Referee Report for *Economics*
Perfecting Imperfect Competition
(MS 218)

This paper deals with an interesting issue in the literature on mechanism design, specifically creating a mechanism to get natural monopolies to behave like perfectly competitive firms. This paper proposes a tax that induces natural monopolies to produce the perfectly competitive price and output, where price = marginal cost.

The usual way to deal with natural monopolies is for a regulatory body to impose marginal cost pricing on the natural monopoly. The problem with this solution is that the regulatory body may not be able to observe marginal costs. In such cases, the natural monopoly may be able to divert a surplus for private gain by choosing an inefficient technology or inefficient input mix. For example, the natural monopoly could hire too much labor and employ their relatives or provide for perquisites such as lavish headquarters, and provide senior management with travel by private jet.

An alternative to regulation would be to implement a mechanism that would induce a natural monopolist to behave like a perfectly competitive firm. The author shows that a tax equal to (price – marginal cost)×price^{-1} will induce such behavior when condition 11 (page 6) is positive.

I have three concerns about the proposed solution:

1. The title suggests that the paper deals with imperfect competition; whereas the proposed tax seems to apply only to the case of natural monopoly.
2. To impose the proposed tax, the regulatory body or tax administration would have to be able to observe marginal costs. Thus, the proposed mechanism or tax suffers from the same drawbacks as a regulatory body seeking to impose marginal cost pricing in the face of asymmetric information about costs.
3. Condition 11 in the paper must be nonnegative for the proposed tax to maximize profits at the perfectly competitive output. In order for condition 11 to be nonnegative, total revenue must be greater than total cost (P×Q ≥ TC). In other words, the natural monopolist must at least break even at the perfectly competitive output. However, the case when a natural monopoly is not profitable at the perfectly competitive output, or marginal cost is less than average cost throughout the relevant range, is precisely the case that is likely to prevail in real world applications. In the standard textbook treatment of this case, the regulatory body can impose average cost pricing or use a two-part tariff. In any event, the proposed tax is only a solution in a limited set of circumstances when the natural monopolist is profitable at the perfectly competitive output.
4. In light of comments 2 and 3 above, the proposed tax has a means to modify the behavior of a natural monopolist does not appear to have any advantage over a regulatory body simply imposing marginal cost pricing. To be successful under either scheme (using the proposed tax or a regulatory body simply imposing marginal cost pricing), the monopolist must be profitable at the perfectly competitive output and the regulatory body must be able to observe marginal costs. Perhaps the proposed tax would have an advantage in the case of dynamic demand and costs with uncertainty. However, this has not been demonstrated in the paper.