



Discussion

Comments on “How good is the market
at assessing bank fragility? A horse race
between different indicators”

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The main distinguishing feature of this paper is its focus on balance sheet and other bank-specific data. This is in contrast to other papers on emerging market banking crises that have emphasized macroeconomic variables, and provides a valuable alternative perspective on the Asian crisis. The paper makes a number of contributions. First, it extends the earlier paper by Bongini et al. (2000) which conducted a logit study of the determinants of bank reorganization (defined as a bank being closed, recapitalized, suspended or merged) in terms of balance sheet variables, ratings and other dummies. The current paper by Bongini, Laeven and Majnoni adds two additional explanatory variables – whether the bank is rated, and whether the bank is listed on the stock market. Another contribution of the paper is the construction of the series of the implied default probabilities obtained from a Merton model for those banks for which stock market data are available. This yields estimates of the implied value of deposit insurance. This series is then plotted for each country in the study, and compared to the plots arising from the other variables in an attempt to gauge how closely any of these variables correspond to our prior conceptions as to the crisis period.

A number of interesting conceptual questions may be raised in connection with the paper's methods and findings. Three suggest themselves in particular.

- For the “indicators” referred to in the title, what are they indicators of?
- Is the Merton model appropriate for this type of study?
- Is this approach superior to one based on macro variables?

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Consider the first bullet point. To the extent that the dependent variable of the logit study is bank reorganization, the occurrence of the event reflects both the underlying expected loss of the bank, but also the constraints and preferences of market participants and the relevant authorities. For the same underlying “fundamentals” in terms of expected loss, say, the responses of market participants and public authorities will be conditioned by the overall macroeconomic conjuncture and other constraints they may face. As such, it could be argued that bank reorganization is an indirect indicator of the underlying fundamentals. Modelling the motives and constraints of market participants and the public authorities is of independent interest, but it would be important to be clear about what one is trying to measure.

Next, consider the second bullet point. The familiar Merton model rests on the assumption that the liabilities of the borrower are either constant or is growing at a known rate, and that it is only the assets of the borrower that is fluctuating. The assets follow an exogenous geometric Brownian motion. It is when the ratio of assets to liabilities falls below some threshold that default is triggered (in the simplest case, the threshold is one). The authors use a well-known adaptation of this method to calculate the implied default probability of a bank, and hence the implied value of any deposit insurance. The main assumptions, however, seem ill suited for the study of banks during the Asian crisis. One of the key features of the Asian crisis was the currency mismatch on the balance sheets of borrowers. By borrowing at the (low) dollar rates, but investing in the high-yielding local assets, the borrowers were betting on being able to reap the benefits of the interest rate differential. As long as the currency peg held, this worked well. However, when the peg fell, this strategy was disastrous. Indeed, any attempt to head off imminent devaluation would (by, say, belatedly selling local currency and buying dollars) would merely exacerbate the pressure on the currency peg and hasten its demise.

With exchange rate risk, it is the uncertainty over the banks' fluctuating *liabilities* that is key to failure. This is very different from the standard Merton model. By presuming that all the change in the stock price is due to a shift in the asset value of the bank, one would be overestimating the volatility of the asset process. Moreover, since the collapse of the peg is a one-off event, the assumption that the ratio of assets to liabilities follows geometric Brownian motion would be hard to justify. This is so, even if one believed that the underlying asset process itself follows geometric Brownian motion.

There is one further point that also leads us to the third bullet point. Currency crises in their final throes are usually accompanied by desperate measures by the authorities to stem the devaluation by raising interest rates, among other things. Such interest rate defences are accompanied by the depressingly familiar collapse in asset prices (stocks, property, debt) and increases in corporate distress. Thus, even if the peg manages to stay intact, the financial crisis will still have a sizeable effect on banks' stock prices. The lesson here is that the asset process of the banks are affected by the *endogenous response* of the authorities to circumstances, rather than being a fixed, exogenous process. This suggests that a quick fix in terms of putting in jumps in the process governing the asset/liability ratio will not be a fully satisfactory solution.

The decision of the authorities to abandon the peg or to subject the economy to the painful medicine of defending the peg depends on the underlying strength of the economy. In turn, the pain threshold is very much a question of the underlying macroeconomic strength of the country concerned. In this respect, it could be argued that macroeconomic variables are at least as important in understanding bank distress through their effect on the liabilities side of the banks' balance sheets.

Reference

Bongini, P., Claessens, S., Ferri, G., 2000. The political economy of distress in East Asian financial institutions. *Journal of Financial Services Research* 19, 5–25.