SAMUEL S. THEODORE

Market Risk for Banks and its Controls - Their Importance for Moody's Bank Ratings

The topic of market risk has become overly important for bank managements, regulators, and analysts alike. It seems that the more is published and talked about market risk, the more market participants realize how many more details they want to focus on.

We have noticed sometimes a trend to excessively fear the danger of a banking collapse, or worse yet, of a systemic collapse, and this because of improperly monitored market risks taken by an institution. Such concerns are all the more acute as the markets are becoming more volatile. We are having a sample of such a period in the current shifty markets. A systemic collapse is probably less likely, but we believe it's good that this concern does exist.

First, a few general remarks. Among other things, what we try to anticipate in our bank rating analysis is the reaction to a crisis scenario of bank managements, but also of regulators, of institutional shareholders (if any), in other words, the predictability of what we generically call institutional support. As a parenthesis, institutional support has been more forthcoming and especially more predictable in many European countries than it has been in the more fragmented U.S. banking system. However, due to increasing challenges brought to European banks by deregulation, market liberalization, and globalization, institutional support tends to be today less predictable than in any period after the last war. Simply put, there are too many challenges, too many new developments, too many new elements of risk that cannot be easily quantified, classified and monitored in an orderly fashion. And, also, today's technology can lead to a crisis much too fast for people (again, managers or regulators) to be able to react and prevent, if adequate systems are not already in place.

And yet, let us remember how many bank failures have occurred earlier in this century in Europe, at a time when the banking business was so much less complicated compared to today's world - and then we can conclude that enormous improvements have taken place in monitoring and controlling banking and financial risks by both bank managements and regulators.

This brings the subject of market risk for banks, which is clearly many times more complicated and more complicated to monitor than it ever was in the past. The definition of market risks can be misleading. After all, almost everything that a bank does carries market risk, not least the bread-and-butter of making loans and collecting deposits. For example, sharp moves in interest rates affect differently a bank's assets and liabilities. But we take here the narrower definition, the one for example that has been adopted by international regulators such as the Basle committee, the one which refers to trading in debt and equity securities, commodities, derivatives, and foreign exchange. It is fair to say that our analysis of the risks a bank is willing to take (or takes unwillingly) in carrying out such activities is really global. It includes both credit risk and market risk,

in addition to the other elements of risk usually associated with trading: legal, operational, etc. In this context, we have identified at least five areas in which to focus our analysis for market risk.

1. Measuring Market Risk and Its Components

We rely to some extent on what is increasingly demanded also by bank regulators, that is, an analysis of a bank's balance sheet sensitivity, mostly to interest-rate changes. We look at significant fluctuations in the net replacement value of the trading portfolio for all instruments - both cash and derivatives. Monitoring contract replacement costs is done of course to assess primarily the *credit* risk of trading activities, but the exercise is also helpful to evaluate the *market*-risk appetite of the bank: If net replacement values are unusually high for the type of trading book, or especially if they fluctuate wildly (not in correlation with market patterns), perhaps the book-matching policies of the bank are too "liberal" (i.e., substantially imperfect matching to arbitrage market deviations). This would be a negative flag for us, even if we feel fully comfortable with the credit risk of all counterparties. We limit this type of analysis to the bank's own book, but we want to know to what extent proprietary trading is or not fundamentally different from trading for clients? Unfortunately, not many derivatives warehousers are able to segregate analytically their own books from their clients'.

Various more technical details are part of our analysis: How is the-mark-to-market valuation done? Is the pricing based on mid-market rates or worst of bid/ask rates? What valuation models are used? Are they developed in-house, are they purchased from outside vendors? How are market variables determined? Is the potential risk of illiquidity in a specific market, such as derivatives, being included in the price?

We try to understand how conservative the bank is in setting limits for such market risks as delta, gamma, volatility, correlation, etc. Are these limits based on true stress scenarios? What are the hypotheses of such scenarios? Do we feel comfortable with them?

We question how often is the bank marking to market its balance sheet and off balance sheet positions. Frequently, we are told that it is done every day. Sometimes, we are told that it happens every week, or every month, but if need be market values can be calculated on an ad-hoc basis very fast. This may be bad news for us: when a crisis hits, it is usually very fast, and if actual position reports are not examined regularly by senior management, the amplitude of a problem goes undetected until it may be too late.

We also ask ourselves to what extent can we rely on the portfolio valuation given to us by management, what are the assumptions behind it? Is the market valuation tested with scenarios, do they use a simulation approach? What are the scenarios? Also, how are volatility and correlation factored into the simulations? How is market risk hedged in each product area? Is the hedging for option-based derivative products static or dynamic? When given the estimate of sensitivity, to what extent has the time factor been included and correctly assessed?

2. Market-Risk Tolerance of Management

An important matter for us is the extent to which the bank's existing tolerance for risk and current assumptions will change once the business grows. Risk tolerance is a relative element, it changes in function of the growth of the business. Management is constantly building up experience, like in any other activity, and with it both the level of self-confidence and the skills enabling it to do more are growing. And management is also pressed by competitors, and, as in lending, it so often happens that the bank ends up at some level of risk that it would have never accepted had it been given the option at the very beginning.

3. Modalities and Degree of Market-Risk Controls

We do not have a ready-made model of "good controls" versus "insufficient controls". We try to rely on common sense in our evaluation process and we want indeed to be reassured that the market risk taken by the bank is well monitored and well controlled. We usually obtain the sense for what is being done from three main channels:

- Assessing the extent to which the monitoring and control are done by professionals that are not directly involved in the profit activities which generate these risks.
- Examining various management reports produced by various departments, and trying to understand and interpret them.
- Obtaining direct information from discussions with management.

Regarding the first aspect, it makes us quite uncomfortable when we find that there are no dedicated controls on market-risk-generating activities, in other words that the controls are done, other than by the traders and their supervisors themselves, only at the level of senior management. We strongly feel that market risk control is, and should be, a full time job. Nowadays one can hardly imagine a decently-managed commercial bank engaged in business lending and not having at hand some credit experts whose job is not to generate profits by making loans. We can also hardly imagine traders taking their decisions on what counterparty to do business with, not having any input from the credit specialists. The same with market risk. Sometimes, some banks that have just entered market activities would tell us that a control system for market risks would be soon institutionalized. This could be a sign that the thought process behind controlling market risk may have been a bit too late.

Moving another step, when we examine various management control reports, we try to understand exactly how useful they are, how much real information they convey, how often they are produced. Perhaps the most important thing is the certainty that they are really checked by the appropriate managers. And, if they are, that it is done on a timely basis, and that the reports are well understood? For that, the accessibility of information in those reports is essential. It does happen that ever so often, going over an extremely complicated management control report and not understanding much of it, we ask questions, and we do not get very clear answers.

4. Sensitivity of Senior Management to Market Risk and Market-Risk Controls

When discussing these topics with the bank's management, we have in some instances the feeling that market risks are not very well comprehended, that trading activities, including in more complicated derivatives, are perceived as being somewhat of a routine nature. We are often concerned that, sometimes, the senior management of a bank does not fully comprehend the extent to which their institution can be at risk due to market activities. They are happy to rely on the specialized departments and are confident that any problems will be fully detected and straigthened out at that lower level. However, even if we feel comfortable with the controls assured at the departmental level, we are reassured when the top management fully understands what is going on and is always in a position to hit the brakes instantly and to say "we stop here".

5. Capital Allocation to Market Risks

We believe that the current discussion on the appropriation of capital for market risks (Tier 3), as suggested by the Basle Committee, will have a beneficial effect among bankers. We are aware of the fact that many banks in Europe (and for that matter several European regulators as well) are reluctant to see yet another layer of capital imposed to banks, fearing that excess capital will prevent them from competing effectively in the global marketplace. We as a rating agency are nevertheless glad to see such preoccupation with covering market risks being part of global regulations.

Regarding internal capital allocation by banks, we find that many of them are only at the beginning of the road. Often, capital allocation means solely complying with regulatory norms of solvency. But even when a bank does have a system in place to allocate capital among areas of risk, we still find that such analysis is often in a "laboratory" stage: It is done by some financial unit of the bank, but the outcome, that is, the actual economic allocation, is not really put into practice. Often, after such an allocation exercise, management realizes that there is not enough capital around to fill all the risk gaps, and the project goes straight to the back burner. What we often do is try to undertake the capital-allocation analysis ourselves and then come up with some kind of "ideal" capital level, and also with a "minimal" capital level. Of course, such analysis can be only relative, it is difficult, if not impossible for us to determine for each rated bank the exact risk correlation among instruments, markets, and volatility scenarios. Nevertheless, a rough estimate can at least give us a view on the true capital needs of a bank.

I will now conclude with a few words on the banks we rate, related to the manner in which they accept, manage, and control market risks.

In spite of increased turmoil in financial markets and in spite of spurred market activities by banks, we at Moody's continue to believe that, overall, *the credit risks associated with lending (and also with trading) outweigh market risks related to trading.* Increased exposure to market risk, or insufficient controls, have been so far less of a main reason for rating downgrades. In looking at the ratings Moody's has on the large U.S. or Japanese securities houses, for example, one will notice that some of them are fairly high, in spite of the high-risk profile of their activities. As an example, we maintain A1 and A2 ratings on six major securities houses. By comparison, similar ratings often characterize such institutions as savings banks or building societies, whose traditional business franchise and financial structure are inherently less prone to shock risks. This is in part because we believe that *significant market risks, wherever they are truly well diversified, well covered, and adequately controlled, can be more manageable than lending risks.*

In general, we feel that the large universal banks that have a global market presence are relatively well protected against significant market risk. I can mention here several global players from the United States, Switzerland, Germany, the United Kingdom, France, or Japan. Most of such large groups operate in several markets, are involved in a wide range of products and instruments across many sectors - debt, equities, commodities, derivatives, foreign exchange.

In addition to the inherent advantage of netting (typical of the portfolio approach for derivatives warehousing), which leads to significant offsets and thus to lowering market risks, we believe that in these cases the portfolio effect of such a wide diversification also contributes to lower risk. This is because of the lack of perfect positive correlation among all these instruments, which, we believe, can substantially mitigate market risks. Besides, the major participants in global market activities have well defined specialized departments, extensive and sophisticated technology, rapidity of information, adequate back offices, and especially dedicated teams for controlling market risks.

At the other end of the spectrum, we are much more concerned about new entrants in such markets and activities, or about small players that objectively can be more exposed to market risk. This, of course, assuming that their market activities are too extensive when compared to their franchise strength and to their capacity to manage risk. The typical scenario goes as follows: because of competition from larger banks, a small institution feels compelled to offer its business clients more sophisticated trading and market-making services. In time, the bank would feel more confident in undertaking proprietary trading, including for speculative purposes. Sometimes, the control systems would come in place as a second step, which puts the institution at some obvious risk. One example of such potentially dangerous activity diversification would be a retail institution with no international presence which, in order to boost returns from its liquidities, would

swap some of its local government bond holdings for more complicated instruments, such as some types of U.S. mortgage-backed securities. In some instances, our ratings would then tend to reflect such drastic changes in market-risk appetite.

We can thus conclude simply by saying again that yes, Moody's monitors carefully all these elements related to market risks, but so far they do not represent determining factors for rating changes.