Dividend Policy Determinants: An Investigation of the Influences of Stakeholder Theory

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This paper investigates the relationship between the dividend-policy decisions and investment decisions of a firm. Recent literature proposes a theory that links the two decisions. This link is stakeholder theory, which views the firm as a nexus of contracts and includes both investors and non-investors as stakeholders of the firm. By using a proxy for the level of non-investor stakeholder influences, our research finds that a relationship does exist. This is indicated by the firm having a lower dividend-payout ratio, which indicates its ability to make good on the implicit claims of non-investor stakeholders.

■ There is considerable debate on how dividend policy affects firm value. Some researchers believe that dividends increase shareholder wealth (Gordon, 1959), others believe that dividends are irrelevant (Miller and Scholes, 1978), and still others believe that dividends decrease shareholder wealth (Litzenberger and Ramaswamy, 1979). Financial management research on financing policy decisions, including the dividend decision, considers investment as an exogenous variable, or at least as having a fixed, known distribution.

However, recent research (Cornell and Shapiro, 1987; Peterson and Benesh, 1983; Prezas, 1988; and Ravid, 1988) suggests that there are interactions between investment and financing decisions. Cornell and Shapiro (1987) posit that non-investor stakeholders (customers, employees, suppliers, distributors, and other firms providing complementary goods and services) influence this interaction of investment and financing decisions.

We investigate the influence of these stakeholders on firms' dividend policy by examining the interaction between the dividend and investment policies. We propose that both non-investor stakeholders and capital suppliers have an impact on a firm's dividend policy. To test this proposition, we use a more direct measure of free cash flow as a way to relate dividends and agency costs and an objective smoothing procedure on the dividend-payout ratios. Our results indicate that an interaction between the dividend and investment policies of a firm does exist.

This paper is divided into five parts. In Section I, we review the related literature and provide background information on stakeholder theory and dividend policy. In Section II, we discuss our empirical model, followed by a sample description in Section III. We report our empirical results in Section IV. The final section discusses the implications of our results and provides concluding remarks.

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I. Background

One group of financial theorists (Martin, Petty, Keown, and Scott, 1991; Miller, 1986; and Miller and Modigliani, 1961) provides a hypothesis for dividend policy irrelevance. This group bases its theory on the assumptions of 1) perfect capital markets, meaning no taxes or transaction costs exist, the market price cannot be influenced by a single buyer or seller, and there is costless access to information; 2) rational behavior on the part of participants in the market, valuing securities based on the discounted value of future cash

flows accruing to investors; 3) certainty about the investment policy of the firm and complete knowledge of these cash flows; and 4) managers that act as perfect agents of the shareholders. For dividend policy to matter, one or more of these assumptions cannot hold.

One critical assumption that may not hold is certainty about the investment policy of the firm. Titman (1984) develops a model that hypothesizes a possible interaction between investment and financing decisions. His model suggests that equity holders have incentives to maximize the wealth of non-investor stakeholders in a firm. These stakeholders suffer costs in the event the firm liquidates. Their costs can take the form of job search costs by employees, increased maintenance costs for customers, or retooling costs for suppliers.

The firm may also bear some costs of uncertainty. Its customers may believe they will bear liquidation costs if the firm goes out of business, and they will discount the price they are willing to pay for its goods and services to reflect these anticipated costs. Customers can thus use capital structure as one indicator of the future default potential of their vendors.

Stakeholder theory, developed by Cornell and Shapiro (1987), complements the work of Titman (1984) by looking at the implicit claims on the firm. It is the implicit claims aspect of Cornell and Shapiro's stakeholder theory that creates the link between the investment and financing decisions of the firm, because the level of net operating income of the firm can be affected by financing decisions, such as dividend-payout ratios.

One of the key factors in their stakeholder theory is differentiating between explicit and implicit claims on the firm. Explicit claims are characterized as product warranties, price contracts, and wage contracts—in other words, legal contracts. Implicit claims are characterized as being too state-contingent or too ambiguous to reduce to a written or other explicit form. Some examples are the ability to provide service and parts, employment for people without contracts, and continuing sources of supply that do not require new negotiations.

The interests of non-investor stakeholders can affect the financial decision-making process of firms, through both explicit and implicit claims on the value of the firm (Jensen, 1983). The value of implicit claims is related to the total risk of the firm. As the firm decreases its ability to honor implicit claims, it becomes riskier to its stakeholders. As noted above, to compensate for this risk, the value of the goods or services that the firm sells is reduced. Implicit claims are more sensitive to changes in the financial condition of the firm than are explicit claims, since a firm can choose to default on its implicit claims without being forced into bankruptcy. If firms have serious cash flow shortages, they will default on implicit claims first, then on explicit claims. Thus, implicit claimants are at the greatest risk.

Net organizational capital (NOC), as defined by Cornell and Shapiro (1987), characterizes the level of non-investor stakeholder influence on dividend payouts. When a firm sells goods or services that have comparatively larger amounts of implicit guarantees, the ability to fulfill these obligations increases the value of the firm's equity in the market. The belief is that the value, or price, stakeholders are willing to pay exceeds the actual costs that the firm will incur to meet these promises. Therefore, the reduction of stakeholder risk has a greater value than the firm's cost of reducing this risk. The result is that the firm creates an organizational asset that exceeds the cost of the organizational liability used to create it. The amount by which these organizational assets exceed the organizational liabilities is the level of NOC, which accrues to the shareholders. As the firm invests in the ability to meet stakeholder claims, its level of NOC increases as the value to stakeholders exceeds the cost to the firm.

Barton, Hill, and Sundaram (1989) test the predictions of stakeholder theory for capital structure. By subjectively categorizing firms into either high- or low-NOC groups, they test the relationship of stakeholder theory to capital structure. They find that high-NOC firms tend to be more conservatively financed (use more equity) than firms with low NOC.

Barton et al. (1989) note one limitation: their subjective assignment of firms to high- and low-NOC categories. They indicated the possibility that their variable is not a true proxy for, or correct measure of, NOC.

This idea of a conservative debt policy in relation to the level of NOC can also be extended to dividend policy. Firms with higher levels of NOC also need higher levels of liquidity to allow for payoffs on potential implicit claims. These firms are more conservatively financed, use more equity, and maintain a higher level of liquidity to avoid the costs of financial distress. To increase liquidity, firms might lower dividend-payout ratios. Lower payouts mean firms will need less outside financing, since they are retaining cash internally rather than paying dividends. This cash retention is consistent with the pecking order theory of Myers (1984). Firms prefer internal financing to external financing and will adapt their target payout ratios to their investment opportunities. One of these opportunities is increasing NOC.

Cornell and Shapiro (1987) initially hypothesize that managers of a firm can signal their ability to make payoffs on implicit claims by paying higher dividends. However, this hypothesis is not consistent with the

purpose of the signal. Firms wish to indicate that they have the necessary cash to make payoffs on implicit claims, but setting a higher dividend-payout ratio reduces the cash available to make those payoffs, and creates an inconsistent signal. Instead, the signal should be consistent with the goal of having higher liquidity.

More recently, Shapiro (1990) provides a different hypothesis on the relation between dividend policy and NOC. Firms with relatively high levels of NOC need to be particularly concerned about dividend stability. These firms must "...set the dividend at a level that can be maintained." Shapiro's theory is that these firms will have lower dividend-payout ratios to signal stakeholders that they expect to be able to make payoffs on implicit claims.

Valuation of implicit claims is very difficult. However, Cornell and Shapiro (1987) note that this valuation is related to the level of spillover that a firm has across product lines, business lines, or divisions. For example, if a firm chooses to identify all of its products under a single brand name or business line and those products are similar, then changes in the value of implicit claims of one product can have considerable effects on the other products. A firm that is differentiated into unrelated business lines or many divisions will have fewer spillover effects. Stakeholders recognize that focused firms have more to lose when they default on an implicit claim. Therefore, stakeholders will place higher value on an implicit claim for a focused firm than on that of a diversified firm.

We can see the effects of spillover on a firm's customers by considering the effect of the discontinuation of one business line on customers of another business line. If the business lines are unrelated, then spillover effects will be minimal. An example is General Electric's jet engine and household appliance divisions. If GE exited the jet engine business, there would likely be little effect on consumers' perceptions of GE's ability to pay implicit claims in the appliance division.

II. Data and Methodology

In this section, we describe our econometric model and the variables used in the study. (See Barton, Hill, and Sundaram, 1989; Lloyd, Jahera, and Page, 1985.) We use the regression equation below as the basis for testing our hypothesis of a relationship between the NOC of a firm and its dividend payout. To specify the model more fully, we include other variables based on previous research.

$$DP_{it} = \beta_0 + \beta_1 FS_{it} + \beta_2 LSALES_{it} + \beta_3 INS_{it} + \beta_4 LCSHR_{it} + \beta_5 FCF_{it} + \beta_6 GROW_{it} + \beta_7 STD_{it} + \epsilon_{it} \quad (1)$$

where

DP_{it} = smoothed dividend payout ratio for Firm i in fiscal year t
FS_{it} = measure of the focus of Firm i in year t
$LSALES_{it}$ = natural log of sales of Firm i in year t
INS_{it} = residual of insider ownership for Firm i in year t regressed on LSALES
$LCSHR_{it}$ = residual of natural log of number of common shareholders for Firm i in year t regressed on LSALES
FCF_{it} = free cash flow for Firm i in year t
$GROW_{it}$ = sales growth of Firm i for year t, using the prior five years
STD_{it} = standard deviation of monthly returns of Firm i in year t

Dividend payout, the dependent variable, is measured on an annual basis and is mathematically smoothed, as described below. Since managers are loath to lower dividends, they instead adopt a partial adjustment process (as shown by Lintner, 1956) and let the dividend-payout ratio fluctuate. Since firms tend to have relatively stable target dividend-payout ratios, a smoothed payout ratio should smooth the fluctuations due to earnings variability, but still reflect the firm's desired, or target, dividend-payout ratio. The independent variable FS measures the level of NOC. We use several control variables. We use the natural log of annual sales to control for size effects in the final regression and to remove any size effects from two other control variables, insider ownership and the number of common shareholders. Three variables control for agency costs: insider ownership, the natural log of the number of shareholders, and free cash flow. Two variables control for transaction costs: sales growth and the standard deviation of firm returns.

A. NOC Variable

Stakeholder theory predicts that firms that have both high potential implicit claim values and the desire to pay those claims will attempt to distinguish themselves before stakeholders make the claims. Shapiro (1990) indicates that managers signal their ability to honor implicit claims by paying lower dividends. This keeps more cash in the firm to pay implicit claims and reduces the risk of a possible dividend cut. Therefore, as NOC becomes higher, dividend-payout ratios should be lower.

One problem with testing this proposition is that NOC is difficult, if not impossible, to measure directly. However, the spillover effect can be a proxy for NOC levels. The spillover effect as a measure for NOC is based on the idea of corporate focus (Comment and Jarrell, 1991), which measures a firm's concentration in its core business. Comment and Jarrell investigate the relation between corporate profitability and corporate

focus using four measures of the level of focus by a firm. Since Comment and Jarrell's measures are highly correlated, we use only one measure in this study, the maximum proportion of a firm's sales attributable to a distinct business line.

A less-focused firm is diversified into more business lines and likely to have fewer spillover effects. For example, if stakeholders have implicit claims against Division A, the ability of a different line of business, Division B, to meet its implicit claims should have relatively little spillover effect on the stakeholders of Division A. The relatedness of the two divisions will impact the spillover relationship, but overall, the more business lines a firm has, the less likely spillover will occur. The firm with low spillover effects will then have lower NOC than will a firm that is more focused, since defaulting on implicit claims is less injurious to a less-focused firm, as compared to a more-focused firm. This suggests that as corporate focus increases, NOC should also increase. This should lead to a decrease in the dividend-payout ratio for the more-focused firm. The measure for corporate focus, FS_{it}, for Firm i is

$$FS_{it} = \underset{j=1}{\overset{N_{it}}{MAX}} \frac{S_{jit}}{S_{it}} \qquad (2)$$

where:

N_{it} = Number of business lines reported by Firm i for year t

S_{jit} = Sales for business line j for Firm i for year t

S_{it} = Total sales for Firm i for year t[1]

This measure of NOC is related to that of Barton, Hill, and Sundaram (1989). They base their measurement on strategy categories, in which firms with a single business line and firms with related business lines are high-spillover firms, as compared to firms with multiple unrelated business lines, which are low-spillover firms. Our measure, although similar, does not duplicate their method, because our method does not differentiate between related and unrelated business lines. However, our method is more easily determined by objective means.

B. Size Variable[2]

Research by Lloyd, Jahera, and Page (1985), and Vogt (1994) indicates that firm size plays a role in explaining the dividend-payout ratio of firms. They find that larger firms tend to be more mature and thus have easier access to the capital markets, which reduces their dependence on internally generated funding and allows for higher dividend-payout ratios. To isolate agency effects from size influences, we regress the percentage of stock held by insiders and the natural log of the number of common shareholders on the natural log of sales. We then use the residuals, with size effects thus removed, in our model. The hypothesized relationship between firm size and dividend-payout ratios is positive.

Following the approach used by Lloyd et al. (1985), we also use the natural log of sales from Compustat PC Plus as a size proxy.[3] The natural log of sales corrects for scale effects by treating as equal the same percentage variation, rather than the same numerical variation.

C. Agency Cost Variables

We use insider ownership, measured by the percentage of total shares outstanding held by insiders, as a measure of agency costs. As ownership by management increases, agency costs decline, since the managers bear more of the wealth effects of their decisions (Subrahmanyam, Rangan, and Rosenstein, 1997). Since larger firms tend to have more shareholders, we remove effects due to firm size by regressing the percentage of stock held by insiders against the natural log of sales. The residuals are used in the final regression. We expect a negative relation between the percentage of shares held by insiders, controlled for size, and the dividend-payout ratio. Insider ownership data were obtained from the *Spectrum 6* publication of CDA Investment Technologies (Computer Directions Advisors), which lists insider ownership based on SEC forms three and four.[4] Only direct ownership is included as part of the shares held by insiders.

Our second measure of agency costs is the monitoring of managers by shareholders. If a shareholder holds a substantial fraction of the firm's equity, an institutional investor, for example (Bathala, Moon, and Rao, 1994), then monitoring by this individual is a low-cost activity as a percentage of the individual's wealth in shares. Conversely, when ownership is dispersed among many shareholders, monitoring by those shareholders becomes a high-cost activity. Less concentrated ownership of a firm creates higher agency costs for that firm, and therefore increases the need for other agency-cost-reducing mechanisms. As a result, we expect that firms with lower concentrations of ownership, or a relatively larger number of

[1]Data source is Compustat PC Plus.

[2]We are grateful to an anonymous reviewer for suggesting this analysis.

[3]We also tried using the natural log of total assets as a proxy for size, but the natural log of sales provided a model with better explanatory power.

[4]Finding accurate insider holdings information presents a data collection problem. Rozeff (1982) and Lloyd, Jahera, and Page (1985) use insider holding information collected from Value Line, which lists the holdings as approximate figures. Rather than using approximate figures, we use data required by the Securities Exchange Act of 1934, sections 16(a) and 23(a), under which beneficial share holdings and transactions of directors, officers, and beneficial owners of registered companies must be reported.

shareholders, will have higher dividend payouts.

The hypothesized relation between dividend payout and ownership concentration is positive. To measure the concentration of ownership, we use the natural log of the number of common shareholders (Rozeff, 1982) from Compustat PC Plus. However, firm size is related to the number of shareholders. To remove size effects, we regress the natural log of the number of common shareholders on the natural log of sales and use the residual in the final regression.

Our third measure of agency costs is the free cash flow of a firm. Jensen (1986a) defines free cash flow as cash flows that are in excess of funds required for all projects that have positive net present values after those projects are discounted at the cost of capital. Firms with numerous growth opportunities have a lower level of free cash flow than firms with few growth opportunities. Having a relatively lower level of free cash flow means that agency costs will be lower and the need for dividends to reduce agency costs will be lessened. Alternatively, for firms with fewer growth investments, management can use free cash flow for the consumption of perquisites or investment in negative net-present-value (NPV) projects, leading to increased agency costs. To reduce this suboptimization and reduce agency costs, firms with higher free cash flows may have higher dividend payouts. Therefore, our hypothesized relationship between free cash flow and dividend payout is positive.

Our measure of free cash flow develops from Crutchley's (1987) study of dividend policy as part of managerial decision-making. Crutchley defines free cash flow as the funds available to managers before discretionary capital investment decisions. This includes net income, depreciation, and the interest expense of the firm. Needed capital expenditures are subtracted from these cash flows to account for investment in positive-NPV projects.

For our research, we measure free cash flow as the ratio[5]

$$\frac{\text{net income + depreciation + int expense - capital exp}}{\text{total assets}} \quad (3)$$

D. Transaction Cost Variables

Higher dividend payouts reduce equity agency costs but increase the transaction costs associated with external financing (Rozeff, 1982). Firms that are either experiencing or expecting higher growth rates will need to keep dividend payouts lower to avoid the costs of external financing. Proxies for transaction costs must be used, since it is not possible to measure them directly.

We used two variables to account for transaction costs. The first variable used is based on Barton, Hill, and Sundaram's (1989) model and the second on Crutchley's (1987) model.

Barton, Hill, and Sundaram use a sales growth variable that relates the natural log of sales to time. High growth rates in revenues create a need for additional financing, since they indicate higher financial needs for asset investments. Therefore, we use the growth rate variable as a proxy for transaction costs. We measure the growth rate, $GROW_{it}$, which is the regression coefficient of the natural log of sales against time, for Firm i, at time period t, as[6]

$$GROW_{it} = \frac{\text{cov}\,(\ln SALE_{in}, n)}{\text{var}\,(n)} \quad \text{for } n = (t\text{-}4), (t\text{-}3), \ldots, t(4)$$

The second measure of transaction costs is the standard deviation of monthly firm returns (Crutchley, 1987). Since underwriters charge more for underwriting the issues of riskier firms, the standard deviation of monthly firm returns is also a proxy for transaction costs. The standard deviation of firm returns comes from the CRSP tapes and is based on a calendar year.[7] We expect a negative relation with dividend-payout ratios for both the growth and standard deviation variables, since higher transaction costs would offset the agency-cost-reducing benefits of dividends.

E. Problems with Payout Ratios

The target dividend-payout ratio presents particular measurement problems. We calculate the standard deviation of each firm's dividend-payout ratio for our study's time period. The mean standard deviation of this time series by firm is 156%. The cross-sectional dividend-payout ratios, prior to smoothing, range from –2,168% to 48,380%.

To reduce reliance on subjective smoothing methods but still allow for changes in the dividend-payout ratio over the test period, we need to apply a data transformation to estimate the target dividend-payout ratio. The specific smoothing algorithm used in this study is a 4253H filter, which is based on a weighted moving average methodology.[8] The 4253H

[5]Data source is Compustat PC Plus.

[6]Data source is Compustat PC Plus.

[7]However, dividends are reported on a fiscal-year basis. While this can result in some timing differences, we anticipate a minimal impact, since most firms use the calendar year as their fiscal year.

[8]The transformation consists of several passes of moving average/median smoothing, and is a powerful filter for smoothing a series. We performed the following transformations: 1) a four-point moving median centered by a moving median of two; 2) a five-point moving median; 3) a three-point moving median; and 4) a three-point weighted moving average using Hanning weights (0.25, 0.5, 0.25); 5) we computed residuals by subtracting the transformed series from the original series; 6) we then repeated steps 1 through 4 for the residuals; and 7) we added the transformed residuals to the transformed series. This filtering method often produces a smooth series while maintaining the salient characteristics of the original series. This smoothing method is classified as "standard and very effective" (*CSS Statistica*, 1992, and Velleman and Hoaglin, 1981).

filter smoothes out extreme observations in the data set for each firm, but still allows for systematic adjustment of the firm's dividend-payout ratio by managers. Thus, we can measure the target dividend-payout ratio even when managers are adjusting it to adapt to changing endogenous and exogenous conditions (Lintner, 1956). After smoothing, the mean standard deviation of the time series dividend-payout ratios by firm is 5.4%.

Table 1 summarizes the expected signs for each of the variables.

III. Sample Description

The sample we use in this study consists of 477 firms that met the following criteria:

1) Firms that had complete data for the years 1983-1990 on Compustat PC Plus for the following variables: 1) dividend-payout ratio, 2) number of common shareholders, 3) net income, 4) depreciation expense, 5) interest expense, 6) total assets, and 7) sales revenue by business line. Firms also had to have data for total sales revenue for the years 1979-1990 to allow for the calculation of a five-year growth rate and for the size calculation.

2) Firms that had monthly returns listed on the 1990 CRSP monthly returns tape for the years 1983-1990.

3) Firms that had insider holdings listed in the *Spectrum 6 Insider Holdings Series*, published by CDA Investment Technologies, Inc., for the years 1983-1990.

4) Firms that did not have as a primary SIC code 4900-4949, which includes regulated utilities, or 6722-6798, which includes open- and closed-end trusts and oil royalty traders.

We eliminated five firms that, although they met these criteria, had dividend-payout ratios that were either extremely volatile or always exceeded 100%. The dividend-payout ratios for these firms could not be adequately smoothed.

We developed the model with data from 477 firms over an eight-year period, for a total of 3,816 observations, and used a pooled time series cross-sectional analysis to test it.

IV. Discussion of the Results

The means and standard deviations for the variables in the study appear in Table 2. The values for the mean smoothed dividend-payout ratio closely agree (29.60 vs. 30.48) with that of Rozeff (1982).

Table 3 shows the results for the general regression model. The coefficients of all the variables have the predicted sign and are statistically significant at the 0.01 level or better. The adjusted R-squared for the model is 0.360. The F-statistic for Equation (1) was 299.69, which, with over 3,800 observations in the sample, indicates that the joint effect of all the independent variables is highly significant.[9]

A. NOC

The coefficient of corporate focus is negative and statistically significant, indicating a negative influence on dividend-payout ratios. This supports the theoretical model's predictions. The coefficient is also not affected by multicollinearity, since the variable remains significant across different trials of the regression model when other independent variables are entered or removed.[10]

The coefficient of firm focus supports the model, since it is negatively related to NOC. Thus, the results are consistent with the hypothesis that there is some product-market influence on the dividend policy of firms. Because the focus variable deals with sales revenue for the firm and its business lines, it is a relatively direct measure of the product-market influence on the firm. However, it is important to note that possible alternate explanations exist for this relatedness.[11] Comment and Jarrell (1995) note that evidence exists that less-focused firms can have greater agency problems. This can occur, for example, when weak divisions have easy access to the capital from other divisions. Thus, the negative relationship may arise because highly-focused firms signal implicit stakeholders or less-focused firms signal explicit stakeholders.

B. Size Effects

The coefficient of firm size is significant and in the hypothesized direction. This indicates that larger firms tend to have higher payout ratios. Compared to smaller

[9]As a measure of multicollinearity, we calculate variance inflation factors (VIF), which regress each independent variable against all the other independent variables. VIFs can range from one to infinity, with 10 suggesting that multicollinearity may be a problem (Neter, Wasserman, and Kutner, 1985). All our VIFs are under 1.25, indicating that multicollinearity does not appear to be a significant problem.

[10]Each of the independent variables was removed, one at a time, to test for multicollinearity problems with the other independent variables. The coefficients did not change sign or significantly change in size.

[11]We are grateful to an anonymous reviewer for suggesting this alternate hypothesis.

Table 1. Expected Signs for the Empirical Model Variables

This table provides a summary of the variables used in the study, along with the expected beta coefficient signs. The last column shows the proxy of each variable. The variables are defined as: FS is a measure of the focus of the firm, LSALES is the natural log of sales, INS is the residual of the percentage of common shares held by corporate insiders after regressing on the natural log of sales (to remove size effects), LCSHAR is the residual of the natural log of the number of shareholders regressed on the natural log of sales, FCF measures free cash flow, GROW is the growth rate in sales, and STD is the standard deviation of firm returns.

Coefficient	Variable	Expected Sign	Proxy for
β_1	FS	Negative	Net Organizational Capital
β_2	LSALES	Positive	Size
β_3	INS	Negative	Agency Costs
β_4	LCSHAR	Positive	Agency Costs
β_5	FCF	Positive	Agency Costs
β_6	GROW	Negative	Transaction Costs
β_7	STD	Negative	Transaction Costs

Table 2. Means and Standard Deviations for Variables in the Study

This table provides descriptive statistics for the variables used in the study over the period 1983-1990. DP is the smoothed dividend-payout ratio for the firm. The variables are defined as: FS is a measure of the focus of the firm, LSALES is the natural log of sales, INS is the residual of the percentage of common shares held by corporate insiders after regressing on the natural log of sales (to remove size effects), LCSHAR is the residual of the natural log of the number of shareholders regressed on the natural log of sales, FCF measures free cash flow, GROW is the growth rates in sales, and STD is the standard deviation of firm returns.

Variable	Mean	Standard Deviation
DP (percent)	29.5993	21.2116
FS	0.7278	0.2372
LSALES	7.0412	1.6169
INS	6.0456	10.7391
LCSHR	9.3009	1.0314
FCF	0.0481	0.0872
GROW	0.0530	0.1172
STD (percent)	0.0990	0.0301

firms, larger firms have easier access to the capital markets and are therefore less dependent on internal funds. Therefore, they can afford to pay higher dividends.

C. Agency Costs

Results from the regression indicate that insider ownership negatively and significantly affects dividend-payout ratios, and the number of shareholders positively affects payouts. Both results are consistent with the theoretical model and previous empirical work.[12]

These results indicate that firms with a higher percentage of stock held by insiders will have lower agency costs and lower dividend-payout ratios. The natural log of the number of shareholders also positively and significantly affects dividend-payout ratios, again supporting extant theoretical and empirical work (Rozeff, 1982). Firms with a larger dispersion of ownership of common stock will have higher agency costs and higher dividend-payout ratios to control agency costs.

We also use free cash flow, which has not been used in previous studies of dividend-payout determinants, to measure agency costs. Our empirical results show that free cash flow positively and significantly affects dividend-payout ratios. This result supports the hypotheses (Jensen, 1986a) that firms with higher levels of free cash flow will have higher agency costs and need higher dividend-payout ratios to reduce those agency costs.[13]

D. Transaction Costs

The coefficient of the standard deviation of monthly returns for a firm is negative and statistically significant. Dividend-payout ratios are lower for higher-risk firms. This supports the theoretical model that postulates that higher-risk firms face larger transaction costs.

Where previous studies used other variables, such

[12]Rozeff (1982) and Lloyd, Jahera, and Page (1985), for example, had similar findings. Our coefficient estimates are similar to those obtained by Rozeff (-0.081 compared to -0.090 for the insider ownership variable), even though our data sample is from a different time period and source.

[13]We also tested two other measures of free cash flow, one that did not remove capital expenditures, and one that substituted operating income for net income. The regression results were comparable, but had lower explanatory power.

Table 3. Regression Results for the General Model

This table shows the regression results for the general model as defined by Equation (1). The total number of observations is based on 477 firms over eight years of data for a total of 3,816 observations. The regression is a pooled cross-sectional approach. The variables are defined as: FS is a measure of the focus of the firm, LSALES is the natural log of sales, INS is the residual of the percentage of common shares held by corporate insiders after regressing on the natural log of sales (to remove size effects), LCSHAR is the residual of the natural log of the number of shareholders regressed on the natural log of sales, FCF measures free cash flow, GROW is the growth rates in sales, and STD is the standard deviation of firm returns.

General Parameters	Adjusted R^2 = 0.36	F_{stat} = 299.69***	
Variable	Beta	Standard Error of Beta	t-Statistic
INTERCEPT	53.849	2.271	23.716***
FS	-4.361	1.213	-3.595***
LSALES	1.859	0.196	9.478***
INS	-0.081	0.028	-2.939***
LCSHR	1.879	0.362	5.190***
FCF	21.794	3.288	6.629***
GROW	-11.743	2.600	-4.516***
STD	-349.028	10.358	-33.696***

***Significant at the 0.01 level.

as beta, as a transaction costs variable (Lloyd, Jahera, and Page, 1985), our use of the standard deviation provides additional benefits because it measures total risk differences among firms in the sample.[14]

The second measure of transaction costs, sales growth, is also negatively and significantly related to dividend-payout ratios. This is as predicted by the model and agrees with previous work (Rozeff, 1982). These results confirm the idea that higher dividend-payout ratios increase the transaction costs to a firm since the costs are incurred when a firm needs to use other sources of financing to replace dividend dollars.

V. Conclusions

We find that corporate focus is negatively related to dividend-payout ratios. More focused firms (with fewer lines of business) tend to have lower dividend-payout ratios. Larger firms tend to have higher payout ratios than do smaller firms. When we consider the influence of agency costs on payouts, we find that the greater the degree of insider ownership, the lower the payout; the larger the number of shareholders, the higher the dividend-payout ratio; and the greater the free cash flow, the higher the payout ratio. When looking at transaction costs, payout ratios are lower for firms that have higher standard deviations of returns and for higher-sales-growth firms.

Our findings provide some support for the interaction of the dividend policy and investment decisions. It appears that managers may indeed consider the claims of stakeholders, other than debt and equity holders, when choosing a target dividend-payout ratio. Our results support the dividend policy signaling aspect of stakeholder theory specified by Cornell and Shapiro (1987). However, the type of signal used is that of a more conservative dividend policy, as predicted by Shapiro (1990).

Further, this study validates free cash flow as a more direct measure of agency costs. Rather than acting as a proxy for the possibility of agency costs, free cash flow more directly measures the cash available to managers for the consumption of perquisites.

Our study is one of the first to apply NOC empirically, and thus stakeholder theory, to dividend policy. We find a significant relationship between dividend-payout ratios and firm focus as a proxy for NOC. Dividend-payout ratios are lower for high-NOC firms; perhaps high-NOC firms are preserving liquidity and indicating to their stakeholders that they are prepared to meet implicit as well as explicit claims.

Our results suggest that non-investor stakeholders enter into the dividend decision through implicit claims. The value of the implicit claims of the firm affects the prices of the goods that the firm sells. When a firm is in a position to make payoffs on implicit claims and has signaled its intention to do so, stakeholders may be willing to pay more for the firm's products. This will increase the value of the firm, creating a relationship between the investment and financing decisions of the firm. Therefore, our results provide some evidence against the separation of the investment and financing decisions.

[14]We also tested firm betas as an alternative measure of risk in estimating the model. The results had lower explanatory power, and beta evidenced some multicollinearity with other variables.

Our results also provide support for product market influences on dividend policy. Firms with high NOC levels, or "reputation," try to indicate this to customers. These firms will maintain a higher level of liquidity to fulfill the implicit claims of stakeholders in the future and avoid the scrutiny associated with a dividend cut. This finding is consistent with the prediction of Shapiro (1990).

Our results also suggest that research into the financing policy of firms should sometimes take into consideration the effect of the firm's investment policy. The traditional view of the firm as a "black box" that maximizes debt and equity holder wealth will not always hold. The stakeholder view of the firm as a nexus of contracts should be considered for certain types of research.

A. Limitations

Although our results are significant and agree with previous work, our variables might not be true proxies for the effects we intended to measure. Our choice of a measure for NOC, focus, may not be a perfect indicator, since we do not differentiate between related and unrelated business lines. Nevertheless, our empirical results indicate the possibility of links between dividend policy and the investment decision of the firm, as proposed by stakeholder theory.

B. Future Research

Further research might be conducted into the viability of other measures of NOC. For example, measures that differentiate between implicit and explicit stakeholders could be useful in identifying less-focused firms signaling explicit stakeholders as compared to more-focused firms signaling implicit stakeholders.

Other limitations relate to our choice of agency costs measures. For example, in our free cash flow variable, we subtract capital expenditures, making an implicit assumption that these are all positive-NPV expenditures. Further research could consider negative-NPV investments.

The ideas of stakeholder theory and NOC could be extended further by looking at the influences on other investment and financing decisions. Future work could examine areas such as the relation of stakeholder theory to mergers, acquisitions, and takeovers. This might be especially interesting and possibly informative, since the literature (Jensen, 1986b) indicates little or no gain to the acquiring firm.

Another area of potential research is the relationship between NOC and industry. Cornell and Shapiro (1987) note that the level of NOC can be impacted by the types of products that the firm produces; thus, industry-specific types of relationships may exist. ■

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