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Journal of Banking & Finance 26 (2002) 909–921

Journal of BANKING & FINANCE

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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.

JEL classification: G14; G21; G33
Keywords: Credit ratings; Basel II; Capital adequacy; Default losses; Bond defaults

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

☆ This paper is a significantly revised version of the paper that was prepared for the NYU Salomon Center/University of Maryland research project on "The Role of Credit Reporting Systems in the International Economy," sponsored by the Center for International Political Economy and the Bank of England Conference on "Banks and Systemic Risk," May 23–25, London, England.

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PII: S0378-4266(01)00269-2

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 envisaged 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 standardized 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 already 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 distributions on loans (bonds), including the normal, actual and Poisson distributions as well as using Monte-Carlo experiments, [3] 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 division 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. [4] As such, we believe a non-zero risk-weight is pru-

Table 1
An alternative risk weighting proposal for bank corporate loans[a]

	AAA to AA−	A+ to BBB−	BB+ to B−	Below B−
Corporates	10%	30%	100%	150%

[a] From Altman and Saunders (2000, 2001).

[3] See, Saunders (1999) for a description of alternative loss distribution models.

[4] For example, Southern California Edison's and Pacific G&E's bonds were rated AA− as of December 31, 2000 and there is, at the time of this writing, a non-trivial probability that the firm could default sometime in the year 2001 due to the regulatory debacle and the sudden increase in fuel cost and lack of energy in California. Indeed, Pacific G&E's AA-bonds, as of December 31, 2000, did default less than one month later in mid-January, 2001.