive than the domestic company, the practice of a policy of subsidy on behalf of the foreign government would lead the domestic government to grant lower potential quotas of production. In the same manner, we find that a less competitive foreign company leads the foreign government to implement a very high eviction subsidy while this level of subsidy is advantageous neither for its company nor for the domestic company: the numerical results we arrive at lead in certain cases to an attribution negative levels of potential production quotas by the domestic government. These negative levels of potential production quotas simply reflect the idea that no degree of openness of economies is possible for the domestic government. Contrarily, in the presence of diminishing returns and when the relative marginal cost of the foreign company compared to the domestic company decreases, i.e. when the foreign company is more competitive than the domestic company (thus, the practice of a subsidy of the foreign government is not justified) the domestic government is prepared to grant increasingly higher potential quotas of production to the foreign company because the domestic government anticipates an absence of policy of subsidy on behalf of the foreign government.

Summarily, this just boils down to saying that the basis of the degree of openness of the domestic economy will depend on the one hand, on the levels of subsidy implemented by the foreign government and on the other hand, on the relative competitiveness (in terms of marginal cost of production in this study) of the foreign company compared to the domestic company. The more this relative competitiveness is in favour of the domestic company; the less the domestic government will be tempted to open its economy (since the foreign government is obliged to practise high levels of subsidy to catch up with the domestic company). Reciprocally, the more this relative competitiveness is in favour of the foreign company; the more the domestic government will be tempted to open its economy.

The results of this study are strongly attached to the hypothesis of homogeneity of goods on which the Cournot model we use is based. When the products offered by the domestic and foreign companies are different, although substitutable, then the model of Bertrand is more adapted more to answer the question raised. We are brought to believe that when the goods

appear different, the domestic government can be tempted to harden the policy of openness of its economy since the foreign government can argue or justify that there is no distortion to competition. For the domestic government, it will ask itself the question of the true distinction that exists between the product supplied by its company and the product supplied by the foreign company. If this question of distinction remains ambiguous for the domestic government, it will be very reticent to open its market. This question will be addressed in future studies.

In the long run, unfair competition of the foreign state towards the domestic country might degrade diplomatic relations, leading to political tensions and threats of retaliation by applying an anticipated commercial rate of compensation or war when the foreign state has a higher power index. The stakes is therefore to help the dispute organ of the World Trade Organization (WTO) to apply just and equitable compensation measures.

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