

# New paradigms in banking supervision?

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In July of 2013, the Basel Committee on Banking Supervision published a noteworthy discussion paper addressing some rather fundamental issues of regulation. The paper examined the trade-off between the risk sensitivity of regulatory requirements, which is desirable, and their complexity, which is an inherent necessity. This raises the question, at least implicitly, of whether the detailed rules advanced in recent years for calculating capital ratios based on book values are indeed adequate. Building on this premise, the paper explicitly proposes the additional inclusion of market value-oriented metrics in evaluating the stability of a bank. The present paper carries forward with this idea, analysing how we have gotten where we now are with existing capital ratios and considering appropriate market value-based alternatives.

The discussion paper put out by the Basel Committee [cf. Basel Committee on Banking Supervision 2013 as well as Tallau 2013] is noteworthy in that it leaves the door open to a change in regulatory paradigm in at least two respects: Firstly, it takes a critical view toward the complexity and differentiated treatment of regulatory requirements put in place under Basel II and Basel III, for the first time citing “simplicity” as a regulatory objective in its own right – and on an equal footing with the objectives of risk sensitivity and comparability. Secondly, it calls into question the primary orientation around solvency ratios in which the numerator is the book value of equity and considers whether alternative or supplementary metrics might be proposed. Such a proposal could initially come in the form of an extension to Basel III, under which additional ratios have already been introduced – namely the Leverage Ratio, Liquidity Coverage Ratio and Net Stable Funding Ratio. However, new potential measures discussed in the consultation paper – such as equity capital ratios, price-to-book ratios and risk metrics derived from share price volatility – are of an entirely different character in that they are not calculated solely upon accounting data but rather include, in addition, components oriented around market values.

## Market value orientation as the new paradigm?

Might market value-based measures potentially be a better way to measure the solvency of a bank than the equity capital ratios based upon book value in use today? There is no doubt that the latter are flawed in two major ways: Firstly, adverse developments in the bank’s finances are reflected only after a considerable delay in time, and its deteriorating earnings prospects are not directly reflected in its financial accounts, which are not forward- but rather backward-looking. Secondly, financial accounting is susceptible to discretionary latitude in valuations.

For these reasons, there have been growing calls, including from academia, to move away from the book value-based paradigm [Flannery 2014]. These arguments draw attention to the lack of timely recognition in reported financial statements of, for example, a bank run expressing a loss of confidence in an affected bank. Under the classical model described by Diamond and Dybvig [cf. Diamond/Dybvig 1983], the book value of a bank’s equity remains unchanged even up to the point that depositors unexpectedly begin to pull their money out in droves. But this time, however, it is generally too late to react, and thus the only remaining avenue is, at least in the short term, a government-guaranteed bailout

at the expense of the taxpayer. The market, in contrast, may potentially be able to identify emerging problems at an earlier stage, such that the market value of equity drops, pulling market value-based solvency ratios down along with it, and triggering reaction at an early phase. In this way, remedial measures can be put in place – for example, in the form of a capital increase – in order to avoid a potential bank run.

## Performance of capital measures during the crisis

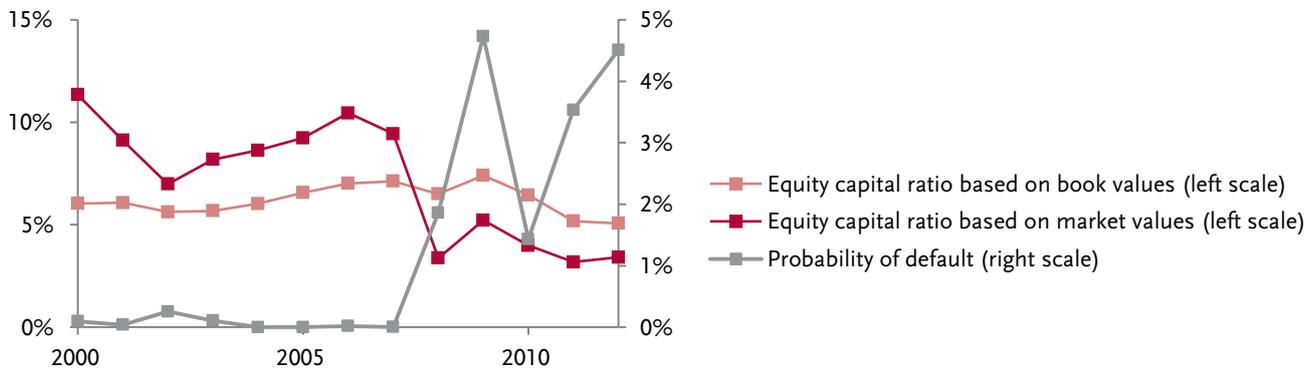
► Figure 01 depicts the average equity capital ratio of the 50 largest European banks since 2000, alternatively calculated using both book equity and market value of equity. If one first looks only at the book value-based capital ratio (light red line), the crisis of 2007/2008 cannot even be recognised. (Note that the values for risk-weighted capital, which are relevant for regulatory purposes, follow a very similar pattern and thus are omitted here for reasons of visual clarity.) Only in its aftermath, and in the transition into the subsequent European sovereign debt crisis starting in 2010/2011, is there any decline in these book-based values.

In stark contrast, the average equity capital ratio based on market values (dark red line) reacts immediately upon inception of the crisis and, within just one year, plunges from 9.4 per cent in 2007 to 3.4 per cent in 2008, a drop of considerably more than half. In parallel with this dramatic drop, the average probability of the bank defaulting within one year (grey curve in ► Figure 01) rises from almost zero to 1.9 per cent. These one-year (risk-neutral) default probabilities were computed here for each of the 50 banks on the basis of the pricing model described by Merton [cf. Merton 1973], further details of which may be found, for example, in Ronn/Verma [cf. Ronn/Verma 1983].

The magnitude of the average bank default probabilities during this period, which do not drop back down but rather fluctuate within a range of 1.4 per cent and 4.7 per cent, is particularly striking in that these values are an order of magnitude greater than the 0.1 per cent maximum which the Basel Committee sets as a target [cf. Gordy/Howells 2006].

## Default probabilities far above target threshold

It is thus evident that, using the book value-based solvency ratios which are the foundation of current bank regulation, there is a dramatic failure to recognise the risk of bank default which should, in fact, be its primary objective. If one is to take this objective seriously, there should be an urgent need to dramatically strengthen the equity capitalisation of

**Figure 01: Performance of stability indicators since 2000, calculated for 50 largest European banks**

Source: Compiled by authors based upon Flannery 2014.

European banks, for which the average probability of bank default even in 2012 was forty times greater than the target threshold. (It is recognised here that, because of issues with the Merton model and risk neutrality, these default probabilities may not be exact. There is, however, no question that these default probabilities are vastly above 0.1 per cent – and this is just the average of the 50 banks.)

From where we stand now, the introduction of market value-based solvency ratios could make a valuable long-term contribution toward keeping bank default probabilities within the target threshold – or even preventively keeping them at lower levels. Potential mechanisms to achieve this might include the direct calculation of institutional default probabilities through the use of a model, or indirectly through their influence upon market value-based equity capital ratios, as discussed in the Basel Committee consultation paper. Where these ratios are not within the required minimums or maximums, the bank's capitalisation must be strengthened as a matter of urgency. One means of achieving this is through the use of hybrid capital instruments, such as the “contingent convertible bonds” now under discussion. A regulatory requirement along these lines would, at the same time, achieve the objective of simplicity, as the market's objective estimate of a bank's risk would take the place of the current, highly complex internal calculation by the bank of its risk-weighted assets.

The foregoing analysis tentatively comes to the rather provocative conclusion that the banks within the sample remain massively undercapitalised. Is the logical consequence of this, namely a significant reduction in leverage ratios, even imaginable at this time? For many financial executives, the vision of a banking sector with equity capital ratios of ten per cent or more may well be unthinkable. Where can this equity capital even be found? What must also be considered here, however, is that – particularly in the absence of (implicit) government guarantees – a reduction in leverage serves to make equity capital investments significantly less risky, thus potentially broadening its appeal to new investor groups. One might even imagine normal depositors taking at least a portion of their savings and converting these instead into equity-like instruments offering attractive returns with modest risk. In fact, the cooperative banks which form the vast network of Volksbanken and Raiffeisenbanken in Germany have been successfully employing this very principle for some 150 years.

### Market value paradigm is not a panacea

This proposed shift in regulatory paradigm will undoubtedly raise a host of new questions. For one, what should be done with the great many

banks whose shares are not even listed on an exchange? While one answer might be to apply the new paradigm only to exchange-listed banks, this raises the issue of unequal regulatory treatment.

One must, in addition, recognise the dangers of excessive faith in the market. In the case of perhaps the most notorious bank run in recent memory, namely the failure of Northern Rock, the drop in the bank's share price only began on the day on which depositors were queuing up the door, anticipating this event not even by one day. Nevertheless, the proposal offered by the Basel Committee would seem sufficiently promising to warrant, at the very least, serious discussion among both researchers and practitioners.

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