Referee Report on "New Evidence on News-Driven Business Cycles" (MS89)

This paper uses aggregate German data to explore the joint behavior of stock prices and total factor productivity with the aim of testing the hypothesis of news driven business cycles, as proposed by Beaudry and Portier (2006) ("BP" hereafter). Following BP, the main empirical strategy in this paper is to use two identification schemes sequentially to evaluate the relevance of news in business cycle fluctuations. After summarizing what I think are the most important finding of this paper, I highlight several issues that I think deserve some additional attention and review.

Findings

- Innovation in stock prices that is contemporaneously orthogonal to TFP is highly correlated with the shock that explains long run movements in TFP, though the correlation is less pronounced than that found in BP.
- More than half of the total TFP response to permanent innovation to technology is immediate rather than delayed. This result is robust to different measures of TFP.
- The proposed news shocks are Granger-causal for the number of patents granted by the German patent agency, while shocks without permanent effect on technology are not.

1 General Comments

Given that the aim of this paper is to explore the quantitative relevance of news for German business cycles, the paper shall provide answers to the additional following two questions:

- How does the German economy respond to such a shock, that is, does the responses to ε_2 (or $\widetilde{\varepsilon}_1$) look like standard business cycle fluctuations in the sense of generating positive comovements in macro aggregates? To answer this questions, it is necessary to provide the impulse responses of output, consumption, investment and hours to these two shocks. Moreover, a comparison of the impulse response under these two shocks provides a robustness check for the interpretation of ε_2 as news shock.
- Could this type of shock be a major source of business cycle fluctuations? To this end, it is useful to compute the share of the forecast error variance of various macro aggregates (say, consumption, hours and output) attributable to ε_2 at different time horizon, as opposed to the contribution of the other shock (unexpected temporary shocks).

2 Specific Comments

- The paper studies a bi-variate system for TFP and stock prices. As a robustness check, a better job could be done if the correlation, impulse responses of macro aggregates and the related issues are also explored in a higher dimension system, say, a tri-variate system that includes TFP, stock prices and consumption. This is because a tri-variate system, by imposing long-run restriction, would allow to isolate a combination of the standard random walk process and the diffusion shock process, both of which have a long-run effect on TFP (in the bi-variate system, the long run impact on TFP is solely captured by the diffusion shock process). Hence, in the three variable cases, if we find a high correlation between ε_2 and $\widetilde{\varepsilon}_1$, it suggest that the surprise component of productivity is of minor importance in fluctuations.

- In Figure 2, the response of TFP to an innovation in stock prices, by construction, is zero on impact, while the response of TFP to $\widetilde{\varepsilon}_1$ is immediate. Therefore, I will be curious to know whether stock prices Granger causes TFP or the opposite. A news story should implies that such causality should not be rejected.

- The lower panel of Figure 3 shows that for the quality adjusted TFP, the effect of an innovation in permanent TFP is virtually instantaneous, which is largely different from the impulse response of TFP to ε_2 and its counterpart when the factor quality is not adjusted in measuring TFP. To reconcile this fact with the story delayed-technology diffusion, it is useful to show that the quantitative importance of embodied technology in the aggregate TFP movements is predominantly large.