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Sims, C. A. 2002. Solving linear rational expectations models. *Computational Economics* 20 (1–2): 1–20.
Smets, F., and R. Wouters. 2003. An estimated dynamic stochastic general equilibrium model of the Euro area. *Journal of European Economic Association* 1 (5): 1123–75.
Taylor, J. B. 1993. Discretion versus policy rules in practice. *Carnegie-Rochester Conference Series on Public Policy* 39:195–214.
Uhlig, H. 1999. A toolkit for analyzing nonlinear dynamic stochastic models easily. In *Computational methods for the study of dynamic economies,* ed. R. Marimón and A. Scott, 30–61. Oxford: Oxford University Press.
Yun, T. 1996. Nominal price rigidity, money supply endogeneity, and business cycles. *Journal of Monetary Economics* 37 (2): 345–70.

Comment

Warwick J. McKibbin

This interesting chapter develops a DSGE model for Korea based on the approach of Del Negro and Schorfheide (2004), but it includes oil in production and consumption. In addition to exploring the impact of oil price shocks and monetary shocks on the Korean economy, the chapter also explores whether excluding oil as an intermediate input alone or as final demand alone results in misspecification.

My comments can be divided into questions about the model specification and some comments on the empirical results that require greater elaboration.

The model specification is what becomes a conventional DSGE model, with households, firms, and government making intertemporal decisions. One feature of the model is that money is in the utility function. This is conventional in many DSGE models, but it does create a demand for money that depends on wealth rather than transactions (or income), which tends to be rejected by the data in standard econometric analysis of money demand. A transactions demand for money specification would probably fit the data better. An extension of the standard model is that consumption is allocated between one composite good and oil. In addition, firms choose production based on a CES production function of labor and a Cobb-Douglas nesting of capital and oil. The restriction of a unitary substitutability between oil and capital is a strong assumption. On U.S. data when estimated on a time series of input-output tables this assumption can be rejected (see McKibbin and Wilcoxen 1999). There is no obvious reason for this specification and in future work on the model production could easily be extended to a CES

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KLEM production structure, as in the G-Cubed model of McKibbin and Wilcoxen (1999).

Another assumption that needs further discussion is the assumption of the law of one price for the composite good, but less than perfect substitutability of domestic and foreign oil. The opposite is more likely to be the case given the composite good is an aggregate of many different goods where oil is more uniquely defined.

The fiscal closure is very simple. The authors note that tax revenue from oil is not included (which is a large revenue source in Korea), and I agree with them that this would be a useful future extension of the model.

The model is estimated using a DSGE-VAR framework, which is another strength of the chapter. This technique balances the contribution of the theoretical restrictions of the DSGE with the data in the VAR specification. As far as I am aware this is the first time that this approach has been applied to a model of the Korean economy.

It is not clear why the authors test for the misspecification of only having oil as an input versus only having oil as final demand. From the data in the early part of the chapter it is clear that oil enters in both parts of the model. It is not surprising that the two extreme specifications are rejected by the data in favor of a specification that has oil used for final demand and as an input in production.

The most interesting part of the chapter is the impulse responses to an oil price shock. Unfortunately the discussion of the oil price impulse response consists of a single paragraph, which is surprising given it is the theme of the chapter. A longer discussion of the economics of the results to this shock would be very helpful and would be an important contribution.

The results for pass-through of oil prices and the discussion is puzzling and needs further elaboration. The discussion of the reason for the lack of complete pass-through via government tax changes is compelling, but to imply that it should be included in the model specification in order to avoid the model is misspecification.

There is a lot of potential in this chapter and the estimated model is an important contribution to modeling the Korean economy. Unfortunately, the chapter does not give a convincing answer to the question of how oil prices impact on the Korean economy.

References

Del Negro, M., and F. Schorfheide. 2004. Priors from general equilibrium models for VARs. *International Economic Review* 45 (2): 643–73.

McKibbin, W., and P. Wilcoxen. 1999. The theoretical and empirical structure of the G-Cubed model. *Economic Modelling* 16 (1): 123–48.