

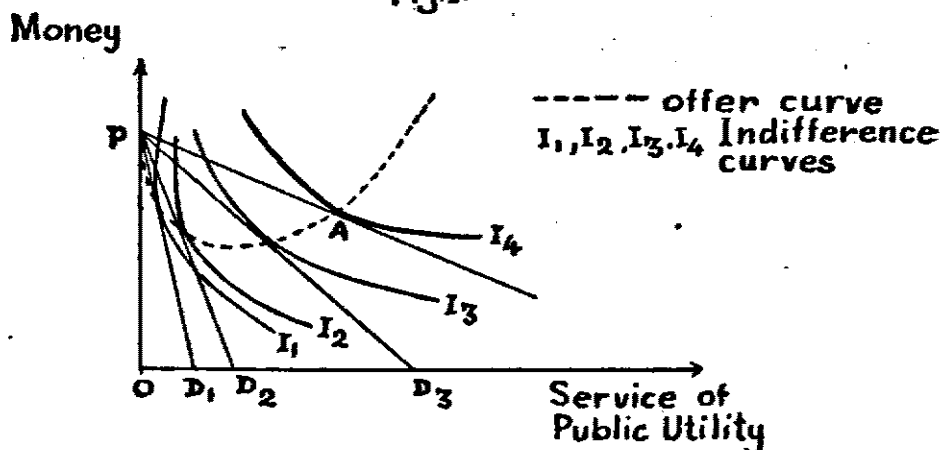
A GRAPHICAL PROOF OF A THEOREM ON THE PRICING OF PUBLIC UTILITIES—A Short Note

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HOTELLING's famous theorem¹ demonstrated that any excise tax which replaced an income tax yielding the same revenue placed the individuals in a less preferred position and that a price above the marginal cost is similar to excise tax hence marginal cost pricing is better under his assumptions. In this paper an attempt is made to give a rather different graphical proof of the same theorem than the usual graphs. The advantage of our proof is that it avoids the confusion that may arise from a neglect of the vital distinction between the "total" and the "marginal conditions for a social optimum.

The main tool of analysis used in our graphical representation will be the concept of *offer curves*. The *fig. 1* is drawn to clarify the ideas. We have on the horizontal axis the service of the public utility and on the vertical axis the money income. We pick a point P on the vertical axis. We are given a smooth well behaved indifference map as depicted. From the point P we draw different budget lines as PD₁, PD₂, PD₃, etc. and note the points at which the straight lines are tangent to the indifference curves. The different budget lines drawn indicate the effect of variation of the prices of the services of utility on the equilibrium level of the demand for the public utility.

Fig.1.



¹ Hotelling, H., "The Relation of Prices to Marginal Costs in an optimum system", *Econometrica*, 1939, p. 151. Cf. also Mishan, E.J., "A Survey of Welfare Economics, 1939-59" *Economic Journal*, June 1960, pp. 197-265, see this for detailed bibliography.