Referee report on "(S,s) Pricing: Does the Heterogeneity Wipe Out the Asymmetry on Micro Level?"

## Summary

The paper constructs an example of a model with asymmetric (S,s) pricing policies which, when hit by monetary shocks that evolve as a 4-state Markov process, can potentially produce two forms of asymmetry in aggregate dynamics: different responses of output to positive and negative monetary shocks, and different responses to monetary shocks depending on whether the economy is in a boom or in a recession.

## Comments

The paper provides an example that the aggregation result in Caballero (1992) is not very general, and that aggregation of asymmetric (S,s) policies *can* lead to asymmetries in aggregate dynamics. The problem is that Caballero's result isn't meant to be general (at least I never thought of it that way). As I see it, it is precisely an *example* of a fallacy of composition – a situation where extrapolating from microeconomic to aggregate behavior leads to the wrong conclusions. Thus, my take-away from the paper is that it presents us with an example that shows the lack of generality of another example.

The paper would be much improved if the author retired the idea of following up on Caballero (1992) too closely, and instead presented a more fully-fledged model that could account quantitatively for the stylized empirical facts about such aggregate asymmetries. In doing so it would also be very beneficial to change (or update, say) the framework to a more carefully specified menu-cost model, rather than taking the shortcuts that the author does currently - which give the paper a somewhat outdated flavor. State-of-the-art menu-cost models that can be used for that purpose are available out there (starting with Golosov and Lucas (2008)). After choosing one – or developing yet a new variant of such models - the author can calibrate it to speak to the empirical evidence that the paper aims to account for, making use of the vast amounts of empirical evidence about individual prices that the literature has accumulated since Bils and Klenow (2004).

This is not to say that I don't appreciate the care the author has taken to account for the earlier literature on state-dependent pricing, and also the early empirical literature on nominal price rigidity. I certainly do. However, in the current version of the paper, this comes at the expense of properly acknowledging the renewal that this literature experienced after the advents of Bils and Klenow (2004) (on the empirical side) and Golosov and Lucas (2008) (on the modeling side). In terms of marketing the work and relating it to research at the frontier of this field, this certainly works to the author's disadvantage.

A final comment, which is also somehow related to the timeliness of the paper: In the introduction the author completely overlooks the existing literature that provides microfoundations for time-dependent price-setting behavior.<sup>1</sup> This literature explores evidence that other costs in the price-setting process (information, managerial etc) are arguably more important than physical menu costs. The author loosely cites these other costs in the conclusion, arguing that the frictions that the menu-cost literature relies on should be interpreted more broadly. Yet, the idea that this interpretation is valid is an old misconception that has been superseded by the results in the literature showing that information-related costs do not lead to purely state-dependent pricing policies. This is yet another point in the paper that conveys the impression that it has its roots quite a few years back and didn't fully incorporate the developments in the literature since then. One can – and definitely should – give proper credit to the earlier contributions. But that should not come at the expense of making the paper up-to-date.

<sup>1</sup> It is perhaps ironic that one of the first contributions in this literature is due to Caballero (1989).