

A Note on the Welfare Cost of a Tariff

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It is a well known result in international trade theory that for a small country the imposition of a tariff diminishes the value of national income at world prices. Suppose, however, that in the short-run (SR) some factors are specific to particular industries. Then, an interesting question is whether or not in the long-run (LR) the reduction in national income at world prices -- and so the domestic welfare cost of the tariff -- will be greater or smaller than in the SR. Figure 1 illustrates the point at issue. An increase in the tariff will result in a short-run loss of output (valued at world prices) identified by the area AB'C', and a long-run loss equivalent to area ABC. But there is no presumption of which area is larger.

Two polar cases which assume a simple two-commodity world, quickly illustrate the issue. Suppose, first, that sectors produce outputs in fixed proportions. Then, unless all factors are mobile so that short-run cost is less than the long-run cost, a (sufficiently large) tariff increase cannot diminish national income at world prices. Alternatively, suppose both sectors have identical isoquants with constant returns to scale, and that the world price is unity. In the long-run a tariff cannot diminish national income at world prices since the long-run transformation curve is then linear with slope unity. But, in the short-run, the tariff drives output interior to the long-run transformation set and so the tariff cost is higher than in the long-run.

In order to isolate the forces at work, we adopt the standard two factor two good, constant returns to scale model.¹ Taking capital to be the industry specific factor, SR equilibrium is characterized by equations (1) - (5).

$$(1) \quad \frac{\partial X_1(L_1, \bar{K}_1)}{\partial L_1} = p \frac{\partial X_2(\bar{L}-L_1, \bar{K}_2)}{\partial (\bar{L}-L_1)}$$

$$(2) \quad \frac{\partial X_1(L_1, K_1)}{\partial L_1} = w$$

$$(3) \quad \frac{\partial X_1(L_1, \bar{K}_1)}{\partial K_1} = r_1$$

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distortion may be considerably less than is commonly held. Of course, this does not alter the case for the superiority of no tariff at all. And, finally, if the factors are only weakly complementary, then the cost of the distortion may be considerably less than is commonly held. Of course, this does not alter the case for the superiority of no tariff at all. And, finally, if the factors are only weakly complementary, then the cost of the production distortion may be even greater in the SR than in the LR.

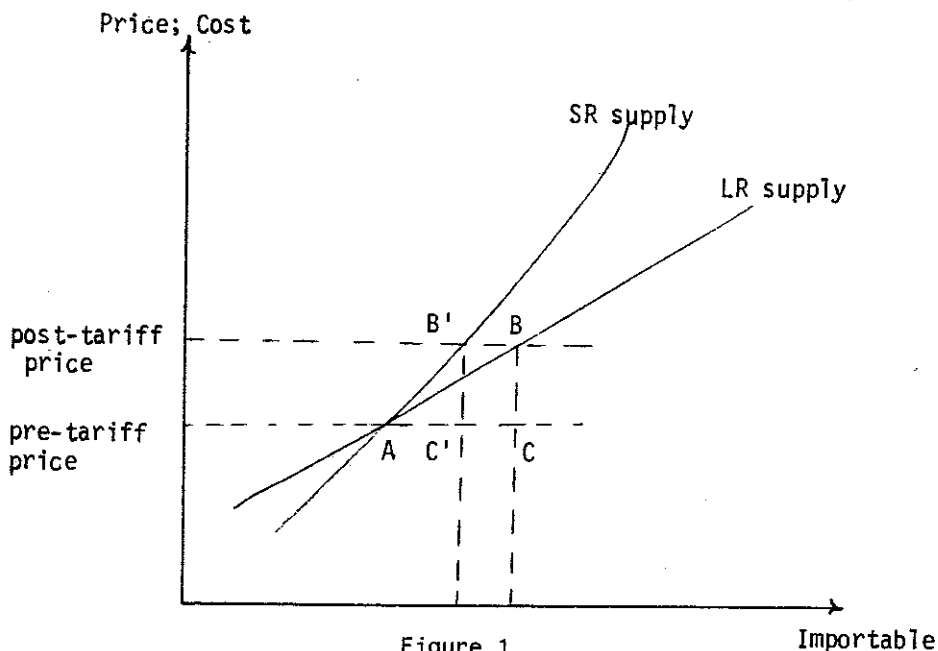


Figure 1

FOOTNOTES

¹/The literature on trade in the presence of factor specificity is rapidly increasing and has taken the tack of exploiting the standard variable proportions model. See, for example, the common framework utilized in Mayer [1], Mussa [2], and Neary [3].

REFERENCES

- [1] Mayer, W., "Short-Run and Long-Run Equilibrium for a Small Open Economy." Journal of Political Economy, September/October, 1974.
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- [3] Neary, J., "Short-Run Capital Specificity and the Pure Theory of International Trade," Economic Journal, September 1978.