Sub-debt Yield Spreads as Bank Risk Measures

DOUGLAS D. EVANOFF*  
Research Department, Federal Reserve Bank of Chicago, 230 S. LaSalle Street, Chicago, IL 60604-1413

LARRY D. WALL  
Research Department, Federal Reserve Bank of Atlanta, 1000 Peachtree Street, N.E., Atlanta, GA 30309-4470

Abstract

Several recent studies have recommended greater reliance on subordinated debt as a tool to discipline bank risk taking. Some of these proposals recommend using sub-debt yield spreads as triggers for supervisory discipline under prompt corrective action (PCA). Currently such action is prompted by capital adequacy measures. This paper provides the first empirical analysis of the relative accuracy of various capital ratios and sub-debt spreads in predicting bank condition: measured as subsequent CAMEL or BOPEC ratings. The results suggest that some of the capital ratios, including the summary measure used to trigger PCA, have almost no predictive power. Sub-debt yield spreads performed slightly better than the best capital measure, the Tier-1 leverage ratio, albeit the difference is not significant. The performance of sub-debt yields satisfies an important pre-requisite for using sub-debt as a PCA trigger. However, the prediction errors are relatively high and further work to refine the measures would be desirable.

Key words: Bank regulation, bank capital, subordinated debt.

The Federal Deposit Insurance Improvement Act of 1991 (FDICIA) contained a number of provisions intended to discourage banks from taking excessive risk, and to protect the deposit insurance fund from losses at failed banks. One important provision of FDICIA is its requirement that the supervisors implement prompt corrective action (PCA).\(^1\) PCA provides a series of optional and mandatory actions by the supervisors as a bank’s capital adequacy declines. The intent is to protect the deposit insurance by limiting supervisory forbearance, and thereby reduce the subsidy to risk-taking provided by deposit insurance.

A potential weakness of PCA is its reliance on book value capital adequacy ratios measured using historic costs as required by generally accepted accounting principles (GAAP). As White (1997) indicates, ”The GAAP definitions and rules are generally oriented toward backward-looking, cost-based valuations—which are more appropriate for a ‘stewardship’ notion of accounting than for using the accounting information as an indicator of whether a bank may be sliding toward (or may have already reached) true (market value) insolvency…”\(^2\) For example, GAAP does not permit recognition of the effect of interest rate changes on the value of a bank’s liabilities or on the value of assets that it intends to hold until maturity.\(^3\)

*Corresponding author.
One alternative to relying on capital adequacy ratios to trigger PCA is to use a market-based measure. A potential advantage of using equity or debt prices is that market participants have an incentive to look through reported accounting figures to the real financial condition of a bank and to price a bank’s securities based on their best estimates of the distribution of the security’s future cash flows. Thus, security prices have the potential to be a better signal for prevent forbearance than do bank capital adequacy ratios. A possible disadvantage of using market-based measures such as the yields on uninsured debt obligations or equity prices are that these measures are available only for the largest banks. However, the share of assets held by the largest banks is large and increasing. Additionally, these banks pose the greatest danger of systemic risk and the largest risk to the deposit insurance fund.

The market risk measure that has probably received the most attention thus far is subordinated debt (sub-debt) yield spreads. Indeed, the existing empirical evidence provides some support for the use of these spreads. These studies estimate the difference between the yield on sub-debt and the yield on a comparable maturity Treasury security as a function of a number of accounting ratios that are believed to be correlated with the riskiness of the bank. The results, which are summarized in Kwast et al. (1999), find mixed evidence on the relationship between sub-debt yields and bank risk measures in the early to mid-1980s. Flannery and Sorescu (1996) note that the bailout of all of the creditors of Continental Illinois, and subsequent statements by the Comptroller of the Currency about banks that were “too-big-to-fail,” may have led sub-debt investors to believe that they would not suffer credit losses on the debt issues of the largest banks. However, they noted that by the late 1980s, the FDIC was imposing losses on sub-debt holders at large failed banks and the least-cost resolution provisions passed in 1991 as part of FDICIA strongly suggested that sub-debt holders would remain at risk in future failures. Thus, when Flannery and Sorescu look at the late 1980s and early 1990s, they find that sub-debt yield spreads are related to a bank’s risk exposure in the manner predicted by theory. Jagtiani, Kaufman and Lemieux (2001) find similar results in the post-FDICIA period. Similarly, Coviz, Hancock and Kwast (2000) find that financially weaker banks are less likely to issue sub-debt, which is consistent with the market charging these banks a risk premium.

While the use of sub-debt as a risk measure is supported by these studies, they are not designed to answer the question of whether sub-debt spreads are better measures of a bank’s financial condition than are the current capital adequacy ratios. A strong theoretical case may be made that the credit risk portion of the sub-debt yield spread is a more accurate risk measure, and is less likely to be influenced by forbearance, than is the current capital adequacy measure. However, as shown by Hancock and Kwast (2001), non-credit risk factors also appear to influence observed sub-debt prices.

This study takes the first step in evaluating the potential usefulness of sub-debt yield spreads by testing whether these spreads are better predictors of a bank financial condition as proxied by supervisory ratings than are the existing capital ratios. Both the sub-debt yield spreads and the capital adequacy ratios are measured as of the quarter end prior to the assignment of the supervisory rating. Supervisory ratings are typically assigned after an examination, and hence, may reflect both public and nonpublic information about the bank.

One potential disadvantage of this approach is that information from the examination