Credit ratings and the BIS capital adequacy reform agenda

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Abstract

In this paper, we have revised and updated our earlier study in order to analyze the most recent (second) draft of the BIS’s proposed reforms of bank capital requirements. We conduct Monte-Carlo experiments using data on defaults and severity rates on publicly-traded US corporate bonds over the 1981–1999 period. Analyzing the whole period and various sub-periods, it is clear that the most recent draft of the BIS proposed reforms seriously overestimates the relative riskiness of high-quality debt relative to low quality debt in the so-called standardized model. As a result, the most recent proposal still contains inherent risk-shifting (taking) incentives for banks. © 2002 Elsevier Science B.V. All rights reserved.

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1. Introduction

In earlier papers, Altman and Saunders (2000, 2001) analyzed the initial reform proposals of the BIS released in June 1999 (Basel Committee on Banking Supervision, 1999). The initial BIS proposals put forward a three-stage plan towards reforming the
current 8% risk-based capital rule for credit assets of banks. Specifically, a first stage
standardized model, with risk-weights based on credit rating agency buckets, was en-
visaged to be followed by the adoption of internal rating based (IRB) models (using
bank’s own risk weighting/grading systems) and potentially, in the future, transition
to internal models based on (default) correlations among credit risky assets.

In our earlier paper, we found fault with two aspects of the then proposed stan-
dardized model. The first was the inherently lagging nature of agency ratings that
could result in capital ratios moving too slowly in cyclical recessions e.g., required
capital ratios reaching a peak after a recession, when loan default increases had al-
ready occurred. The second problem involved the broad degree of granularity in the
corporate loan risk weightings in that only three buckets for rated corporate loans
were envisaged with one additional bucket for unrated loans. We showed that the
proposed relative risk weightings of 20% (AAA to AA–), 100% (A+ to B–) and
150% (below B–), along with the 100% for unrated borrowers, were simply too
broad and did not reflect the relative risk of unexpected losses on loans in each
bucket. In order to show this, we utilized data on corporate bond defaults (including
prices one year prior to default as well as on default) in the US over the period 1981–
1999 (September).

These data, along with different assumptions regarding the shape of loss distribu-
tions on loans (bonds), including the normal, actual and Poisson distributions as well
as using Monte-Carlo experiments, showed that the proposed BIS corporate loan
risk weights did not differentiate sufficiently with respect to both the expected and
unexpected loss rates in these buckets. Based on these findings, we recommended
a revised weighting scheme that included splitting the A+ to B– 100% bucket, into
two separate buckets, A+ to BBB– and BB+ to B–, with the split reflecting the di-
vision between investment and non-investment grade borrowers. Our proposed risk
weightings on the revised investment and non-investment grade buckets are listed in
Table 1. The rationale for the lower 10% weight for AAA to AA– rated corporate
credits was the observation that there has never been a default, within one year, on
bonds rated in these two top categories and our updated results (below), continue to
show this. We agree, however, that in some unusual cases, a AAA or AA bond could
default over a one year horizon. As such, we believe a non-zero risk-weight is pru-

<table>
<thead>
<tr>
<th>AAA to AA–</th>
<th>A+ to BBB–</th>
<th>BB+ to B–</th>
<th>Below B–</th>
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<tbody>
<tr>
<td>10%</td>
<td>30%</td>
<td>100%</td>
<td>150%</td>
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