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The Demand for Preferred Stock with Sinking Funds and Without: A Note

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IN THE 1970S THERE was a noticeable increase in the amount of preferred stock issued by utility companies. During this period the historically positive yield differential between high grade preferred stocks and high grade corporate bonds turned negative. A substantial fraction of the demand for preferred stock has come from casualty and stock life insurance companies [10]. Much of the corporate demand for preferred stock may be attributed to the 85 percent exclusion of preferred dividends from net income for federal income tax purposes.

Insurance companies must follow the valuation rules of the National Association of Insurance Commissioners (NAIC). For example, bonds may be carried at amortized original cost (book value) if they are investment grade (equivalent to Moody's Baa or higher), but they have to be carried at a lower value if they have lower ratings. Common stock is carried at market price.

The NAIC recently adopted a rule permitting insurance companies to carry sinking fund preferreds at book value rather than marking them to the market. The 1979 edition of the *Valuation of Securities*: *Procedures and Instructions* booklet published by the NAIC allows preferred stock held by property and casualty companies to: "Commencing with the December 31, 1978 Annual Statement, be valued for statement purposes at cost, providing the issue is subject to a 100% mandatory sinking fund ... over a period not longer than 40 years from the date of issue" [11]. Holding assets which are accounted for at book value rather than market value reduces the variance of reported equity. The benefit of this provision for insurance companies is that during a period of rising interest rates, sinking fund preferred stock held by insurance companies will not contribute to erosion of reported asset base and balance sheet equity. It is likely that in some instances the provision would enable insurance companies to continue to write new policies at a growth rate that would not otherwise be possible due to state statutes which limit the maximum value of policies written in relation to balance sheet asset value.

Whether or not bookkeeping rules have a significant impact on security prices has long been an interesting question [4] [6]. This paper examines the impact of the change in NAIC rules upon the pricing of preferred stock.[1]

I. Sinking Fund Provisions

The sinking fund provision for preferred stock differs from the typical sinking fund provision for a corporate bond. Typical bond sinking funds require the issuer

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[1] Sinking fund provisions may affect yields directly due to perceptions of default risk and/or market ability arguments. See [3].

to deliver to the trustee the required number of bonds or enough cash to purchase the bonds at the redemption price, or a combination of bonds and cash. Hence the issuer pays the lower of the market price and the redemption price. For bonds, the sinking fund rarely retires the entire issue.

On the other hand, preferred stock issues are relatively small, and the preferred stock sinking fund typically stipulates a mandatory redemption of a fixed percentage of the issue per year until the issue is completely retired.[2] As with sinking fund bonds, the issuer may enter the open market to purchase that part of the issue to be redeemed, but the thinness of the typical issue will preclude this possibility without substantially driving up the price. It is reported that "accumulation institutions" exist which attempt to acquire sufficient portions of sinking fund issues to negotiate a redemption price close to par [7].

II. Empirical Investigation

This study seeks to test whether the relative demand for sinking fund issues increased and underwent a permanent structural shift as a result of the NAIC ruling in 1978.

To examine the impact of the NAIC ruling, data were gathered on 252 new, publicly issued utility preferred stocks sold between January 1975 and July 1981 as recorded in *Moody's Bond Survey*.

A straightforward test of the hypothesis that the NAIC ruling altered the demand for preferred stock is obtained by comparing the dividend yields of preferred stocks issued prior to 31 December 1978 with those issued after 31 December 1978, for both sinking fund and nonsinking fund issues. The yield measure chosen for nonsinking fund issues is the dividend yield based upon the offering price. Use of dividend yield as a return measure presupposes an infinite dividend stream which is less realistic for sinking fund issues. Therefore, the yield measure chosen for sinking fund issues was the yield or internal rate of return on the entire quarterly series of unequal payments for the sinking fund issue. This calculation has the advantage of incorporating the price at which the mandatory redemption is to be executed which is sometimes different from the initial offering price.

Over the 6½ year period from 1975 to 1981, Moody's Aa rated utility preferred yield index ranged between 7.9 percent and 13.3 percent. Lower grade indices experienced an even wider range of yield levels. To account for movement in market rates over time a yield spread measure was calculated for each new issue by subtracting the Moody's Aa rated utility preferred stock yield index from the yield on the new issue at the time it was sold.

Table I shows the means and standard deviations for new issue yield spreads in the pre-NAIC and post-NAIC periods for both the sinking fund and the nonsinking fund groups. In Table II the issues are categorized into two rating categories: Aa and A rated versus Baa and Ba rated.

[2] In recent years approximately 90 percent of the sinking fund preferreds are redeemable at par (or the initial offering price). The other 10 percent are redeemable within one or two dollars of the initial offering price. In contrast, preferred stocks are all "callable" at the option of the issuer at prices in excess of the initial offering price.

Table I indicates that the average sinking fund issue yield spread was 1.18 percent prior to the NAIC ruling which declined to 77 basis points after the NAIC ruling. On the other hand, the average yield spread for nonsinking fund issues increased from 40 basis points to 77 basis points between the two periods. In order to test the significance of yield spread differentials in Table I, we use analysis of variance (ANOVA) F-tests which are reported in Table I. The F-ratio testing the decline in yield spreads for sinking fund issues before and after the NAIC ruling has a value of 4.40. The F-ratio testing for an increase in nonsinking fund yields is also significant with a value of 7.39. This is evidence that the NAIC accounting change resulted in a decline in relative yields for sinking fund preferreds and an increase in relative yields of nonsinking fund preferreds.

Table II reveals that higher grade sinking fund preferred issues declined in yield by an average of 123 basis points after the NAIC ruling, whereas higher

Table I

Sinking Fund and Nonsinking Fund Yield Spreads Before and After the NAIC Ruling

	1975–1978 Period		1979–1981 Period		
	Mean (standard deviation)	Number of Issues	Mean (standard deviation)	Number of Issues	F Ratio
Sinking Fund Isses	1.18 (.77)	61	.77 (1.31)	64	4.40[a]
Nonsinking Fund Issues	.40 (.47)	107	.77 (.90)	20	7.39[a]

[a] Statistically significant at the 95% confidence level

Table II

Sinking Fund and Nonsinking Fund Yield Spreads Before and After the NAIC Ruling by Rating Class

Rating Class	1975–1978 Period		1979–1981 Period		
A and Aa	Mean (standard deviation)	Number of Issues	Mean (standard deviation)	Number of Issues	F Ratio
Sinking Fund	.91 (.73)	35	−.32 (.68)	31	48.83[a]
Nonsinking Fund	.22 (.38)	70	.24 (.52)	13	0.03
Baa and Ba					
Sinking Fund	1.56 (.67)	26	1.80 (.85)	33	1.48
Nonsinking Fund	.74 (.42)	37	1.74 (.52)	7	30.50[a]

[a] Statistically significant at the 95% confidence level

grade nonsinking fund issues did not change in yield. In contrast, lower grade sinking fund issues did not change in yield after 1978, whereas lower grade nonsinking fund issues increased in average yield by 100 basis points. Part of the general rise in yields on lower grade issues during the 1979 to 1981 period is attributed to market volatility and uncertainty during the period.

III. Conclusions

The evidence indicates a rather dramatic "clientele effect" in the demand for sinking fund preferred stock versus nonsinking fund preferred stock. An increase in demand for sinking fund issues transpired in 1978 when the NAIC adopted an accounting valuation ruling for insurance companies which enabled sinking fund preferreds never to have to be marked to market value when interest rates vary. The ruling appears to have provided sufficient motivation at the margin to reduce the yield spreads between sinking fund and nonsinking fund issues. Among higher grade issues sinking fund issues now tend to have lower yields than nonsinking fund issues. This evidence indicates a near classic example of bookkeeping taking precedence over economic substance.

Some of the major implications of the results presented here are:

(1) Regulatory bodies can have significant influences upon relative prices in securities markets if their rulings change market demand within an investor clientele. This possibility should be understood in advance of regulatory changes such as the NAIC 1978 preferred stock valuation.

(2) Potential preferred stock issuers may realize capital cost savings by inclusion of sinking fund provisions. This will depend upon the degree to which the supplies of sinking fund preferreds accelerate to meet demand. If supplies increase enough, a new equilibrium will be reached which takes into account the "clientele effect."

(3) Potential noninsurance company investors should consider the relative demand for sinking fund preferred issues, and the possible foregone yield for which they receive no obvious benefits.

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