Comment on «A Limit-Risk Capital Adequacy Rule: An Alternative Approach to Capital Adequacy Regulation for Banks with an Empirical Application to Switzerland»

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SHELDON’S paper on capital adequacy rules and insolvency risk represents a fruitful attempt to combine theoretical and empirical research to gain further insights into bank regulation. With the enormous growth of derivatives over the last ten years, banks have become major players in derivatives’ markets and sometimes have taken excessive risks. Therefore bank regulation has focused on internal bank risk management systems and on the appropriate design of capital adequacy rules.

SHELDON, first, discusses in his paper theoretical aspects of appropriate capital adequacy rules; second, he analyses empirically data on Swiss banks to find out their risk and return characteristics and to what extent they satisfy capital adequacy requirements. The following comments on SHELDON’s paper are structured similarly to his thoughts.

(1) SHELDON repeats the criticism of the conventional regulatory approach. In this approach, the risk asset ratio approach, the capital charge is simply a weighted sum of the various bank assets. This implicitly assumes that all asset returns are perfectly correlated. As this assumption is untenable, the Supplement to the 1988 Basle Accord allows banks to use «in house-models» like the «value at risk»(VAR)-model. While SHELDON supports the use of VAR-models, he criticizes the regulatory distinction between market risks and credit risks.

According to the BIS-guidelines, capital charges are levied separately for market and for credit risks and added up. SHELDON criticizes this because, at least, part of the market risk is due to credit risks so that some double counting of credit risk is involved. Although SHELDON’S point is well taken, some qualifications come to mind which may provide some support for the BIS-guidelines.

- Most bank loans are not securitized and non-tradable. They are kept in the books at book values, not at market values. Market returns for such assets often are not known. These assets are managed by using conventional systems which have little to do with...
VAR-models. Therefore, it seems reasonable to separate interest rate and credit risk for these assets. Double counting of credit risk is avoided.

- Even if securitized assets are considered, the question is whether data on market returns are available which reflect also credit risk realistically. It is well known that default risk varies considerably over the business cycle. After several good years, default risk does not show up in market returns of these years. Hence a danger exists that using these market returns default risk will be underestimated. Separate charges for market and default risk may be a safeguard against such danger albeit some double counting is involved.

(2) SHELDON suggests to extend the VAR-model by considering also the expected net return of a bank. The usual VAR-model derives the capital requirements by multiplying the standard deviation of the bank’s net portfolio return by some factor. Assuming that the return is governed by a certain type of probability distribution, this approach constrains the probability of default. The expected net return of the bank is ignored in this approach; in other words, it is set equal to zero. SHELDON incorporates the expected net return in his VAR-approach and substitutes «expected gross return (before overhead costs) minus overhead costs» for the expected net return. This serves also as the basis for his empirical investigation of Swiss banks.

Theoretically speaking, there is no doubt that SHELDON’S approach is correct in deriving probability conclusions. This does not imply, however, that this approach should also be used for the derivation of capital charges. Basically two arguments cast doubts on the consideration of the expected net return in deriving capital charges. First, the Supplement of the Basle Accord considers two weeks as the period required for unwinding a position. Many banks seem to consider only 2 to 7 days in their VAR-models. The expected net return, divided by the standard deviation of the net return, becomes very small (in absolute terms) for such a short period. Therefore the implied capital requirement will differ only little regardless of whether the expected net return is included or not. Second, it is well known that expected returns are much more difficult to estimate than standard deviations and correlations since the latter are more stable over time. Therefore it is rather difficult to check the plausibility of expected returns estimates. Both arguments, hence, can be used to justify a VAR-approach which deliberately ignores expected returns.

(3) SHELDON makes an important attempt to get a closer hold on the fundamental question of bank regulation, namely the costs and benefits of stricter regulation. He measures the benefits of higher capital standards by

- the reduction in systemic risk (risk that at least one bank defaults), and
- the reduction in expected losses inflicted on a bank’s depositors in default, conditional on the event of default.

It may come as a surprise that SHELDON considers the depositors’ expected losses conditional on the bank’s default. In fact, one would usually consider the unconditional
expected losses. But then still the question remains to what extent losses of different banks occur at the same time, i.e. the systemic risk needs to be taken into account at the same time. Since this issue has not yet been resolved, SHELDON uses the two indicators of benefits mentioned before. But it is important to note that there is no easy way to combine both indicators into one to come up with a measure of the unconditional expected losses of all depositors in the economy.

SHELDON is aware of the difficulties in measuring the social costs of higher capital requirements; he uses the risk premium of Swiss bank equity capital as a measure. This measure is very doubtful, however. Suppose this premium increases with banks' leverage, i.e. when capital requirements are relaxed. This neither implies a lower nor a higher social cost, however, since it may only be due to a redistribution of systematic (non-default) risk from non-banks to banks. More research is needed to develop some reasonable measure of the social costs of capital requirements.

(4) By addressing the multi-period perspective SHELDON makes clear that the one-period results of the VAR-model cannot simply be generalized to the multi-period case. He presents some strong conditions under which this generalization is possible. His remarks should prove helpful to attack the multi-period problem under more realistic conditions. The one-period VAR-model is a very short term-oriented myopic model, completely ignoring dynamic multi-period effects.

(5) Some of the empirical results of SHELDON are striking. He collected annual balance sheet and income statement data from a great majority of Swiss banks during the period 1987-1993. It is amazing to see how strongly groups of banks differ with respect to overhead costs, capital to asset ratios, average gross returns and the standard deviation of gross returns. Interestingly, banks with higher standard deviation of gross returns tend to have also higher average returns. Apart from the troubled regional banks, default probabilities are generally very low.

Although these results are very interesting, we should be careful in viewing them as the annual counterpart to the very short term-VAR approach. The standard deviation of accounting gross returns can be expected to be strongly downward biased because of profit smoothing. In addition, it is not at all clear how the empirical results are affected by the fact that large portions of bank activities are off balance-sheet activities.

(6) Some more general thoughts will end this comment. Reading the paper raises the question whether it is reasonable to apply the VAR-approach to all assets of a universal bank. On the one hand, the VAR-approach appears superior to the risk asset ratio approach. But on the other hand, why should a bank subject the management of all its non-securitized medium and long term business to the very short term VAR-approach? Short term market returns for those assets mostly do not exist. Assigning those returns artificially creates its own problems and mistakes. Even if market returns exist, the short term view may necessitate hedging activities which raise the bank’s medium term risk instead of lowering it. As a simple example, consider a zero bond which provides a
riskless payoff after two years. Thus, there is no risk after two years. But the short term market value is risky. Hence hedging this risk in the very short term creates a risk after two years. Therefore, short term risk considerations may be in conflict with medium term risk considerations. This argument relates, of course, to the previously mentioned shortcoming of the VAR-approach, i.e. it is a short term, myopic approach ignoring any medium term effects.

This shortcoming need not make the VAR-approach deficient for the derivation of capital requirements, however. Capital requirements can only be a rough kind of restriction imposed from the outside; they can never be a substitute for a prudent internal risk management which remains the job of the bank.