# Strategic Trade Policy and International Trade in the Presence of International Cross-Ownership

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This paper examines the effects of international cross-ownership of firms on trade pattern and social welfare in the three-country trade model in which firms in oligopolistic industry of two countries engage in intra-industry trade and export to the third country as well. The paper shows how international ownership of firms affects trade flow and firm values via strategic trade policies in such a model. The paper also considers the effect of international ownership on national welfare and world welfare.

*Keywords*: Strategic trade policy, International cross-ownership, Intra-industry trade, Oligopoly

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## I. Introduction

Many papers have examined the role of strategic trade policy under imperfect competition. One of major findings in the literature

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is that the strategic trade policy can 'shift' profits from foreign firms to home firms or home government in imperfectly competitive markets.[1] Most papers on strategic trade policy, however, are based on the implicit assumption that profits earned by firms are not diffused to other countries.[2] This is clearly a very restrictive assumption, especially in view of the fact that equity markets are internationally integrated. In fact, most large firms in developed countries are owned by equity-holders diffused across countries.[3]

International ownership affects the analysis of strategic trade policy in several significant respects. First of all, national governments can adopt policies that affect terms of trade of securities between countries. This possibility is examined by Gordon and Varian (1989). Moreover, international ownership affects the incentive of governments to assist firms located within their boundaries, thereby changing trade policies and trade volumes as well. This is so because portions of profits accrue to non-residents holding equities of firms. Shareholders can also adjust the international cross-ownership structure to influence trade policies to their advantage. In a broad sense, there exists a link between asset ownership structure and market performance in oligopoly. Farrell and Shapiro (1990), Fershtman (1990) and Cheong and Lee (1999), among others, examine such a link in various situations.

Incorporating international equity markets into the variant of the model of Brander and Krugman (1983), Lee (1990, 1991) and Kang and Lee (2000) consider the effect of equity sales between residents of exporting and importing countries on trade policies and trade patterns. Long and Soubeyran (2001) consider the effect of international cross-ownership in the Brander-Spencer (1985) model in which firms located in two countries export to the third country. While Lee (1990, 1991) focuses on a one-way trade model, Kang and Lee (2000) introduce international ownership into the two-way

[1]See, among others, Brander and Spencer (1985) and Eaton and Grossman (1986). Brander (1995) offers an extensive survey of the literature.

[2]Lee (1990, 1991), Dick (1993), Welzel (1995) and Long and Soubeyran (2001) are rare exceptions.

[3]Dick (1993, p. 232) reports that, for a sample of 17 two- or three-digit U.S. manufacturing industries, foreign ownership share of each industry ranges from 8.94% (motor vehicles) to 22.31% (stone, clay and glass products), with an asset-weighted average of 13.44%.

trade model. This paper further extends Kang and Lee (2000) by allowing for export to the third country. This paper also generalizes the duopoly model of Kang and Lee (2000) to incorporate an arbitrary number of firms.

This paper is organized as follows. Section II sets out the model that exhibits characteristics of both the two-way trade model and the third-market model. Section III examines real measure of social welfare and then considers choice of international trade regime by governments. Concluding remarks then follow.

## II. The Model: Cournot-Nash Oligopoly

There are 3 countries in the world, labeled 1, 2, and 3, respectively. There are two industries, one competitive industry and the other oligopolistic industry. Country 1 has $m$ identical firms of the oligopolistic industry. Country 2 has $n$ identical firms of the industry. Intra-industry trade of goods produced by the oligopolistic industry takes place between countries 1 and 2. Country 3 exports goods produced by the competitive industry and imports goods of the oligopolistic industry from countries 1 and 2. All the countries have firms of the competitive industry, the products of which are traded between the countries to balance the trade flow. This model can be viewed as a combination of Brander and Krugman (1983) and Brander and Spencer (1985). If the market of country 3 is very small, the model is close to Brander and Krugman (1983). On the other hand, if the market in country 3 is very large, the model is close to Brander and Spencer (1985).

The firms in the oligopolistic industry produce for their own domestic market and for the export market as well. Firm $i$ in country 1 exports $x_{1i}$ to country 2 and $z_{1i}$ to country 3, and produces $y_{1i}$ for the domestic market. Thus, the total production of firm $i$ is $x_{1i}+z_{1i}+y_{1i}$. Similarly firm $j$ in country 2 exports $x_{2j}$ to country 1 and $z_{2j}$ to country 3, and produces $y_{2j}$ for the domestic market. The inverse demand for the product in country 1 is given by

$$P_1=A-(X_2+Y_1),\ A>0, \tag{1}$$

where $P_1$ is the price of the product in country 1, A the vertical

intercept of the demand curve, $X_2$ $(=\sum_j x_{2j})$ the aggregate export of the firms in country 2 to country 1, and $Y_1$ $(=\sum_i y_{1i})$ the aggregate sales in the domestic market of the firms in country 1. Similarly, the inverse demand for the product in country 2 is given by

$$P_2=A-(X_1+Y_2), \tag{2}$$

where $P_2$ is the price of the product in country 2, A the vertical intercept of the demand curve, $X_1(=\sum_i x_{1i})$ the aggregate export of the firms in country 1 to country 2, and $Y_2$ $(=\sum_j y_{2j})$ the aggregate sales in the domestic market of the firms in country 2. Note that countries 1 and 2 have the same demand function. Thus, the only difference between country 1 and country 2 is the number of firms of the oligopolistic industry.

The inverse demand in country 3 is given by

$$P_3=A-k(Z_1+Z_2),\ k>0, \tag{3}$$

where $P_3$ is the price of the product in country 3, $Z_1(=\sum_i z_{1i})$ the aggregate export of the firms in country 1 to country 3, and $Z_2$ $(=\sum_j z_{2j})$ the aggregate export of the firms in country 2 to country 3. Note that there is no production of the good in country 3. The parameter $k$ in eq. (3) is the measure of the market size of country 3 relative to country 1 or 2's. If $k$ is greater than 1, country 1's market is larger than country 3's, and vice versa. The larger $k$ is, the closer the model gets to Brander and Krugman (1983). On the other hand, as $k$ gets smaller, the model gets closer to the third market model of Brander and Spencer (1985).

Following Brander and Spencer (1985) and Eaton and Grossman (1986), this paper models international trade as a two-stage game of governments and firms as follows. In the first stage the governments set trade policies simultaneously. The governments of countries 1 and 2 determine the levels of country-specific export subsidies and import tariffs. The government of country 1 gives $s_{12}$ specific export subsidies to export to country 2 and $s_{13}$ specific export subsidies to export to country 3, and imposes $t_1$ specific import tariffs on imports from country 2. The government of country 2 gives $s_{21}$ specific export subsidies to export to country 1 and $s_{23}$ specific export subsidies to export to country 3, and imposes $t_2$ specific import tariffs on imports from country 1. The

government of country 3 levies fully countervailing duties $t_{31}$ $(=s_{13})$ on imports from country 1 and $t_{32}$ $(=s_{23})$ on imports from country 2.[4] The goods of the competitive industry are freely traded across countries with no intervention by any government.

In the second stage the firms engage in Cournot-Nash competition in each market. The solution to this game is assumed to be subgame-perfect. To obtain a solution we work backwards.

### *A. Interaction between Firms*

In the second stage, the firms engage in Cournot-Nash competition, taking trade policies as given. Even though the firms are owned by a set of internationally diversified owners, they are assumed to maximize profits. This is the case if the equities of the firms are diffused to a large number of equity-holders. When the firms are owned by a small number of equity-holders, their interests are tightly woven through cross-ownership of the firms. Then the firms would maximize some combination of profits rather than own profits. That is, they would maximize combined wealth of a small number of equity-holders. In the present paper we do not allow for this possibility, however.

The profit of firm $i$, for $i=1,\cdots,m$, in country 1 is

$$\Pi_{1i}=(P_1-c_1)y_{1i}+(P_2-c_1+s_{12}-t_2)x_{1i}+(P_3-c_1+s_{13}-t_{31})z_{1i}-F_1, \tag{4}$$

where $c_1$ is the constant marginal cost of firms in country 1 and $F_1$ the fixed cost of firms in country 1. In a similar way the profit of firm $j$, $j=1,\cdots,n$, in country 2 is given by

$$\Pi_{2j}=(P_2-c_2)y_{2j}+(P_1-c_2+s_{21}-t_1)x_{2j}+(P_3-c_1+s_{23}-t_{32})z_{2j}-F_2, \tag{5}$$

where $c_2$ is the constant marginal cost of firms in country 2 and $F_2$ the fixed cost of firms in country 2. For simplicity, we assume that $c_i$ and $F_i$ are zero, for $i=1, 2$.

The first-order conditions for profit maximization are

[4]The government of country 3 can levy partially countervailing duties. Even in this case, however, competition in country 3 can be safely ignored in the analysis of intra-industry trade when marginal costs are constant. Thorough examination of such a case is left for future research.

$$\frac{\partial \Pi_{1i}}{\partial y_{1i}} = A - X_2 - Y_1 - y_{1i} = 0, \quad i = 1, \cdots, m, \tag{6}$$

$$\frac{\partial \Pi_{1i}}{\partial x_{1i}} = A - X_1 - Y_2 + s_{12} - t_2 - x_{1i} = 0, \quad i = 1, \cdots, m, \tag{7}$$

$$\frac{\partial \Pi_{1i}}{\partial z_{1i}} = A - k(Z_1 + Z_2) - kz_{1i} = 0, \quad i = 1, \cdots, m, \tag{8}$$

$$\frac{\partial \Pi_{2j}}{\partial y_{2j}} = A - X_1 - Y_2 - y_{2j} = 0, \quad j = 1, \cdots, n, \tag{9}$$

$$\frac{\partial \Pi_{2j}}{\partial x_{2j}} = A - X_2 - Y_1 + s_{21} - t_1 - x_{2j} = 0, \quad j = 1, \cdots, n, \tag{10}$$

$$\frac{\partial \Pi_{2j}}{\partial z_{2j}} = A - k(Z_1 + Z_2) - kz_{2j} = 0, \quad j = 1, \cdots, n, \tag{11}$$

Note that eqs. (8) and (11) are simplified, utilizing the fact that $s_{13} - t_{31} = s_{23} - t_{32} = 0$. Eqs. (6) and (10) determine the market equilibrium in country 1. Eqs. (7) and (9) determine the market equilibrium in country 2. Similarly, eqs. (8) and (11) determine the market equilibrium in country 3. Since marginal costs are constant, market equilibrium in each country is determined independent of the other markets. Let $R_{1i}$ denote the profit firm $i$ of country 1 obtains from export to country 3, for $i = 1, \cdots, m$. Also, let $R_{2j}$ denote the profit firm $j$ of country 2 obtains from export to country 3, for $j = 1, \cdots, n$. Then, under the given assumptions, $R_{1i}$ and $R_{2j}$ can be treated as constants. We concentrate on markets in countries 1 and 2.

Simultaneous solution of eqs. (6) and (10), and eqs. (7) and (9), respectively, gives

$$X_2 = \sum_j x_{2j} = \frac{n[A + (m+1)(s_{21} - t_1)]}{(m+n+1)}, \tag{12}$$

$$Y_1 = \frac{m[A - n(s_{21} - t_1)]}{(m+n+1)}, \tag{13}$$

$$P_1 = \frac{[A - n(s_{21} - t_1)]}{(m+n+1)}, \tag{14}$$

$$X_1 = \frac{m[A + (n+1)(s_{12} - t_2)]}{(m+n+1)}, \tag{15}$$

$$Y_2 = \frac{n[A - m(s_{12} - t_2)]}{(m+n+1)}, \text{ and} \tag{16}$$

$$P_2 = \frac{[A - m(s_{12} - t_2)]}{(m+n+1)}, \tag{17}$$

Utilizing these results the aggregate profits are given by

$$\Pi_1 = \sum_i \Pi_{1i} = \frac{m[\{A - n(s_{21} - t_1)\}^2 + \{A + (n+1)(s_{12} - t_2)\}^2]}{(m+n+1)^2} + R_1, \tag{18}$$

$$\Pi_2 = \sum_j \Pi_{2j} = \frac{n[\{A - m(s_{12} - t_2)\}^2 + \{A + (m+1)(s_{21} - t_1)\}^2]}{(m+n+1)^2} + R_2, \tag{19}$$

where $R_1 = \sum_i R_{1i}$ and $R_2 = \sum_j R_{2j}$. Note that $R_1$ and $R_2$ are constants. Consumer surplus of each country is, respectively, given by

$$CS_1 = \frac{(X_2 + Y_1)^2}{2} = \frac{[(m+n)A + n(s_{21} - t_1)]^2}{2(m+n+1)^2} \text{ for country 1, and} \tag{20}$$

$$CS_2 = \frac{(X_1 + Y_2)^2}{2} = \frac{[(m+n)A + m(s_{12} - t_2)]^2}{2(m+n+1)^2} \text{ for country 2.} \tag{21}$$

These results will be utilized when analyzing the interaction between governments 1 and 2.

*B. Interaction between Governments*

We now analyze the first-stage interaction between the governments. Since the markets are segmented, the governments can determine trade policies for each market separately. That is, the import tariff for the domestic market can be independently set with no consideration of its effect on own export. Similarly, export subsidies are set with no effect on its domestic market. As in Lee (1990, 1991), Dick (1993), and Welzel (1995), firms are owned by residents as well as by non-residents. We assume that there is no restriction on international flow of equities and dividends. Residents of country 1 have, in the aggregate, $\alpha_{1i}$ proportion of equities of firm $i$ in country 1, for $i=1,\cdots,m$, and $\beta_{1j}$ proportion of equities of firm $j$ in country 2, for $j=1,\cdots,n$. Similarly, residents of country 2 have, in the aggregate, $\alpha_{2i}$ proportion of equities of firm $i$ in country 1, and $\beta_{2j}$ proportion of equities of firm 2. Residents of country 3 have, in the aggregate, the remaining $\alpha_{3i}$ proportion of firm $i$ in country 1 and $\beta_{3j}$ proportion of firm $j$ in country 2. Note that $\alpha_{1i}+\alpha_{2i}+\alpha_{2i}=1$ for $i=1,\cdots,m$, and $\beta_{1j}+\beta_{2j}+\beta_{3j}=1$ for $j=1,\cdots,n$.

National welfare is defined to be the sum of the portions of the profits accruing to respective residents, consumer surplus and import tariffs less export subsidy expenditures. National welfare of country 1 is given by

$$W_1=\sum_i \alpha_{1i}\Pi_{1i}+\sum_j \beta_{1j}\Pi_{2j}+CS_1-s_{12}X_1+t_1X_2-s_{13}Z_1, \tag{22}$$

National welfare of country 2 is also given by

$$W_2=\sum_i \alpha_{2i}\Pi_{1i}+\sum_j \beta_{2j}\Pi_{2j}+CS_2-s_{21}X_2+t_2X_1-s_{23}Z_2, \tag{23}$$

Utilizing symmetry of firms, $W_1$ and $W_2$ can also be expressed as, respectively

$$W_1=\alpha_1\Pi_1+\beta_1\Pi_2+CS_1-s_{12}X_1+t_1X_2-s_{13}Z_1, \text{ and} \tag{22}'$$

$$W_2=\alpha_2\Pi_1+\beta_2\Pi_2+CS_2-s_{21}X_2+t_2X_1-s_{23}Z_2, \tag{23}'$$

where $\alpha_1=(\sum_i \alpha_{1i})/m$, $\alpha_2=(\sum_i \alpha_{2i})/m$, $\beta_1=(\sum_j \beta_{1j})/n$, and $\beta_2=(\sum_j \beta_{2j})/n$. The parameters $\alpha_i$ and $\beta_i$ measure the extent of average ownership by residents of country $i$. They belong to the closed interval [0, 1].

Note that the definitions of $W_1$ and $W_2$ take the extent of international ownership into account.

Each government tries to maximize respective national welfare by suitably choosing export subsidies and import tariffs. Note that the export subsidy and import tariff of each country can be set separately since the markets are segmented. Also, from (22)′ and (23)′ we can find that the government of country 1 or 2 has an incentive to set $s_{13}$ or $s_{23}$ as low as possible if the government of country 3 is the follower in the subsidy-tariff game. This can be explained as follows. The export subsidies given to export to country 3 have no effect on the export volume to country 3 since the government of country 3 levies fully countervailing duties. Nor do they affect trade flow between countries 1 and 2. Positive subsidies, if any, are simply passed over to the government of country 3. If the export tax is not allowed, as in the USA and some other countries, then the optimal export subsidy to export to country 3 is simply zero.[5] With zero subsidies, the government of country 3 does not levy any countervailing duties, either.

We now concentrate on the policy interaction and intra-industry trade between countries 1 and 2. The government of country 1 solves the following first-order conditions:

$$\frac{\partial W_1}{\partial s_{12}}=0 \Rightarrow \frac{2\alpha_1(n+1)\{A+(n+1)(s_{12}-t_2)\}}{(m+n+1)}-\frac{2\beta_1 n\{A-m(s_{12}-t_2)\}}{(m+n+1)} -\{A+(n+1)(s_{12}-t_2)\}-(n+1)s_{12}=0, \text{ and} \tag{24}$$

$$\frac{\partial W_1}{\partial t_1}=0 \Rightarrow \frac{-\{(m+n)A+n(s_{21}-t_1)\}}{(m+n+1)}-\frac{2\alpha_1(m+1)\{A+(m+1)(s_{21}-t_1)\}}{(m+n+1)} +\frac{2\beta_1 m\{A-n(s_{21}-t_1)\}}{(m+n+1)}+\{A+(m+1)(s_{21}-t_1)\}-(m+1)t_1=0, \tag{25}$$

Similarly the government of country 2 solves

[5]We assume that the subsidies given by governments 1 and 2 are not negative.

$$\frac{\partial W_2}{\partial s_{21}}=0 \Rightarrow \frac{2\alpha_2(m+1)\{A+(m+1)(s_{21}-t_1)\}}{(m+n+1)}-\frac{2\beta_2 m\{A-n(s_{21}-t_1)\}}{(m+n+1)} \\ -\{A+(m+1)(s_{21}-t_1)\}-(m+1)s_{21}=0, \text{ and} \tag{26}$$

$$\frac{\partial W_2}{\partial t_2}=0 \Rightarrow \frac{-\{(m+n)A+m(s_{12}-t_2)\}}{(m+n+1)}-\frac{2\alpha_2(n+1)\{A+(n+1)(s_{12}-t_2)\}}{(m+n+1)} \\ +\frac{2\beta_2 n\{A-m(s_{12}-t_2)\}}{(m+n+1)}+\{A+(n+1)(s_{12}-t_2)\}-(n+1)t_2=0. \tag{27}$$

Simultaneous solution of eqs. (24) and (27) yields the equilibrium subsidy and tariff for the market of country 2. Other things being equal, the market equilibrium in country 2 is determined by the value of effective subsidies $g_1(=s_{12}-t_2)$. In the same way, simultaneous solution of eqs. (25) and (26) gives the equilibrium subsidy and tariff for the market of country 1. The market equilibrium in country 1 is also determined by the effective subsidy $g_2(=s_{21}-t_1)$. Through simple calculation we obtain the values of $g_1$ and $g_2$:

$$g_1=\frac{[2n\beta-2(n+1)\alpha+2m+n+1]A}{[2(n+1)^2\alpha+2mn\beta-3mn-3n^2-6n-2m-3]} \tag{28}$$

$$g_2=\frac{[2m\alpha-2(m+1)\beta+2n+m+1]A}{[2(m+1)^2\beta+2mn\alpha-3mn-3m^2-6m-2n-3]}, \tag{29}$$

where $\alpha=\alpha_1+\alpha_2$ and $\beta=\beta_1+\beta_2$. Given the values of $A$, $m$ and $n$, $g_1$ and $g_2$ are functions of $\alpha$ and $\beta$. That is, the market equilibria in countries 1 and 2 are determined by the extent of combined ownership of the firms by residents of countries 1 and 2. We summarize these results as proposition 1.

***Proposition* 1.**
Suppose that country 3 levies fully countervailing duties on imports from countries 1 and 2. If the governments of countries 1 and 2 maximize $W_1$ and $W_2$, respectively, then the extents of combined ownership of countries 1 and 2, $\alpha$ and $\beta$, determine the effective export subsidies and intra-industry trade flow between the two countries.

Proposition 1 extends Kang and Lee (2000) to cases where there are many firms in countries 1 and 2 and where the firms export to the third country as well. Equity trade between residents of countries 1 and 2 does affect neither effective subsidy nor trade volume between the two countries. This result can be explained as follows. The two governments adjust the levels of subsidies and tariffs according to changes in the extents of international ownership. When equities are traded between countries 1 and 2, the subsidies and tariffs change by the same amount. As a result, effective subsidies remain unchanged. However, equity sales between residents of country 3 and residents of countries 1 and 2 changes the values of $\alpha$ and $\beta$. This affects the trade flow between countries 1 and 2. Given the values of the parameters $\alpha$, $\beta$, $m$ and $n$, we can easily calculate the optimal trade policy and trade and production volumes for intra-industry trade.

## III. Social Welfare and Trade Regime

In the analysis in section II the international ownership structure is given exogenously. This assumption is plausible when the equities of firms have already been sold to non-residents prior to government intervention. Social welfare given by eqs. (22) and (23) seems plausible as well. However, in some cases, equity sales might take place just before government intervention. Or, potential sellers and buyers would have rational expectations about government intervention. Then, the potential sellers and buyers of the equities take government intervention into account when determining the prices of the firms. In the simple model of this paper, the price of the firm is exactly equal to the profit of the firm. As the potential sellers and buyers have perfect foresight on government policies, the price of the firm is exactly equal to the profit of the firm with government intervention. In this case the exact measure of social welfare should take into account revenues from equity sales and expenditures for equity acquisition.

Let $V_i$ denote the sum of prices of the firms in country $i$, for $i=1, 2$. Let $SW_i$ denote social welfare of country $i$ which takes revenues and expenditures from equity sales into account, for $i=1, 2$. They are given by, respectively

$SW_1 = \alpha_1 \Pi_1 + \beta_1 \Pi_2 + CS_1 - s_{12} X_1 + t_1 X_2 - s_{13} Z_1 + (1 - \alpha_1) V_1 - \beta_1 V_2$, and (22)″

$$SW_2 = \alpha_2 \Pi_1 + \beta_2 \Pi_2 + CS_2 - s_{21} X_2 + t_2 X_1 - s_{23} Z_2 - \alpha_2 V_1 + (1 - \beta_1) V_2 \qquad (23)''$$

where $(1 - \alpha_1)V_1$ denotes revenues from sales of $(1 - \alpha_1)$ portion of the firms in country 1, $\beta_1 V_2$ represents expenditures of country 1 necessary for purchase of $\beta_1$ portion of the firms located in country 2, and so on. Under perfect foresight, $V_i$ is equal to $\Pi_i$, for $i = 1, 2$. Then $SW_i$, for $i = 1, 2$, are simplified to, respectively

$$SW_1 = \Pi_1 + CS_1 - s_{12} X_1 + t_1 X_2 - s_{13} Z_1, \text{ and} \qquad (22)'''$$

$$SW_2 = \Pi_2 + CS_2 - s_{21} X_2 + t_2 X_1 - s_{23} Z_2. \qquad (23)'''$$

These functional forms of $SW_1$ and $SW_2$ are the same as the conventional forms of social welfare with no international ownership. The international ownership parameters do not appear in the definitions of social welfare. However, this does not mean that international ownership does not matter. Even in this case, the extents of international ownership do matter since the governments try to maximize social welfare given by eqs. (22) and (23), respectively, where international ownership parameters are present.

### *A. Trade Regime Choice: Duopoly Case*

So far the governments are assumed to take the international ownership structure as given. We now examine the possibility that the governments choose the trade regime collectively. Kang and Lee (2000) have considered the possibility that the extents of international ownership of firms are determined endogenously. Kang and Lee (2000) have also examined the possibility that the trade regime is collectively chosen by shareholders across the countries.

To see the possibility of trade regime choice, we first examine how social welfare is affected by international ownership. For simplicity we consider the case when each country has only one firm of the oligopolistic industry: international duopoly. Thus country 1 is identical to country 2. The shareholders are assumed to have perfect foresight on government intervention. Then relevant measure of social welfare would be eqs. (22)″ and (23)″. We compare

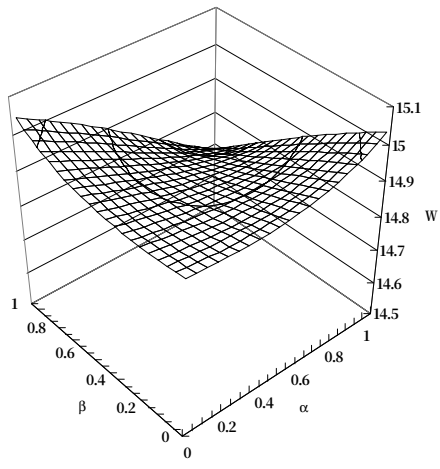


FIGURE 1. SOCIAL WELFARE SURFACE OF DUOPOLY

the sum of social welfare, $SW_1+SW_2$, for each value of $\alpha$ and $\beta$. Figure 1 depicts the welfare surface for the duopoly case. It turns out that the sum of social welfare is maximized when one of the firms is completely owned by residents of country 3 and the other firm is completely owned by residents of countries 1 and 2. That is, $SW_1+SW_2$ is maximized at $(\alpha, \beta)=(1, 0)$ or $(\alpha, \beta)=(0, 1)$.

For the duopoly case, we also examine the possibility that national governments collectively choose the international trade regime. This is reminiscent of trade negotiation between governments. Many national governments often try to find out a collectively beneficial trade regime rather than being stuck in trade war prescribed by strategic trade policy literature.[6] We compare the sum of social welfare in intervention regime with that in free trade regime. Simple calculation shows that $SW_1+SW_2$ in intervention regime is smaller than that in free trade regime. Thus free trade will prevail even if strategic trade policy is allowed for both countries. To obtain more general results, however, more study should be done.

[6]A prominent example is a GATT/WTO multilateral negotiation on trade liberalization.

## IV. Concluding Remarks

This paper has examined the strategic trade policy and trade flow when firms are internationally owned. While the paper has raised several interesting issues, the paper remains to be extended in many respects. To maintain tractability this paper has assumed fully countervailing duties by the government of country 3. An obvious extension would allow for partially offsetting countervailing duties by the government of country 3. Relaxing several restrictive assumptions would be a valuable extension.

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