Referee report on
Horizontal Mergers and Uncertainty
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Summary:
The paper analyzes horizontal merger private profitability and the welfare effects of mergers when cost synergies associated to the merger are uncertain. The model considered is the standard Stackelberg framework where mergers between leaders, and/or followers are considered. Several results are derived from the fact that expected profits, consumer' surplus and total welfare generally increase with the degree of uncertainty captured by the variance of the uncertain cost.

General Comments:
Globally, the paper is well written as long as the main messages are correctly conveyed to the reader. To the best of my knowledge the calculation is correct and I also found the results technically interesting. The points raised in the paper are very interesting and in my opinion they are also a novelty. The current version of the paper though should be improved, especially regarding the intuitions behind the results, in order to meet the standard of the "e-Journal". There are then some problems with this paper which I have detailed below.

My main criticisms are the following:
1) I consider the timing of the game presented and the assumptions made appropriate for the research question that the authors have in mind. In the way the model is formulated and since profits positively depend on the square difference between ci and c, expected profits increase with the degree of uncertainty (namely, the variance). This effect crucially drives all the results obtained in the paper since across the whole paper the authors correctly compare expected values (profits, consumer surplus or welfare) with actual values. The authors, however, fail to provide neither a relevant economic intuition in this regard nor a justification about the robustness of this effect with respect to some other crucial assumptions of the model. In this sense, Amir et el. (2009) obtain a similar result for the Cournot model. The main difference however is that unlike the present paper they only consider cost synergies with a possible positive sign. A natural question arises thus; are the possible errors of the uninformed players (namely, the asymmetric information associated to the cost synergies) the driving force of the increase of the expected profits of informed players with respect to the variance? In other words, why and how may firms benefit from the uncertainty even when production costs are possibly larger than expected? In my opinion these questions should be clarified in a revised version. Actually, the authors spend some pages (Remarks 1 and 2) describing the effects of the variance on expected values without any further attempt to explain the intuition.

2) Subsection 3.2 is overrated in the present version and should be much shorter since in my opinion does not provide relevant insights. In short, the authors prove that mergers that in the deterministic case are already profitable (cases C and D as proved among others by Daughety 1990) can be profitable with cost losses whereas mergers that are generally not profitable without uncertainty (cases A and B proved by Huck et al. 2001) need uncertainty in order to be profitable.

3) In sections 4, Proposition 3, the authors should also include the analysis for mergers of cases C and D in the text of the result. Also, subsections 4.1 and 4.2 and subsections 5.1 and 5.2 should be respectively merged. In my opinion the same should apply to Propositions 3 and 4 on the one hand and Propositions 5 and 6 on the other hand where by stating these results in just two different Propositions the readers might more easily compare the severity of the CS and total welfare criteria.