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# THE WELFARE CONSEQUENCES OF DIRECTLY-UNPRODUCTIVE PROFIT-SEEKING (DUP) LOBBYING ACTIVITIES

## Price versus quantity distortions*

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This paper is a contribution to the growing literature on the theory of what Bhagwati (1982) has christened the theory of DUP activities. These are activities that use up real resources in making profits (i.e. income) without producing directly or indirectly a 'good'. They result therefore in the contraction of the availability set defined on goods. For one generic subset of such DUP activities, namely distortion-triggered lobbying activities, the paper establishes asymmetrical propositions on the possibility of such DUP lobbying resulting in a paradoxical improvement of welfare.

## 1. Introduction: Concepts and questions

In the last decade a number of economists have turned to analyzing esoteric activities such as illegal transactions (e.g. smuggling or tariff evasion), lobbying for licenses, lobbying for tariffs or monopoly, etc. none of which is part of the economist's standard tool kit.

It has recently been argued [Bhagwati (1982)] that the key characteristic of these activities is that they represent, unlike the 'normal' or 'traditional' activities of economic models, ways of making profits that do not involve *directly* the production of *any output*. In short, they are directly-unproductive, profit-seeking (hereafter DUP) activities, and their effect is to contract the available set of consumption possibilities in the economy by diverting resources from directly-productive activities.[1]

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[1]Pronounced as 'dupe' activities, the phrase DUP activities also comes close to the spirit in which economists are likely to view such activities! The alternative of calling them ZOP (i.e. zero-output profit-seeking) activities is, on that ground, less appealing. Strictly speaking, these activities provide *income* to factors employed in them. As such, 'income-seeking' rather than 'profit-seeking' is a more appropriate way of characterizing them. However, given the aptness of the word 'dupe' in describing them, we have chosen to retain the phrase 'profit-seeking'.

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When these DUP activities are policy-intervention-related in the economy — and they need not be, as in the case of theft, noted by Tullock (1967) — they can be classified to analytical advantage, as shown in fig. 1. There, the DUP activities are classified into two basic categories: I, those that seek policy intervention (including change therein) as in the case of protectionist lobbying to create tariffs or quotas; and II, those that are triggered by (exogenous) policy intervention. The intervention-triggered DUP activities are, in turn, classifiable into *lobbying* activities to secure a share in the resulting rents or revenues, and the intervention-*evading* DUP activities such as smuggling in the presence of tariffs or QRs. Each of the resulting three major classes of DUP activities, in turn, can relate to quantitative or price interventions.

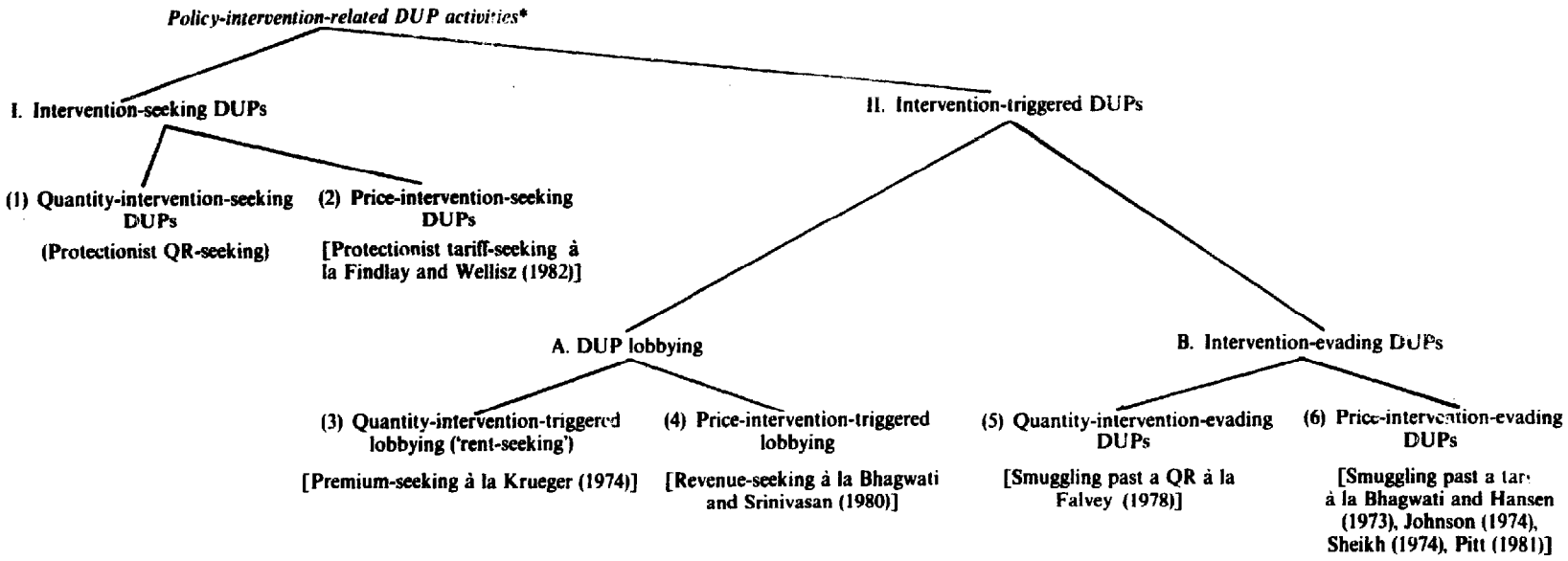
This paper addresses the DUP activities of the lobbying class, and essentially contrasts the quantity and price distortion-triggered DUP lobbying on the dimension of their welfare impact. One precise point, considered in section 2, is the following. When the policy intervention that triggers such lobbying is distortionary (e.g. the quotas that are lobbied for happen to result in a suboptimal restriction of trade rather than constituting optimal restriction), we know from earlier analyses [e.g. Bhagwati and Srinivasan (1980)] that the diversion of resources into DUP lobbying has to be considered in a *second-best* context. As such, it is possible to argue that distortion-triggered lobbying may be paradoxically welfare-improving: reflecting the phenomenon of immiserizing growth [e.g. Bhagwati (1958) and Johnson (1967)] or, its dual, the phenomenon of negative shadow factor prices that can arise in a distortionary situation [Srinivasan and Bhagwati (1978)]. Section 2 considers whether such a paradox can arise symmetrically in the case of *both* quantity and price distortions, i.e. equally in the two cases, 3 and 4, distinguished in fig. 1. Section 2 derives two central propositions in this regard, which establish a basic asymmetry in regard to the paradoxical welfare-impact possibilities in the presence of quantity-intervention-triggered and price-intervention-triggered DUP lobbying activities. Section 3 extends the contrast between these two types of DUP lobbying activities to yet other questions which have important theoretical and policy implications.

## 2. Price versus quantity distortion-triggered DUP lobbying and welfare improvement

We show that:[2]

*Proposition 1. Whenever the distortion that triggers DUP lobbying activity is the only distortion in the economy, and is a (pure) quantity constraint and*

[2]These propositions are based upon there being just one distortion in the economy and need not hold when there is more than one distortion. For instance, if there are several foreign distortions, proposition 1 need not hold unless each distortion happens to be a quota. Alasdair Smith emphasized that we draw attention to these possibilities.




*The brackets give specific examples of the DUP category in question.

Fig. 1.

*remains a binding constraint in the presence of the DUP lobbying activity, there can be no welfare improvement.*

*Proposition 2. When the only distortion is instead an ad valorem price distortion, DUP lobbying can raise welfare (except when the distortion does not affect productive efficiency).*

The essential argument underlying proposition 1 is that, while the DUP lobbying activity takes place in a second-best distortionary situation, it fails to improve welfare because the quantity constraint 'bottles up' the source of positive gain that might outweigh the loss implied by the diversion of real resources to the DUP activity. This, on the other hand, does not happen when the distortion is instead of a price variety.

To see this in the traditional $2 \times 2$, small, open economy model, consider then the four classic distortionary cases,[3] in their quantity and price versions: (1) trade quota/constraint and trade tariff; (2) production quota/constraint and production tax; (3) factor use quota/constraint and factor tax; and (4) consumption quota/constraint and consumption tax.

### *2.1. Trade quota and trade tariff*

A quota carries a premium which leads to 'premium-seeking' by lobbyists hoping to get hold of the trade quota. The price counterpart of this, of course, is the revenue that the tariff yields; and the corresponding DUP lobbying is then 'revenue-seeking'. Geometrically, it is easy to show how revenue-seeking may lead to paradoxical welfare-improvement, whereas premium-seeking cannot.

#### *2.1.1. Trade tariff*

Thus, imagine a tariff-seeking lobby has succeeded and a protective tariff has been put in place. Imagine next that the revenue that results from this (nonprohibitive) tariff attracts a revenue-seeking lobby. This revenue-seeking lobby therefore operates from an initially-distorted, tariff-ridden equilibrium (see fig. 2). There a small country with given terms of trade $P_t C_t$ and a production possibility curve $AB$ is depicted. Then a tariff is imposed, making the importable good 2 more expensive domestically and leading to production at $P_t$ at the point of tangency of the tariff-inclusive price-ratio $P_t S$ with $AB$, and consumption at $C_t$. Now, a DUP revenue-seeking activity which this tariff generates would lead to production of goods shifting from $P_t$

[3]These four cases have been distinguished and analyzed, from the viewpoint of the theory of policy intervention in the presence of noneconomic objectives, in Bhagwati and Srinivasan (1969).

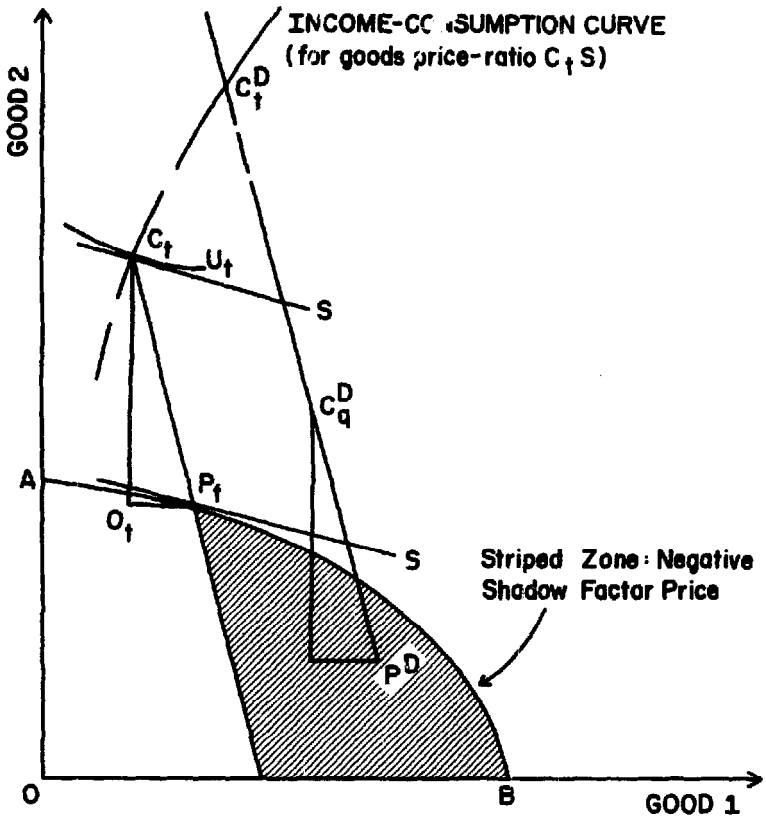



Fig. 2.

to somewhere inside $AB$ and, if this shift occurred to a point such as $P^D$ in the striped zone, the revenue-seeking activity would paradoxically *improve* welfare: as at $C_t^D$.

### 2.1.2. *Trade quota*

Now, does this paradoxical possibility not arise equally if the tariff is replaced instead by an import quota? It would seem at first blush that it would. But this is not so.[4] For, in the case of a quota on exports *or* imports, when defined purely in quantity (rather than value) terms, the trade triangle is fixed for the binding quota as $C_t O_t P_t$ and, no matter where $P_t$ shifts to within $AB$ as a result of premium-seeking, the attendant constrained-trade equilibrium must imply that the resulting consumption point $C_q^D$ *cannot* rise above $C_t S$ and hence above $U_t$ as well. As long as imports are fixed quantitatively, therefore, premium-seeking has to be immiserizing.

[4]Bhagwati and Srinivasan (1980) were in error on this issue and Mehmood-ul Anam of Carleton University spotted this.

### 2.2. Production quota and production tax

Next, consider fig. 3 for the case of production distortions. Assume that the initial equilibrium production is distorted to $P_{ps}$ but consumption takes place at international prices at $C_{ps}$.

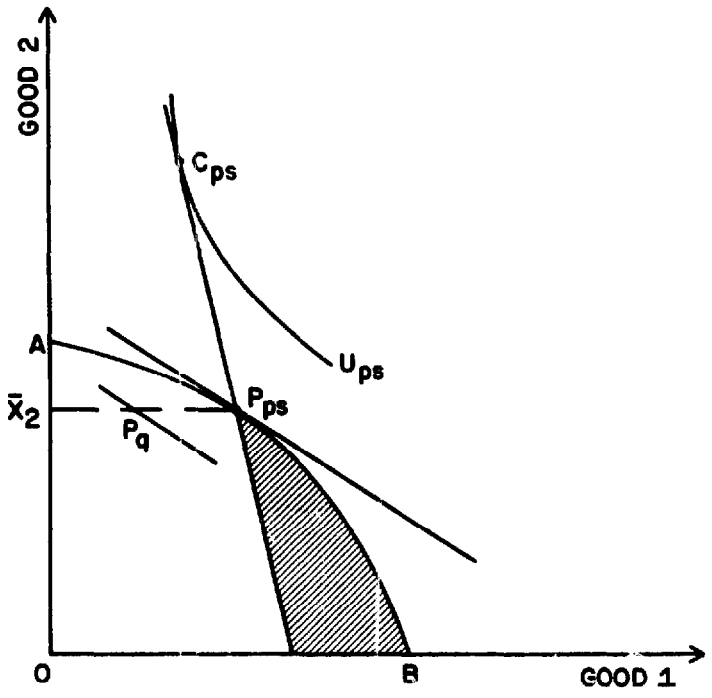



Fig. 3.

#### 2.2.1. Production quota

Now, if the distortion is a quantitative one, i.e. $X_2 = \bar{X}_2$, the DUP activity generated to get the lucrative premia on production licenses (for producing good 2) will necessarily immiserize the economy. The reason is clearly that the loss of resources to the DUP activity will only shift the social budget line inwards and, given $\bar{X}_2$, this must reduce $X_1$ and hence social utility. In fig. 3, the shift of production is shown, under the quota, to $P_q$ from the initial $P_{ps}$.

#### 2.2.2. Production tax

However, if the distortion is of a price variety, i.e. a production tax, brings production initially to $P_{ps}$, DUP activity will raise welfare if it shifts the production point to within the striped area.

### 2.3. Factor employment quota and factor tax

Here again, a factor employment quantity constraint will eliminate the possibility of a negative shadow factor price, whereas a factor tax distortion will not.

#### 2.3.1. Factor employment quota

With an employment quota of say $\bar{L}_1$, in the absence of DUP activity the transformation curve of the economy will be inside the curve without the quota (except at one point). The initial equilibrium will be characterized by the tangency of the international price line with this restricted transformation curve. As such the introduction of DUP activities will only shift the availability line inwards, as in the production quota case, thus resulting in a loss of welfare.

#### 2.3.2. Factor tax

Suppose the employment level is implemented instead through a tax on employment in the production of good 2. With no DUP lobbying, but with the tax kept constant at this rate, the restricted transformation curve is $AB$ in fig. 4 (though $AB$ need not be concave as drawn, of course). At the initial position $P^*, C^*$, tangency of the price line with the transformation curve no longer obtains. Hence, introducing DUP can improve welfare if it shifts the production point from $P^*$ to somewhere in the shaded area.

### 2.4. Consumption quota and consumption tax

Finally, we consider the consumption quota and tax cases and demonstrate that, in both cases, the paradox of negative shadow prices will not arise, despite the second-best nature of the problem at hand.

#### 2.4.1. Consumption constraint

Let the initial situation be at $P^*$, $C_{ct}$ and $U_{ct}$ in fig. 5. Interpreting this as a consumption *quantity* constraint, such that $C_2 \leqq \bar{C}_2$, we can see that seeking will necessarily shift the social budget line to the left (i.e. from $P^*C_{ct}$ to $C_qC_p$) and hence immiserize the economy (shifting it from $U_{ct}$ to $U_q$).

#### 2.4.2. Consumption tax

In this instance, however, even if the initial situation is treated as a consumption tax distortion, there will be a shift in welfare from $U_{ct}$ to $U_p$ as consumption shifts from $C_{ct}$ to $C_p$ down the income–consumption curve at

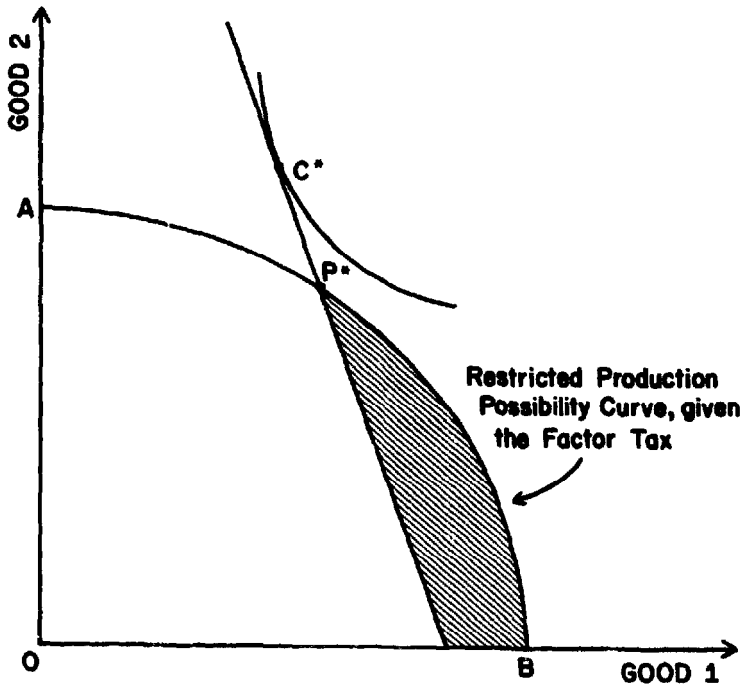

GOOD 2
A
C*
P*
Restricted Production
Possibility Curve, given
the Factor Tax
O
B
GOOD 1

Fig. 4.

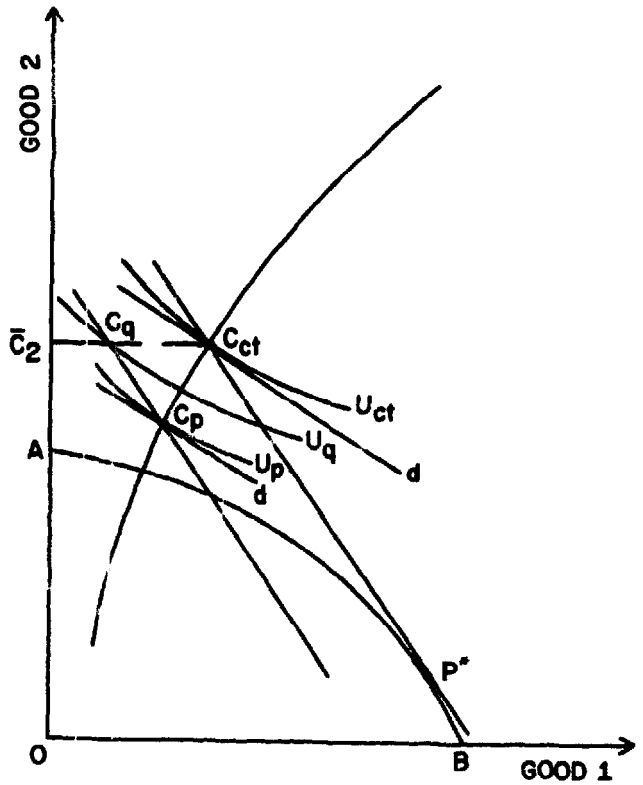

GOOD 2
$\bar{C}_2$
Cq
Cct
Uct
Cp
Uq
A
Up
d
d
P*
O
B
GOOD 1

Fig. 5.

constant (consumer) goods price-ratio $d$. Thus, in the case of a consumption distortion, there can be no welfare improvement even with a *price* distortion!

The reason why, in both the price and quantity cases, we now have immiserization is easily understood. Since the initial situation represents full production efficiency (at $P^*$), *any* lobbying must necessarily shift the social budget line inwards. For the fixed *price* distortion in consumption, by writing the indirect utility function in terms of the domestic goods price ratio $p$ and the world-price-valued social income $y$, we see immediately that the former $p$ is fixed and the latter $y$ declines with DUP lobbying. Hence, a decline in social utility is inevitable. For the *quantity* distortion, again the decline in social income $y$ implies that, given $\bar{C}_2$, the attainable $C_1$ must fall, and hence again a decline in social utility follows.

### 2.5. General principles

In all these cases the quantity distortion does not permit welfare improvement. Why? The answer is clear as soon as one understands that for welfare improvement through DUP lobbying to occur, the shadow price of a factor has to be negative. However, the marginal variation in factor supply is in *each* such quantity-constrained case undertaken from what can be regarded as a second-best optimal position; and, as Bhagwati's (1968) generalization of the theory of immiserizing growth shows, immiserizing growth and hence its mirror image phenomenon of a negative shadow factor price [see Bhagwati, Srinivasan and Wan (1978)] can arise only if suboptimality is present. The reason why the quantity-constrained cases can be regarded as involving marginal variation of factor supply from an optimal position is that, as we know from the theory of optimal policy intervention in the case of noneconomic objectives [Bhagwati and Srinivasan (1969)], the optimal way to achieve quantity constraints or objectives relating to production, consumption, trade and factor employment is to utilize implicit or explicit tax-cum-subsidies on production, consumption, trade and factor use, respectively. In fact, utilizing this very insight, Bhagwati (1970, pp. 82–84) had argued that the phenomenon of immiserizing growth could not arise when noneconomic objectives were being pursued with the aid of first-best policies,[5] but that it would resurrect itself if second-best or third-best policies were adopted to implement them in the first place. Proposition 1 above therefore follows immediately.

[5]Our unpublished algebraic derivation of shadow factor prices in the quota-constrained cases (concerning trade, production, factor use and consumption) shows correspondingly that the shadow factor prices in these cases are the *market* prices. This precise proposition is referred to in subsection 3.2 below. It is, of course, to be expected that the shadow prices would be the market prices when, as argued in the text, the quantity-constrained cases can be construed as involving a second-best *optimal* situation.

At the same time, it is equally clear that if the initial situation is regarded as one of *price* distortion, it cannot now be interpreted as one characterized by second-best optimality. Therefore, the possibility of a welfare improvement cannot be ruled out (except for the case of a consumption distortion since productive efficiency obtains in this case even under the distortion in consumption). Hence proposition 2 follows.

## 3. Other theoretical implications

### 3.1. *Rank-ordering DUP lobbying activities triggered by quantity and price distortions*

It is important to note that, while DUP lobbying is necessarily wasteful when triggered by price distortions but not generally when triggered by quantity distortions (as just demonstrated in section 2), this does not imply that one can uniquely rank-order these distortions in the presence of DUP activity. This point was raised by Krueger (1974) in her analysis of premium-seeking, and the attendant analysis of tariffs versus quotas. Hence, we may take up that comparison, but allowing for full revenue-seeking and premium-seeking to arise in the tariff and quota cases, respectively.

Thus, take fig. 2 again and consider two possibilities. First, let the equilibrium at $P_t$, without the DUP activity, be a tariff equilibrium and let it trigger a revenue-seeking DUP activity which is, for simplicity, *fully* competitive and results in *all* revenues being sought. Next, consider $P_t$ to be a quota equilibrium and again allow it to trigger a premium-seeking DUP activity which is fully competitive and results in all premia on the import licenses being sought. Comparing now the two outcomes, we must conclude that it is not possible to rank-order the two outcomes, even if the technology of the revenue-seeking and premium-seeking DUP activities is assumed to be identical. This, and more, can be shown as follows.

At the full seeking equilibrium, consumer expenditure equals factor incomes that correspond to the production point on the production possibility curve at which the marginal rate of transformation equals the domestic price ratio. Hence, denoting by $p$ this domestic price ratio and by $Y(p)$ the total factor income given $p$, we can write welfare in terms of the indirect utility function $V(p, Y(p))$. From the fact that $p$ equals the marginal rate of transformation, we get $dY/dp = X_2 \equiv$ output of good 2. Hence, $dV/dp = \partial V/\partial p + (\partial V/\partial Y)\cdot X_2$. Now, from Roy's identity, we know that $(\partial V/\partial Y)C_2 = -\partial V/\partial p$, where $C_2$ is the consumption of good 2. Thus, $dV/dp = -(\partial V/\partial Y)(C_2 - X_2) < 0$, given that $\partial V/\partial Y > 0$ and good 2 is the importable. Hence, if the domestic price-ratio corresponding to the equilibrium with a quota and full premium-seeking is greater (smaller) than the tariff-inclusive price, welfare in that equilibrium will be lower (higher) than that under a

tariff with full revenue-seeking. In other words, the comparison of welfare levels will reflect a comparison of the implicit tariff under the quota (and full premium-seeking) with the explicit tariff!

### 3.2. *Shadow factor prices in the presence of DUP lobbying*

Yet another interesting issue is what the presence of DUP lobbying does to the estimation of shadow factor prices in cost–benefit analysis: a question raised recently by Foster (1981). Now, we know already from subsection 2.5 (and the unpublished algebraic analysis referred to in footnote 5, which corroborates the analysis of subsection 2.5), that the shadow price of each factor at the initial equilibrium, when such equilibrium is characterized by the *absence* of DUP lobbying, is its *market* price when this distortion is a *quantity* distortion (but *not* when it is a price distortion). However, we can show, following on from Foster's (1981) interesting analysis, that the shadow factor price will generally be the market price if the initial situation is itself defined to be DUP-lobbying-*inclusive*, when the distortion is a *price* distortion rather than a quantity distortion! In short, the equivalence of shadow and market factor prices occurs in exactly opposite cases, in regard to quantity and price distortions, depending on whether the initial situation is DUP-lobbying-exclusive or DUP-lobbying-inclusive. Why?

To see this, consider again the revenue-seeking and premium-seeking comparison. In the former case, with the entire revenue sought away, the consumer expenditure on *goods* equals income at market prices for factors. And these factor prices and goods prices do not change (as long as incomplete specialization continues) as we vary factor endowments, thanks to the tariff. As such, the value of change in the labour (capital) endowment by a unit is its market reward: hence, the shadow factor prices are the market prices. Asymmetrically, this proposition does not extend generally to shadow prices of factors at the premium-seeking equilibrium in the case of a quota. For, generally, the implicit tariff and hence factor prices will vary with marginal variation in the factor supply, in this instance.

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