Profit tax and tariff under international oligopoly

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Abstract

A simple model of international duopoly is developed to examine the effects of tariff and corporate profit tax. It is shown that in an export-cum-on-site-production regime, a tariff continues to be an effective instrument for shifting net profit away from foreign to domestic firms. A corporate profit tax, on the other hand, could lower the domestic output and employment and decrease the net earnings of both domestic and foreign firms. Thus when the host government’s ability to raise tariff is limited, it should seriously consider a corporate tax cut policy to achieve the dual purpose of creating more jobs and increasing corporate earning at home. © 1999 Elsevier Science Inc. All rights reserved.

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1. Introduction

In this article, I address a policy issue—the taxation of profits of the transnational corporations by the host nation, especially its rent-shifting power vis-à-vis that of a tariff. In the perfectly competitive trade literature, taxation of foreign investment income has been as important a topic as tariffs (see, e.g., Kemp, 1966; Corden, 1967; Jones, 1967; and Bond, 1991). But it has not received that much attention in recent literature on trade policies under oligopolistic competition. In this literature, important work has been done on such policies as: tariffs or quotas on foreign firms’ export, subsidies to domestic competitors, and the strategic use of R&D expenditures by the host government (e.g., Brander & Spencer, 1984; Cheng, 1988; Dixit, 1984, 1988; Eaton & Grossman, 1986; Krishna, 1989; and Krugman, 1992).
The issue of taxation of foreign investment income under oligopolistic competition, however, still remains more or less unexplored. Brander and Spencer (1987) have looked at this policy alternative in a monopoly model of international trade. In their article, the foreign monopolist makes a choice between export and on-site production by engaging in a “strategic game” with the host government. Brander and Spencer, however, rule out the simultaneous existence of export and on-site production in their model. They do recognize, however, that “… the possibility of simultaneous export and foreign investment would raise interesting issues …” (p. 260). Furthermore, in their model, tariff and profit tax are endogenous as is the host nation’s unemployment. Being a monopoly model of trade and investment, the Brander-Spencer analysis does not consider the implications of oligopolistic interdependence. The model does not allow domestic firm in a host country. Naturally, the question of rent shifting from foreign to domestic firms could hardly be addressed in such a model.

Brander and Spencer (1984) have discussed the rent-shifting power of tariff under international duopoly. But there, they have assumed that the foreign firm operates under an “export regime” only, which implies “investment regime” or on-site production is non-existent, and so also is the profit tax. Similarly, Conway and Wang (1998) examined the choice between direct investment and export by a multinational company competing against a domestic firm in the host country. But once again they too did not pay attention to an export-cum-on-site-production scenario.

In this article, I examine the rent-shifting effect of tariff and a profit tax imposed by a host nation on the foreign firm that competes with its host counterpart. The foreign firm is assumed to engage in an export regime as well as foreign investment regime. Thus the foreign multinational is essentially behaving like a multi-plant duopolist by having production locations in both source and host countries. It pays the host government a tariff on its export, and a tax on its profits earned from on-site production at the same rate as its host competitor.

Shifting of production location from source to host less developed countries (LDCs) to take advantage of lower production cost in the latter has been a standard practice of the developed countries’ (DCs’) multinationals corporations. However, foreign direct investment by a DC’s multinational in another DC has been a growing trend in the recent decades. This is essentially the “tariff-jumping” phenomenon under growing regional integration throughout the developed world. Particularly noteworthy is the increasing foreign direct investment or on-site production of the European and Japanese corporations in the United States. The existing tariffs or the threat of stiffer taxes, especially under the North American Free Trade Agreement (NAFTA), on the Japanese or the European exports have forced the foreign manufacturers to start on-site production in the United States. Thus the Japanese auto-manufacturing corporations, such as Toyota, Honda, and Nissan, or the German auto-manufacturers, such as Volkswagen and BMW, are increasingly serving their North American market from their plants in North America as well as from those in their own countries. These multinationals are not only paying tariffs on their exports, they are also paying taxes on their profits from on-site production at the same rate as their host competitors such as GM, Ford, and Chrysler. This export-cum-on-site-production phenomenon is true for the American multinationals serving the European market for automobiles as well.
Three reasons explain this growing trend of export-cum-on-site production phenomenon. First is the traditional tariff-jumping argument. Exclusive dependence on export from the source country plant to satisfy foreign demand would mean higher tariffs or nontariff barriers imposed by the host nations particularly when the host nation belongs to a regional free trade area that the source nation does not. Second is the increasing convergence of labor costs across DCs. The labor cost advantage enjoyed in the past by the multinational corporations (MNCs) from their production in source location is gradually disappearing because of the inter-country factor price equalization phenomenon. Third is the pressure from various interest groups in host nation that calls for local job protection or creation. Thus, to maintain or increase their market share in an environment of increasing regional integration, the MNCs are forced to engage in export as well as on-site production in host nations.

In this export-cum-on-site production scenario, would an increase in tariff rate or tax rate shift rent from the foreign to domestic firms? This is precisely the question I attempt to answer in this paper. Specifically, I build a partial equilibrium model of multinational production in which the firms are Cournot duopolists. The foreign firm is assumed to have production location in source as well as host nation. The foreign firm pays the host government tariff on its export, and also a tax on its profits from on-site production at the same rate as the domestic firm. The article shows that while an increase in tariff on imports would increase the sales, market share, and profit of the domestic firm, an increase in the profit tax would increase the host firm’s sales, market share, and gross profit while reducing its net profit.

Intuitively, in a simple monopoly model, a proportional profit tax has no effects on the monopolist’s output and price, but as long as it earns a positive profit, the monopolist’s net profit is reduced by the amount of tax paid. The reason is simple. A proportional profit tax reduces the marginal revenue and marginal cost of the monopolist in equal proportion, and that leaves its output and price unchanged. In a simple Cournot model of duopoly, a proportional profit tax will have no effects on each duopolist’s output and profit. When one of the duopolists is a global profit maximizer and pays the tax only on a part of its global profit, the effects of the tax on output, price, and profit of each duopolist will not be that straightforward. Here, the multinational firm is engaged in export-cum-on-site-production and pays the tax on profits from its on-site production only. Consequently, the tax would not reduce its marginal revenue and marginal cost equiproportionately as it would have had the tax been on all of its global profit. The tax thus reduces the MNC output from on-site production, increases its export, and reduces its total sales in the host market. The reduction in MNC sales would lead to an increase in the sale of the host firm as a result of Cournot reaction. The increase in host firm output will increase its market share and gross profits as well. Because the host firm has also to pay the profit tax at the same rate as the MNC, its net profit will fall.

The paper is organized as follows. In section 2, I present a simple version of the Brander-Spencer (Brander and Spencer, 1984) model of pure international duopoly. The two firms, foreign and domestic, are engaged in quantity competition in the host country market. The foreign firm serves the host market through export only. It pays tariff on its export. In this model, the rent-shifting effect of tariff is demonstrated.
section 3, export-cum-on-site-production phenomenon is incorporated in the Brander-Spencer model, and rent-shifting power of tariff and corporate profit tax is examined. In section 4, I present a numerical solution of the model to exemplify the implications of the tariff and the profit tax. The paper ends with some concluding remarks in section 5.

2. Tariff and rent-shifting: The Brander-Spencer result

The foreign corporation maximizes its profits (\(\Pi\)) by engaging in export \((x^2)\) to the host country. It pays a specific tariff on its export at the rate of \(t\), \(0 \leq t < 1\). The host firm produces \(y\) amount of the same product, and maximizes its profit \(\pi\). Two firms face a linear demand function

\[
P = P(x_2 + y), \quad P' < 0, \quad P'' = 0.
\]

Both the firms produce under increasing marginal cost conditions. Their profit functions are as follows:

\[
\Pi = Px_2 - C(x_2) - tx_2. \quad (2)
\]

\[
\pi = Py - C(y). \quad (3)
\]

Each firm’s profit maximization would yield the following first order conditions.

\[
\Pi_x = x_2P' + P - C'_x - t = 0. \quad (4)
\]

\[
\pi_y = yP' + P - C'_y = 0. \quad (5)
\]

One can derive the reaction functions of the foreign and home firm from Eqs. (4) and (5) respectively. Now I differentiate Eqs. (4) and (5) totally and derive the following comparative static derivatives.

\[
(dx_2/dt)|D| = (2P' - C'_x) < 0. \quad (6)
\]

\[
(dy/dt)|D| = -P' > 0. \quad (7)
\]

\[
(d[y/(x_2 + y)]/dtd)|D| = [x_2(dy/dt) - y(dx_2/dt)]/(x_2 + y)^2 > 0. \quad (8)
\]

\[
d(x_2 + y)/dtd)|D| = (P' - C'_y) < 0. \quad (9)
\]

\[
(dP/dtd)|D| = P'(P' - C'_y) > 0. \quad (10)
\]

\[
(d\Pi/dtd)|D| = -x_2(1 + P^2) < 0. \quad (11)
\]

\[
(d\pi/dtd)|D| = yP'(2P' - C''y) > 0. \quad (12)
\]

Note that \(C''\) is the slope of the marginal cost function, \(C'' > 0\). And \(|D|\) is the coefficient determinant of Eqs. (4) and (5), and \(|D| = 3P'^2 - 2P' (C''_x + C''y) + C''_y > 0\).

From Eqs. (6)–(12) it is evident that an increase in the tariff rate would decrease the export and profit of the foreign firm, while it will raise the sales, market share, and profit of the host firm. This is the rent-shifting effect of tariff in Brander-Spencer
model. The tariff, as under perfect competition here too, will raise the domestic price
and reduce aggregate sales.

3. Export-cum-direct investment regime: Extension of Brander-Spencer

The foreign firm is now assumed to be a multiplant duopolist. It serves the host
market in two ways, one through export \((x_2)\) from its plant in source country, the
other from its production \((x_1)\) in the host country. The multiplant production is assumed
to be the result of “tariff-jumping” by the MNC. The host firm produces \(y\) amount
of the same product\(^1\). The linear inverse demand function\(^2\) will now be written as
follows.

\[
P = P(x_1 + x_2 + y), \quad P' < 0, \quad P'' = 0. \tag{13}
\]

The MNC now pays a specific tariff at the rate of \(t\) per unit of \(x_2\), and also a proportional
tax at the rate of \(t\) on its profits from on-site production, \(x_1\). The host firm also pays
a tax on its profits at the same rate \(t\), \(0 \leq t < 1\).

So the net profit functions of the two firms will be as follows:

\[
\Pi = (1 - t)[x_1P(x_1 + x_2 + y) - C(x_1)] + [x_2P(x_1 + x_2 + y) - C(x_2) - tx_2]. \tag{14}
\]

\[
\pi = (1 - t)[yP(x_1 + x_2 + y) - C(y)]. \tag{15}
\]

Under the Cournot quantity competition assumption, the first order conditions for
profit maximization by the duopolists are as follows:

\[
\frac{\delta \Pi}{\delta x_1} = (1 - t)[P + x_1P' - C'_1] + x_2P' = 0. \tag{16}
\]

\[
\frac{\delta \Pi}{\delta x_2} = (1 - t)x_1P' + (P + x_2P') - C'_2 - t = 0. \tag{17}
\]

\[
\frac{\delta \pi}{\delta y} = (1 - t)[yP' + P - C'_y] = 0. \tag{18}
\]

Here \(P'(0)\) and \(C'_1(>0)\) are the first derivatives of the demand and cost functions
respectively. Furthermore, from Eq. (16), \([P + x_1P' - C'_1] > 0\). Now I differentiate
Eqs. (16)–(18) totally to obtain the following.

\[
(1 - t)(2P' - C''_1)dx_1 + P'(2 - t)dx_2 + (1 - t)P'dy = [P + x_1P' - C'_1]d\tau. \tag{19}
\]

\[
P'(2 - t)dx_1 + (2P' - C''_2)dx_2 + P'dy = x_1P'd\tau + dt. \tag{20}
\]

\[
P'dx_1 + P'dx_2 + (2P' - C''_y)dy = 0. \tag{21}
\]

Here \(C''(>0)\) stands for the slope of the marginal cost function. The Cournot-Nash
equilibrium is assumed to be locally strictly stable so that the coefficient determinant
\([D']\) of the system given by Eqs. (19)–(21) is negative. It is also assumed that in the
absence of on-site production the duopoly market remains stable. The latter assumption
basically reiterates that \([D] > 0\) (see Bulow, Geanakoplos, & Klemperer, 1985
for details). Specifically, I have

\[
|D| \equiv 3P'^2 - 2P'(C''_2 + C''_y) + C''_2C''_y > 0
\]

(as in section 2), and
Thus the system is stable, that is, $|D'| < 0$ if $(C''_1(1 - \tau) + P'\tau)[(3 - \tau)P'^2 - C''_2(2 - \tau)P'] > 0$. I assume stability, and solve Eqs. (19)–(21) to derive the following comparative static derivatives.

### 3.1. Case 1: Tariffs

1. \[dx_2/d\tau = -|D'|^{-1}[P + x_ip' - C'_i]|D| - x_ip'(3 - \tau)P'^2 - P'(2 - \tau)C''_y < 0.\] (22)
2. \[dx_1/d\tau = -|D'|^{-1}[P + x_ip' - C'_i]|[3P'^2 - 2P'(C''_1 + C''_y)] + C''_i > 0. \] (23)
3. \[dx_i/d\tau = -|D'|^{-1}[C''_i(1 - \tau) + P'\tau][2P' - C''_y] < 0. \] (24)
4. \[dy/d\tau = |D'|^{-1}[C''_i(1 - \tau) + P'\tau]P' > 0. \] (25)
5. \[d(x_1 + x_2)/d\tau = -|D'|^{-1}[C''_i(1 - \tau) + P'\tau][P' - C''_y] < 0. \] (26)
6. \[dP/d\tau = -P'|D'|^{-1}[C''_i(1 - \tau) + P'\tau][P' - C''_y] > 0. \] (27)
7. \[d\Pi/d\tau = [(\delta\Pi/\delta y)(dy/d\tau) + (\delta\Pi/\delta t)] = [x_i(1 - \tau) + x_2]P'(dy/d\tau) \] (28)
8. \[d\pi/d\tau = [(\delta\pi/\delta x_1)(dx_1/d\tau) + (\delta\pi/\delta x_2)(dx_2/d\tau)] \] (29)
9. \[+ (\delta\pi/\delta t) = (1 - \tau)yP'[d(x_1 + x_2)/d\tau] > 0. \] (30)

Assuming stability, Eqs. (23)–(30), especially Eqs. (29) and (30), once again establish the rent-shifting power of tariff. In an export-cum-on-site production regime, tariff would reduce MNC export and increase its on-site production, but it would reduce the overall sale and net profit in the host country. The host firm’s output and net profits, on the contrary, would rise as a result of tariff.

### 3.2. Case 2: Corporate profit tax

1. \[dx_2/d\tau = -|D'|^{-1}[P + x_ip' - C'_i]|D| - x_ip'(3 - \tau)P'^2 - P'(2 - \tau)C''_y < 0. \] (31)
2. \[dx_1/d\tau = -|D'|^{-1}[P + x_ip' - C'_i]|[3P'^2 - 2P'(C''_1 + C''_y)] + C''_i > 0. \] (32)
3. \[dx_i/d\tau = -|D'|^{-1}[2P' - C''_y][x_iP'[C''_i(1 - \tau) + P'\tau] + [(P + x_ip' - C'_i)(C''_y - P'\tau)]. \] (33)
4. \[dy/d\tau = |D'|^{-1}P[x_iP'[C''_y(1 - \tau) + P'\tau] + [(P + x_ip' - C'_i)(C''_y - P'\tau)]. \] (34)
5. \[d(x_1 + x_2)/d\tau = -|D'|^{-1}[P' - C''_y][x_iP'[C''_y(1 - \tau) + P'\tau] + [(P + x_ip' - C'_i)(C''_y - P'\tau)]. \] (35)
6. \[dP/d\tau = P'[d(x_1 + x_2 + y)/d\tau]. \] (36)
7. \[d\Pi/d\tau = [(\delta\Pi/\delta y)(dy/d\tau)] + (\delta\Pi/\delta t) = [x_i(1 - \tau) + x_2][P'(dy/d\tau) \] (37)
8. \[- (Py - C(x_i)]. \] (38)
Assuming stability, Eqs. (31) and (32) ensure that an increase in corporate profit tax would decrease the MNC’s on-site production, and increase its export. But the effects of the tax on the total sales of the MNC and of the host firm are not so clear cut. A sufficient condition for 
\[
\frac{dx_1 + x_2}{d\tau} < 0, \quad \frac{dy}{d\tau} > 0
\]
is 
\[
[x_1P'[C_i'(1 - \tau) + P'\tau] + [(P + x_1P' - C_i')(C''_x - P'\tau)] > 0.
\]
(39)

Once Eq. (39) is assumed, Eqs. (35)–(38) would show that 
\[
\frac{dx_1 + x_2 + y}{d\tau} < 0, \quad \frac{dP}{d\tau} > 0, \quad \frac{d\Pi}{d\tau} < 0, \quad \text{and} \quad \frac{d\pi}{d\tau} \equiv 0.
\]
Under condition of Eq. (39), the corporate profit tax will have the same effects as the tariff on aggregate sales, price, and the net profit of the MNC. The tax will increase the host firm’s market share and gross profit, but it may reduce its net profit. Thus, unlike a tariff, the corporate profit tax may fail to shift rent away from the foreign to the host firm.

In the following section, I provide a numerical example where a rise in profit tax rate is shown to lower the net earnings of both firms. In this example, then, a cut in the rate of profit tax would increase the market output and also the net earnings of the firms.

4. Numerical example: Export-cum-on-site-production

Let the demand and cost functions be given as follows.

\[
P = 2 - (x_1 + x_2 + y), \quad P' = -1, \quad P'' = 0.
\]
(40)
\[
C(x_1) = 0.5x_1^2, \quad C'_1 = x_1, \quad C''_1 = 1.0.
\]
(41)
\[
C(x_2) = x_2^2, \quad C'_2 = 2x_2, \quad C''_2 = 2.0.
\]
(42)
\[
C(y) = 0.5y^2, \quad C'_y = y, \quad C''_y = 1.0.
\]
(43)

Now I substitute these numerical values in Eqs. (16)–(18) and obtain the following equations.

\[
-3(1 - \tau)x_1 - (2 - \tau)x_2 - (1 - \tau)y = -2(1 - \tau).
\]
(16’)
\[
-(2 - \tau)x_1 - 4x_2 - y = -(2 - \tau).
\]
(17’)
\[
-x_1 - x_2 - 3y = -2
\]
(18’)

The coefficient determinant of the system given by Eqs. (16’–18’) is \(|D''| = 2\tau^2 + 21\tau - 21\). The explicit solution of the system will yield the following.

\[
x_1 = \frac{[12\tau + 2t\tau - 5t - 8][2\tau^2 + 21\tau - 21]}{[2\tau^2 + 21\tau - 21]},
\]
\[
x_2 = \frac{[4\tau^2 - 8t\tau + 8t - 4][2\tau^2 + 21\tau - 21]}{[2\tau^2 + 21\tau - 21]},
\]
and

\[
y = \frac{[10\tau + 2t\tau - t - 10][2\tau^2 + 21\tau - 21]}{[2\tau^2 + 21\tau - 21]}
\]

I assume the following three scenarios: (a) initial situation of no-tax and no-tariff \((\tau = 0, t = 0)\); (b) no-tax, positive tariff situation with \(\tau = 0, t = 0.10\); and (c) positive tax, no-tariff situation with \(\tau = 0.10, t = 0\).
Table 1
Calculation of variables

<table>
<thead>
<tr>
<th></th>
<th>(a)</th>
<th>(b)</th>
<th>(c)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$t = \tau = 0$</td>
<td>$t = 0.10, \tau = 0$</td>
<td>$t = 0, \tau = 0.10$</td>
</tr>
<tr>
<td>$x_1$</td>
<td>0.3809</td>
<td>0.4048</td>
<td>0.3602</td>
</tr>
<tr>
<td>$x_2$</td>
<td>0.1905</td>
<td>0.1524</td>
<td>0.2097</td>
</tr>
<tr>
<td>$(x_1 + x_2)$</td>
<td>0.5714</td>
<td>0.5572</td>
<td>0.5699</td>
</tr>
<tr>
<td>$y$</td>
<td>0.4762</td>
<td>0.4809</td>
<td>0.4767</td>
</tr>
<tr>
<td>$(x_1 + x_2 + y)$</td>
<td>1.0476</td>
<td>1.0381</td>
<td>1.0466</td>
</tr>
<tr>
<td>$y/(x_1 + x_2 + y)$</td>
<td>0.4545</td>
<td>0.4632</td>
<td>0.4555</td>
</tr>
<tr>
<td>$(x_1 + y)$</td>
<td>0.8571</td>
<td>0.8857</td>
<td>0.8369</td>
</tr>
<tr>
<td>$P$</td>
<td>0.9524</td>
<td>0.9619</td>
<td>0.9534</td>
</tr>
<tr>
<td>$P^*$</td>
<td>0.4354</td>
<td>0.4308</td>
<td>0.4345</td>
</tr>
<tr>
<td>$I^*$</td>
<td>0.4354</td>
<td>0.4156</td>
<td>0.4067</td>
</tr>
<tr>
<td>$\pi^*$</td>
<td>0.3401</td>
<td>0.3470</td>
<td>0.3409</td>
</tr>
<tr>
<td>$\pi$</td>
<td>0.3401</td>
<td>0.3470</td>
<td>0.3069</td>
</tr>
</tbody>
</table>

$P^*$ and $\pi^*$ denote the gross profits of the MNC and the host firm respectively, whereas $P$ and $\pi$ stand for the corresponding net profits.

Now I calibrate the values of different variables—$x_1$, $x_2$, $y$, $P$, $I$, $\pi$, etc., and put those in Table 1. From Table 1 one can see that while a tariff would shift net profit away from foreign to domestic firm, a tax would not. Furthermore, from rows 1, 4, 6 and 7 of Table 1 it is clear that an increase in tariff rate from 0 to 0.10 would raise the domestic production of each firm. Thus the tariff raises total domestic production $(x_1 + y)$. Because it decreases import $(x_2)$ by a greater percentage, the total sale in the host market goes down. The tariff also increases the market share and net profit of the domestic firm, and reduces those of the foreign firm. This confirms the rent-shifting characteristics of a tariff even under export-cum-on-site-production regime.

An increase in the profit tax rate from 0 to 0.10 would increase the domestic output and market share of the host firm, and lower the on-site production of the MNC such that the total domestic production $(x_1 + y)$ goes down. Thus while an increase in tariff would create more domestic jobs, an increase in the profit tax rate would reduce it. Moreover, even though the tax raises the gross profit of the host firm and lowers that of the foreign firm, it lowers the net profits of both. Thus, for the host government, perhaps a corporate tax cut policy would be a better alternative because it would serve the purpose of creating more domestic jobs while increasing the net income of both foreign and domestic firms. Besides, while a tariff necessarily raises domestic price, a cut in the corporate tax rate lowers it.

5. Concluding remarks

Under an imperfectly competitive market, tariff shifts rent away from the foreign to domestic firms, a result that is well established in the international trade and investment literature. But is tariff a viable policy for industrially advanced countries
operating under the GATT or WTO regulations? Besides, there is the tariff jumping argument for foreign direct investment. To avoid tariff on their exports, foreign companies set up on-site production facilities in the host countries. In fact, multinational production has been growing at a rapid pace in today’s international trade and investment arena. Throughout the industrial world, emphasis has been shifting from global trade liberalization to regional economic integration. Freer trade within regional blocks such as EEC, NAFTA, or MERCOSUR countries and discriminatory trade policies towards nonmembers are forcing the oligopolistic conglomerates to globalize their production. Given the multinational nature of oligopolistic competition, and also the problems associated with the policy of tariff increases, what should a host government do to protect its domestic firms? This question is particularly important in the context of the dilemma faced by policy makers in today’s industrial world. They have to deal with the growing demand for protection at home while at the same time meet the national commitments to various regional or international agreements for freer trade. The need to re-examine and even go beyond the list of traditional policy instruments such as tariffs or quotas under oligopolistic trade is then clear.

In this article, I have examined the effects of corporate profit tax under international duopoly. It has shown that under simple Cournot quantity competition assumption, an increase in tax rate could raise the market share and gross profits of the host firm. But the tax would reduce the net profits of the foreign as well as the domestic firm. It would also reduce the total output and, therefore, employment created by the domestic and foreign firms. Conversely, a tax cut would reduce the host firm’s market share and gross profit. But it will increase the total domestic output and employment, and also the net income of both the host and foreign firms. When the host government’s ability to raise tariff is limited, it should seriously consider a corporate tax cut policy for creating more jobs and corporate earnings at home.

Acknowledgments

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Notes

1. A close substitute produced by the host firm, such as automobiles produced by American producers in automobile industry case, would not change the qualitative nature of the results at all.
2. The non-linear demand function would undoubtedly generalize the model, but it would severely complicate the analysis and yield ambiguous results.
3. As Dixit (1988) said in the context of trade under imperfect competition, “Even in industries where profit shifting is shown to be important, trade policies can only be justified if no other superior policies are feasible. The study of such a hierarchy of policies . . . is an important task for theoretical research” (see p. 301).
4. Conjectural variations version of the oligopoly model would be much more complex in terms of deriving any intuitively meaningful results.

References


