Invited Report on

"What Do Micro Price Data Tell Us on the Validity of the New Keynesian Phillips Curve?"

by

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"What Do Micro Price Data Tell Us on the Validity of the New Keynesian Phillips Curve?" presents an interesting and carefully done survey on the existing state of both empirical research on the price changing behavior of firms and the relationship between that behavior and the major modeling practices used in the New Keynesian literature. Starting with Bils and Klenow (2004) and continuing through the many recent studies on price setting in Europe there has been an explosion in knowledge concerning the behavior of product prices at the micro-level. This paper provides a concise overview of what the profession has learned from analyzing product level prices and relates the many stylized facts to a host of models, both time and state-dependent, that are currently being used in dynamic stochastic general equilibrium models. Evaluating these various models with respect to what we are now learning about firm behavior is a useful exercise for helping us refine our modeling strategies of price setting behavior. In this regard, the analysis in the paper indicates that no current model provides an adequate representation of firm behavior. The paper also points out some of the macroeconomic consequences of trying to capture various aspects of the micro data, and this is another relevant contribution of the study.

Besides studies of actual price behavior, there has been a growing number of papers that survey how firms say they behave. My approach to this literature is a bit more hesitant than it is to harder data, but these surveys do provide some interesting food for thought and the paper discusses results from this literature as well.

The key empirical features of price setting pointed out in the paper and consistent across countries are that individual prices remain fixed for a number of months (actually close to a year for the median country in the sample) and this observation is consistent with survey responses by firms. An important aspect of this type of behavior is that it is at variance with the assumption of indexation that appears in various classes of models in the literature, such as the sticky information models of for example Mankiw and Reis (2002), the convex cost

of adjustment models pioneered by Rotemberg (1982), or the automatic indexation models of Smets and Wouters (2003) and Christiano, Eichenbaum, and Evans (2005). Along this dimension the time-dependent models of Taylor (1980) or the state-dependent menu cost models of say Dotsey, King and Wolman (1999) are more consistent with this aspect of pricing behavior.

Another interesting feature of pricing data is that hazards are downward sloping. At first glance, this observation might tempt one to reject state-dependent menu costs models, but the discussion concerning the modeling of heterogeneity and the effects of aggregation is well done and worth reading. In ongoing research with Alex Wolman and Bob King, we are finding these type of effects. Although it is too early to tell if we will match empirical hazards exactly, the aggregation channel discussed here looks promising. Further, given the work of Midrigan (2006) and some of our own preliminary results, the second generation of state-dependent menu cost models will probably be able to match a good deal of the micro data on pricing behavior. That is not to say that these models represent the final word on pricing, far from it, it is just that they may be quite consistent with the rich set of data that now exists on price setting.

The other interesting feature of the hazard function is that it periodically spikes up at annual frequencies and that there may be additional seasonality in price setting. The view taken in the paper is that this is evidence of time-dependent aspects of pricing behavior and this may indeed be the correct interpretation. However, it could also be due in part to the seasonality of shocks and in particular demand shocks. If these shocks have higher variance in certain months, and if there are enough large idiosyncratic demand shocks that cause many firms to change their prices in those months, then it is conceivable that one would see spikes in the hazard function that take on a seasonal. However, this feature of the hazard might also arise in models where there are costs to acquiring information. In months where demand is traditionally highly volatile, more firms will find it desirable to acquire information and reset their price. Also, with respect to time-dependent behavior the work of Konieczny and Rumlor (2006) would have made a nice addition to this discussion. With respect to the data on hazards, it is also obvious that models that include indexation are at variance with the micro data.

The pricing data also show a good deal of heterogeneity across goods. Some types of goods change prices much more frequently than do others. These differences are also related to industry characteristics. Along these lines the paper discusses the interesting work of Alvarez, Burriel, and Hernando (2005) and Carvalho (2006), which allow for different degrees of stickiness in different goods.

Finally, the paper discusses evidence that indicates that there are both time-dependent as well as state-dependent aspects of pricing behavior, as well as both forward and backward-looking aspects of pricing decisions. The paper also points out that in survey responses firms do not consider menu costs to be an important aspect affecting pricing decisions. This observation implies that the reliance on menu costs by current state-dependent models is problematic, yet infrequent adjustments that are often large in magnitude are a hallmark of agents facing fixed costs of adjustment.

In short the paper does a nice job of summarizing the main features of various classes of New Keynesian models and their consistencies and inconsistencies with the recent data on individual pricing decisions. It points out both the significant progress that has been made and the existing challenges that we still face. An important aspect of these challenges will be establishing what features of the micro-price data are essential in helping us understand the macroeconomic effects of price rigidities. For instance, is the understanding of sales crucial to understanding the effects of price rigidities on the macroeconomy? Is it crucial to accurately match the distribution of price changes in order to understand how price setting behavior influences macroeconomic outcomes?. There is already some interesting work indicating that heterogeneity at the micro level can have interesting implications for matching macroeconomic moments. Here I am thinking of the recent work by Carvalho (2006) and the work by Gertler and Leahy (2006) and Midrigan (2006).

0.0.1 References

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