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The paper titled "A DSGE Model for a SOE with a Systematic Interest and Foreign Exchange policy in which the central bank exploits the risk premium for stabilization purposes" extends a relatively standard new-Keynesian small open economy model to study the possible coexistence of interest rate and exchange rate rules, with the latter operating through interventions in the FX market. These operations are separate from operations in the government bond market designed to steer the short-term interest rate to its desired level. The former operations amount to sterilized interventions, if one understands the "sterilized" part as implying that they keep market interest rates unchanged. This is a term the author rejects however, because in his view it implicitly gives the exchange rate a subordinate role. The general objective of the paper is to extend the standard analysis of policy to better capture the way central banks operate in emerging markets in practice. This justifies the extension of the standard framework to look at separate items in the central bank balance sheet and separate instrument rules that affect each of these components.

The paper focuses on three broad policy specifications:

- A managed exchange rate regime (MER) where the two rules—one on interest rates and one on the rate of nominal depreciation—coexist;
- A flexible exchange rate regime (FER), where only the rule on interest rates holds and there are no CB operations in the FX market;
- A pegged exchange rate regime (PER), where only the rule on exchange rates holds and there are no CB operation in the government bond market.

For each broad policy specification, the paper provides an extensive analysis, which includes:

- The analysis of simple, calibrated, rules, consisting of: i) stability properties, i.e., range of parameters under which there is determinacy and non-explosiveness of the model solution; and ii) standard deviations of key model variables under alternative parameter values.
- The choice of optimal simple rules, with the optimality given by: (i) the minimization of the variance of household's utility; or (ii) the minimization of several ad hoc loss functions. The choice of ad hoc functions is meant to capture different central bank "styles". These range from caring (almost exclusively) about the volatility of inflation or output, or some combination of these and the volatility of real exchange rates and reserves, as well as some concern with the volatility of changes in nominal interest rates and changes in nominal depreciation (instrument volatility).

- The analysis of optimal policy under commitment, with the optimality established relative to the ad-hoc loss functions described above. The analysis is now extended to study the role of price rigidities, the elasticity of the interest rate premium with regards to net foreign assets by private sector, and the volatility of the external risk premium shock.

While the paper looks at many possible cases, the overall finding is that there are advantages to having two rules. The managed exchange rate regimes performs better than either the flexible exchange rate specification or the pegged regime, regardless of the type of rule (simple or not, optimal or not) and the type of loss function (utility based or ad hoc). In section 4, the paper conjectures that this superiority of the multiple instrument specification is related to the ability to influence the household's foreign debt ratio in ways that help stabilize the economy.

Comments

The analysis in the paper is very comprehensive and provides a robust assessment of the various specifications that are considered. It coincides with recent work on the same topic (see Ostry, Ghosh and Chamon (2012) and Benes, Berg, Portillo and Vavra (2013)). These papers also make the case for using two policy instruments—the policy interest rate and sterilized foreign exchange interventions—in emerging and frontier markets. The use of two policy instruments can allow central banks to maintain low inflation while also (potentially) avoiding large movements in the exchange rate. This paper nicely complements the discussion in those other papers by extensively analyzing both stability and optimality issues. The paper makes an important contribution to the literature on modeling monetary policy in emerging markets and the analysis seems correct.

Economic intuition

The paper would benefit from providing additional economic intuition on the reasons behind the superiority of the managed exchange rate regime. Here is one view on this issue. There are two main distortions in this model. The first one is related to the presence of nominal rigidities, which allows output to deviate from its natural level in the presence of various shocks, and the standard role of monetary policy (in the new-Keynesian literature) is to help replicate the flexible price equilibrium (see Woodford 2003). The second distortion is related to the international asset market structure. Agents in this economy can only buy or sell non-contingent assets, the price of which is subject to risk premium shocks, and cannot insure against terms of trade movements and other internal or external shocks.

The two instruments/policy rules emerge can help tackle both distortions through different channels. The interest rate rule helps address helps address issues with nominal rigidities, trough the standard interest rate channel of monetary policy. The exchange rate rule, on the other hand, helps partially insulate the economy against external shocks through the

endogenous risk premium. The latter mechanism is simple: an increase in reserve accumulation—that keeps the interest rate constant, ceteris paribus---initially results in an offsetting decrease in the private sector's net foreign assets. This decline in net foreign assets raises the country's risk premium and results in a nominal depreciation. By moving the endogenous component of the risk premium around, sterilized interventions can undo some or most of the exogenous changes in the premium, as well as some of the effects of other external shocks (terms of trade). The strength of this separate channel depends on the debt elasticity of the risk premium, which the paper analyzes in section 4.

These issues may be driving some of the results in different parts of the paper. For example, this dichotomy could help explain why reducing nominal rigidities makes the pegged regime closer to the managed float: each would be influencing the only distortion left (the international financial asset market structure). However, they would become clearer if the paper focused exclusively on a utility-based analysis. The choice of ad-hoc loss functions may lead to some confusion, because not all central bank types make sense. For example, why should the central bank target the real exchange rate? Presumably, there is a level of real exchange rate volatility that is desirable from a welfare perspective, and a rule that results in an excessive stabilization of the real exchange rate is not desirable from this perspective.

The mechanism through which sterilized interventions work

A limitation of the paper is that the channel through which sterilized interventions work, the existence of a ***private debt*** sensitive risk premium is not analyzed in greater detail. First, if the debt premium was modeled as depending on the country's overall net foreign assets (private plus public), which is perfectly feasible, then sterilized interventions would not work, and there would be no difference between a managed exchange rate regime and a flexible one. Second, the introduction of debt sensitive risk premium in the macro literature was a technical solution to the problem of lack of a unique steady state in open economy models (and the presence of a unit root in consumption and net foreign assets).[1] The fact that this premium matters for sterilized interventions is a fortunate coincidence but that was not its original purpose. The paper would benefit from discussing in greater detail what this endogenous premium is meant to represent. In Berg et al (2013), for example, sterilized interventions affect the economy through balance sheet effects in the financial sector, even though the debt sensitive risk premium affecting consumer optimization depends on the country's overall net foreign asset position (and therefore does not provide a channel for sterilized interventions).

[1] See Schmitt-Grohe and Uribe (2003).

Robustness to individual shocks

The paper would also benefit from understanding how the ranking of policy regimes depends on the type of shock, especially in the context of the utility-based assessment. Is the superiority of the managed regime robust to any of the shocks taken separately? My guess is that the benefit of the managed regime is stronger for some shocks than for others. For example, there are benefits from exchange rate flexibility when the economy is hit with shocks to the terms of trade, because of the exchange rate's role as a shock absorber. This is the finding in Berg et al (2013), it would be interesting to see whether the same results apply here. The paper goes some way in this direction in section 4 but more could be done.

Policy implications

The results from the paper may give the impression that it is straightforward to run a managed float, and the two papers mentioned earlier may also give that impression. The opposite may be true, for reasons that are not modeled but are worth mentioning. First, the paper does not analyze shocks with permanent effects on the terms of trade or the real exchange rate. Such shocks can easily lead to policy inconsistencies: by trying to target an overvalued or undervalued rate the central bank may end up either running out of reserves or endlessly accumulating reserves, to the point where the cost of carrying these may become an issue. Second, depending on how the central bank designs its intervention rule it may expose itself to speculative attacks. This is less likely to be the case if it simply leans against the wind than if it targets an exchange rate level (as in Berg et al (2013)). More generally, there are limits to how many reserves a central bank may be willing/able to sell (the stock out problem). A third point is that in practice, the central bank may not be able to keep a clear distinction between instruments and objectives, and so that they may end up giving up on interest rate policy out of concern for their exchange rate implications. Unlike the analysis in the paper, a clear hierarchy between what comes first and what comes after is key. Finally, even if the CB is perfectly clear about what it does, it may end up sending mixed signals to the markets about what it is that it targets. This may affect the transmission of policy, unanchor expectations, and may be more of an issue in central banks with little credibility.

Smaller comments

There is an inconsistency between the description of the export sector on page 17 (where it it stated that its production uses land) and the production function in equation (22), where production depends on GDP instead.

References

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