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STAFF MEMORANDA

MODELING THE MARKET FOR BANK DEBT CAPITAL

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I. Introduction

Considerable literature has appeared in recent years concerning the response by financial markets to measurable differences in bank riskiness. Most extensively studied has been the market for long-term bank debt (capital notes or debentures, subordinated to deposits). Despite using similar models and samples, several of the studies came to somewhat divergent conclusions, especially as regards the effect of leverage on bank borrowing rates. The purpose of this paper is to explore possible explanations for such divergences and also to present new empirical results on factors influencing the cost of bank debt.

To this end, a data set encompassing most fixed-rate issues by banks and bank holding companies from 1971 to 1978 was assembled and analyzed statistically. This sample, 278 observations in total, is considerably larger than those previously available to researchers and thus allows more detailed analyses. A new feature of our data set is that bank debt placed privately is included in the sample, which has the particular effect of extending our observations well down into the range of small banks and holding companies. Our sample thus encompasses a much broader spectrum of bank sizes than previous studies.

The factors we examine in an attempt to account for the divergences noted above are (1) whether the debt is the obligation of a bank or of a bank holding company, (2) whether the debt is the obligation of a "large" or a "small" banking organization, and (3) whether the debt was issued before or after the failure of Franklin National Bank, an event that by most accounts had a substantial impact on the banking and investing community. In addition, we examine our sample to see if privately placed issues obey the same risk premium model as publicly issued debt. In general, the results of our empirical tests support the finding that leverage is not significant in explaining risk premium, with the possible exception of the period before the failure of Franklin. We find significant effects for the bank/holding company and small/large distinctions, as well as the public/private distinction. The effect of the failure of Franklin has previously received attention, and results in this paper corroborate existing findings. Finally, we note a disturbing implication of our study for the regulatory function.

The remainder of this paper is organized as follows. Section II reviews several recent studies of bank debt, noting both similarities among their results and differences. Section III outlines the theoretical model used in the present paper, and section IV presents empirical estimates. Section V summarizes the results and presents conclusions.

II. Previous Literature

The first examination of risk premiums on bank debt is by Pettway (1976), who uses a model quite similar to that of Fisher (1959) in the seminal study of the valuation of long-term debt. Pettway's sample is composed of primary market observations (new issues) on bank and holding company debt issued from 1971 to 1974. All issues in his sample are non-convertible, fixed-rate, fixed-maturity, and publicly placed. Pettway's basic findings are that bank risk variables do not significantly contribute to explaining risk premiums, although financial variables such as size of the issue, term to maturity, and period of time since banks began issuing long-term debt are important. In particular, neither of two leverage variables is significant, the ratio of borrowed funds to total capital or the ratio of debt capital to equity capital. Also, the distinction between bank and holding company issues is not significant (tested with an intercept dummy variable), nor is the size of the issuing firm, measured by total assets.

Beighley (1977) focuses his attention on whether leverage should be measured at the issuing firm level or at the consolidated holding company level and also considers in greater detail whether leveraged funds consist of all debt or just debt capital. He uses secondary market observations for 1972 to 1974, examining each year separately. His sample consists only of holding company debt, all non-convertible, fixed-rate, and publicly issued. Beighley's results largely contradict Pettway's. He finds both size of the issuer and leverage to be

significant determinants of risk premium. In addition, the ratio of net loan losses to total loans, used as a proxy of the riskiness of bank assets, becomes increasingly significant from 1972 to 1974. Beighley does not report results for marketability of the debt issue or term to maturity.

Martin's (1977) paper is quite similar to those of Pettway and Beighley. He examines a single cross-section of debt securities issued publicly between 1971 and 1974, using secondary market observations on debt yields from early 1975. He includes two earnings variables in his model, growth in earnings per share of common stock and an interest coverage ratio, along with capitalization variables, term to maturity, size of the issue, and an intercept dummy for holding companies. While he finds term to maturity and marketability to be significant, the same result obtained by Pettway, leverage is insignificant in explaining risk premium. Growth in earnings per share and interest coverage are only significant if the size of the issue and the size of the issuing firm are excluded from the regression model, implying considerable collinearity among the variables. Holding company status in insignificant. Thus, Martin corroborates Pettway's finding that leverage is insignificant as a determinant of risk premium.

Herzig-Marx (1979b) also employs secondary market quotations in his study, using early 1976 as the date of observation. Both bank and holding company issuers are represented in his sample, which

includes some convertible issues as well as straight debt. Inclusion of these convertibles is justified on the grounds that all such issues trade far below par, at prices which approximate their value as straight debt; a statistical examination supports this contention. Herzig-Marx also includes several indenture provisions in his model, such as provisions for early retirement of the debt and restrictions on dividend payments by the issuing firm. He also includes an earnings variable, the gross rate of return on income-producing assets, and the ratio of provision for loan losses to total loans as a proxy for the riskiness of bank assets. The results of this study indicate that asset risk is a significant determinant of risk premiums, which is what Beighley found, and that the rate of return on assets is also significant, similar to Martin's result. In addition, the size of the issuer is significant, as is leverage. Term to maturity and marketability of the debt issue are not significant.

In sum, these four studies, although displaying considerable uniformity of approach, empirical methodology, and sample construction, nonetheless reach different conclusions regarding the variables that determine risk premiums on bank debt. Particularly vexing is the lack of agreement concerning the effect of leverage. Among the important sample differences are whether the observations represent primary or secondary market quotations, the time period under observation, and whether banks or bank holding companies are included in the samples. This paper will address each of these differences in an effort to ascertain their effects.

III. The Model

For this study, bank debt issues are observed in the primary market, that is, at the time of issuance. Observations are drawn from the period 1971 to 1978. Consequently, one can distinguish among three types of variables that influence risk premiums. First, conditions in money and capital markets, especially as they pertain to the economy's position in the business cycle, must be considered. Second, investor perceptions of the relative riskiness of issuing banks and bank holding companies are included; especially prominent in this category is investor attitudes toward the degree of leverage employed. Third, investor attitudes toward factors other than bank riskiness are examined. In this last category are the size of the debt issue, indicating its marketability, and the term to maturity of the debt. Marketability has frequently been found to be a significant determinant of risk premium, as noted in section II, and can be viewed as an index of market risk should the investor be forced to liquidate his holdings prior to maturity. Term to maturity of the debt is important since investors' risk perceptions vary with the expected holding period. In particular, the probability of default by a risky issuer will be an increasing function of the investment horizon, while the probability of default on risk-free debt is by definition invariant to the investment horizon. We thus expect premium to increase with longer terms to maturity and to decrease with larger, i.e., more marketable, issues.

Conditions in capital markets are of evident importance in determining primary borrowing rates for banks. Examining the rate spread between Moody's Aaa- and Baa-rated bonds, Jaffee (1975) found that cyclical variations in risk premiums could be satisfactorily explained by six variables relating to the economy's position in the business cycle: consumer sentiment, the unemployment rate, the growth rate of corporate retained earnings, the growth rate of fixed capital investment, the growth rate of output prices, and the level of interest rates. Based on the strength of Jaffee's results, we use the Baa-Aaa rate spread to index the economy's position in the business cycle, in effect turning his model around in the interests of an economical empirical specification. We also include the yield on Treasury securities in our model to index the level of interest rates in the market. While Jaffee used the Baa bond rate for this purpose, bond ratings are slow to reflect changes in corporate riskiness, especially small changes. In addition, recent theoretical work by Merton (1974) derives the result that risk premiums are inversely related to the risk-free rate of interest. Capital market conditions are thus indexed by two variables, the Baa-Aaa rate spread and the level of Treasury rates.

Two variables are used to measure riskiness of issuing banks and bank holding companies. The first is the gross rate of return on income-producing assets (total assets less cash and due from banks and plant and equipment). In accordance with firmly established finance theory, riskier assets should yield higher gross rates of

return. The second variable is leverage, measured by the ratio of total interest-bearing debt to total assets. Interest-bearing debt excludes demand deposits, most of which are held under compensating balances to assure lines of credit and thus are not as risk-sensitive as interest-bearing liabilities.

Besides these six variables, we wish to examine four other factors that might influence debt costs: private vs. public placements, bank vs. holding company issuer, small vs. large issuer, and before vs. after the failure of Franklin National Bank. To do this, we subdivide the sample according to those four categories and perform an analysis of covariance to determine if the subsamples fit the same regression model. Since we are concerned with slope differences between groups, and not primarily with intercept differences, we include four intercept dummy variables in our basic regression model. The variables appearing in the model are as follows:

PREMIUM = arithmetic difference between the yield to maturity on bank debt and yield to maturity on Treasury debt of the same maturity;

ISSUE = size of the debt issue in millions of dollars;

TERM = term to maturity in years;

TYLD = risk-free rate of return for the same maturity as the debt issue under observation;

SPREAD = the Baa-Aaa rate spread;

RGROSS = gross rate of return on income-producing assets;

LEVERAGE = the ratio of interest-bearing liabilities to total assets;

PRIVATE = 0 if publicly placed, 1 if privately;

HC = 0 if bank debt, 1 if holding company debt;

LARGE = 0 if issuer under $5 billion in total assets, 1 if issuer over $5 billion in total assets;

FRANKLIN = 0 if debt issued before 1974 Q4, 1 if issued after 1974 Q3.

Expected signs are positive for TERM, SPREAD, RGROSS, and LEVERAGE, and negative for ISSUE and TYLD. The expected signs for the dummy variables are positive for PRIVATE and FRANKLIN, negative for LARGE, and indeterminate for HC. The reason the sign of PRIVATE is expected to be positive is that smaller banks may tend to favor the private placement market as well as banks whose financial soundness is such that public disclosure might cause loss of deposits or higher borrowing costs. Previous research has found that bank borrowing costs rose after the failure of Franklin National Bank, and several studies have found larger banks able to borrow on better terms than smaller banks. The reason we include a size variable as an intercept term is that collinearity between issuer size and issue size is thus mitigated, as well as allowing us to perform a careful analysis of covariance. Two effects are present in the HC dummy variable. First, holding companies can have more diversified sources of income, which should reduce their probabilities of failing and hence result in lower risk premiums. Nonetheless, one should remember that most activities allowed to holding companies are also permissible for national banks. Second, investors in holding company debt have a legal claim only on the parent company, while bank subsidiaries are the primary sources of earnings. Because

creditors of the holding company are farther removed from the actual revenue stream, this implies a positive relationship with risk premium. The empirical results will indicate which of these two effects dominates.

IV. Empirical Results

Table 1 gives some general characteristics of the sample used for this study. In total, the sample consists of 278 newly-issued capital notes or debentures, all non-convertible. The range of issuer size is from $31 million to $74 billion. Thus, in terms of both number of observations and sizes of firms, the present sample is much more inclusive than previous studies.

Table 2 presents regression results for the risk premium model described in section III. The column labeled "All" estimates the model for the entire sample. Only one sign, that for LEVERAGE, is counter to expectation, although the coefficient is not significant by usual statistical criteria. The other bank riskiness variable, RGROSS, is also not significant. These two results tend to confirm Pettway's original findings and those of Martin. All other variables are significant at the 5% level or better. Overall, the model performs satisfactorily, considering the long time period covered and the extensive range of bank sizes.

Examining the quantitative effect of individual variables, one can see that marketability, while significant, does not exert much of an effect on risk premium. Each additional million dollars of debt

issued reduces risk premium by only 0.2 basis points, clearly quite a small effect. This may indicate that investors in bank debt are generally not expecting to sell their holding prior to maturity, so that potential trading volume is of no great concern. Alternatively, it may reflect the fact that private issues are included in the sample. For these observations, ISSUE probably measures negotiating costs on a per dollar of debt basis, indicating that there are no great economies of scale in private debt placements.

Term to maturity has a more substantial impact. Each additional year adds just over 2 basis points to required yield. The yield differential between a 10- and a 30-year bond would thus be 42 basis points, which is not inconsiderable.

The variables denoting conditions in capital markets and the economy's position in the business cycle are both highly significant and quantitatively important. TYLD, which references the overall level of interest rates, is expected to be higher during expansionary phases and lower during recessionary phases, ceteris paribus. Thus, as economic conditions turn more favorable, risk premiums on debt fall. This is the result predicted by Merton's (1974) model. Similarly, the Baa-Aaa rate spread tends to widen as the economy moves into a cyclical trough. Thus, as economic conditions deteriorate risk premiums on bank debt rise.

Private placements, as expected, tend to require yields approximately 27 basis points higher than public issues, ceteris paribus.

Large issuers are able to borrow on cheaper terms, and issues placed after the failure of Franklin tend to carry much higher costs (but more about this below). Results for the holding company dummy variable indicate that the diversification effect, if any, is swamped by the fact that holding company obligations are farther removed from the main source of income, namely the bank subsidiaries.

While most of these results make good intuitive sense, they are all subject to qualification based upon the analyses of covariance to be discussed next. The purpose of these further analyses is to determine whether the regression results are sensitive to sample characteristics. The statistical theory underlying analysis of covariance is as follows. A measure of the extent to which an empirical model fails to accord with the data used to test it is the sum of squared residuals. The residual sum of squares can always be reduced by adding another variable to the regression model, provided that additional variable is not perfectly collinear with variables previously included. As a special case of adding more variables, consider adding a complete replication of the original variables, except that each replication is used to estimate the model for one of two (or more) mutually exclusive and exhaustive subsets of the original sample. Clearly, the combined residual sums of squares for the two subsamples will be smaller than the single residual sum of squares for the original sample, because in effect we are using twice as many parameters to estimate the same relationship. Whether a significant improvement in explanatory power has been obtained by thus subdividing

the sample can be tested by the amount of reduction in the residual sums of squares. It turns out than an F-test is appropriate for answering this question.[1] The line labeled "F-ANCOVA" in Table 2 presents the value for the F-test obtained for each of the four analyses of covariance reported. The test statistic reported, however, excludes the effect of allowing the intercepts to vary; in other words, the effect of the classifying dummy variable is taken into account.

Results for the analysis of public vs. private placements indicates that, by usual statistical criteria (5% level of Type I error), there is no difference between public and private placement markets. Indeed, a finding strongly to the contrary would be most surprising, since private and public placements are close substitutes and both markets are reasonably efficient; consequently, one would expect both markets to evaluate a debt issue in about the same way. One might note, however, that the coefficient of SPREAD appears to be substantially different, being negative and insignificant for public placements and positive and highly significant for private. This probably reflects the fact that private placements became a larger proportion of all debt issued in the later years of the sample (1976 to 1978; see Table 1). Thus, this may be mirroring the effect, to be noted below, concerning issues placed before and after Franklin failed.

The distinction between issuers that are banks and those that are bank holding companies is depicted in the next two columns of

Table 2. The F-test for slope differences indicates that the two subsamples fit the same regression model. In the case of this analysis, no important coefficient differences are apparent. Thus, one can conclude that financial markets evaluate specific risk and economic factors similarly for banks as for bank holding companies. All other things equal, though, holding companies face slightly higher borrowing costs, probably due to the fact that bond investors have a claim on the earnings of the holding company while most holding company earnings flow from the bank subsidiaries.

We next consider the possibility that small and large banking organizations are evaluated differently by financial markets. The F-test again indicates no significant subsample differences, although here two coefficient estimates appear to differ substantially between the two subsamples. The coefficient of SPREAD is positive and significant for small organizations while negative and insignificant for large. To what this difference might be due is not clear, although as reported below sample differences for SPREAD can be shown to exist. The intercept dummy variable for holding companies is similarly positive and significant for small organizations while negative and insignificant for large. This probably reflects the fact that very few large organizations are not holding companies (49 out of 57 issues by large organizations were obligations of holding companies). That slope differences are not significant, while the intercept for large organizations is negative and highly significant, suggests an interesting interpretation. As far as risk characteristics and economic

out arrives 5 to 7 days after the due date; if more time lapses and the print-out has not arrived, inquiries should be made with Continental. able to borrow at lower costs than smaller organizations. This suggests that there is some factor, unrelated to measurable differences in riskiness, related only to the size of the organization, that influences investors' perceptions of the probability of default. The factor that occurs immediately to mind is the bank regulatory apparatus. Many students of the banking industry have suggested that large banks are less likely to fail because regulators are less likely to allow them to fail. Our empirical estimates suggest that regulatory protection translates into approximately an 18 basis point advantage in the cost of long-term funds.

Finally, we consider sample differences based upon issues placed before and after the failure of Franklin National Bank. The F-test for this subdivision of the sample indicates significant slope differences for the two time periods. Previous literature, however, has established that investor perceptions of bank risk probably did undergo change due to Franklin's demise (Fraser and McCormack 1978). The change itself has been identified as investors' views of the riskiness of the banking industry relative to the business cycle and concern only the SPREAD variable (Herzig-Marx 1979a). Netting out this latter effect, the value of the F-test falls to 1.633, which is not significant even at the 10% level.[2] Thus, once we take account of the differing effect of SPREAD, there are overall no slope differences before and after the failure of Franklin National Bank. The coefficient

of LEVERAGE seems to change substantially, though, going from positive and significant in the before period to negative and marginally significant in the after period. This could be interpreted as evidence that highly leveraged banks no longer came to the debt market after Franklin; sample values belie this interpretation, however, since mean values (standard deviations) of LEVERAGE are 49.0% (10.7%) before Franklin and 57.0% (10.8%) after. One might further note that the only regression in which leverage is statistically significant is in the before period. This implies that previous studies which drew most of their observations before Franklin failed might have found leverage to be a statistically significant determinant of risk premium, while those whose sample was predominately from the after Franklin period would not have discerned any effect of leverage.

V. Summary and Conclusions

This paper has presented further evidence on the pricing of bank debt capital in the primary market. Using a large data set covering straight debt issues from 1971 to 1978, we have presented empirical estimates for a valuation model encompassing business cycle factors, bank risk variables, and investor attitudes toward marketability and the investment horizon. We have furthermore stratified the sample in four ways to examine the sensitivity of the model to data characteristics. In general, the results were satisfactory and quite consistent across different subsamples.

Summarizing first the results bearing on divergences evident in previous studies, we find that, on the whole, leverage is not significant in explaining variations in risk premiums. We draw the inference that such divergences as are found in the literature may well be due to the period sampled, since observations before Franklin failed tend to show a significant coefficient for LEVERAGE while those after do not. We find, however, that an intercept dummy variable denoting issues that are obligations of bank holding companies is positive and highly significant, counter to previous results by Pettway and Martin. We believe the significance for HC probably stems from our use of a longer period of observation, since its coefficient is only significant in the after Franklin period. We also find strong support for the investor variables ISSUE and TERM, measuring marketability and the investment horizon, respectively. Studies that omitted these variables, such as Beighley, are probably guilty of misspecification.

Variables denoting the economy's position in the business cycle, TYLD and SPREAD, are consistently significant in our regression model. The empirical results in this paper indicate that investors believe the banking industry's level of risk to be countercyclical, as one would expect: risk falls during expansionary periods and rises during contractions. This has only been the case following the failure of Franklin National Bank, however, corroborating previous empirical work.

Finally, we have presented new evidence concerning the private placement market and the effect of issuer size. The private placement

market appears to operate in much the same manner as the public issue market, with the possible exception that riskier and/or smaller banks tend to favor private placements. Apart from an intercept difference, privately placed debt is evaluated the same as publicly issued debt. These findings lend support to the position that financial markets be allowed a greater role in monitoring bank risk-taking. Reservations concerning the efficacy of financial market regulation are to a great extent concerned over the smaller banking organizations and also those that are much riskier than the norm. Since many of these banks are forced into the private market, for example when regulatory authorities demand an increase in bank capitalization, finding that private placement markets efficiently price risky debt makes reliance on financial markets more attractive from a regulatory viewpoint.

Concerning the effect of issuer size, our results indicate that, apart from an intercept difference, small and large banking organizations are evaluated alike. This strongly implies that measurable differences in bank riskiness influence debt prices the same regardless of issuer size, but that size per se imparts a downward effect to borrowing costs for large organizations. These finding are consistent with the view, frequently voiced, that bank regulation itself prompts investors to believe that large banking organizations are less likely to fail simply because they are large. If so, bank regulation would seem to have a particularly perverse effect on the riskiness of the industry.

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FOOTNOTES

*Economist, Federal Reserve Bank of Chicago, The views expressed are those of the author and do not necessarily reflect the views of the Federal Reserve Bank of Chicago or the Federal Reserve System. The author wishes to express his appreciation to Anne S. Weaver for her assistance in this project and to Richard H. Pettway for his invaluable counsel and friendship.

[1]For the derivation of a variety of tests relating to analysis of covariance, see Johnston (1972, pages 192-297).

[2]To take account of the known change in the coefficient of SPREAD before and after Franklin failed, the basic regression model was estimated with SPREAD and an interactive term between SPREAD and FRANKLIN both included in the equation. The residual sum of squares from this augmented equation was compared with the sum of the two residual sums of squares from partitioning the sample. Using the appropriate number of degrees of freedom, this F-test had the value 1.633.

Table 1

Sample Characteristics

Year	Number of Observations	Risk Premium mean	Risk Premium st. dev.	Risk-free Rate mean	Risk-free Rate st. dev.	# Issues banks	# Issues bhcs	Primary Market public	Primary Market private
1971	13	1.40	0.52	5.97	0.41	13	0	13	0
1972	56	1.32	0.54	6.09	0.24	24	32	41	15
1973	27	1.10	0.39	6.94	0.22	11	16	14	13
1974	17	1.25	0.77	7.25	0.47	4	13	13	4
1975	24	1.71	0.57	7.42	0.36	7	17	19	5
1976	40	1.57	0.62	7.67	0.29	7	33	17	23
1977	54	1.24	0.44	7.53	0.26	24	30	12	42
1978	47	0.80	0.32	8.28	0.28	27	20	13	34

Table 2

Regression Results for Risk Premium Model

	All	Public vs.	Private	Bank vs.	HC
INTERCEPT	4.463	4.122	5.347	4.978	4.161
ISSUE	-0.002**	-0.003***	-0.002	-0.003	-0.002
	(2.059)	(2.860)	(1.019)	(1.070)	(1.503)
TERM	0.021***	0.023***	0.019**	0.026***	0.020***
	(5.191)	(5.704)	(2.109)	(4.236)	(3.420)
TYLD	-0.592***	-0.511***	-0.708***	-0.625***	-0.565***
	(9.923)	(7.543)	(6.759)	(7.929)	(6.132)
SPREAD	0.656**	-0.003	1.484***	0.373	0.922**
	(2.383)	(0.010)	(2.958)	(1.100)	(2.042)
RGROSS	0.000	-0.001	-0.000	-0.048	0.025
	(0.012)	(0.041)	(0.009)	(1.609)	(0.844)
LEVERAGE	-0.003	0.001	-0.007	-0.003	-0.003
	(1.224)	(0.157)	(1.550)	(0.891)	(0.633)
PRIVATE	0.265***	------	------	0.271***	0.230**
	(4.059)			(2.985)	(2.443)
HC	0.180***	0.119	0.106	------	------
	(2.842)	(1.339)	(1.096)		
LARGE	-0.283***	-0.219**	-0.313	0.007	-0.364***
	(2.628)	(2.045)	(1.326)	(0.029)	(2.776)
FRANKLIN	0.581***	0.724***	0.428*	0.863***	0.445**
	(4.256)	(4.809)	(1.784)	(4.141)	(2.335)
$\bar{R}^2$	0.415	0.445	0.354	0.434	0.402
F	20.619***	13.540***	9.208***	10.864***	12.931***
RSS	50.616	17.279	30.408	15.093	34.247
d.f.	267	132	126	107	151
F-ANCOVA	-------	1.761*		0.741	

Notes: Absolute values of t-statistics are in parentheses; asterisks indicate significance levels (2-tailed tests) as follows: *, 10%; **, 5%; ***, 1%; RSS is residual sum of squares; d.f. is degrees of freedom; F-ANCOVA is F-test for slope differences.

Table 2 (con't)

Regression Results for Risk Premium Model

	Small vs. Large		Before vs. After	
INTERCEPT	4.728	2.750	3.860	4.674
ISSUE	-0.005 (1.549)	-0.001 (1.180)	-0.003** (2.111)	-0.001 (1.158)
TERM	0.025*** (4.740)	0.013** (2.026)	0.031*** (8.479)	0.015 (1.992)
TYLD	-0.636*** (9.499)	-0.293** (2.239)	-0.513*** (9.024)	-0.598*** (6.138)
SPREAD	0.759** (2.399)	-0.228 (0.411)	-0.632** (2.409)	1.652*** (3.795)
RGROSS	-0.012 (0.517)	0.048 (1.398)	0.041 (1.620)	-0.013 (0.496)
LEVERAGE	-0.003 (1.074)	-0.003 (0.542)	0.008** (2.335)	-0.006* (1.724)
PRIVATE	0.230*** (2.787)	0.270* (1.994)	0.238*** (3.079)	0.281*** (3.022)
HC	0.225*** (3.112)	-0.231 (1.355)	-0.138 (1.367)	0.166*** (1.995)
LARGE	------	------	-0.093 (0.703)	-0.344** (2.250)
FRANKLIN	0.664*** (4.058)	0.369 (1.473)	-------	-------
$\bar{R}^2$	0.374	0.227	0.656	0.395
F	15.604***	2.829***	23.901***	13.202***
RSS	43.209	5.319	8.130	36.475
d.f.	211	47	99	159
F-ANCOVA	1.233		3.863***	