

Essays on Marginal Cost and Inflation

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Theoretical models of inflation argue that inflation depends on real marginal cost. However due to measurement difficulties, researchers typically assume that marginal cost is proportional to standard activity variables, such as the output gap. This approach has problems, and may not necessarily yield reliable results. Gali and Gertler's (1999) seminal paper was one of the first to attempt to measure marginal cost directly, in order to examine inflation dynamics. This dissertation attempts to apply this idea to better explain inflation behavior, by means of a more reasonable method of measuring real marginal cost.

1 The New Keynesian Phillips Curve and the Cyclicity of Marginal Cost (job market paper)

The labor income share is commonly used in place of real marginal cost in tests of the sticky-price New Keynesian Phillips Curve. However, this paper argues that the labor share is an inappropriate measure of real marginal cost for two reasons: it is countercyclical whereas theory predicts marginal cost should be procyclical, and it employs a counterfactual assumption that labor can be freely adjusted at a fixed real wage rate. I relax this assumption to a more realistic one, by examining the change in costs induced by a variation in hours worked. This leads to a measure of marginal cost that is markedly procyclical, which then produces results that are contradictory to the underlying model of the NKPC. Thus I conclude that the NKPC fails to give a sound explanation of inflation dynamics.

2 A Generalized Derivation of the Price-Marginal Cost Markup (in progress)

To this day, the benchmark for computing the markup of price over marginal cost is based on Hall's (1988) method. Hall's idea is based on the implicit assumption that labor can be flexibly adjusted at a fixed real wage rate; this is parallel to the assumption that I object to in chapter 1 of this dissertation. I relax this assumption, and derive a generalized expression for the markup, which I then apply to industry-level data. While evidence of market power remains strong, the generalized markup measure yields estimates that are very different than those produced by Hall and others who have used his methodology. This exercise demonstrates that much of the literature produces biased estimates of the price-marginal cost markup.

3 Cost-based Phillips Curve Forecasts of Inflation (in progress)

Stock and Watson (2008) argued that simple Phillips Curve forecasts of inflation do better at forecasting than other more complex models. I conduct quarterly Phillips Curve forecasts using the unemployment rate, the output gap, and manufacturing real marginal cost as activity variables. For almost all cases, the fit of the model, and the static and dynamic forecasts are best in the regressions with marginal cost. These results hold up when we add supply shocks, and at both the aggregate and manufacturing sector levels. Hence marginal cost improves forecasts of inflation, since it is one of the determinants of price.