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THE IMPACT OF POLITICAL ECONOMIC SENSITIVITIES ON TRADE REGIMES AMONG POLITICALLY ASYMMETRIC COUNTRIES

Abstract:

This paper examines the impact of political economic sensitivities of the trade regime among politically asymmetric countries. Our concerns focus on the effects of firm's lobbying activity in each country, not only tariff setting, but also on the trade regime's decision, especially considering the countries' asymmetries in political economic sensitivities. We derive the following conclusion from our oligopolistic political economy model. If the country has a greater political bias, then the domestic government prefers to participate in unilateral trade regime or bilateral trade regimes. However, if the country's political factor is insignificant, then the government prefers to carry out complete free trade. These results imply that Korea-China-Japan FTA negotiation could be accelerated when three countries' political sensitivities are larger. Moreover, China, which has the greatest political sensitivity, would be more likely to participate in Korea-China-Japan FTA. We find that the sharp contrast between these results and the previous literature stems mainly from the asymmetries of political economic sensitivities when domestic governments determine the political tariff and trade regime.

Keywords:

Political Economic Sensitivities; Trade Regime; Lobbying; Strategic Trade Policy

JEL Classification: F12, F13, F15

1. Introduction

If you look at the flow of world trade order of recency, rather than free trade through the multilateral, regional economic integration, such as the FTA has been actively conducting. Doha Development Agenda negotiations that have been launched in 2001 (DDA) where the goal is to end in a batch settlement system in 2005 originally, but it does not show what the progress up to now. As a result, efforts to achieve economic development worldwide through trade liberalization under the WTO regime he has not progressed. Be a factor delaying the flow of world trade order to multilateralism, such a situation is necessarily empowered the movement you are trying to restructure the world trade order in a manner of regional economic integration further. In the flow of world trade order like this, countries are striving to conclude the FTA negotiations with countries to align the interests of the country. At this time, the country is going to be in consideration of the various elements, to negotiate the FTA. In the process of concluding the FTA negotiations, influence and political pressure of the countries cannot be ignored. Effect in response to the trend of globalization of companies in particular, changes in trade policy is given to each industry is very large. Therefore, the political pressure on companies to trade policy, it is possible to become a powerful force as dominates its way decisions and trade policies.

Previous papers do not take into account the degree of political influence that is different from country to country in the FTA negotiations, of course, this might be far from the realistic aspect. However, in this paper, it is assumed that countries' political economic sensitivities are different, in this case, it is intended to check whether the set so as to have the incentive to any FTA countries other degree of political pressure. Political sensitivity, are those that vary depending on the characteristics of each country, by this, the degree of the Contribution of Lobbying of the industry in each country is different. That is intended to also affect the Trade Regime and decisions Trade policy, thus, would be able to see more clearly between the Trade Regime decision process of the country where the degree of political pressures is different.

In this way, Trade Regime decision of each country is a very important factor in the benefit of countries tend to regionalism is strengthened. In fact, whether political pressure affects the Trade Regime decision or not is controversial, many studies of existing have been performed. Pravin Krishna (1998) insisted that trade policy was determined by lobbying process through interest group consisted of producers, accordingly preferential arrangements would be much more politically supported. As a result, preferential arrangements lower the incentive of multilateral liberalization. Grossman and Helpman (1994) considered political contributions of interest groups have an impact on trade policy choice of the government. Moreover, Grossman and Helpman (1995) analyzed the government negotiated the FTA in response to the political pressure of interest groups within the industry. Levy (1997) has argued it is impossible to increase the political support of Bilateral Free-trade agreements supporting the Multilateral trade liberalization, rather to the role of preventing the MTA. Thus, the above-mentioned paper, has agreed to the political pressure of interest groups, the government would give a decisive influence on the selection of Trade Policy and Trade Regime.

When the political pressure on the company may affect the Trade Policy decision of government, previous studies have been assumed to be the same degree of political

sensitivity. In the case of paper Ornelas (2005a), when the degree of political bias of all countries is the same, he studied the impact of lobbying on the trade policy decision of the government and the change of the external tariff due to this. Furthermore, Ornelas (2005b) asserts when the trade barriers in the region between is removed by FTA, this lowers the incentive to lobby for higher tariffs outside of import competition between industries. Therefore, it causes a reduction in the rent, which is created in the lobby process. In these papers, it was possible to derive the analytical results described above because they assumed the same political sensitivity among countries.

However, in this paper, if the degree of political pressure on the Trade Regime decision is different from country to country, I want to see the lobby process of domestic industry or bring what kind of results to the Trade Regime government decisions. We will be able to analyze more realistic Trade Policy decision-making processes of government and the degree of political pressure in the region in doing so.

The remainder of this paper is organized as follows. In Section 2, let us examine the structure of the theoretical analysis model, then analyze the optimal tariff level under given trade regime. In Section 4, if countries have an asymmetric political bias, we analyze the process of selecting the optimal trade regime. With Section 5, we identify the main conclusions and future research.

2. The Model

2.1. The basic structure

There are three countries, country 1, 2, 3 and two sectors, one competitive (X) and one oligopolistic (Q). Both goods are homogeneous, produced under constant returns to scale and require only labor (L) as input. I normalize units so that the production of one unit of X requires one unit of L, and the production of one unit of Q requires c>0 units of L. Then, choosing X as the numeraire, any equilibrium with diversified production requires wages set to one. The technology level, L is supplied inelastically in each country are homogeneous among countries. So trade occurs only in the industry of oligopoly material Q.

For the sake of simplicity of the analysis, companies of each country, one by one exists, there is no qualitative difference when we extended to the number of companies n. Each country has representative consumer and their preferences are represented in the form of a utility function U of quasi-linear. In other words, since the utility function is to have a form of quasi-linear function, inverse demand function has the form of a linear function such as the following.

$$P^i(Q^i) = A - Q^i \quad \text{for all} \quad i \in \{1,2,3\} \qquad (1)$$

⊠

Q denotes aggregate consumption, $P^i(Q^i)$ represents the market's inverse demand for the oligopolistic good, and A>c. If the product Q is supplied oligopolistically in each country, aggregate sales are $Q^i = q_i^i + \sum_{i \neq j} q_j^i$,where i is import country, and j is export country.

2.2. Payoff function

National welfare W is defined as the sum of the utility of the consumer (CS), the benefit of the producers (Π) and the sum of the tariff revenue (TR):

$$W^i = CS^i + TR^i + \prod^i, i = 1,2,3.$$

Moreover, aggregates the domestic firms' profits in both the local market (Π^l) and the foreign markets (Π^{ROW}):

$$\prod^i = \prod^{il} + \prod^{ROW}, i = 1,2,3.$$

The preference of the government, and is a sensitive degree of political, degree of the preferred government "contribution" (C) is different for each country, it is displayed. Therefore, the payoff function of government, can be expressed as follows: as the sum of the contribution ,that is ,the lobby costs, and government utility of the country receives from the industry.

$$G^i(t,C) = W^i(t) + \beta_i C, \quad i = 1,2,3 \qquad (2)$$

The size of the degree of political sensitivity of the contribution is the lowest at 1 country, inversely, the political sensitivity of the contribution is the highest in the 3 country. And the net payoff of oligopolistic industry (V) has a function which is obtained by subtracting the contribution of companies to provide the government with a total profit of the entire market of the industry.

$$V^i(t,C) = \Pi^i(t) - C, \quad i = 1,2,3 \qquad (3)$$

If the tariff satisfy the following formula using the reward function of the above, efficiency is achieved:

$$\underset{t}{Max} W^{il}(t) + \beta^i \Pi^{il}(t), \quad i = 1,2,3 \qquad (4)$$

I call this tariff "political tariff (t^p)". If the formula (4) has an interior solution, are as follows, first order condition to obtain the political tariff:

$$\frac{dCS^i(t)}{dt} + \frac{dTR^i(t)}{dt} + (1+\beta^i)\frac{d\Pi^{il}(t)}{dt} = 0 \qquad (5)$$

We consider the three types of the trade regime. u mean unilateral, countries impose import tariffs against imports of all. b means a bilateral, that is if 1 country and 2 country are conclude an FTA, then both countries abolish import tariffs on each other,

but impose import tariffs to 3 countries. In the end, m means multilateral, in this case, all countries 1, 2, and 3 will abolish import tariffs to achieve a complete free trade.

In this paper, we would like to learn the lobby of the company is what effect the trade policies of the country, and is determined through the game structure noncooperative of four steps.

1. Companies in each country provide Contribution to national governments for the sake of influencing trade policy. $C_i(r,t^i(r))$ is the lobbying cost which each firm provides to government, where $t^i(r)$ is the tariff imposed by country i under the trade regime $r \in R$.
2. Governments select the trade regime $r \in R$.
3. Governments determine the external tariff level $t^i(r)$.
4. Each firm produces their product by Cournot competition.

Under this structure, by using Backward inductions, we obtain the value of the game balance. In other words, the analysis of the exact opposite of the order of the time in a way that in situations where the tariff is given, the company is looking at the decision-making process the production volume, try looking for the optimal tariff for the following, to determine the Trade Regime finally it is intended to examine the balance value through.

3. Tariff Setting

Unilateral Regime

First, let us look at the case that the government has selected the Unilateralism in Trade Regime. Companies in each country benefit function are as follows.

$$\Pi_j^i(u,t^i(u)) = [P^i(u,t^i(u)) - c - t_j^i(u)]q_j^i(u,t_j^i(u))$$
$$= [A - q^i(u,t^i(u)) - t_j^i(u)]q_j^i(u,t_j^i(u)) \quad , \quad i,j \in \{1,2,3\} \qquad (6)$$

[Proposition 1] Optimal tariff level and international profit and production of companies in each country is as follows under the unilateral trade regime.

Cournot-Nash equilibrium output under the Unilateral trade regime has the following values.

$$q_1^1 = \frac{2(A-c)}{5-2\beta_1} \qquad q_2^1 = \frac{(A-c)(2\beta_1-1)}{4\beta_1-10} \qquad q_3^1 = \frac{(A-c)(2\beta_1-1)}{4\beta_1-10}$$

$$q_1^2 = \frac{(A-c)(2\beta_2-1)}{4\beta_2-10} \qquad q_2^2 = \frac{2(A-c)}{5-2\beta_2} \qquad q_3^2 = \frac{(A-c)(2\beta_2-1)}{4\beta_2-10} \qquad (7)$$

$$q_1^3 = \frac{(A-c)(2\beta_3-1)}{4\beta_3-10} \qquad q_2^3 = \frac{(A-c)(2\beta_3-1)}{4\beta_3-10} \qquad q_3^3 = \frac{2(A-c)}{5-2\beta_3}$$

The profit of companies in the market in each country under the Unilateral trade regime is as follows.

$$\Pi_1^1 = \frac{4(A-c)^2}{(5-2\beta_1)^2} \qquad \Pi_2^1 = \frac{(A-c)^2(1-2\beta_1)}{(5-2\beta_1)^2} \qquad \Pi_3^1 = \frac{(A-c)^2(1-2\beta_1)}{(5-2\beta_1)^2}$$

$$\Pi_1^2 = \frac{(A-c)^2(1-2\beta_2)}{(5-2\beta_2)^2} \qquad \Pi_2^2 = \frac{4(A-c)^2}{(5-2\beta_2)^2} \qquad \Pi_3^2 = \frac{(A-c)^2(1-2\beta_2)}{(5-2\beta_2)^2} \qquad (8)$$

$$\Pi_1^3 = \frac{(A-c)^2(1-2\beta_3)}{(5-2\beta_3)^2} \qquad \Pi_2^3 = \frac{(A-c)^2(1-2\beta_3)}{(5-2\beta_3)^2} \qquad \Pi_3^3 = \frac{4(A-c)^2}{(5-2\beta_3)^2}$$

Here, it is a condition firm's profit is always positive:
$\beta_1, \beta_2, \beta_3 < \frac{5}{2}$.

The government's optimal tariff under the Unilateral trade regime is as follows.

$$t^1(u) = \frac{(3+2\beta_1)(A-c)}{10-4\beta_1} \qquad t^2(u) = \frac{(3+2\beta_2)(A-c)}{10-4\beta_2} \qquad t^3(u) = \frac{(3+2\beta_3)(A-c)}{10-4\beta_3} \qquad (8)$$

At this time, it is a condition for tariff level does not become negative. If you look at the optimal tariff, it is possible to know that the country politically sensitive imposes tariffs of up to. Country 3 is the most politically biased country and they impose the highest tariff, however, in the case of country 1 with the lowest political biased degree imposes tariffs on the lowest level $\left(\beta_1, \beta_2, \beta_3 \Rightarrow t^1(u) < t^2(u) < t^3(u)\right)$.

On the other hand, social welfare function in each country, which is the sum of the economic surplus of the society members, is defined as the sum of tariff revenue and profit, and corporate utility of consumers.

$$W^i(r,t^i(r)) = CS^i(r,t^i(r)) + \Pi_j^i(r,t^i(r)) + t^i(r)\sum_{j\neq i} q_j^i(r,t^i(r)) \quad \forall i, j \in \{1,2,3\}, \quad r \in R \qquad (9)$$

Tariff revenue and consumer surplus in each country are as follows.

$$CS^1 = \frac{(A-c)^2(3-2\beta_1)^2}{2(5-2\beta_1)^2} \quad CS^2 = \frac{(A-c)^2(3-2\beta_2)^2}{2(5-2\beta_2)^2} \quad CS^3 = \frac{(A-c)^2(3-2\beta_3)^2}{2(5-2\beta_3)^2} \qquad (10)$$

$$TR^1 = \frac{(A-c)^2(1-2\beta_1)(3+2\beta_1)}{2(5-2\beta_1)^2}$$

$$TR^2 = \frac{(A-c)^2(1-2\beta_2)(3+2\beta_2)}{2(5-2\beta_2)^2} \qquad (11)$$

$$TR^3 = \frac{(A-c)^2(1-2\beta_3)(3+2\beta_3)}{2(5-2\beta_3)^2}$$

Bilateral Regime

Here, it is considered that country 1, 2, and 3 participate the FTA negotiation in each case. All countries, are participating in the FTA entered into endogenous manner, consider the number of cases of country 1 and country 2, country1 and country 3, and country 2 and country 3 are joining the FTA.
Is as follows profit function of firms in each country in Bilateral trade regime:

$$\Pi_j^i(b,t^i(b)) = [P^i(b,t^i(b)) - c - t_j^i(b)]q_j^i(b,t_j^i(b))$$

$$= [A - q^i(b,t^i(b)) - t_j^i(b)]q_j^i(b,t_j^i(b)) \qquad i, j \in \{1,2,3\}$$

[Proposition 2] Optimal tariff level and international profit and production of companies in each country is as follows under the bilateral trade regime.

1. FTA between country 1 and country 2

Cournot-Nash equilibrium output under the Bilateral trade regime has the following values.

$$q_1^1 = \frac{6(A-c)}{21-2\beta_1} \qquad q_2^1 = \frac{6(A-c)}{21-2\beta_1} \qquad q_3^1 = \frac{(A-c)(3-2\beta_1)}{21-2\beta_1}$$

$$q_1^2 = \frac{6(A-c)}{21-2\beta_2} \qquad q_2^2 = \frac{6(A-c)}{21-2\beta_2} \qquad q_3^2 = \frac{(A-c)(3-2\beta_2)}{21-2\beta_2} \qquad (12)$$

$$q_1^3 = \frac{(A-c)(2\beta_3-1)}{4\beta_3-10} \qquad q_2^3 = \frac{(A-c)(2\beta_3-1)}{4\beta_3-10} \qquad q_3^3 = \frac{2(A-c)}{5-2\beta_3}$$

The profit of companies in the market in each country under the bilateral trade regime is as follows.

$$\Pi_1^1=\frac{36(A-c)^2}{(21-2\beta_1)^2} \qquad \Pi_2^1=\frac{36(A-c)^2}{(21-2\beta_1)^2} \qquad \Pi_3^1=\frac{6(A-c)^2(3-2\beta_1)}{(21-2\beta_1)^2}$$

$$\Pi_1^2=\frac{36(A-c)^2}{(21-2\beta_2)^2} \qquad \Pi_2^2=\frac{36(A-c)^2}{(21-2\beta_2)^2} \qquad \Pi_3^2=\frac{36(A-c)^2(3-2\beta_2)}{(21-2\beta_2)^2} \qquad (13)$$

$$\Pi_1^3=\frac{(A-c)^2(1-2\beta_3)}{(5-2\beta_3)^2} \qquad \Pi_2^3=\frac{(A-c)^2(1-2\beta_3)}{(5-2\beta_3)^2} \qquad \Pi_3^3=\frac{4(A-c)^2}{(5-2\beta_3)^2}$$

The government's optimal tariff under the bilateral trade regime is as follows. If the two countries, country 2 and country 1, imposes zero tariff to each other when they conclude the FTA: $t_2^1(b)=0 \quad t_1^2(b)=0$.

$$t_3^1(b)=\frac{(A-c)(3+2\beta_1)}{21-2\beta_1} \qquad t_3^2(b)=\frac{(A-c)(3+2\beta_2)}{21-2\beta_2} \qquad t^3(b)=\frac{(A-c)(3+2\beta_3)}{10-4\beta_3} \qquad (14)$$

Tariff revenue and consumer surplus is as the following when country 1 and country 2 negotiated FTA.

$$CS^1=\frac{(A-c)^2(15-2\beta_1)^2}{2(21-2\beta_1)^2} \quad CS^2=\frac{(A-c)^2(15-2\beta_2)^2}{2(21-2\beta_2)^2} \quad CS^3=\frac{(A-c)^2(3-2\beta_3)^2}{2(5-2\beta_3)^2} \qquad (15)$$

$$TR^1=\frac{(A-c)^2(3-2\beta_1)(3+2\beta_1)}{(21-2\beta_1)^2}$$

$$TR^2=\frac{(A-c)^2(3-2\beta_2)(3+2\beta_2)}{(21-2\beta_2)^2} \qquad (16)$$

$$TR^3=\frac{(A-c)^2(3-2\beta_3)(3+2\beta_3)}{2(5-2\beta_3)^2}$$

2. FTA between country 2 and country 3

Cournot-Nash equilibrium output under the Bilateral trade regime has the following values.

$$q_2^2=\frac{6(A-c)}{21-2\beta_2} \qquad q_3^2=\frac{6(A-c)}{21-2\beta_2} \qquad q_1^2=\frac{(A-c)(3-2\beta_2)}{21-2\beta_2}$$

$$q_2^3=\frac{6(A-c)}{21-2\beta_3} \qquad q_3^3=\frac{6(A-c)}{21-2\beta_3} \qquad q_1^3=\frac{(A-c)(3-2\beta_3)}{21-2\beta_3} \tag{17}$$

$$q_2^1=\frac{(A-c)(2\beta_1-1)}{4\beta_1-10} \qquad q_3^1=\frac{(A-c)(2\beta_1-1)}{4\beta_1-10} \qquad q_1^1=\frac{2(A-c)}{5-2\beta_3}$$

The profit of companies in the market in each country under the bilateral trade regime is as follows.

$$\Pi_2^2=\frac{36(A-c)^2}{(21-2\beta_2)^2} \qquad \Pi_3^2=\frac{36(A-c)^2}{(21-2\beta_2)^2} \qquad \Pi_1^2=\frac{6(A-c)^2(3-2\beta_2)}{(21-2\beta_2)^2}$$

$$\Pi_2^3=\frac{36(A-c)^2}{(21-2\beta_3)^2} \qquad \Pi_3^3=\frac{36(A-c)^2}{(21-2\beta_3)^2} \qquad \Pi_1^3=\frac{36(A-c)^2(3-2\beta_3)}{(21-2\beta_3)^2} \tag{18}$$

$$\Pi_2^1=\frac{(A-c)^2(1-2\beta_1)}{(5-2\beta_1)^2} \qquad \Pi_3^1=\frac{(A-c)^2(1-2\beta_1)}{(5-2\beta_1)^2} \qquad \Pi_1^1=\frac{4(A-c)^2}{(5-2\beta_1)^2}$$

The government's optimal tariff under the bilateral trade regime is as follows.
If the two countries, country 2 and country 3, imposes zero tariff to each other when they conclude the FTA: $t_3^2(b)=0 \quad t_2^3(b)=0$

$$t_1^2(b)=\frac{(A-c)(3+2\beta_2)}{21-2\beta_2} \qquad t_1^3(b)=\frac{(A-c)(3+2\beta_3)}{21-2\beta_3} \qquad t^1(b)=\frac{(A-c)(3+\beta_1)}{10-4\beta_1} \tag{19}$$

Tariff revenue and consumer surplus is as the following when country 2 and country 3 negotiated FTA.

$$CS^1=\frac{(A-c)^2(3-2\beta_1)^2}{2(5-2\beta_1)^2} \qquad CS^2=\frac{(A-c)^2(15-2\beta_2)^2}{2(21-2\beta_2)^2} \qquad CS^3=\frac{(A-c)^2(15-2\beta_3)^2}{2(21-2\beta_3)^2} \tag{20}$$

$$TR^1=\frac{(A-c)^2(1-2\beta_1)(3+2\beta_1)}{2(5-2\beta_1)^2}$$

$$TR^2=\frac{(A-c)^2(3-2\beta_2)(3+2\beta_2)}{(21-2\beta_2)^2} \tag{21}$$

$$TR^3=\frac{(A-c)^2(3-2\beta_3)(3+2\beta_3)}{(21-2\beta_3)^2}$$

3. FTA between country 1 and country 3

Cournot-Nash equilibrium output under the Bilateral trade regime has the following values.

$$q_1^1=\frac{6(A-c)}{21-2\beta_1} \quad q_3^1=\frac{6(A-c)}{21-2\beta_1} \quad q_2^1=\frac{(A-c)(3-2\beta_1)}{21-2\beta_1}$$
$$q_1^3=\frac{6(A-c)}{21-2\beta_3} \quad q_3^3=\frac{6(A-c)}{21-2\beta_3} \quad q_2^3=\frac{(A-c)(3-2\beta_3)}{21-2\beta_3} \qquad (22)$$
$$q_1^2=\frac{(A-c)(2\beta_2-1)}{4\beta_2-10} \quad q_3^2=\frac{(A-c)(2\beta_2-1)}{4\beta_2-10} \quad q_2^2=\frac{2(A-c)}{5-2\beta_2}$$

The profit of companies in the market in each country under the bilateral trade regime is as follows.

$$\Pi_1^1=\frac{36(A-c)^2}{(21-2\beta_1)^2} \quad \Pi_3^1=\frac{36(A-c)^2}{(21-2\beta_1)^2} \quad \Pi_2^1=\frac{6(A-c)^2(3-2\beta_1)}{(21-2\beta_1)^2}$$
$$\Pi_1^3=\frac{36(A-c)^2}{(21-2\beta_3)^2} \quad \Pi_3^3=\frac{36(A-c)^2}{(21-2\beta_3)^2} \quad \Pi_2^3=\frac{36(A-c)^2(3-2\beta_3)}{(21-2\beta_3)^2} \qquad (23)$$
$$\Pi_1^2=\frac{(A-c)^2(3-2\beta_2)}{(5-2\beta_2)^2} \quad \Pi_3^2=\frac{(A-c)^2(1-2\beta_2)}{(5-2\beta_2)^2} \quad \Pi_2^2=\frac{4(A-c)^2}{(5-2\beta_2)^2}$$

The government's optimal tariff under the bilateral trade regime is as follows.

If the two countries, country 1 and country 3, imposes zero tariff to each other when they conclude the FTA: $t_3^1(b)=0 \quad t_1^3(b)=0$.

$$t_2^1(b)=\frac{(A-c)(3+2\beta_1)}{21-2\beta_1} \quad t_2^3(b)=\frac{(A-c)(3+2\beta_3)}{21-2\beta_3} \quad t^2(b)=\frac{(A-c)(3+2\beta_2)}{10-4\beta_2} \qquad (24)$$

Tariff revenue and consumer surplus is as the following when country 1 and country 3 negotiated FTA.

$$CS^1=\frac{(A-c)^2(15-2\beta_1)^2}{2(21-2\beta_1)^2} \quad CS^3=\frac{(A-c)^2(15-2\beta_3)^2}{2(21-2\beta_3)^2} \quad CS^2=\frac{(A-c)^2(3-2\beta_2)^2}{2(5-2\beta_2)^2} \qquad (25)$$

$$TR^1 = \frac{(A-c)^2(3-2\beta_1)(3+2\beta_1)}{(21-2\beta_1)^2}$$

$$TR^3 = \frac{(A-c)^2(3-2\beta_3)(3+2\beta_3)}{(21-2\beta_3)^2} \qquad (26)$$

$$TR^2 = \frac{(A-c)^2(1-2\beta_2)(3+2\beta_2)}{2(5-2\beta_2)^2}$$

Multilateral Regime

Let's consider the case of Mulitilateralism is a case in which country 1, 2, 3 exist in the world have a free trade. Is as follows profit function of firms in each country in Multilateral trade regime:

$$\Pi_j^i(m,t^i(m)) = [P^i(m,t^i(m)) - c - t_j^i(m)]q_j^i(m,t_j^i(m))$$

$$= [A - q^i(m,t^i(m)) - t_j^i(m)]q_j^i(m,t_j^i(m)) \qquad i, j \in \{1,2,3\}$$

[Proposition 2] Optimal tariff level and international profit and production of companies in each country is as follows under the multilateral trade regime.

Cournot-Nash equilibrium output under the multilateral trade regime has the following values.

$$q_1^1 = \frac{A-c}{4} \quad q_2^1 = \frac{A-c}{4} \quad q_3^1 = \frac{A-c}{4}$$

$$q_1^2 = \frac{A-c}{4} \quad q_2^2 = \frac{A-c}{4} \quad q_3^2 = \frac{A-c}{4} \qquad (27)$$

$$q_1^3 = \frac{A-c}{4} \quad q_2^3 = \frac{A-c}{4} \quad q_3^3 = \frac{A-c}{4}$$

The profit of companies in the market in each country under the multilateral trade regime is as follows.

$$\Pi_1^1 = \frac{(A-c)^2}{16} \quad \Pi_2^1 = \frac{(A-c)^2}{16} \quad \Pi_3^1 = \frac{(A-c)^2}{16}$$

$$\Pi_1^2 = \frac{(A-c)^2}{16} \quad \Pi_2^2 = \frac{(A-c)^2}{16} \quad \Pi_3^2 = \frac{(A-c)^2}{16} \qquad (28)$$

$$\Pi_1^3 = \frac{(A-c)^2}{16} \quad \Pi_2^3 = \frac{(A-c)^2}{16} \quad \Pi_3^3 = \frac{(A-c)^2}{16}$$

The government's optimal tariff under the multilateral trade regime is as follows. If the three countries, that is country 1, country 2 and country 3 may have entered into the multilateral trade negotiations, tariffs imposed on each other is zero, free trade is performed all over the world: $t_3^1(m) = t_3^2(m) = t_1^2(m) = t_1^3(m) = t_2^3(m) = 0$

Tariff revenue and consumer surplus is as the following when free trade is performed.

$$CS^1 = \frac{9(A-c)^2}{32} \quad CS^2 = \frac{9(A-c)^2}{32} \quad CS^3 = \frac{9(A-c)^2}{32} \qquad (29)$$

$$TR^1 = 0 \quad TR^2 = 0 \quad TR^3 = 0 \qquad (30)$$

4. Trade Regime Decision

In this chapter, I'll explain the process of governments to determine the Trade Regime in an endogenous manner. That is, those corresponding to the two stages of the game, in consideration of all that in the case of maximizing the government payoff function in equation (2), governments, select the Trade Regime. If you look at the payoff function of government, we consider the Contribution and the cost society utility level both. Contribution is a possibility that the extent of the reaction of the lobby costs, which are different from countries according to their political sensitivity. In other words, the asymmetry between the political sensitivity affects the lobby cost, this creates a clear difference between the payoff function of government. In conclusion, it affects decision process of trade regime.

Contribution is done through a negotiation process between the government and industry, it is determined by the bargaining power of each entity. If the government does not have the bargaining power at all, then have the Contribution of the following:

$$C_{\min} = \frac{[W^{il}(t^*) - W^{il}(t^p)]}{\beta_i}$$

While if the government has all bargaining power but oligopolistic firms have no bargaining power, in this case, are as follows, the value of the Contribution:

$$C_{\max} = \Pi^{il}(t^p) - \Pi^{il}(t^*)$$

In general, since they are in the middle of both cases, assuming that each of the bargaining power of the oligopoly companies and bargaining power of the government

to ε and $1-\varepsilon$, the value of the equilibrium Contribution under the given trade regime is as follows.

$$\overset{\Lambda}{C}(r,t^p(r)) = \varepsilon[\Pi^{il}(t^p) - \Pi^{il}(t^*)] + (1-\varepsilon)[W^{il}(t^*) - W^{il}(t^p)]/\beta_i \quad \forall i \in \{1,2,3\}, r \in \{u,b,m\}$$

5. Concluding Remarks

Considering the case of each country has asymmetric political sensitivity, we examined how the industry's lobbying costs impact on the decision process of trade regime and trade policy. In order to analyze this, assuming the process which industry's interest group exerts their political impact and which of the trade policy decision asymmetrically according to the country, we could clearly clarify the distinction of political sensitivity to the contribution in each country's government.

(Expected results We derive the following conclusion from our oligopolistic political economy model. If the country has a greater political bias, then the domestic government prefers to participate in unilateral trade regime or bilateral trade regimes. However, if the country's political factor is insignificant, then the government prefers to carry out complete free trade. By this, we can find the political implications of the FTA negotiation decision-making process of the country between the degree of political sensitivity of the interest groups in the real world is different. For example, the three countries FTA among Korea, China and Japan is under discussion to continue. Three countries are asymmetric in terms of market size and technology, as well as the degree of political sensitivity is also an important asymmetric factor when they negotiate the FTA. According to the results, Korea-China-Japan FTA negotiation could be accelerated when three countries' political sensitivities are larger. Moreover, China, which has the greatest political sensitivity, would be more likely to participate in Korea-China-Japan FTA.

We find that the sharp contrast between these results and the previous literature stems mainly from the asymmetries of political economic sensitivities when domestic governments determine the political tariff and trade regime. The paper of the future, not only political sensitivity between nations, if it is set to be different from all the extent of the technical capabilities and the market size of the country, industry in each country within the government and Trade Policy decision and Trade Regime in endogenous are all it is to study the processes involved in. In this case, it is intended that research consistent with the real world is carried out, by this, in many countries to try to conclude a regional economic integration, the present study is expected to bring a political implication.

References

Grossman, G. M. and Helpman (1994). "Protection for Sale." *American Economic Review* 84: pp.833-850.

Grossman, G. M. and Helpman (1995). "The Politics of Free Trade Agreements." *American Economic Review* 105: pp.667-690.

Levy, P. Y. (1997). “A political-economic analysis of free-trade agreements.” *American Economic Review* 87: pp.506-519.

Ornelas, E. (2005a). “Endogenous Free Trade Agreements and the Multilateral Trading System.” Journal of International Economics 67: pp.471-497.

Ornelas, E. (2005b). “Rent Destruction and the Political Viability of Free Trade Agreements.”Quarterly Journal of Economics 120: pp.1475-1505.

Pravin Krishna (1998). “Regionalism and Multilateralism : A political economy approach.” *Quarterly Journal of Economics* 113: pp.227-251.