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Comment

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Razin and Loungani's paper links measures of openness to weights in a utility based loss function. Through policy that minimizes the loss function, openness is then tied to the tradeoff between output and inflation. The authors argue that disinflation data support the model's implication that more open economies have higher sacrifice ratios.

Their model builds on Razin and Yuen (2002), which in turn is an open economy extension of a closed economy formulation found in Woodford (2003). In Woodford (2003), there is a continuum of differentiated labor and differentiated products. Consumption is the familiar Dixit-Stiglitz aggregate of the differentiated products, with substitution elasticity θ . Current period utility depends on current period consumption and leisure. Producers are a mix of flexible price firms and firms with one period price stickiness. Because prices are sticky for at most one period, the aggregate supply curve that results is of the new classical form familiar from work from the 1970s on monetary misperceptions models. Specifically, output deviates from steady state only insofar as there are inflation surprises (Woodford 2003: 397):

$$\pi_t = E_{t-1} \pi_t + \theta\psi\alpha_t \quad (1)$$

Here, x_t is the output gap, θ is the elasticity that figures into Dixit-Stiglitz aggregation, and ψ is a positive parameter that depends on θ and some other model parameters. These other model parameters are: the fraction of flex price firms (γ in the notation of the present paper), the elasticity of consumption in consumer's utility function (σ), and the elasticity of leisure in consumer's utility function (ω). Woodford (2003: 398) shows that a quadratic approximation around the steady state yields a loss function:

$$\text{loss} = (\pi_t - E_{t-1} \pi_t)^2 + \psi(x_t - x^*)^2, \quad (2)$$

π_t = inflation, x_t = output gap, x^* = efficient output gap.

The ψ that appears in the aggregate supply curve (1) is the same as the ψ that appears in the loss function (2).

In Razin and Yuen's (2002) open economy extension, the home country produces good 1 to n , the foreign country goods n to 1, for given n . Aggregate supply is shown to depend on the foreign output gap and the deviation of the real exchange rate from steady state. The slope on domestic output gap ψ is shown to vary with openness as follows:

slope of aggregate supply when there is trade and capital mobility (3)

< slope of aggregate supply when there is trade mobility
but not capital mobility

< slope of aggregate supply when there is neither trade
nor capital mobility (i.e., closed economy).

As well, given trade mobility, the slope falls as the import share $1 - n$ increases, a result again consistent with the notion that increased openness lowers the slope of aggregate supply.

Recall the conventional wisdom that the sacrifice ratio is greater when aggregate supply is flatter: a shift downwards in aggregate demand will be associated with a relatively large fall in output and a relatively small fall in inflation when aggregate supply is relatively flat. The inequalities in (3) thus suggest that the sacrifice ratio is higher in more open (i.e., flatter slope [lower ψ]) economies. (A side comment: Some recent literature has focused on the upside of a flat [low ψ] aggregate supply curve—thanks to globalization, inflation is slow to take off, even when demand pressures are high. This paper focuses on the downside of a flat aggregate supply curve: disinflations are costly.)

The present paper shows that Razin and Yuen's (2002) results on the slope of aggregate supply translate to similar weights in a utility based loss function. As in section 5 of the present paper, let numerical subscripts 1, 2, and 3 denote the values of ψ that result across different assumptions about trade and capital mobility. Symbolically, then:

- ψ_1 [loss function parameter when there is trade and capital mobility] (4)
 < ψ_2 [loss function parameter when there is trade mobility
 but not capital mobility]
 < ψ_3 [loss function parameter when there is neither trade
 nor capital mobility].

Razin and Loungani assume that policy will be set to minimize this loss function, and that tradeoffs between inflation and output that we see in the data will reflect the loss function weights. The empirical work considers whether greater openness (lighter restrictions on capital controls and trade) implies higher sacrifice ratios. It does so using disinflation episodes from Ball (1993). It adds ordinal measures of current and capital account openness to Ball's (1993) regressions of sacrifice ratios on inflationary variables. The result is that the sacrifice ratio increases with openness.

The basic idea of this paper—use modern monetary models to explain cross-sectional variation in the output-inflation tradeoff—is an excellent one. The paper, however, does not make nearly as much of this idea as it might. A list of questions and concerns might include:

1. The paper relies on an aggregate supply curve in which the output gap deviates from zero only when there are inflation surprises. This is a model of aggregate supply that in my view has little claim to empirical relevance. What happens if one allows for multiple periods of stickiness, using the Calvo or other model for price setting? What happens if one allows for an inertial component to inflation? What happens if one allows the fraction of flex price firms or the import share to change with secular changes in the rate of inflation?
2. Let us put aside such questions, and take the model as given. A needlessly small amount of data were used. According to the model and the argument of the authors, there is no particular reason to focus on disinflations. What happens if data from other time periods or other countries are used? Is the evidence from inflationary (as opposed to disinflationary) periods consistent with the model?
3. Let us also take as given the focus on disinflations. The paper does an incomplete job motivating and interpreting its regressions. Are the effects of openness economically large? Are they plausible, in terms of a rough calibration of parameters that determine the slope of the aggregate supply curve? In light of the model, shouldn't the regressions con-

trol for cross-country variation in other determinants of the slope (e.g., fraction of flexible price firms, share of imports)?

These are the sorts of questions that I hope the authors will answer in future research on this subject.

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