Bank Holding Company Dividend Policies and Share Prices

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ABSTRACT

This paper analyzes the relationship between dividend policy and the rate of return on bank holding company (BHC) stocks. We hypothesize that the representative investor in BHC shares has a preference for dividend income over prospective capital gains return. Regulatory policy is hypothesized as playing a role in the determination of the substitutability between dividends and capital gains.

To test our hypothesis, two different specifications of the SML were established for the years 1971-80. Our cross-sectional sample included forty-four large BHCs. In general, the statistical evidence provides support for the supposition that investors in BHC stock do not consider expected dividend return and capital gain return as perfect substitutes.

INTRODUCTION

The reaction of investors to the dividend policy of the firm has received considerable attention in the last two to three decades. During this period, two or three principal schools of thought emerged. One school led by Gordon (1959) and Linter (1956) suggested that dividend policy is relevant to security valuation; a second, led by Miller and Modigliani (1961), suggested that it is not. The third position, usually called the tax differential theory, is the reverse of the Gordon and Linter position. It hypothesizes that investors require higher rates of return on high dividend yield stocks.

Survey evidence indicates that the managers of large banks and bank holding companies (BHCs) establish and maintain target payout ratios or target ranges. For example, approximately 72 percent of the banks surveyed by Kennedy and Scott (1983) set a target payout percentage. Similarly, a recent study by Baker, Farrelly, and Edelman (1985) suggests that managers of regulated firms have a different view of dividend policies, taxes, and shares prices than managers operating in a competitive environment.

One cannot conclude from these results that there is any necessary linkage between this type of managerial behavior and the value of stockholders' wealth (i.e., through a clientele or any other effect). Nevertheless, the findings suggest that BHC managers are cognizant of or are reacting to a desired (or conventional) dividend disbursement pattern. By inference, shareholders are not completely indifferent to dividend policies.

> ***The results reveal that the rate of return on BHC stock is inversely related to dividend payout.***

This paper studies effects of dividend policy changes on equity returns of large BHCs. The hypothesis put forth is that the representative investor in BHC shares is willing to pay a small premium for cash dividends compared with prospective capital gains. In other words, the return on BHC shares with high payout ratios will be lower (and vice versa) than the theoretical values predicted by the capital asset pricing model (CAPM) which implicitly assumes the neutrality of dividend policy.

Our hypothesis about the behavior of the BHC shareholders is based on two important observations. The first impetus to the formulation of our hypothesis was a study by J.B. Long (1978) for a public utility, showing that there was a significant demand for cash dividends in spite of a generally lower after-tax total return to investors. In other words, total returns on the dividend-paying stock were lower than those on the other issue because a unit of dividend yield substituted for more than one unit of capital gains return. Long presented no definitive explanation for this finding, suggesting only that a resolution of the paradox would be an important contribution to the theory of common stock valuation.

Second, as mentioned earlier, dividend survey studies reveal the existence of target payout ratios and gradual or lagged adjustment to these levels. Extending these observations, we postulate that the dividend yield and capital gain return are not perfect substitutes in the minds of investors.

The following section provides an overview of the empirical literature pertaining to bank and BHC dividend policy. The methodology used in this study is described in the third section followed by a presentation of empirical results. The final section discusses some conclusions.

EMPIRICAL STUDIES OF BANK AND BHC DIVIDEND POLICY

The results of several studies of bank and BHC dividend policy reveal considerable variability among the studies with respect to purpose, sample design, test period, and statistical technique. Nevertheless, in relationship to the focus of this paper, the list is rather extensive and provides a useful introduction to the evidence pertaining to the "dividend puzzle" as it relates to the BHC firm.

In an early work by Durand (1957), the relationship between the dividend payout ratio and share prices was analyzed using 117 bank stocks over the period 1946-1953. Durand's overall conclusion was that bank dividend disbursement practices played an important role in determining the ratio of market price to book value.

Another study using a geographically segmented sample was conducted by Adams (1967) for the years 1959-1966. His objective was to ascertain whether the prices of bank stocks, like those of public utilities, were enhanced by more generous dividend policies. The core of Adams' analysis was a tabular comparison of average payout ratios, price-earnings multiples and eps growth rates for bank and utility stocks in four geographic regions. Examination of the tabular results revealed a positive relationship between average payout and the p/e ratio. A somewhat more sophisticated test was conducted by correlating the absolute differentials of the average payout ratios and average price-earnings multiple between the two groups of firms (i.e., banks and public utilities). Since the differentials were highly correlated, Adams concluded that banks could increase share values by raising their payout ratios to levels comparable to those of public utilities.

Peltzman's (1970) use of a geographically segmented sample was directed at a different purpose than the two studies discussed previously. His aim was to estimate the joint effect of geographic and entry restrictions on the value of bank shares. However, a by-product of his cross-sectional results was an estimation of the relationship between dividend payout and share prices. Sample stratification was predicated on bank deposit size. Estimations based on the samples of large banks revealed that the ratio of market to book value was not significantly related to the dividends-to-capital ratio. For small banks, however, he concluded that dividends merely represented a proxy for "true" or permanent earnings rather than an independent influence.

The largest fifty U.S. banks classified by asset size in 1965 provided the basis for Magen's (1971) study of the determination of bank stock prices and capital costs. Separate cross-sectional and time-series estimates were made for the periods 1962-1965 and 1958-1966 respectively. The dividend payout ratio was negatively related to the earnings yield in several of the equations. However, the regression results were generally weak and the signs of the coefficients (particularly for the payout ratio) tended to be quite unstable across the different specifications of the model.

Beighley, Boyd, and Jacobs (1975) examined the impact of several financial variables on BHC share price and price-earnings ratios using data from 113 BHCs over the period 1972-1974. The independent variables in these models included the ratio of total debt to the book value of the total equity, ratio of actual loan losses less recoveries to total loans, growth rate of net operating income, consolidated asset size, number of shares outstanding, and dividend payout per share. The average price per share and the p/e ratio represented the regressands of the models. The cross-sectional equations were specified in both absolute and log form. The authors found that the coefficients of the dividend payout proxies (dividends per share) were positive and significant at the .01 level or better in all of the estimations.

> ***Investors in BHC stocks do not consider expected dividend return and capital gain return as perfect substitutes.***

Pettway's (1976) paper represents a comprehensive analysis of the determinants of BHC betas and p/e ratios. Along with the dividend payout ratio, Pettway included the eps growth rate, capital to risk assets ratio, total deposits, dividends per share, and current dividend yield among the regressors. The sample encompassed thirty-eight large banks and BHCs over the period 1971-1974. The conclusions of the study are based on eight cross-sectional regression equations; i.e., one for each of the four years for the two regressands. The regression coefficient for the payout was positive in all four p/e ratio equations. However, it was statistically significant for only two years, 1971 and 1974. The dividend payout ratio was negatively related to the firm's beta in three of the four years. Nevertheless, only in one year, 1974, did the coefficient reach an acceptable level of statistical significance.

The studies by Jahankhani and Lynge (1980) and Graddy, Homaifar, and Karna (1984) are similar in their attempt to identify through accounting proxies how managerial decisions effect market risk perceptions. The payout ratio was included among the regressors in both studies as a surrogate for dividend policy. Each paper focused on the determinants of a bank's or BHC's beta.

The cross-sectional models of Jahankhani and Lynge were estimated by using the average values of the financial measures over the period 1972-1976. The sample included data from ninety-five banks and BHCs. Beta was regressed on the payout ratio, equity capital to total assets, loan losses to total loans, cash and U.S. Treasury securities to total assets, loan to deposit ratios, and the co-

efficients of variation of deposits and earnings per share. Their results showed a significant negative relationship between the payout ratio and beta. They interpreted these findings as evidence of a dividend clientele effect among bank shareholders.

Using pooled cross-sectional and time-series data for forty-five BHCs over the years 1970-1979, and a modified set of regressors, Graddy, Homaifar, and Karna came to a similar conclusion. The leveraged beta was inversely related to the payout ratio in all of the regression models.

METHODOLOGY

The methodological approach used in this study is similar to that of Bar-Yosef and Kolodny (1976). Bar-Yosef and Kolodny began their analysis of dividend policy by deriving an explicit equation for the dividend yield portion of a security's expected return implied from the capital asset pricing model, CAPM (Sharpe 1964). Theoretically, the equation resulting from this procedure provides a basis for testing investor preference for returns in the form of dividends and in the form of capital gains. If the equalities in their equation are consistently violated, one would raise questions about the dividend irrelevance. On the other hand, should empirical estimates support their formulation, one would conclude that equity holders had no net preference concerning the form in which they received their returns. However, the feasibility of directly testing this idealized dividend yield equation is remote because it requires an estimate of the proportion of the total return on each security an investor expects to receive in the form of dividends. Nevertheless, Bar-Yosef and Kolodny's dividend yield equation does provide a theoretical foundation for empirical testing of the dividend effect on BHC stock returns.

To explain, verification of Bar-Yosef and Kolodny's original dividend yield equation means that security returns are completely defined by the security market line, SML, regardless of the dividend policy of the firms. In such a case, as far as dividend policy is concerned, it is relevant only to the extent that it affects a security's systematic risk. Or, expressed somewhat differently, once a security's beta is known, further knowledge about the firm's dividend policy is redundant.

It is our contention, following Bar-Yosef and Kolodny, that the effect of dividend policy can be tested for BHC securities by including the dividend payout ratio among the regressors in the SML estimation. Two different specifications of modified versions of the SML are tested here for results.

In equation (1), r_i and β_i stand for the return and the systematic risk measure for the ith BHC security. The payout ratio variable π_i is added as an explanatory variable in the SML. The argument here is that if α_2 in the equation is insignificant, then the conventional SML provides an accurate estimate of the expected return on the ith BHC stock. Such a finding would not, of course, negate the importance of the relationship between dividend payout and beta noted in past studies of the determinants of bank and BHC systematic risk (Graddy, Homaifar and Karna 1984; Jahankhani and Lynge 1980). An insignificant α_2 implies that π_i provides no useful information about the determination of security returns beyond that inherent in β_i. The statistical significance of α_2 supports the notion that dividend policy has an important independent influence on stock returns. If both independent variables are found significant, then it can be concluded that the market values cash dividend return more than the capital gains return. Therefore, dividend relevance would be supported.

$$r_i = \alpha_0 + \alpha_1 \beta_i + \alpha_2 \pi_i + e_i \qquad (1)$$

$$r_i = \alpha_0 + \alpha_2 \beta_i + \alpha_2 \epsilon_i + e_i, \qquad (2)$$

where

$$\epsilon_i = \pi_i - \alpha^*_0 - \alpha^*_1 \beta_i$$

Equation (2) is a respecification of equation (1) using a residual dividend policy measure, ϵ_i. A high degree of collinearity between the regressors in equation (1) could confound the estimated coefficients, making their interpretation difficult. Past studies (Miller and Scholes 1972; Petit and Westerfield 1972) have found a negative correlation between the payout ratio and the systematic risk measure. Furthermore, Frost (1978) shows that the existence of this negative correlation between the regressors may cause a downward bias in α_2, the estimated coefficient of π_i. This problem is addressed in equation (2) by replacing the original payout ratio with a residual payout ratio measure, referred to as ϵ_i, among the regressors. The value of ϵ_i was derived by first regressing π_i on β_i and then defining the residuals from this equation as ϵ_i. The value of ϵ_i indicates the dividend policy, which does not depend on the market factor. The value of ϵ_i, therefore, replaces the explanatory variable π_i in equation (1). A significant α_2 in equation (2) implies that BHC dividend policies have an effect on stock return beyond that contained in the market factor.

EMPIRICAL RESULTS

The regression results in Table 1 are based on a pooled time-series and cross-sectional sample encompassing forty-four of the nation's largest BHCs over the years 1971-1980.* On December 31, 1980, these forty-four organizations held 77 percent of all BHC assets and 57 percent of total banking sector assets. Within the sample, size ranged from approximately $115 billion at the upper extremity to $3 billion at the lower end. In addition, each

*Editor's note: For a different analysis of this same sample during the 1978-1980 period see, Graddy, D.B. and A.S. Karna. 1987. Dividend aspirations, regulatory policy, and the return on BHC shares. *Akron Business and Economic Review* (Winter): 80-89.

of the organizations had widely distributed and actively traded equity issues. The stocks of thirty-three of the companies were listed on the New York Stock Exchange during the period. The remaining eleven organizations were traded over the NASDAQ system.

Besides being large and actively traded, the companies had to meet a final technical requirement to be included in the sample. To be acceptable, the organization had to have a continuous quarterly beta series throughout the analysis period. Moody's Bank and Finance Manual and the Value Line data base were used to calculate the payout ratio, rates of return, and the beta coefficients for the forty-four BHCs.

The results in Table 1 reveal that the rate of return on BHC stock is inversely related to dividend payout. The regression coefficient for the payout ratio (π_i) in equation (1) has a negative sign and is significant at the .01 level or better. Equation (2) yielded a negative and significant coefficient for ϵ_i.

These results are important because they imply that dividend policy has an effect on BHC stock returns beyond that contained in the market factor. From this we conclude that the dividend policy appears to have an important independent effect on the level of BHC stock returns as postulated earlier in the paper. BHCs with higher dividend payouts provide investors with a lower risk-adjusted return than BHCs with smaller dividend payouts. This result is confirmed in tests using the two regressions.

TABLE 1

REGRESSION RESULTS FOR THE POOLED TIME SERIES AND CROSS SECTION SAMPLE, 1971-1980

	Regressors			
Specification	Payout Ratio Measure (π)	Residual Payout Ratio Measure (ϵ)	Systematic Risk Measure (β)	F-Statistic
Equation (1)	-0.1620*		-0.0833#	
	(3.3347)		(1.6137)	6.01*
Equation (2)		-0.1612*	-0.0484	
		(3.3308)	(0.9674)	6.83*

Note: T-statistics are in parentheses.
* indicates significance at the 0.01 level or better using a two-tail test.
# indicates significance at the 0.10 level or better using a two-tail test.

SUMMARY AND CONCLUSIONS

This study examined the relationship between dividend changes and the rate of return on BHC shares. We hypothesized that the regulated status of BHC enterprises impacts on investor preferences for expected dividend yield versus prospective capital gain return. The predisposition of investors for dividend disbursements arises from an inherent conflict between shareholders and regulators on what constitutes an adequate amount of equity capital and consequently, an optimal retention policy for BHC organizations.

In general, the evidence of our study supports the hypothesis that investors in BHC stocks do not consider expected dividend return and expected capital gain return as perfectly substitutable units. In the case of BHCs, dividend policy seems to count. Cash dividends are preferred to retained earnings. This demonstrates that in order to improve market share price, BHC managers must attract both types of investors, dividend return seekers and capital gain return seekers. BHCs with some portion of earnings distributed as dividends improve their share values over BHC stocks with no dividend distribution. In other words, BHCs could increase their market values by gradually increasing their dividend payout ratio, at least up to some aspiration level of payout ratio.

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