

Comments on “What Do Micro Price Data Tell Us on the Validity of the New Keynesian Phillips Curve?” by Luis J. Alvarez

This paper draws our attention to the differences between current macroeconomic models of price setting behavior and the available firm-level empirical evidence on price changes. The paper describes 25 theoretical pricing models and derives their implications regarding the frequency and the hazard rate of price adjustments. In addition, the paper highlights whether the models allow for heterogeneity and departures from rational behavior. The conclusion is, not surprisingly, that there is not a “best model” all of whose implications are confirmed by the data.

The paper does not introduce new data nor develop new models but rather attempts to summarize how well popular models match the data. The data come from the numerous country-specific studies of price setting behavior that form part of the Inflation Persistent Network (IPN) organized by the European Central Bank, and have been extensively analyzed in many of the publications referenced in the paper. In general, although descriptive in nature, these papers also attempt to explain their empirical findings in terms of how well they match the implications of existing theoretical models. Thus, the contribution of this paper is essentially to summarize available results in an intelligent way.

One of the key statistics that theoretical models need to conform with is the hazard rate of a price change – the probability of a price change at time t given no price change before time t . The hazard rate is found to be declining with the duration of a price, i.e., the probability of a price change declines the longer the price remains fixed. This is a surprising result both in terms of intuition and of theory, but it is a well known empirical property of estimated hazard functions in the presence of heterogenous agents. This problem goes by the name of “true state dependency versus unobserved heterogeneity”.¹

¹In labor economics, the estimated probability of employment decreases with unemployment duration

The author is well aware of this problem and addresses it in pages 14 and 15, as well as in another paper (Alvarez, Burriel and Hernando, 2005). Thus, a downward-sloping hazard rate is very likely **not** a true characteristic of hazard functions. Models should therefore not be judged by how well they fit this incorrectly estimated feature of the data.

This brings to the fore the issue of heterogeneity. Heterogeneity is usually ignored in macroeconomic models, but it is prevalent in firm-level data (e.g., in prices, productivity, innovation, etc.). Heterogeneity across firms has many dimensions and the paper is not very clear about this. Table 4 gives examples of differences in pricing behavior across different goods, while at the bottom of page 17 the heterogeneity referred to is across firms presumably selling the same good.

It is not surprising that there is heterogeneity in pricing behavior across goods. The issue of interest is to explain this heterogeneity in terms of underlying differences in technology and market structure. In my opinion, the main message of this paper should be the need to identify the key drivers of heterogeneous pricing behavior both in theory and in the data. Tables 7 and 10 are a step in this direction.

Alvarez, J.L., Burriel, P. and I. Hernando (2005), “Do decreasing hazard rates for price changes make any sense?,” <http://www.ecb.int/pub/pdf/scpwps/ecbwp461.pdf>

because the “employable” individuals are the ones that rapidly find jobs and therefore the “unemployable” ones are the ones with long unemployment spells.