# The Observational Equivalence Between a News Shock Process and a Moving Average Process

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**Abstract**

News shock, a recently advocated explanation for aggregate fluctuations, claims that news of future technology shocks, as opposed to the unexpected TFP shocks, namely, contemporaneous TFP shocks, is the major driving force of business cycles. In this paper I evaluate the identification of the news shock and construct a simple example where, under certain information sets, a news shock is not identified and is observationally equivalent to a moving average representation of a contemporaneous shock. I also empirically examine this supposition with synthetic and true data. I employ the Bayesian approach in estimating a DSGE model, largely based on Schmitt-Grohe and Uribe (2008). I simulate the data under an ARMA specification and estimate the model under a news specification. The misspecified model falsely finds that news play a much more important role than the unanticipated shocks in driving aggregate fluctuations. The marginal data density suggests that the observable variables under consideration may not be able to identify news shocks. The same exercise is applied to the true macro data. I didn't find news shock important. The marginal data densities of the news and ARMA specifications are very close, which suggests the observational equivalence of those two representations under this information set. Theoretically, I prove that when news shock is present, nonfundalmentnalness always arises and the DSGE model doesn't give rise to a VAR representation. I propose an algorithm to obtain an observationally equivalent VARMA representation. I call for carefully identifying news shocks prior to claiming their importance.