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Discussion

Comments on “Monetary policy rules and exchange rate flexibility in a simple dynamic general equilibrium model”

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This very nice paper clearly fits in Devereux’s agenda of promoting exchange rate stability and international monetary cooperation as a better alternative to floating exchange rates and independent, uncoordinated policies. Our first comment has to do with whether or not the paper actually accomplishes this goal.

A reader who is familiar with Benigno and Benigno’s (2003) work immediately recognizes from the setup of Devereux’s model that mimicking the flexible price equilibrium under flexible exchange rates is the optimal policy that central banks should commit to pursue to maximize welfare. All assumptions that ensure this result (along with a very elegant analytical solution of the model) are in place: unitary elasticity of substitution between domestic and foreign goods, purchasing power parity (PPP), log utility, subsidies that offset the monopolistic distortion in steady state.

Given that the model delivers a clear indication as for what central banks should do, all other policy rules are bound to produce results that are inferior (or at best equal) to those generated by the independent pursuit of the flexible price allocation. Hence, it is not clear to us that the setup of the paper is the best one to argue in favor of exchange rate pegs and policy coordination. Doing so by comparing the outcome under what Devereux calls a cooperative peg to constant money growth rules is not convincing, as one is left wondering why central banks would want to follow such money growth rules in the first place.

Perhaps, the more interesting question is how far a properly designed regime of fixed exchange rates leaves the economy from the performance under floating rates and optimal policies. Here, the answer is ‘not far at all.’ The quantitative difference is quite small on welfare grounds.

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Yet, even this result is somewhat unsurprising. It is in line with those of several studies that have found that differences across policymaking regimes are often small on quantitative grounds. Even when policy coordination dominates, we know since the literature surveyed by Canzoneri and Henderson (1991) that it often does so by little in standard models that preserve familiar symmetry features across countries. Flipping the coin, it is not entirely a surprise that optimal policy dominates a properly designed, cooperative peg by little in Devereux's model.

So, one is left with the following question: If central banks can commit to cooperative fixed exchange rate rules such as those suggested by Devereux and they can deliver welfare that is very close to that under the optimal policy, why should not they be able to commit to the independent pursuit of the flexible price equilibrium and go all the way toward optimality? This is not really discussed in the paper. An implicit argument may be that commitment to a cooperative, fixed exchange rate arrangement may be more feasible than the independent commitment to optimal, non-coordinated policies. If this is the argument, one should show that commitment to a second-best rule is better than discretion—the exercise originally explored by Giavazzi and Pagano (1988) in a more traditional, non-microfounded setup. However, this is not what the paper does.

Recent history suggests that cooperative exchange rate pegs are by no means easier to support than the independent commitment to optimal policies. The experience of the European exchange rate mechanism (ERM) in the early nineties is an example. The ERM had the nature of a cooperative peg, with the obligation for the Bundesbank to extend short-term credit lines to central banks under speculative pressure. When the pressure mounted in 1992, and the Bundesbank feared for the stability of German inflation in the wake of the reunification shock, this cooperative feature of the arrangement was put to the test and failed. For the first time in ERM history, the Bundesbank invoked the Emminger Letter (which allowed it to opt out of its cooperative obligations if these were perceived to jeopardize domestic price stability) and the Italian lira and the British pound were forced out of the ERM. A lesson of this experience was that cooperative pegs are very hard to sustain, and corner solutions—outright monetary union or floating exchange rates—are preferable.

Ultimately, we think that Devereux should make his points in favor of exchange rate stability in models in which relinquishing exchange rate flexibility can at least improve upon independent discretion, if not on optimal, uncoordinated policies under commitment.¹ We see relaxing some of the most stringent assumptions of Devereux's model as necessary to have a setup in which the conclusion is not clearly that mimicking the flexible price equilibrium is optimal, even at the cost of some analytical tractability. Benigno and Benigno (2003) offer insights into the consequences of more general assumptions on preferences and the absence of monopoly-offsetting subsidies in a world in which PPP holds. Devereux himself has written papers in which the nature of price setting and nominal rigidity has important consequences

¹ Monacelli (in press) and Soffritti and Zanetti (2003) re-examine the Giavazzi–Pagano exercise in the context of the Galí and Monacelli (2002) small open economy model.

for optimal policy (Devereux and Engel, 2003). We think that relaxing the assumption of complete markets is also central to the development of an empirically appealing, quantitative model for policy evaluation. Benigno (2001) shows that there are gains from policy coordination when markets are incomplete. Importantly, he shows that these gains become substantially larger when steady-state net foreign assets are not zero. Lane and Milesi-Ferretti (2001, 2002a,b) document forcefully that long-run net foreign asset positions are different from zero in a number of countries. Their findings lend empirical support to the relevance of Benigno's result.

We have also some observations on the specific nature of monetary policy as modeled in Devereux's paper.

First, we find the choice of money as the instrument of monetary policy somewhat outdated. After Taylor's (1993) seminal paper, a large literature has developed that focuses on monetary policy through interest rate setting. Woodford (2003) forcefully makes the point that this is how we should be thinking of monetary policy in our academic exercises. We do not think changing the policy instrument would affect any of Devereux's results. However, it would make the analysis more in line with the recent literature in closed and open economy monetary economics.

Second, the specific rules for money supply on which Devereux focuses need some discussion. Consider the rules that central banks follow under a cooperative peg. Since the literature reviewed by Canzoneri and Henderson (1991), we tend to attach a precise meaning to the words 'policy coordination.' The latter takes place when policymakers choose the optimal paths of their instruments jointly, by minimizing a weighted average of the respective objective functions. This can happen under discretion or under commitment. Devereux simply picks rules that contain properly weighted bilateral exchange rate intervention requirements and calls them a cooperative bilateral peg. But would those be the rules that jointly optimizing policymakers would choose? It is not clear. In fact, we suspect that jointly optimizing policymakers would again just choose to implement the flexible price equilibrium inside each country and let the exchange rate float. One can think of Devereux's rules as a cooperative peg, but his seems a different concept of policy cooperation to us than that we are most familiar with.²

Third, Devereux implements targeting rules such as pegs or the flexible price equilibrium by assuming that the reaction coefficient of the policy instrument to the deviation of the relevant variable from the target tends to infinite. For example, an arbitrarily large reaction coefficient to the deviation of employment from its flexible price equilibrium level is how the latter is implemented. In this case, the deviation of employment from the flex price level is zero in equilibrium and no instrument instability is observed. This is reminiscent of McCallum and Nelson's (2000) design of super-aggressive interest rate rules to achieve policy targets. As McCallum and Nelson's interest rate rules, it is exposed to Svensson's (2003) criticism that such rules would be absolutely impractical in reality. It is true that, in a model such as

² In fact, one could argue that the cooperative peg rules are simply exchange rate targeting rules for both central banks that are consistent with existence and uniqueness of the rational expectation equilibrium of the model and have little to do with policy coordination.

Devereux's, where no deviation from target happens in equilibrium when the reaction coefficient is huge, the latter cannot have negative consequences. But reality faces central banks with situations in which deviations of variables from targets do happen. In this case, a rule that involves an arbitrarily large reaction can have devastating consequences for the economy.

There are many ways one can implement a targeting rule without resorting to arbitrarily large reaction coefficients. Woodford (2003) illustrates how optimal monetary policy can be implemented through feasible interest rate reaction functions. In open economies, one can also implement the flexible price equilibrium through very simple rules. Consider the following example. Mimicking the flexible price equilibrium in models that rely on nominal rigidity as in Calvo (1983), Yun (1996), or Rotemberg (1982) involves stabilizing inflation in domestic product prices at zero so as to keep the markup at its steady-state level. Denote the percentage deviation of domestic (foreign) product price inflation from the steady state (zero) with π_t^{PPI} ($\pi_t^{\text{PPI}^*}$). Suppose uncovered interest parity (UIP) holds. Denote the percentage deviation of the home (foreign) gross nominal interest rate between t and $t + 1$ from the steady state with i_{t+1} (i_{t+1}^*). Then: $i_{t+1} - i_{t+1}^* = E_t \varepsilon_{t+1} - \varepsilon_t$, where ε_t is the percentage deviation of the nominal exchange rate from the steady state and E_t is the conditional expectation operator. Suppose the home and foreign central banks follow the rules:

$$\begin{aligned} i_{t+1} &= i_{t+1}^* + E_t \varepsilon_{t+1} - \varepsilon_t + \tau \pi_t^{\text{PPI}}, \\ i_{t+1}^* &= i_{t+1} - E_t \varepsilon_{t+1} + \varepsilon_t + \tau^* \pi_t^{\text{PPI}^*}. \end{aligned}$$

Each central bank is reacting to the counterpart's behavior and to expected depreciation in a proportional fashion, and it is reacting to inflation in domestic product prices with coefficients τ and τ^* different from zero. Given UIP, the rules above imply $\pi_t^{\text{PPI}} = \pi_t^{\text{PPI}^*} = 0$ and ensure that central banks are mimicking the flexible price equilibrium in each country without the need for extreme policy aggressiveness. In fact, one does not even need the reaction coefficients τ and τ^* to be strictly larger than 1—and thus satisfy the Taylor principle—to accomplish the goal, although τ and $\tau^* > 1$ may be desirable to signal the central banks' policy commitment to the public.

Conclusions: We enjoyed reading Devereux's paper. It is a very useful exercise if one wants to understand the workings of the class of models that are establishing themselves as benchmark for academic and policy analysis under different assumptions about policy. The elegance of the model, Devereux's ability to solve it analytically, and the clarity of the arguments are to be praised. Yet, we are not entirely sure that this paper makes a convincing case in favor of relinquishing monetary independence.

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