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Comment on “Estimates of the Open Economy New Keynesian Phillips Curve for Euro Area Countries”

Johann Scharler¹

Oesterreichische Nationalbank

I would like to start my discussion with a brief review of the relevant literature. This will allow us to assess how the paper fits into the literature. The “new theories” of short run inflation dynamics are mostly based on staggered price and/or wage setting. Calvo (1983) has introduced a tractable way to obtain a New Keynesian Phillips Curve:

$$\pi_t = \lambda mc_t + \beta E_t(\pi_{t+1}),$$

where π_t is the inflation rate at time t and mc_t denotes marginal cost. Thus, the inflation rate is a function of marginal costs and expected future inflation. However, this simple formulation is known to have two major drawbacks. First, inflation appears to be more persistent than this formulation captures and second, it is not clear how to measure marginal cost. The traditional solution to the first problem is to introduce backward looking firms. That is, a certain fraction of the firms follows a backward looking rule when setting prices. This gives rise to the following, slightly more general Phillips Curve:

$$\pi_t = \lambda mc_t + \gamma_f E_t(\pi_{t+1}) + \gamma_b \pi_{t-1}$$

Although this is a very ad hoc assumption it appears to work in terms of the improved fit of the equation.

¹ Oesterreichische Nationalbank, Economic Analysis Division, Otto-Wagner-Platz 3, POB 61, A-1011 Vienna, Austria, Phone (+43-1) 404 20-7419, Fax (+43-1) 404 20-7499, E-Mail: johann.scharler@oenb.at. The views expressed in this paper are those of the author and do in no way commit the Oesterreichische Nationalbank.

The traditional solution to the second issue was to simply assume that mc_t is proportional to the output gap. However, this assumption holds only true under restrictive assumptions and in addition, the output gap is hard to measure as well. In particular, the output gap has to be the deviation of actual output from the flexible price solution and not from some sort of smoothed GDP series. More recently, Galí et al. among others have suggested to use the labor income share as a proxy for mc_t . Under the assumption that input costs are well approximated by unit labor costs. As pointed out by Leith and Malley (2003) this assumption is hard to defend for open economies where a substantial part of the input costs might be the cost of imported intermediate goods. However, in their empirical analysis, they conclude that open economy aspects do not significantly change the results.

Rumler (in this volume) stresses this point as well and proposes yet another extension. He includes not just foreign but also domestically produced intermediate goods. However, it is not convincingly motivated in the paper for what purposes this extension may be useful.

Next, I would like to discuss how we can interpret the quantitative results of Rumler. Basically, the purpose of the empirical analysis is to uncover structural parameters which govern the degree of price stickiness. Most relevant are the parameters θ and ω . Table 1 shows the estimates from Rumler for the euro area and also for the sake of comparison, parameter estimates frequently found the literature.

Table 1: Structural Parameter Estimates

	θ	ω
closed economy estimates	≈ 0.75	≈ 0.3
See e.g. Galí et al., (2001); Leith and Malley, (2005)		
Rumler (2005) A	0.64	0.44
Rumler (2005) B	0.52	0.20

So far, the consensus appears to be $\theta \approx 0.75$ and $\omega \approx 0.3$. According to Rumler, θ turns out to be lower when open economy aspects are taken into account. This conclusion is based the lower estimate of θ . Thus prices should be less sticky than previously thought. However, depending on the precise formulation of the orthogonality condition ω may also be higher compared to earlier studies.

The question remains, whether these differences in the estimated parameters matter economically. One way, to answer this question is to simulate a New Keynesian Business Cycle model in the spirit of Woodford (2003) under the different

parameterizations for price-setting behavior. That is augment the Phillips Curve by an Euler equation and an interest rate rule and simulate the response to shocks.²

Chart 1: Impulse Response Functions

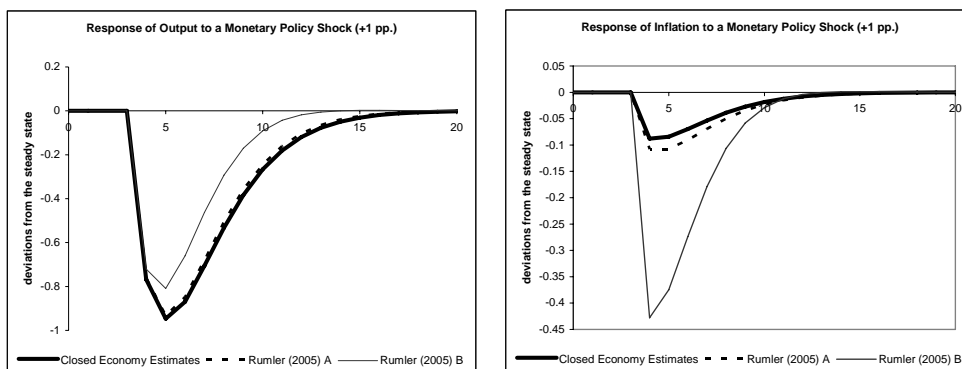


Chart 1 shows the response of the output gap and the inflation rate to a monetary policy shock for the three different calibrations of the price-setting behavior. That is, an expected increase in the nominal interest rate that lasts for one period. We can see that estimates obtained with specification A do not produce any substantial differences in the response of the macroeconomic variables. The inflation response is somewhat muted whereas the difference in the output response is negligible. However, the parameter estimates obtained with specification B produce substantially different results. Monetary policy has much smaller real effects under this parameterization.

Thus, although open economy issues appear to play some role in this respect, large differences in macroeconomic outcomes are more likely to result from the different formulations of the orthogonality condition.

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² The remaining parameters are calibrated to commonly assumed values in the literature. Details are available upon request.

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