

Comment on "IS-LM-BP in the Pampas"

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International macroeconomics has been profoundly affected by the emerging market crises of the 1990's and the early part of this century. The crises have led economists to question conventional wisdom in many areas. For instance, the last few years have seen considerable revisionist thinking on the benefits of capital inflows, the primacy of fiscal imbalances in exchange rate crises, and the role of exchange rate adjustment in responding to external shocks.

Unfortunately, relatively little of this new literature has yet been absorbed into the language of policymaking. It is this deficit that the current paper attempts to correct. The authors have previously written a number of more technical papers exploring the effects of the "credit channel" in the macroeconomics of emerging market economies. This paper provides an exposition of the main messages of their papers in terms of a simple IS-LM-BP analysis, appealing to the universally known Mundell-Fleming apparatus. Unlike the Mundell-Fleming model, however, the present model does not lack microfoundations. But all the hard work is done in a lengthy appendix. The body of the paper is made extremely user-friendly, allowing readers to quickly absorb the main features of the model and then go on to do their own mental experiments within the framework. In terms of setting out an intuitive and elegant framework of analysis, the authors have been very successful.

While the main aim of the paper is to provide a textbook-friendly treatment of an open economy model with balance sheet constraints, a secondary aim is to evaluate if and how these constraints should alter our thinking about the benefits of exchange rate adjustment in emerging market economies.

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The paper combines features from a number of different literatures. From the open economy macro literature, it uses a sticky-price intertemporal model with endogenous investment dynamics. From the credit channel literature, it introduces financial frictions in the form of a risk premium that is sensitive to net worth relative to liabilities. From the crisis literature, it emphasizes the importance of foreign currency liabilities. The result is an integrated macro model in which the effects of a negative external shock operating through the effects on the endogenous risk premium can be examined. The results parallel those in Bernanke, Gertler, and Gilchrist (1999)—shocks tend to get magnified through the “financial accelerator” mechanism. In addition, the paper shows the possibility for a contractionary devaluation, if the negative effects of devaluation through increasing the risk premium outweigh the positive demand effects coming through an increase in competitiveness.

I. Is This the Right Picture?

Traditional textbook Mundell-Fleming analysis is done in interest rate output space. This paper also works in $i - y$ space, but i is now investment, not interest rate. I find it somewhat easier to recast the model in a diagram with the risk premium on the vertical and output on the horizontal.¹ Figure 1 shows how the IS and BP curves work under the “presumptive” case where the BP curve is flatter than the IS curve. Both curves are downward sloping, the IS curve because a fall in the risk premium reduces the real interest rate and raises investment and GDP. The BP curve slopes down simply because a rise in GDP increases net worth and reduces the risk premium. This perspective neatly shows the “magnification” effect introduced by the endogenous risk premium. At a given exchange rate, a rise in foreign demand shifts out the IS curve. In the standard analysis, this would raise demand and output at a given real interest rate. But in an economy where balance sheets matter, there is an endogenous fall in the risk premium, further stimulating investment and output.

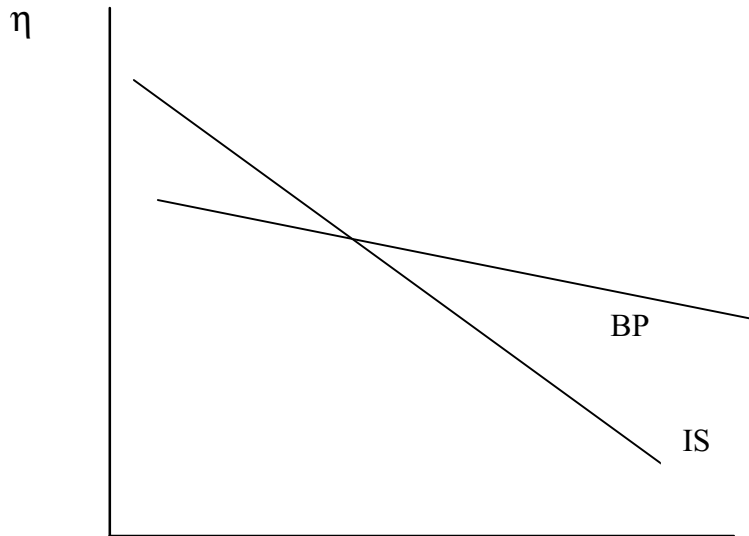
This analysis can also easily illustrate the impact of a nominal exchange rate change. A nominal devaluation shifts both the IS and the BP curves upward. The devaluation is contractionary only if the BP curve shifts out by more than the IS curve.

Unfortunately, the analysis of a floating exchange rate regime is not easy to do in the same diagrammatic terms. This is because the LM curve is also downward sloping in risk-premium/output space, and a movement in the exchange rate will shift all three curves simultaneously. This is true also of the $i - y$ space analysis done in the paper. Since floating exchange rates seem like a natural starting point for policy evaluations with respect to emerging markets and balance sheet constraints, this limits the usefulness of the diagrammatic apparatus.

Finally, it should be noted that the model does admit some counterintuitive features. So far as it appears, there is no guarantee that the BP curve will actually cut the IS curve from below. It is possible for the BP curve to be steeper than the IS curve. In this case, it is an external demand expansion and is actually contractionary in output terms. While this outcome seems unlikely, it is not clear exactly what features of the model might allow this pathological case to be ruled out.

¹In fact, both loci should be centered at zero, but I find Figure 1 easier to interpret.

Figure 1. An Alternative Diagram



II. Is This the Right Model?

The key innovation of the model is to allow for an endogenous risk premium. The risk premium depends positively on the exchange rate and negatively on output. As in the Bernanke, Gertler, and Gilchrist approach, this risk premium behaves as a continuous function of the exchange rate and output. The risk premium therefore behaves smoothly in response to shocks to either variable. This is an appealing feature of the Bernanke and others model, because it allows them to do linear approximation and simulation. But I'm not convinced that this is a virtue for the analysis that the present authors want to do. This is because there is some reason to believe that the risk premium would behave very differently in the case of big shocks—i.e., a crisis time, than it would during normal times. Figure 2 illustrates HSBC bond spreads (in U.S. dollars) for Thailand, Korea, and Indonesia, beginning just after the Asian crisis. It is true that there seems to be a positive relationship between the exchange rate and the risk premium. But it is also striking that this relationship really only holds during the Asian crisis. In normal times, there seems to be little association between the two. It does not seem, from this figure, that the risk premium is a smooth function of the exchange rate.

How important is this distinction? Conceivably, it could be very important. Previous quantitative work by the authors (Céspedes, Chang, and Velasco, 2000), and also by Devereux and Lane (2001) suggests that, when calibrated to reasonable parameter values, the addition of the type of financial accelerator mechanism used in this paper, allowing for a smooth continuous risk premium, does not overturn any conventional wisdom about the benefits of exchange rate adjustment. The mechanism does magnify the response to shocks, but it does not nullify the role of the exchange rate in the adjustment process.

Figure 2a. Thailand

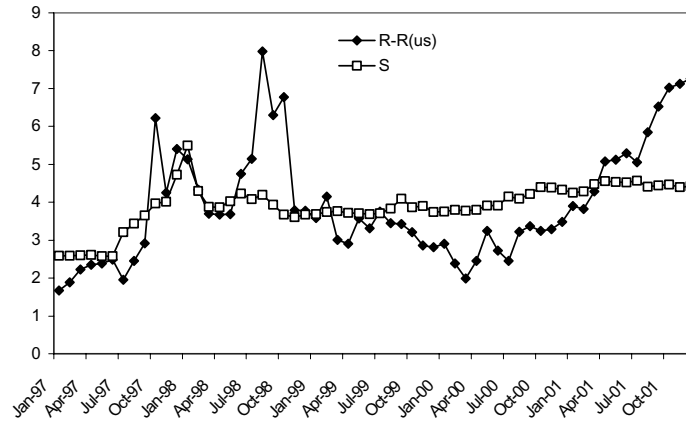


Figure 2b. Korea

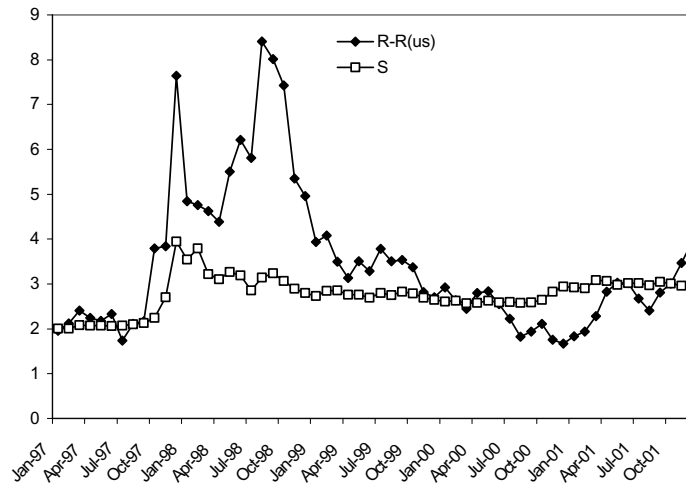
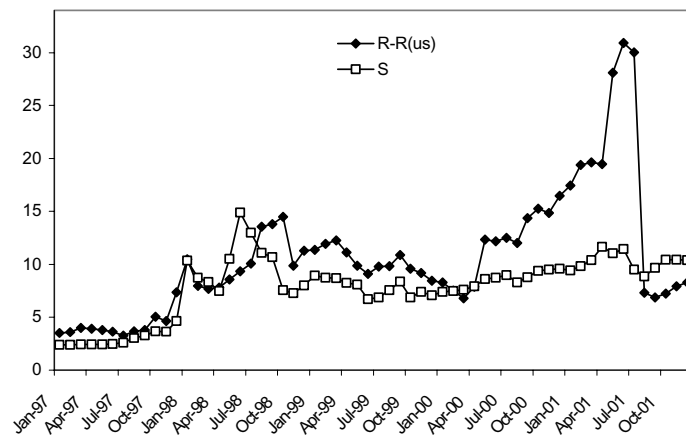


Figure 2c. Indonesia



By contrast, alternative ways of modeling collateral constraints may lead to substantially different results. If credit constraints bind only occasionally, and with respect to large shocks, then it may benefit a country to try to stabilize its exchange rate to try to avoid these constraints. Mendoza (2000), and Aghion, Bacchetta, and Banerjee (2001) pursue this alternative approach. This modeling approach seems more consistent with the experience of emerging market economies. Crisis times are different from normal times. In a crisis, capital flows are subject to "sudden stops," requiring a sharp turnaround in the current account, a large real exchange rate depreciation, and usually a big fall in GDP. Moreover, this seems to happen even in the absence of unusually large external shocks. The approach used in the present paper doesn't seem able to generate the sudden-stop characteristic of crises, at least without very large shocks. This is not surprising in one sense. In the model of Bernanke and others, the risk premium is meant to capture moral hazard at the firm level. It is not clear that we can reinterpret the model to deal with systemic country risk exhibited during a crisis.

There may be alternative specifications of the risk premium, however, that would allow for the financial accelerator to work quite differently than in the present paper. One possibility is to pay more attention to the role of banks in investment financing in emerging markets. In the present setup, an exchange rate depreciation affects both the asset and liability side of entrepreneurs' balance sheets. With foreign currency debt, an exchange rate depreciation increases liabilities. But because the exchange rate change (in the normal case) increases output, it increases net worth directly. In a recent paper, Choi and Cook (2001) develop a model quite similar to that of the present paper, save for the fact that investment financing is done by banks. Banks borrow in foreign currency and lend in domestic currency, in terms of noncontingent loans. In their framework, the effects of a devaluation are much less favorable, because there is no positive offset on banks' balance sheets. The devaluation always reduces net worth. Choi and Cook show that a contractionary devaluation is the norm in their model.

Now I'd like to shift focus a little bit, away from the question of what type of collateral constraint is appropriate, toward the question of where the constraints should enter. In the present model, the balance sheet effects enter on the demand side. In response to a negative external shock, aggregate demand is lower than it would be otherwise, because there is a secondary increase in the risk premium, and investment falls. If constraints were only important on the demand side, then we would expect that a crisis event would be associated with a collapse in the output of domestic, or nontraded, goods but would not impinge directly on exportable, or traded, goods, since their production is limited only by world demand. In fact, during a crisis, the real depreciation following a current account reversal should lead to a fall in the real cost of production of traded goods, stimulating a boom in that sector.

The evidence tends to sharply contradict this, however. Figure 3 shows that for Thailand, Korea, and Indonesia, the Asian crisis led to sharp contractions in both traded and nontraded output, at least in the immediate aftermath of the crisis. This suggests that, to the extent that balance sheets were important, it was on the supply side rather than the demand side. Devereux and Lane (2002) develop an emerging market model in which balance sheet constraints limit the access to trade

Figure 3a. Thailand

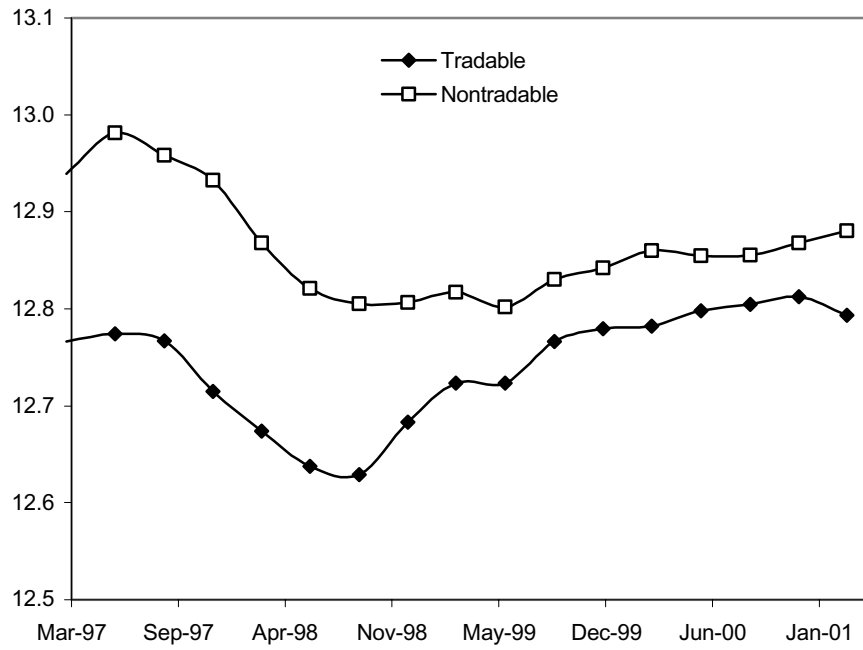


Figure 3b. Korea

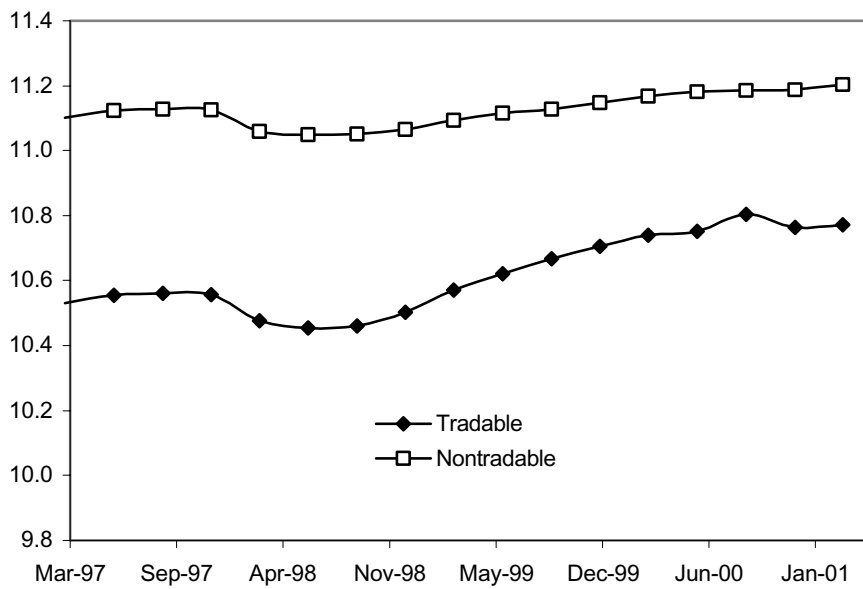
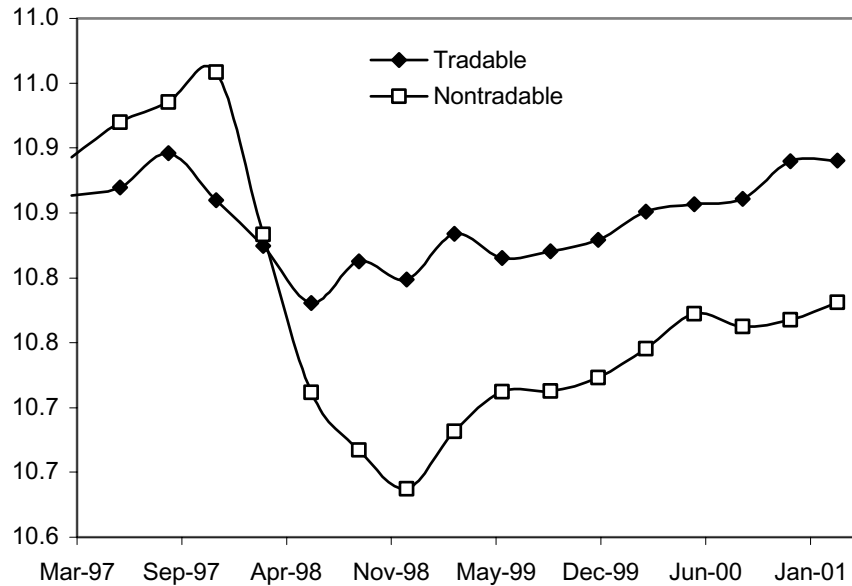


Figure 3c. Indonesia



credit that is available to exporting firms. As a result, a sharp devaluation may generate a fall in the output of traded goods. From anecdotal evidence during the Asian crisis, the problems associated with trade financing seem to have had an important role in the propagation of the crisis.

III. Conclusions

Overall, I think this paper makes a worthwhile contribution to the debate over the right way to think about macroeconomic policy in emerging markets. It is pitched at a level that makes the issues accessible to all. My ultimate concern is that it does not really contribute to our understanding of crises or "sudden stops." In emerging market economies, however, crises and sudden stops have dominated the macroeconomic environment over the last decade.

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