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Polluters' Profits and Political Response: Direct Control versus Taxes: Comment

Robert S. Main and Charles W. Baird

In a recent issue of this *Review*, James Buchanan and Gordon Tullock (B-T) presented a public choice analysis of the relative merits of direct controls and taxes in externality control. In Section IV of their paper, B-T consider the case of reciprocal external diseconomies of consumption. They ask whether "... persons in this sort of interaction, acting through the political processes of the community, will impose on *themselves* either a penalty tax or direct regulation" (p. 143). Their analysis is carried out within the context of a two-person model in which each person consumes the same quantity of a good (or carries out the same quantity of an activity) in the precontrol equilibrium, but in which the two transactors exhibit different price elasticities of demand for the good. B-T show that under these circumstances the imposition of equal quotas would be preferred to the imposition of an efficient tax by one transactor but not the other. Their analysis that supports that conclusion is incorrect.

The situation is described in B-T's Figure 2 which is reproduced here as Figure 1. The initial equilibrium before any tax or any quota is imposed is at point E . The price of the good is P , and each transactor consumes Q_1 . An efficient tax equal to T is imposed, and the price increases to P^1 ; A decreases the quantity he consumes to Q_a , and B cuts back to Q_b . Assume that all the revenue collected in the tax is returned in equal shares to each transactor. (This is the same as saying that each transactor values the increased government services made available to him with the proceeds of the tax at an amount equal to one-half of the total taxes collected). Each transactor gets back an amount represented by the area $P' M F P$. Transactor A pays in an amount represented by $P' J H P$, while transactor B pays in an amount equal to $P' L K P$. B-T contrast this tax scheme with two alternative quota schemes. The first quota scheme assigns Q_a to A and Q_b to B , while the second quota scheme assigns Q_c to both transactors. The transactors get to purchase the good at P under both quota schemes.

It is clear, as B-T show, that a conflict between A and B emerges when they are asked to choose between the tax scheme and the first quota scheme. That A prefers the tax scheme can be seen by recognizing that under the first quota scheme A loses consumer surplus equal to area $J H E$, while under the tax scheme his loss is area $J H E$ minus area $J M F H$. (He gets the tax that he paid back and in addition he receives area $M J F H$.) His net loss is area $R F E$ minus area $J M R$. Under this quota scheme B loses consumer's surplus equal to area $L E K$. Under the tax scheme he loses area $L E K$ plus area $L M F K$. (He paid $P' L K P$ in tax and gets a refund equal to only $P' M F P$.) Since this conflict exists it is possible that the transactors would choose the quota scheme over the tax scheme.

B-T assert that a similar conflict could result if the transactors were choosing between the tax scheme and the second quota scheme. However, it is clear that *both* transactors would always prefer the tax scheme to the second quota scheme. Under the second quota scheme, A loses consumer's surplus equal to area $R F E$. We have already seen that his loss under the tax scheme

is area $R F E$ minus area $J M R$. Under the second quota scheme, B loses consumer's surplus equal to area $S F E$, and we have already seen that his loss under the tax scheme is $M L E F$. Since both transactors prefer the tax scheme, there is no possibility that they would themselves choose the second quota scheme. Public choice analysis does not predict the emergence of direct controls under these circumstances.

With equal quotas, the transactors will have unequal marginal evaluations of the good. B-T go on to consider what would happen if the transactors exploited this opportunity for mutual gains from trade when the equal quotas are imposed. Transactor A would be willing to sell units of the good to B if B paid any price above A 's marginal evaluation. The supply price line B would face would be $R L$ (the mirror image of the $R J$ portion of A 's marginal evaluation curve); A would sell $M J$ ($= M L$) units to B at price P . The final allocation would be the same as under the tax scheme. The exchange would benefit B by area $S M L$, and would benefit A by area $J M R$. Of course, these areas are precisely the areas that were lost to the two transactors by the imposition of the equal quota scheme over the tax scheme that both transactors preferred. Although B-T correctly demonstrate the outcome of the trading, they fail to see that that outcome is inconsistent with their prior result that B would prefer the equal quota scheme to the tax scheme. If B did prefer the equal quota scheme, why would he choose to pay A to move toward the tax scheme's results?

We take the main intent of the B-T paper to be a public choice explanation of the propensity of politicians to institute direct controls rather than taxes in externality situations. We have shown that if transactors value the additional government services (returned taxes) at 100 percent of the taxes that are collected through the tax scheme, they will never choose the equal quota scheme and hence will never pressure politicians to adopt it. However, as B-T point out, to the extent that transactors value the return from the tax at less than the tax paid, the preference for the tax scheme weakens. We believe the explanation for the revealed preference for "equitable" direct controls (equal quotas) lies here.

Reference

Buchanan, J. M. and G. Tullock. "Polluters' Profits and Political Response: Direct Controls Versus Taxes." *Amer. Econ. Rev.* 65 (1975): 139-147.