Some Parallels Between Currency and Banking Crises: A Comment

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Some Parallels Between Currency and Banking Crises
by Nancy Marion
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   Let me begin by saying that I really enjoyed reading this well written and very interesting paper. What Nancy does in this paper is to present a cohesive survey of three strands of literature: the theoretical literature on currency crises, banking crises, and the more recent papers that have attempted to link the two. It is the "twin crisis" literature, which focuses on banking crises in open economy models, that the paper devotes the most attention to. Like the literature on currency crises, very different interpretations of the causes of the twin crises have been offered and this paper lays out some of the key differences between first generation models, which stress the role of economic fundamentals, and second generation models, which highlight the role of self-fulfilling crises and multiplicity of equilibria.

   I am going to divide my remarks into three parts. First, I am going to make some brief comments about the theoretical models discussed in the paper, complementing Nancy's discussion of these. Second, I am going to turn my attention to the empirical evidence on the links of currency and banking crises. Lastly, I will make some remarks about the scope and direction of future research in these areas.

Banking crises models with open economy features

  A predictable open-economy bank-run model, which is discussed at some length in this paper, is that by Dooley (1997). In the Dooley setting, the policy inconsistency arises because the government provides an insurance guarantee for the currency-deposit conversion rate yet allows the backing to support new guarantees to decline over time. This moral hazard story of financial crises has some appeal in explaining capital flows to emerging markets in the wake of the Mexican peso crisis of 1994 and the (then) unprecedented size of that bailout. It also may help explain why domestic-foreign interest rate spreads fail to systematically rise ahead of crises (see Kaminsky and Reinhart, 1996). However, I do have two issues as regards this story that I would like to add to Nancy's comments on this paper. The first issue has to do with the role of uncertainty. In this framework, moral hazard arises because the guarantee offered by central bank reserves is fully credible. But, of course, in reality there may be both uncertainty and information asymmetries. Surely, as was the case in Thailand, derivative positions (the central bank had borrowed dollars in the forward market) can hide what the "true" level of reserves is. Hence, an investor may not have full information on the extent to which the liabilities being issued are fully backed or not. In a similar vein, as the recent Asian crises have shown, the extent of liabilities or implicit guarantees that are outstanding is often not known until after the crisis. In either case, an investor would face the risk, with a nonzero probability, that the central bank does not actually have enough reserves (either its own or those it can borrow from international organizations) to bailout everyone. In this case, uncertainty about who gets paid and who doesn't would mitigate investors' appetite for these bank deposits.
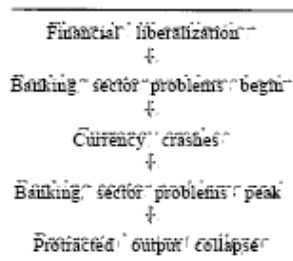
Second, it is important to remember that these grandiose bailouts are a relatively new feature of international capital markets while booms and busts in the capital flow cycle and financial crises have been around for a long time. It must be remembered that foreign investors, harking back to the previous century and Latin American railroad bonds, have lost a lot of money during financial crises. Hence, one can only take the moral hazard argument to explain the ebb and flow of cross border capital movements so far. Turning to second generation explanations of the twin crises, as Nancy notes, there have been two recent papers that have extended the Diamond and Dybvig (1983) framework to an open economy setting-Goldfajn and Valdes (1996) and Chang and Velasco (1998). The brief remarks that I will make here apply to both of these models. As in the original paper, the crises in these models are owing to a liquidity problem on the part of banks. The banks may be faced with runs and may not be able to borrow from abroad to satisfy deposit withdrawals. The key assumption in the models that gives rise to illiquidity is that banks borrow short (from abroad) and lend long (to domestic projects). It is worth noting, however, that this illiquidity scenario presumably rules out the existence of foreign banks, which would have recourse to liquidity in times of unexpectedly large withdrawals via the parent bank abroad. Secondly, it also rules out banks holding any liquid asset, such as an internationally traded bond, that can be liquidated if the need arises. The introduction of either of these plausible considerations into the models would considerably dampen their explosive behavior.

Empirical evidence on the links between banking and currency crises

Given that the theme of this paper has been the parallels and links between currency and

banking crises, I feel I should discuss briefly what the empirical evidence tells us about the chronology of these events (Table 1). This part of my discussion is based on Kaminsky and Reinhart (1996), which examined the issue in some detail.

Table 1. The sequence of the twin crises.

Financial liberalization
↓
Banking sector problems begin
↓
Currency crashes
↓
Banking sector problems peak
↓
Protracted output collapse

From the analysis of nearly thirty banking crises, it would appear necessary to start the discussion of these crises talking a little bit about financial liberalization. Most of the banking crises we examined in that paper shared the common feature that the financial sector had been liberalized shortly before the crisis took place. It would appear that the removal of interest rate ceilings and reductions in reserve requirements that are part of the liberalization process in an environment of lax regulation and even more lax supervision is a recipe for an indiscriminate lending boom and an eventual banking crisis. In turn, as the bad bank loans pile up and the financial sector begins to depend on central bank credit and low interest rates, the seeds are sown for a policy inconsistency between the central bank's exchange rate commitment and its endeavors to act as a lender of last resort to the banks.

More often than not, this policy incompatibility ends up as a currency crisis. However, the story does not end with the currency crisis, as the devaluation itself appears to have pernicious feedback effects on the banking sector. There are clearly balance sheet

effects, among other transmission channels, that merit close scrutiny. Indeed, most often the peak of the banking crisis (if not its beginning) occurs shortly after the currency crisis. Nor does the story end there. As the economy contracts, often severely, the domestic financial sector remains mired in serious difficulty for an extended period of time. In that analysis, we also show that when currency crises occur alongside banking crises the crises are far more severe than when the currency crisis occurs without banking sector problems (see Table 2 and Kaminsky and Reinhart, 1998a). Also, the recessions are deeper and more protracted and the crash in asset prices far greater. Indonesia's decline in GDP of nearly 14 percent in 1998 starkly reminds us of the severity of these capital-market crises.

Table 2. The severity of the crises.

Severity Measure	Banking Crises		Balance-of-Payment Crises	
	Twin	Single	Twin	Single
Cost of Bailout (percent of GDP)	13.3	5.1'	N.A.	N.A.
Loss of Reserves (percent)	N.A.	N.A.,	25.4	8.3'
Real Depreciation (percent)	N.A.	N.A.	25.7	26.6
Composite Index	N.A.	N.A.	25.6	17.5

Source: Kaminsky and Reinhart (1996).
Notes: Loss of reserves is the percentage change in the level of reserves in the six months preceding the crises. Real depreciation is the percentage change in the real exchange rate (with respect to the dollar for the countries that peg to the dollar and with respect to the mark for the countries that peg to mark) in the six months following the crises. The composite index is the weighted average of the loss of reserves and real depreciation. Episodes in which the beginning of a banking crisis is followed by a balance-of-payments crisis within 48 months are classified as twin crises.
, Denotes that the measure of severity of single crisis episodes is statistically different from the twin crises severity at the 5% level. An N.A. denotes not applicable.

While the models that Nancy has reviewed in the paper capture several features of banking and currency crises, these models as well as a much broader family of first and second generation models of currency crises, are silent on several crucial dimensions. Hence, high on the list of topics for future research in the area of financial crises, I would stress three broad themes, that have received comparatively little scrutiny.

First, we should develop models that can explain the self reinforcing vicious circle of banking crises and currency woes. Specifically, the oft-observed pattern of banking crises leading to currency crises and the latter making the financial sector problems even worse. Pinning down the balance sheets of firms and banks and modeling the balance-sheet effects of these crises would clearly be a welcome addition to this literature.

Second, more research needs to be done on what Calvo (1998) has called the sudden stop problem, referring to the sudden stop or drastic reversal of capital inflows and its highly disruptive effects on economic activity. We need to gain a better understanding of the determinants of the output collapses we observe. This would be a departure from existing models. In both first generation and second generation models devaluations are expansionary. In an example of a first generation model, Gerlach and Smets (1995) explain "contagion" following a devaluation in one of two countries that are engaged in bilateral trade with one another by the recessionary effects in the second country of the real appreciation after its trading partner devalued. In that linear model the devaluation in the second country occurs because the decline in output leads to a decline in money demand and a loss of international reserves. In Obstfeld (1994), for instance, the policymaker's loss function weighs the loss of credibility from devaluing from the economic loss of not doing so. In either case devaluations produce the textbook

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improvement in economic activity. Clearly, the aftermath of devaluations in emerging markets paint a very different picture, which we have yet fully to understand and formalize via a model. In this regard, understanding the behavior of banks following the crises is of some importance as, for a variety of reasons, bank lending dwindles and banks often hold high levels of excess reserves.

Lastly, the role of foreign banks in propagating disturbances-or, more broadly, the role of common lenders-as a vehicle of contagion is another area where models have been relatively scarce. Yet, some of the recent evidence on the channels of contagion, such as Frankel and Schmukler (1996) and Kaminsky and Reinhart (1998b), point to the importance of a variety of financial sector links.

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