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No. 149

December 1995

**Mandatory Redeemable Preferred Stocks:  
An Examination of Accounting Treatment  
and Corporate Motivations**

by

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**THE LUBIN SCHOOL  
OF BUSINESS**

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## SYNOPSIS AND INTRODUCTION

The innovative financing arrangements developed by corporate management during the last two decades have produced some instruments that depict contemporary problems in financial reporting. Mandatory redeemable preferred stock (MRPS) is one such instrument. In most cases, a MRPS is a debt security in substance but an equity in form. Aside from the SEC requirements, current GAAP is quiet about how to account and report on MRPS. The SEC (in ASR No.268, 1979) requires that MRPS be classified as a separate item between equity and debt (non-equity/non-debt) in the balance sheet by firms required to file annual reports with the agency. Yet, non-SEC firms still treat MRPS according to GAAP, i.e., equity security. This practice impairs the usefulness (relevance and reliability) of accounting information.

In recognition of the problem, the FASB in 1990, issued a Discussion Memorandum entitled "Distinguishing Between Liability and Equity Instruments and Accounting for Instruments with Characteristics of Both." The memorandum presents three alternatives to the treatment of hybrid securities like MRPS: a) consider as either debt or equity; b) create an additional category in the balance sheet for securities that have both equity and debt characteristics; and c) adopt the entity frame where all securities are listed in order of seniority.

This paper examines the financial and operating characteristics of firms using MRPS. This examination helps in understanding the economic substances of this type of security, which is a vital input in deciding on the appropriate accounting treatment by the FASB. This paper hypothesizes that firms are opportunistic in financing and investing policies, and that the non-debt treatment of MRPS in financial reporting is an encouraging factor for the corporate expanding use of MRPS. Thus, accounting and reporting for a specific financial instrument is a contributing factor in the firm's decision to issue such an instrument.

The empirical results of a comparison between MRPS firms and industry matched non-MRPS firms indicate that MRPS firms have higher leverage and return on equity ratios. They also have lower yield (cost of capital) on MRPS than the yield on debt or perpetual preferred stock that were issued by non-MRPS firms in the same year. Industry practice appeared to be dominant for the period of 1979 and before, where the utility firms represent the major user of MRPS. These results indicate that firms use MRPS to cope with existing financing and operating conditions, given its accounting status. The findings support the recommendation by the AAA committee on the FASB's Discussion Memorandum that MRPS should be treated according to its economic substances (debt) rather than according to its legal form (equity).

**Key Words:** *Mandatory redeemable preferred stock, Accounting treatment, Financial characteristics.*

**Data Availability:** *Data used in this study are from public sources which are described in the text.*

## **BACKGROUND AND PRIOR RESEARCH**

### ***Lack of Direct Accounting Standards for MRPS***

Current generally accepted accounting principles (GAAP) lack direct standards for MRPS. However, the SEC has recognized the problem since 1979 and issued Accounting Series Release (ASR) No. 268 which prescribes the balance sheet presentation of MRPS; and later, addressed the carrying value of these securities in Staff Accounting Bulletin No. 64. Although the FASB has mentioned redeemable preferred stock in several pronouncements, none has specifically stated the accounting treatment of MRPS by the issuing firm.

In ASR No. 268, the SEC requires registrants to exclude redeemable preferred stocks from shareholders' equity in the balance sheet and report it in a separate item between long-term debt and equity. According to ASR No. 268, a preferred stock is classified as MRPS if it is characterized by the following: a) has a stated or determinable date for redemption; and/or b) is redeemable at the option of the holder or if the redemption terms are not controlled by the issuing company. Further, the Staff Accounting Bulletin No. 64 states that MRPS is recorded initially at the fair market value on the date of issuance. If the redemption value is higher than the initially recorded value, the recorded value should be increased periodically by increments using the interest method. In addition, the carrying value should include dividends in arrears if the redemption terms consider these dividends as payable on redemption date. On other hand, dividends made and periodic accretions to the carrying value of MRPS are charged against retained earnings.

The FASB indirectly addressed the problem of MRPS in several pronouncements, most of which are from the investor's side. For instance, in Statement of Financial Accounting Standards (SFAS) No. 12, Accounting for Certain Marketable Securities, the FASB excludes from equity securities preferred stocks that must be redeemed by the issuing firm or where the holder has the redemption option. In SFAS No. 60, Accounting and Reporting by Insurance Companies, the FASB treats redeemable preferred stocks like bonds and mortgage loans, in that they are carried at the amortized cost, while regular preferred stocks and common stocks are to be reported at market value. Similarly, in SFAS No. 47, Disclosure on Long Term Obligations, the FASB requires disclosure for capital issues which are characterized as redeemable at the fixed or determinable redemption price on known dates.

In 1990, the FASB issued the above-mentioned Discussion Memorandum entitled "Distinguishing Between Liability and Equity Instruments and Accounting for Instruments with Characteristics of Both" (FASB 1990). In this memorandum, the FASB offered three alternatives to accounting for securities that have both debt and equity characteristics: a) classify as either equity or debt; b) create an additional balance sheet category for quasi-equity; or c) adopt an entity approach in which securities are not classified but are listed in approximate order of seniority, supplemented by full disclosure about the rights and obligations of each.

### ***Inconsistent and Incomplete Accounting for MRPS***

The analysis of the above pronouncements indicates that current accounting rules for MRPS by issuing companies are incomplete and inconsistent (Nair et al. 1990). The rules are inconsistent because they classify MRPS as a non-equity security in the balance sheet but as equity in the income statement. MRPS are excluded from shareholders' equity in the balance sheet while dividends paid for MRPS are charged to retained earnings and subtracted from net income in calculating earnings per share. Furthermore, the amortization of the difference between the fair market value (on date of issuance) and the redemption value is charged to retained earnings and considered as dividend distributions. Current rules are also incomplete because they are applicable to the SEC registrants only. Thus, non-SEC firms have the discretion to classify MRPS as equity.

### ***The Economic Versus Legal Substances***

Relevance and reliability are the primary characteristics of accounting information. To achieve relevance, the FASB has elected the economic substances in deciding on the accounting treatment for many items. For instance, leased assets, which satisfy the capitalization criteria, are treated as owned assets although they lack legal ownership. Similarly, subsidiaries are consolidated in the parent's financial statements albeit they are legally independent economic entities.

As stated above, mandatory redeemable preferred stock is a financial instrument that is equity in form but debt in substance. Generally, a MRPS has a maturity date and a stated dividend rate. MRPS is redeemable on the redemption date regardless of the issuer's interest. Thus, MRPS is a debt instrument. Yet, it is treated in financial reporting as non-debt capital. Furthermore, non-SEC firms still report MRPS as equity capital. This practice impairs financial statements from providing reliable measures on the financing activities of the firm.

### ***Prior Research***

Researchers have conceptually analyzed MRPS to reach a sound recommendation for the appropriate accounting treatment. For instance, Nair et al. (1990) analyze MRPS in reference with the definition of equity and liability, as presented in Statement of Financial Accounting Concepts No. 6, and conclude that a typical MRPS fits the characteristics of a debt instrument. Therefore, they recommend that MRPS should be treated as a debt instrument in both the balance sheet and income statement. In its response to the FASB's Discussion Memorandum, the AAA's Committee on Financial Accounting Standards recommends that MRPS should be treated as debt security (1993).

Kimmel and Warfield (1993) analyze the characteristics of a sample of 332 MRPS issues in terms of the distinguishing features between equity and debt, e.g., permanency and voting rights. They conclude that MRPS "exhibit significant heterogeneity, and in some cases, have attributes with conflicting implications for classification of MRPS as either debt or equity," (Kimmel and Warfield

1993, 31). Furthermore, they recommend that the disclosure-entity approach addressed by the FASB is more promising in addressing the problem of MRPS.

Given the complexity and the increasing trend of using MRPS as a viable financing source, it becomes necessary, before deciding on the appropriate accounting treatment, to understand corporate motivations to issue MRPS rather than traditional debt or equity. Learning about the characteristics of firms issuing MRPS, within the current accounting rules, in comparison with firms that do not use MRPS sheds some light on the relevance of the classification and treatment of such instruments in financial reporting .

## **DEVELOPMENT OF HYPOTHESES**

### ***Corporate Motivations for Issuing MRPS***

The literature on the agency/contracting theory of the firm provides ample evidence that corporate management behaves in an opportunistic and/or efficient manner (Jensen and Meckling 1976; Christie and Zimmerman 1994). Such behavior reflects corporate investing and financing policies and includes utilizing acceptable accounting rules that enhance the contracting dimensions of such policies.

Under some circumstances, issuance of MRPS may be the efficient financing procedure among all other instruments. The finance theory suggests that management may be reluctant to issue common equity because of the dilution effect (Brealey and Myers 1990). Similarly, management may be unable to issue debt because of covenant restrictions on existing debt contracts (Smith and Warner 1979). Furthermore, issuance of traditional (perpetual) preferred stock can be costly in terms of high dividend/yield rate since it is less attractive to some investors (McDaniel 1984; Heinkel and Zecher 1990).

Firms that are facing the above circumstances find MRPS an efficient financing instrument because of the market appreciation and favorable financial reporting characteristics. MRPS is a liquid investment that has a maturity value, which is independent of the performance of the investee. This feature makes it attractive to investors who are willing to accept a lower dividend/yield rate.

In addition to the valuation advantage, the current accounting treatment of MRPS provides a viable approach to enhance a firm's position in several dimensions: a) expanding or preserving the firm's debt capacity; b) ameliorating the effects of debt covenants on management decisions, and c) improving measures of management performance. In addition, utilization of MRPS and accounting for it as non-equity helps some owners in maintaining control over their firms.

## *Hypotheses*

### *1. Expanding/Preserving a Firm's Debt Capacity (DC):*

Firms that are highly financed by debt and subject to debt covenants are likely to be restricted in issuing additional debt (Smith and Warner, 1979; El-Gazzar and Pastena, 1990). One way of circumventing the constraints on issuance of additional debt is to create a financial instrument that is debt in substance but non-debt in form, e.g., MRPS. Therefore, the following hypothesis (in the alternative) form is tested:

*H01: firms issuing MRPS are highly leveraged in comparison with non-MRPS firms. This implies a positive correlation between using MRPS and leverage.*

One may ask whether lenders or bond-holders regard MRPS as debt in setting the additional borrowing constraint in debt agreements. Empirical evidence from studies that examined actual debt contracts indicates that debt agreements do not treat MRPS as traditional debt issues, since GAAP classifies them as non-debt securities (El-Gazzar and Pastena 1990; El-Gazzar 1993; among others)<sup>1</sup>.

### *2. Ameliorating Near Violation Debt Covenants (NVDC)*

In addition to limiting the debtor's ability to borrow during the life of the bond issue, debt contracts impose some additional constraints on management decisions. These restrictions are known as "affirmative" restrictions which differ from the "negative" covenants. Violation of affirmative covenants puts the firm in technical default, while violation of negative covenants prohibits the firm from making specific decisions like distribution of dividends or issuance of additional debt.

A typical affirmative covenant requires the debtor to maintain a minimum level of interest coverage, current ratio and/or working capital. Under current GAAP, the use of MRPS reduces interest expense, interest payable, and current maturities of long-term debt that the firm would have issued instead of MRPS. The reduction of these items improves the firm's interest coverage and current ratio. Therefore, the use of MRPS by debtors helps in ameliorating near violation of some debt restrictions. The following hypotheses (in the alternative form) are tested:

*HO21: firms using MRPS have lower interest coverage in comparison with non-MRPS firms. This implies a negative correlation between using MRPS and interest coverage.*

*HO22: firms using MRPS have lower current ratio or working capital than firms with non-MRPS. This implies a negative correlation between using MRPS and short-term liquidity.*

### **3. Corporate Growth Opportunities (Growth):**

Heinkel and Zecher (1990) argue and prove analytically that issuance of preferred stock enhances firms' debt capacity and helps firms to avoid sub-investment policies under common equity financing. McDaniel (1984) argues that recent financing policies show that redeemable/sinking-fund preferred stock replaces perpetual preferred stock because it is more attractive to investors and reduces the risks to investors in comparison with debt. These arguments indicate that MRPS enhances realization of growth opportunities for the firm, especially if the firm is near debt capacity limits and traditional borrowing is more costly.

The following hypothesis (in the alternative form) is tested in this study:

*HO3: firms using MRPS have higher capital investments than non-MRPS firms. This leads to the inference of positive correlation between using MRPS and capital expenditure.*

### **4. Management Performance Measurement (MPM)**

Capital raised through MRPS is used in corporate operating and investing activities. Yet, it is not included in total equity in the balance sheet. This act improves accounting performance measurements like return on equity. Most management compensation plans that use accounting profits conditions the compensation bonus on satisfying a minimum level of return on equity or earnings per share (Healy 1985). The following hypothesis (in the alternative form) is tested:

*HO4: firms using MRPS are likely to have higher return on equity in comparison with non-MRPS firms. This implies a positive correlation between using MRPS and a higher return on equity.*

### **5. Ownership Structure (OS)**

Dhaliwal et al. (1982) argue that owner-controlled firms make different investing and financing decisions from those made by management-controlled firms. This leads to the inference that owner-controlled firms are likely to avoid increasing public ownership. One way of achieving this goal is by using non-equity financial instruments. MRPS is a viable instrument in this regard. An owner controlled firm is defined as a firm in which key officers and board members have material holdings of the voting stock, i.e., insider holdings. The following hypothesis (in the alternative form) is tested:

*HO5: owner-controlled firms are likely to use MRPS more than management-controlled firms. This implies a positive correlation between using MRPS and insider holdings.*

## **6. Industry Specific Practice (IP):**

Industry practice can be an important factor in firms' use of MRPS. For instance, McDaniel (1984) argues that a typical utility firm has 10 to 15 percent preferred stock capitalization. Capital intensive firms with low return on equity and near capacity debt financing may find MRPS a more effective financing procedure (McDaniel 1984; Heinkel and Zechner 1990).

Kimmel and Warfield (1993) provide results indicating that industry concentration of MRPS was a valid argument for the years prior to 1980. The use of MRPS is common across industries after 1980. The current study reexamines the industry practice within a larger sample for a longer period of time. The following hypothesis (in the alternative form) is tested:

*HO6: There is industry clustering in the use of mandatory redeemable preferred stock.*

## **7. Lower Yield/Investors' Appreciation**

Some researchers argue that traditional preferred stock is less attractive equity than common stock and less attractive quasi-debt than debt (McDaniel 1984; Heinkel and Zechner 1990). MRPS is a liquid asset that has a redeemable value, which is independent of the issuing firm's performance. This feature meets the preferences of institutional investors who are willing to accept a lower dividend/yield rate for less risky investments. Institutional investors such as insurance companies and retirement funds operate under state and federal constraints and are committed for long-term obligations. They prefer investments that help them match their assets with obligations.

The above argument suggests that a MRPS is more marketable relative to other instruments. This comparative marketability gives the issuing firm the opportunity to sell at a higher price and lower dividend. Accordingly, one would expect that the yield on MRPS is lower than the yield on other financing instruments (debt or perpetual preferred stock) that are issued by non-MRPS firms in the same year. The following hypothesis is tested:

*H07: the yield on MRPS is lower than the yield on other financing instruments that are issued by non-MRPS firms in the same year. This implies a negative relationship between yield and issuance of MRPS.*

## RESEARCH DESIGN

### *Sample*

A survey of all firms that are reporting MRPS as a separate item on the COMPUSTAT tape for the period of 1979 to 1992 was conducted. The fiscal year 1979 was the first year for SEC-firms to comply with ASR No. 268 that required reporting of MRPS as a separate item. This survey identified more than 4,200 entries (firm/year) with MRPS. To avoid dominance of the sample by some firms, the sample was restricted to firms issuing MRPS for the first time. This restriction reduced the sample to 613 firms over the period 1979 to 1992. Another 67 firms were deleted because of incomplete data for the year immediately prior to the issuance date. Thus, the final base sample is 546 firms.

To test the above hypotheses, a matched control sample of the total population of non-MRPS firms was identified. The matching is based on industry classification and by total assets. Thus, the control firm is from the same industry and has (in most cases) approximate total assets equal to those of the experimental firm. Two types of industry matching are used: a) the four-digit SIC industry code; and b) the double-digit SIC industry code.

The four-digit industry code matching is more efficient than the two-digit code but produced a smaller sample, 219 versus 546 firms. For the yield hypothesis, the four-digit industry matching sample was reduced to 184 firms for which the search produced a matching firm that issued debt or perpetual preferred stock in the same year that the experimental firm issued MRPS. Some of the preliminary analysis is based on the total sample of 546 firms that issued MRPS for the first time. Tests of statistical significance are based on the four-digit industry matching, i.e., 219 MRPS firms compared to 219 non-MRPS firms.

### *Model, Variables, and Data Sources*

To test the above hypotheses, several statistical procedures are used including Wilcoxon non-parametric univariate tests and the Probit regression model<sup>2</sup>. For the current study, the model takes the following form:

$$P(\text{MRPS}_j) = A_0 + A_1 (\text{DER}_j) + A_2 (\text{TIC}_j) + A_3 (\text{CR}_j) + A_4 (\text{ROE}_j) + A_5 (\text{CI}_j) + A_6 (\text{INSID}_j) + A_7 (\text{YIELD}_j) + e_j,$$

where:

$P(\text{MRPS}_j)$  = the probability that firm  $j$  elects to use MRPS instead of traditional equity or debt. This variable takes the value of one for firms issued MRPS, and zero otherwise.

$DER_j$  = the debt to equity ratio of firm  $j$  for the fiscal year ended immediately before the date of issuing MRPS. This variable equals (long-term debt / total shareholders' equity).

$TIC_j$  = times interest coverage of firm  $j$  for the fiscal year ended immediately before the date of issuing MRPS. This variable equals [(net income before taxes + interest expense) / interest expense].

$CR_j$  = current ratio of firm  $j$  for the fiscal year ended immediately before the date of issuing MRPS. This variable equals (total current assets / total current liabilities).

$ROE_j$  = return on equity of firm  $j$  for the fiscal year ended immediately after the issuance of MRPS. This variable equals (net income before extraordinary items / total shareholders equity).

$Ce_j$  = capital expenditures of firm  $j$ , a measure of growth. This variable equals the average capital investment to total assets over a window of three years (-1, 0, +1) where year 0 is the year in which the firm issued MRPS.

$INSID_j$  = the percentage of the common stock of firm  $j$  held by insiders as of the fiscal year ended immediately before the issuance of the MRPS.

$YIELD_j$  = is the effective rate of the dividend or interest that takes into consideration the sale price of the instrument and the maturity or redemption value.

The COMPUSTAT tape of 1993 is the source of the financial data used in the calculations for all of the above variables except for the  $INSID$  and  $YIELD$  variables which were obtained from the Standard and Poor's security owners stock guide, corporate proxy statements, security registration form, and notes to financial statements.

## ANALYSIS OF RESULTS

Table 1 presents some univariate statistics on the sample and variables. Panel A of Table 1 presents the mean/variance measures of the variables and the percentage of MRPS to total owners' equity. One major observation of these measures is that the sample includes a wide range of firms as noted by the highest and lowest value of some of the variables. Although this proves that the sample is well diversified across all firms (big and small), it may produce the extreme values' effect on the tests of significance. To control for this problem, independent variables are truncated at the 1.3 standard deviation from the mean.<sup>3</sup>

The statistics in panels A and B show that MRPS represent a sizable percentage of total equity. On average and for the entire period, MRPS counts for approximately 29.4 percent of total equity. **If the hypothesis of debt capacity preserving is true, then MRPS enabled sample firms to expand financing sources by 29.4 percent of the equity without increasing outstanding debt.**

Panel B of Table 1 presents the distribution of the sample by year. All firms that issued MRPS prior to 1979 are grouped with those of 1979 since the SEC reporting firms started disclosing MRPS as a separate component only after the issuance of ASR No. 268. From the distribution, it appears that firms markedly increased their use of MRPS as a percentage of total equity.

Industry distribution (in Panel C) shows that there is some concentration on the use of MRPS by the utility industry. Thirty one percent (169 firms) of the sample are from the utility industry. However, the results of Panel D of Table 1 indicate that the utility dominance was only for the period 1979 and before. Eighty four percent of the total utility MRPS issues were in the period 1979 or before. For the period 1980 to 1992, utility firms that used MRPS for the first time are random and infrequent. Nevertheless, one should be cautious in that inference since the sample is restricted to first time issuers only, i.e., it can be the case that the old firms (1979 and before) have accelerated their use of MRPS through additional issues during the period 1980 to 1992, which were eliminated by research design.

The Pearson correlation coefficients between the variables are presented in Panel E of Table 1. Many of the correlations are statistically significantly different from zero. However, multicollinearity diagnostic tests did not reveal any effects on the regression estimates of the explanatory variables which are presented in later sections.

### **Wilcoxon Non-Parametric Univariate Tests**

Table 2 presents the Z statistics of the differences between means of the explanatory variables of the two samples, the MRPS and the non-MRPS firms. The statistics indicate that the two groups are different in terms of debt financing and surrogates of debt covenant restrictions, performance measures such as return on equity, and the yield. The two groups are not different in terms of ownership structure and capital expenditures.

### **The Multivariate Results**

The Probit regression tests the ability of the hypothesized variables to predict (classify) which firm is likely to use MRPS. The results are presented in Table 3. Test 1 uses all variables except for insider holdings (INSID) and the yield on the security issued (YIELD) because of sample size differences for these variables. Test 2 includes the INSID variable in the regression, while Test 3 contains the yield variable.

From Test 1 in Table 3, the debt financing variables take the expected direction and are significant at .005 level or less. The coefficient of DER is positive, indicating that the higher the leverage the higher the probability that the firm will use MRPS. The coefficients of the times interest coverage and current ratio, the measures of the affirmative debt covenant restrictions, are negative. It should be noted that both TIC and CR are also measures of short-term liquidity. Thus, the higher the short-term liquidity the lower the likelihood that the firm will use MRPS.

The results also show that the coefficient of return on equity (ROE) maintains the expected sign and is significant at .039 level. The capital expenditures variable (CE), the surrogate for growth opportunities, exhibits the opposite direction, but statistically is insignificant. Test 2 includes insider holdings but for a smaller sample. The results of Test 2 confirm those of Test 1 regarding other variables. The INSID variable has a positive direction but is insignificant. From Test 3, the yield variable has the expected sign and is also significant, indicating that MRPS is a less costly financing procedure relative to other options. The model has an overall explanatory power of 62.7 percent.

## **CONCLUSIONS AND RECOMMENDATIONS**

This paper reports on the financial characteristics of firms using mandatory redeemable preferred stock (MRPS). The dilemma of accounting for MRPS is a matter of choice between its legal form and economic substances. This paper helps in understanding corporate motivations for employing MRPS instead of traditional equity or debt. This understanding is a vital input in the decision on accounting and reporting for MRPS. Current GAAP is passive on the accounting for MRPS by issuers. Thus, firms had discretion to treat MRPS as equity until the SEC (1979) required registrants to classify MRPS as a separate item between the debt and equity in the balance sheet. Yet, the SEC mandates still treat dividends on the MRPS as distributions of profits, and subtracts these dividends from net income in calculating earnings per share.

Based on the agency/contracting theory of the firm, this paper claims that management behaves in an opportunistic/efficient behavior and that the non-debt accounting treatment of MRPS provides firms with a viable source to circumvent some financing and operating constraints. Specifically, MRPS is an attractive approach to expand the firm's borrowing capacity and ameliorate the effects of near violation debt restrictions. This paper also claims that MRPS is attractive for regulated investors. Thus, it is more marketable and issuing firms can enjoy a high sale price and/or lower dividend/yield. In addition, MRPS helps in enhancing some performance measures like return on equity.

The results in this paper indicate that debt financing and covenant restrictions along with return on equity and the yield are significant considerations by firms issuing MRPS. These results confirm the opinion that MRPS are employed to cope with operating and financing conditions. This inference, coupled with the redemption feature, lead to the conclusion that MRPS is a debt security in substance and should be accounted for accordingly.

**TABLE 1**  
**SUMMARY STATISTICS OF MRPS FIRMS AND NON-MRPS FIRMS**

**Panel A: Key Financial Variables and Ratios**

	<u>MRPS Firms</u>	<u>Non-MRPS Firms</u>
<b>Size</b> (total assets in millions)		
Mean (median)	1,438 (365)	1,059 (297)
Highest/lowest Value	37,744/4.61	27,676/5.6
Standard Deviation	3,480	2,724
<b>Leverage</b> (debt to equity ratio)		
Mean (median)	2.194 (.839)	.497 (.400)
Highest/lowest value	11.982/.213	4.65/.265
Standard Deviation	6.98	1.122
<b>Times Interest Covered</b>		
Mean (median)	2.656 (2.445)	4.064 (4.230)
Highest/lowest value	10.000/-3.459	10.785/-5.873
Standard Deviation	3.706	5.146
<b>Current Ratio</b>		
Mean (median)	1.674 (2.441)	2.318 (1.826)
Highest/lowest value	7.223/.232	48.854/.338
Standard Deviation	.858	3.409
<b>Capital Expenditure</b>		
Mean (median)	.069 (.047)	.077 (.063)
Highest/lowest value	.299/.005	.556/.009
Standard Deviation	.065	.072
<b>Return on Equity</b>		
Mean (median)	.037 (.099)	.013 (.117)
Highest/lowest value	.808/-3.811	.906/-8.425
Standard Deviation	.358	.802
<b>Insider Holdings</b>		
Mean (median)	.081 (.673)	.075 (.079)
Highest/lowest value	.237/.018	.316/.000
Standard Deviation	.162	.207

*Table 1*

<b>MRPS to Total Equity</b>		
Mean (median)	.294 (.210)	NA
Highest/lowest value	2.886/.013	
Standard Deviation	.683	
<b>Yield</b>		
Mean (median)	.113 (.095)	.152 (.138)
Highest/lowest value	.171/.075	.213/.104
Standard Deviation	.109	.126

**Panel B: Distribution of MRPS Issues by Year**  
(firms issuing MRPS for the first time)

Year	Number of Firms %	Percentage of MRPS to Total Equity
1979 and before	248 (45.40)	12.14
1980	30 ( 5.50)	25.59
1981	17 ( 3.11)	23.10
1982	19 ( 3.48)	19.54
1983	22 ( 4.03)	15.93
1984	9 ( 1.65)	43.23
1985	24 ( 4.40)	38.41
1986	25 ( 4.58)	73.65
1987	25 ( 4.58)	44.43
1988	17 ( 3.11)	29.94
1989	38 ( 6.95)	33.67
1990	29 ( 5.31)	30.69
1991	24 ( 4.40)	40.11
1992	19 ( 3.47)	13.94
<b>Total</b>	<b>546 (100.00)</b>	<b>Average 29.46</b>

*Mandatory Redeemable Preferred Stocks*

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**Panel C: Distribution of the Sample by Industry**

Industry Code	Industry Name	No. of Firms/ Percentage
1000	Agriculture, Extractive, Construction	24( 4.45)
2000	Food, Papers, Printing, Chemicals	72(13.18)
3000	Manufacturing	99(18.13)
4000	Transportation (Excluding Utilities)	38( 6.96)
5000	Wholesale and Retail	45( 8.24)
6000	Financial Services	61(11.17)
7000	Other Services	16( 2.93)
8000	Hospitals and Health Care	21( 3.84)
9000	Conglomerates	1( .18)
<hr/>		
4900	Utilities	169(30.95)
<hr/>		
Total	546(100.00)	

**Panel D: Further Analysis of Utility Issues by Year**

Year	No. of Firms	%
1979 and before	142	84.00
1980	7	3.90
1981	3	1.70
1982	1	.60
1983	5	2.90
1984	0	.00
1985	2	1.20
1986	0	.00
1987	2	1.20
1988	2	1.20
1989	2	1.20
1990	1	.60
1991	1	.60
1992	1	.60
<hr/>		
Total	169	100.00

*Table 1*

**Panel E: Pearson Correlation Coefficients Between Variables**

	DER	TIC	CR	CE	ROE	INSID	YIELD
DER	1.00 .00	-.106 .026	-.063 .182	-.043 .366	-.100 .035	.92 .134	.079 .098
TIC		1.00 .00	-.101 .034	.011 .013	.293 .000	-.074 .102	.204 .000
CR			1.00 .00	-.038 .424	-.007 .899	.085 .093	-.136 .004
CE				1.00 .00	.102 .040	.134 .025	.097 .046
ROE					1.00 .00	.068 .113	.125 .001
INSID						1.00 .00	.193 .001
Size							

1.00

\*\* Definitions: Variables as defined in prior Panels.

**TABLE 2**  
**THE UNIVARIATE WILCOXON NON-PARAMETRIC TESTS OF THE**  
**DIFFERENTIATING VARIABLES**

Variable	Mean		Z Value	Prob. >Z
	MRPS Firms N= 219 <sup>a</sup>	Non-MRPS Firms N= 219 <sup>a</sup>		
DER	2.190	.490	6.960	.0001
TIC	2.650	4.050	4.300	.0001
CR	1.670	2.310	3.880	.0001
CE	.069	.078	1.570	.1142
ROE	.037	.013	1.890	.0588
INSID <sup>a</sup>	.081	.075	.180	.8734
YIELD <sub>b</sub>	.113	.152	2.790	.0019

a, b: sample size is 219 for all variables but the INSID that is based on a smaller sample of 192 firms and YIELD that is based on 184 firms due to data unavailability for some firms.

DER = debt to equity ratio.

TIC = times interest coverage.

CR = current ratio.

CE = capital expenditure.

ROE = return on total equity.

INSID= percentage of the voting stock held by insiders.

YIELD= yield on the instrument issued.

**TABLE 3**  
**THE PROBIT REGRESSION ESTIMATES OF THE DETERMINANTS OF FIRMS TO**  
**ISSUE MRPS.**

$$\text{MRPS}_j = A_0 + A_1 (\text{DER}_j) + A_2 (\text{TIC}_j) + A_3 (\text{CR}_j) + A_4 (\text{CE}_j) + A_5 (\text{ROE}_j) + A_6 (\text{INSID}_j) + A_7 (\text{YIELD}_j) + e_j$$

Variable	Expected sign	Coefficient/ Test 1	(t-value)/ Test 2	level of sig Test 3
Intercept	?	1.667 (20.61) .000	1.537 (20.11) .000	1.252 (19.82) .000
DER	+	.014 (3.05) .002	.015 (3.14) .002	.014 (3.18) .002
TIC	-	-.021 (-3.74) .000	-.023 (-3.89) .000	-.019 (-3.29) .000
CR	-	-.027 (-2.85) .005	-.026 (-2.70) .006	-.024 (-2.39) .006
CE	+	-.401 (-1.18) .238	-.382 (-1.15) .271	-.457 (-1.08) .306
ROE	+	.081 (2.06) .039	.083 (2.10) .031	.768 (2.73) .018
INSID	+	NU	.019 (.35) .672	NU
YIELD	?	NU	NU (1.98) .042	.196
R-squared		.427	.431	.468
Sample (N)		438	384	368

**Definitions:**

DER = debt to equity ratio. TIC = times interest covered. YIELD = yield on security issued.  
 CR = current ratio. CE = capital expenditure.  
 ROE = return on equity. INSID = insider holdings.

## ENDNOTES

1. A direct answer to this question is to examine the debt contracts of sample firms to determine how contractors classify MRPS, debt, or equity. However, this is a separate research project that is in progress.
2. The Probit regression is recommended for use where there are binary (discrete) variables included in the model, especially the dependent variable (see Mckelvey and Zaviona, 1975; and Kaplan and Urwitz, 1979). It should be pointed out, however, that Noreen et al. (1988) provide evidence showing that the statistical results under both Probit and Ordinary Least Squares are not significantly different.
3. This procedure reduces the value of the extreme observation that is located beyond the (+ or -) 10 percent of the distribution of the variable. It mitigates the effect of 10 percent extreme values on both sides of the distribution, the very big and the very small. Under normal distribution, 1.3 standard deviation from the mean represents 80 percent of the total distribution of the random variable. This is still an arbitrary solution but is better than setting a subjective cut off point for each variable.

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