Kevin J. Stiroh

Commentary

A large body of empirical work addresses the question of whether market forces can discipline commercial banks from taking excess risks. This literature has typically examined the price of bank liabilities to ask a straightforward question: Does the price of a new or existing liability (typically measured as the spread on a certificate of deposit or subordinated debt relative to a risk-free rate) reflect the underlying risk of the bank? If so, this may help to reduce risk—either directly if banks avoid risky activities that they know will lead to higher funding costs, or indirectly if regulators can use market signals to identify and control problem institutions. Empirical estimates of this spread/risk relationship, however, have yielded conflicting results depending on the time periods, methodologies, and samples. In particular, studies that focused on the too-big-to-fail (TBTF) period before the financial reforms of the early 1990s typically found little evidence of a link.

Daniel M. Covitz, Diana Hancock, and Myron L. Kwast add to this literature by raising an important point: the decision to issue new liabilities is not exogenous and also depends on the market's perception of bank risk. In other words, quantities also matter, particularly if they are zero. This suggests that more information about the market's ability to discipline banks is likely to be available if one examines both the issuance decision and the spread/risk relationship. This is not necessarily a new idea, but it has not been routinely ignored in empirical investigations of market discipline.[1]

The empirical strategy of Covitz, Hancock, and Kwast is to estimate an "issuance model" that predicts whether a given bank will issue subordinated debt and then control for this in traditional spread/risk regressions.[2] The authors then estimate spread/risk regressions for three time periods that correspond to different regulatory regimes (the "de facto TBTF" regime for 1985-87, the "purchase and assumption" regime for 1988-92, and the "post-FDICIA regime" for 1993-2002), both with and without the sample selection correction. They conclude that it is critical to control for sample selection issues. While straightforward in principle, several issues about the robustness and interpretation of the results temper the strength of this conclusion.

Beginning with the issuance model, most of the results are quite sensible. For example, the bank-specific factors that consistently predict whether a bank issues subordinated debt are the bank's size and whether it issued debt in the past. It is not surprising that large banks are more likely to tap financial markets, and any sort of unobserved heterogeneity like a reputation effect would lead past behavior to be a key predictor of future issuance decisions. The traditional bank-specific risk factors (nonaccrual and past due loan ratios, other real estate owned, the maturity/repricing gap, and market leverage ratio) jointly affect the bank's issuance decision after 1987, but not during the de facto TBTF regime from 1985 to 1987. Why? The authors do not flesh out their explanation, but one can hypothesize that TBTF policies allowed even risky banks to

Kevin J. Stiroh is an assistant vice president at the Federal Reserve Bank of New York.

issue subordinated debt if desired, so there is little empirical link between risk and the probability of debt issuance.

The spread/risk relationships are then estimated both with and without the sample selection correction. The main finding is that the bank-specific risk factors are insignificant during the de facto TBTF regime without the sample correction, but significant with the correction. This suggests that earlier studies that examined this period, which did not control for sample selection, are systematically biased against finding evidence of market discipline. The sample selection correction, however, does not affect either the joint significance or economic impact (as measured by the sum of the normalized marginal risk effects) in either the purchase and assumption or the post-FDICIA periods. Why? Again, the paper does not offer much interpretation, but one possible explanation is that the TBTF policies of the late 1980s so distorted the issuance decision that the spread/risk relationship was impacted. One must keep in mind, however, that only thirty-one observations are available for the key de facto TFBT regime. Covitz, Hancock, and Kwast estimate a relatively rich two-stage model for this early period, so the findings must be considered with the small sample size in mind.

These two results provide a somewhat conflicting picture of market discipline during the early de facto TBTF regime. On the one hand, the issuance model shows that the traditional risk factors were not significant determinants of the bank's decision about whether to issue new debt. On the other hand, these same factors were important determinants of the spread that banks were forced to pay once the debt was issued. Why? One interpretation is that market forces were simply not strong enough to push the bank to an alternative financing strategy, but were strong enough to alter the price. That is, investors were willing to hold the debt securities even of risky banks as long as the risk was adequately compensated. The results suggest that banks were willing to pay this premium and were not shut out of the market entirely.

A final issue relates to the identification strategy for the two-step procedure. That is, what factors affect a bank's decision to issue subordinated debt, but would not affect the price of that debt? The authors identify their model with two types of variables: aggregate variables that are likely to change the demand for debt financing, such as the unemployment rate, contemporaneous stock market excess returns, and market volatility, and bank-specific factors, such as the average tax rate, capital ratio, and supervisory ratings (the "BOPEC" score).[3] The BOPEC rating is a particularly appealing candidate because it is not publicly available information and could plausibly affect the bank's issuance decision (for example, regulators pressure bank managers to raise regulatory capital), but not the spread the bank pays. In practice, however, the BOPEC variables are almost always small and insignificant, so it is not clear where identification is obtained.

The paper argues that one must account for the endogenous issuance decision to understand and evaluate properly the market's ability to discipline U.S. banks. This is a completely sensible point, and given the growing role of market discipline in modern bank regulation and supervision, a potentially important one. The evidence, however, was not completely convincing due both to conceptual questions and the practical concern that the main conclusions were driven by differences for the small sample size for the de facto TBTF regime. These are difficult issues, however, and the paper should be remembered for raising an important point when trying to understand the effects of market discipline.

Endnotes

1. Flannery (1998, p. 282) states that "market discipline in the liability markets may affect either the cost or availability of new funds."

2. Controlling for the sample selection effect involves including the inverse Mills ratio from the first-stage regression as an explanatory variable in the second-stage regression.

3. Other variables are also included in the model, but they are also included in the pricing equation.

References

Flannery, M. J. 1998. "Using Market Information in Prudential Bank Supervision: A Review of the U.S. Empirical Evidence." Journal of Money, Credit, and Banking 30, no. 3 (August): 273-305.