# Characteristics of Industrial Companies Stratified by Dividend Level and Risk

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## Introduction

The purpose of this study is to continue work to identify characteristics of large, industrial, dividend-paying firms in the United States. The study period is from 1995 to 2004. With the stock market decline in 2000 and a major change in the tax laws regarding dividends in 2003, it is expected new information will result. The major study by Fama and French (2001) relied upon data prior to these two significant events. Their study found firm characteristics changed over time.

This study expects to find empirical evidence of an increase in the importance of dividends per share over time and that firm characteristics for dividend payers has changed over time. Current firm characteristics and relationships of variables to dividends per share will be identified.

## Literature Review

Articles since 2000 provided the relevant literature review. Kalay and Michaely (2000) find no evidence of a link between tax structure and dividend yield. This would argue that dividend tax changes in 2003 should not affect dividend yields or influence study results.

Pan (2001) showed managers change dividends proportionally larger than the change in permanent earnings. This linkage demonstrates the importance of changes in permanent earnings to the study of dividends. Several earnings components will be addressed in the current work as a result.

Fama and French (2001) provide the best study of firm characteristics relevant to dividends. These characteristics have changed over time (1978 to 1999), resulting in more small firms with low profitability and strong growth opportunities which are not likely to pay dividends. They also find, regardless of characteristics, firms have become less likely to pay dividends. Relevant variables for dividends proved to be profitability, investment opportunities, size, market value to book value, and share repurchase.

Baker et al. (2001) found based on managers' responses the most important causes of dividend decisions are the pattern of past dividends, stability of earnings, and the level of current and expected future earnings. These factors were relevant for firms listed on both NASDAQ and the New York Stock Exchange. They also found great differences between financial versus non-financial firms.

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Nissim and Ziv (2001) find dividends are positively related to earnings changes in each of two years after the dividend change. Once again, expected future earnings have great relevance for current dividends.

Grullon and Michaely (2002) investigate the relationship between share repurchases and dividends. They find that firms are repurchasing shares with funds that otherwise would have been used to increase cash dividends. Larger firms have not tended to cut their dividends. Firms have gradually substituted repurchases for dividends. Based upon this, common shares outstanding are an important variable for the current work.

Arnott and Asness (2003) provide support for the signaling hypothesis, higher dividend payout forecasts future aggregate earnings growth. Relatively low current dividend payouts (compared to historical rates) do not predict good earnings ahead. Once again the strong linkage between dividends and expected future earnings appears to be evident.

Mougoué and Rao (2003) study the temporal behavior of dividends and earnings. Non-utility firms that followed the signaling hypothesis tended to be smaller, have a lower growth rate of total assets, and have a higher leverage ratio. All variables are relevant for the current work.

Kansas (2003) finds non-linear cointegration between stock prices and dividends over the period 1871–1999. This must be considered in any current work: the importance of the relationship between stock prices and dividends and its nonlinear form.

Psaradakis et al. (2004) investigate the ratio of *Standard and Poor's* composite real stock price index and real dividend per share over time. They develop a model of cointegration in which deviations from long-run equilibrium follow a two-state Markov switching process. Such deviations with a high ratio suggest perhaps an intrinsic bubble. But once again a strong relationship between stock prices and dividends is established.

Baker and Wurgler (2004) propose dividend decisions are driven by prevailing investor demand. Investor demand for dividends changes over time and firms react. They find non-payers tend to initiate dividends when demand is high. Payers tend to omit dividends when demand is low. Demand is based upon the relative stock price on dividend payers. Both past capital gains and future returns are part of the dividend model used.

DeAngelo et al. (2004) build upon the work of Fama and French (2001). They find a concentration of dividends has occurred. Aggregate real dividends from industrial firms increased over the past 20 years, even though the number of dividend payers has decreased by over 50%. Increased dividends from top payers overwhelm the slight dividend reduction from the loss of many small payers. The largest aggregate dividend payers in 2000 account for over 50% of all dividends paid by industrial firms. When looking at a sample for future work, it had best represent these large, dominant, dividend payers to be relevant.

Ma and Kanas (2004) find intrinsic bubbles are driven by fundamentals in a nonlinear way. Once again a nonlinear relationship between stock prices and dividends is evident. This supports the work of Kansas (2003).

The literature provides the basis for the direction of the current work: the empirical study of the characteristics of large, industrial, dividend paying firms.

**Sample and Data**

*Value Line* investment service on-line was the source of the 121 companies in the sample for this study. The sample results from applying the following investment screens on 6/14/05:

1. Domestic companies.
2. Dividend paying.
3. Total Assets greater than or equal to $10,000 million.
4. Omitted company categories: Financials, Insurance, Investment Services, Medical Services, REIT, Thrifts, and Utilities.
5. Other constraints: The company must exist over the ten year time period (1995–2004).

The first 4 constraints resulted in 133 companies. The 5th constraint reduced the sample size to 121 companies.

Some further restrictions were applied that reduced the sample size of firms. All firms must pay dividends in 1995. Also, those firms with negative market/book value ratios are excluded from further analysis. This resulted in a final sample size of 111 firms.

The 111 company sample is biased toward large, industrial companies largely consistent with samples from studies by DeAngelo et al. (2004); Fama and French (2001); Grullon and Michaely (2002); Kalay and Michaely (2000); Mougoué and Rao (2003); and Nissim and Ziv (2001). These companies pay a majority of total cash dividends in the U.S. Accounting information is available and compatible for comparisons for this sample. Some of the omitted categories have incompatible accounting information, with industrials, particularly the financially related types.

Annual data were collected for all 111 companies across the ten year study period from 1995 to 2004. Nine items were collected. Two items: total assets (millions $) and total liabilities (millions $) come from *Standard and Poor's* investment service on-line. Seven items: high annual price per share ($ per share), low annual price per share ($ per share), dividends declared per share ($ per share), book value per share ($ per share), year end common shares outstanding (millions shares), net profit (millions $), and a measure of market risk from 2004 (beta) came from *Value Line* investment service on-line.

The response variable used in this study is dividends per share; the predictor variables are total assets, debt ratio (calculated as total liabilities divided by total assets), net profit, common shares outstanding, and market/book value ratio (calculated as mean price per share divided by book value per share).

Table I shows the annual mean scores and standard error of the mean for all six variables for each year from 1995 to 2004. Only dividends per share and total assets have their means increase each year. The other four variables have more complex patterns over time. Common shares outstanding decreases slightly in only the last year, 2004. Market / book value ratio, debt ratio, and net profit show greater variability over time.

Our preliminary analyses using a logarithmic transformation of the financial variables were more meaningful than using the variables in their original metric. This transformation

worked well especially in eliminating heteroscedasticity. Hence, a natural logarithmic transformation is applied to each financial variable. The following notation is used in the remainder of this paper:

| | |
|---|---|
| DPS: | log transformed yearly dividends per share |
| MARKET: | log transformed yearly market/book value ratio |
| ASSETS: | log transformed yearly total assets |
| DEBT: | log transformed yearly debt ratio |
| SHARES: | log transformed yearly common shares outstanding |
| PROFIT: | log transformed yearly (net profit + c), for constant c |

Note that a few of the profit values were negative; thus, the net profit values were translated so that all values would be positive. Appropriate $ data were adjusted for inflation before transformation.

Based on results found in the literature search, these five variables show promise as being important in the work on variable relationships to dividends.

**Model**

We apply restricted maximum likelihood estimation to model both the cross-sectional and time-structured relationships among financial variables for the panel data (Pinheiro and Bates, 2000). The model used here allows for heteroscedastic and correlated within-firm errors.

Non-stationarity of data over time can introduce a spurious correlation among the variables and may make relationships strong, where there may be none. In order to avoid any issues relating to cointegration, we use the change in each of the log transformed variables to model the relationships between variables.

The model for the ith firm can be represented as

$$\mathbf{y}_i = \mathbf{X}_i\boldsymbol{\beta} + \boldsymbol{\varepsilon}_i, \qquad i = 1,\ldots,111 \tag{1}$$

$$\boldsymbol{\varepsilon}_i \sim N(\mathbf{0}, \sigma^2\boldsymbol{\Delta}_i), \qquad i = 1,\ldots,111$$

$\mathbf{y}_i$ is the 9-dimensional response vector containing $\nabla$DPS, where $\nabla$ denotes the first order difference operator; the columns of the (9x6) design matrix $\mathbf{X}_i$ contain data for the constant, $\nabla$MARKET, $\nabla$ASSETS, $\nabla$DEBT, $\nabla$SHARES, and $\nabla$PROFIT, respectively; $\boldsymbol{\beta}$ (6x1) is the vector of the corresponding regression coefficients; and the within-firm error vector $\boldsymbol{\varepsilon}_i$ are independent for different firms. In the applications discussed below, the positive definite variance-covariance matrices $\boldsymbol{\Delta}_i$ are parameterized by using a parsimonious serial correlation structure to model any dependencies between within-firm errors.

To facilitate presentation of results, the sample of firms was stratified into four separate groups by levels of market risk and $\nabla$DPS of 2004. The highs and lows for each of the risk and $\nabla$DPS variables were determined by using the median for that variable. The year 2004 was picked as risk data were only available for that year, and the end point of data logically made sense for stratification. Models were fit in each of the four stratification groups. The estimated models are reported in Table II.

In general we detected the presence of within-firm serial correlation and found that an AR(1) provided a reasonable model for the within-firm correlation structure in the fitted models (see Box, Jenkins and Reinsel (1994) for a discussion of autoregressive-moving average (ARMA) models.)

**Empirical Results**

Table II shows that some autocorrelation exists in the within-firm errors for Groups 1, 2, and 3. Interestingly, the within-firm errors for Group 4 appear to follow a white-noise error structure. With the exception of a few outliers, the fitted model in each group gave evidence of homoscedastic and normal within-firm errors. We conclude that the estimated model in each group provides a good fit to the data.

Table II reveals some interesting results regarding the relationships of the five variables to ∇DPS for the complete time period 1995 to 2004. The ∇MARKET variable is significant over time at some level for all groups except Group 2 (low risk / high ∇DPS). The two low ∇DPS groups would be expected to show some relationship to ∇MARKET, as their clientele should be more interested in capital gains than the two high ∇DPS groups. What is interesting is the strong level of significant positive relationship between dividends per share and price at the .01 level for Group 4 (high risk / high ∇DPS). Perhaps this is evidence of "bird in the hand" theory of dividend policy. Investors value greatly more dividends over less dividends.

The ∇ASSETS variable is also significant over time for three of the four groups, with Group 1 (low risk / low ∇DPS) now the exception. One would expect to find the positive relationship between dividends per share and size to hold for all four groups. Why it does not, is not clear. What is special about low risk and low dividends per share that abrogates a relationship shown for companies in prior studies?

The ∇DEBT variable is significant over time only for Group 4 (high risk/high ∇DPS). There is a significant negative relationship between ∇DPS and ∇DEBT at the .05 level. For this group, perhaps as leverage increases, rising interest costs cause reductions in net income. This may cause less dividends to be paid under "residual" dividend theory. A link between capital structure and dividends may also be present.

The ∇SHARES variable is significant over time for the high dividend groups (2 and 4), regardless of risk. There is a significant negative relationship between ∇DPS and ∇SHARES at the .05 level or higher. As shares outstanding increase, dividends per share decrease. This would be due to a change in capitalization such as stock splits and stock dividends, exercising of stock options by executives, or selling new common stock. It might be impossible to maintain the existing dividends per share under such circumstances.

The ∇PROFIT variable only shows significant results for Group 4 (high risk / high ∇DPS). There is a significant positive relationship between ∇DPS and ∇PROFIT at the .01 level. This implies residual theory effect may be present. As profits increase over time, apparently, Group 4 feels pressure to share higher returns with stockholders. This pressure is likely increased due to higher risks also present in this group.

It would be interesting to track the consistency of parameter estimates using a moving time span in each of the four stratification groups. A moving window procedure should provide some insight into parameter changes over time, although this type of analysis may be hampered by the limited sample sizes in each group. The results using a five-year moving window are discussed below.

Table III looks at Group 1 (low risk / low ∇DPS) over time by using a five-year moving time span. ∇MARKET is the only variable with any significance. Of the five time periods, only the first two show a positive significant relationship between dividends per share and market price to book value ratio at the .05 level. Under the clientele theory, this group should have clients more interested in capital gains than a high DPS group. The positive relationship makes sense only if as price goes up, low dividends are easy to raise compared to high dividends. One would expect the relationship to be negative for the low dividend groups. Why this relationship disappears over time is unknown.

Table IV for Group 2 (low risk / high ∇DPS) has three variables that are significant at some time at some level: ∇MARKET, ∇ASSETS, and ∇SHARES. ∇MARKET is marginally significant with a negative relationship at the .10 level for only the fourth time period (1998-99 to 2002-03). This is a high dividend group and a positive relationship between ∇DPS and ∇MARKET is expected. As price rises over book value, stockholders would demand a higher dividend yield, raising dividends per share. Why there is a negative relationship is unknown.

∇ASSETS is significant at the .01 level for the first three of the five time periods. The relationship between dividends per share and assets or size variable is positive. As assets increase, dividends per share grow as well, until the last two time periods. Why the relationship is not significant over all time periods is not known.

Finally, ∇SHARES is significant at some level for all but the fourth time period. The relationship between dividends per share and shares outstanding is negative. As shares increase, dividends per share decrease. The most obvious explanation is stock splits.

Table V for Group 3 (high risk / low ∇DPS) has four of the five variables showing some level of significance for some of the time periods. It is apparent that changes occur over time in relationships as significance comes and goes. There appears no logical explanation as to why market, shares and profit show up in periods one and two, while market and assets show up in periods four and five. No significance for any variable in time period three exists. Perhaps it is helpful to know this group has no consistent relationships over time.

Table VI for Group 4 (high risk / high ∇DPS) has the most significant relationships for the five variables over the time periods (19/25 cells). ∇ASSETS and ∇PROFIT are significant at some level for all five time periods. As firms grow both in size and profit, dividends per share increase for this high risk / high ∇DPS group over all time periods. Constant and slightly increasing dollar dividend policy and residual dividend policy, which are not mutually exclusive in the long run, help to explain this result.

∇MARKET is inconsistent and shows up in the first and last time periods as a positive relationship. ∇DEBT is also inconsistent and shows as a significant relationship only in every other time period. ∇SHARES is significant in all but the second time period. The relationship is negative, as it has been for other groups. As shares outstanding increase, dividends per share decrease.

In the final time period (1999-00 to 2003-04) all five variables are significant. This did not occur in any other time period or group. What explains this recent, consistent result? Perhaps an increasing importance of dividends versus capital gains due to the stock market decline in 2000 and tax law changes in 2003 favoring dividends is present.

**Conclusion**

This paper investigates the characteristics of large, industrial, dividend-paying companies in the United States. A sample of firms was stratified by risk and dividend per share level yielding four groups for study. Models relating dividend per share changes to changes in selected financial factors are constructed in each group.

Several interesting conclusions and future research implications can be drawn from the estimated models based on annual data from 1995 to 2004: (1) as expected, dividend per share changes are positively related to changes in market/book value ratio for the two low dividend level groups. Clientele in these groups should show more interest in capital gains than those in the two high dividend level groups. Interestingly, dividend per share changes are positively related to price changes for the high risk, high dividend level group. This would indicate that investors favor more dividends over less dividends; (2) as expected, dividend per share changes are positively related to company size changes for all but the low risk, low dividend group; (3) dividend per share changes are negatively related to debt ratio changes over time only for the high risk, high dividend level group. For this group, this may provide support for a link between capital structure and dividend policy, or for the residual theory of dividend policy; (4) dividend per share changes are negatively related to changes in common shares outstanding for the two high dividend groups, regardless of risk. This would result from a change in capitalization e.g., stock splits and stock dividends, exercising of stock options by executives, or selling new common stock; and (5) dividend per share changes are positively related to net profit changes only for the high risk, high dividend level group. This would indicate that residual theory effect may be present.

A five-year moving time span is applied to each group as a means to provide additional insight into parameter changes; however, very few consistent relationships are observed over time. This may due to the limited sample sizes in each group. Consistent results are realized only for the high risk, high dividend level group. Generally, as the firm grows in size and profit, dividends per share increase for this group over all time periods in the moving window approach. Constant and slightly increasing dollar dividend policy and residual dividend policy, which are not mutually exclusive in the long run, may help to explain this result. Dividend per share changes are negatively related to shares outstanding changes in all periods but one for this group. This is probably due to changes in capitalization such as stock splits and new share issues to keep stock price in the optimal price range ($20-$80 per share). Moreover, this was the only group that had a time period (1999-00 to 2003-2004) where dividend per share changes are significantly related to changes in price, size, debt, shares, and profit. This may be due to an

increasing importance of dividends after the stock market decline in 2000 and tax changes in May of 2003 that made dividends and capital gains equal for tax purposes.

This high risk, high dividend per share level group stands out from the other three groups. The recent period significance for all five variables begs for further research of this group. Perhaps dividends per share can accurately be predicted. Other variables should be tested for significance for this special group.

**Table I**
**Mean Variable Scores**
**1995 to 2004**

| year | dividends per share ($ per share) | market/book value ratio | total assets (millions $) | debt ratio | common shares outstanding (millions shares) | net profit (millions $) |
|---|---|---|---|---|---|---|
| 1995 | 0.54 | 3.44 | 17919.25 | 0.46 | 922.77 | 1031.45 |
| | (0.05) | (0.22) | (3357.20) | (0.01) | (130.25) | (125.97) |
| 1996 | 0.59 | 3.76 | 19729.70 | 0.46 | 929.10 | 1171.00 |
| | (0.05) | (0.24) | (3706.94) | (0.01) | (129.52) | (138.50) |
| 1997 | 0.64 | 4.49 | 21762.67 | 0.49 | 940.34 | 1372.53 |
| | (0.05) | (0.30) | (4045.70) | (0.04) | (128.58) | (163.31) |
| 1998 | 0.67 | 5.05 | 23705.20 | 0.48 | 950.23 | 1362.89 |
| | (0.05) | (0.37) | (4302.27) | (0.01) | (128.51) | (161.54) |
| 1999 | 0.71 | 5.08 | 28476.34 | 0.48 | 999.79 | 1617.98 |
| | (0.06) | (0.38) | (5122.96) | (0.01) | (136.02) | (200.58) |
| 2000 | 0.72 | 4.65 | 33569.77 | 0.48 | 1044.59 | 2039.15 |
| | (0.05) | (0.37) | (5873.91) | (0.01) | (143.28) | (262.68) |
| 2001 | 0.72 | 4.15 | 36456.90 | 0.48 | 1065.63 | 1674.42 |
| | (0.05) | (0.31) | (6217.46) | (0.01) | (142.74) | (278.01) |
| 2002 | 0.75 | 3.62 | 39497.29 | 0.48 | 1082.03 | 1819.59 |
| | (0.05) | (0.25) | (7007.58) | (0.01) | (142.18) | (254.14) |
| 2003 | 0.80 | 3.01 | 44148.39 | 0.46 | 1097.70 | 2210.21 |
| | (0.05) | (0.20) | (8113.33) | (0.01) | (146.54) | (301.42) |
| 2004 | 0.90 | 3.07 | 49179.33 | 0.45 | 1097.22 | 2826.17 |
| | (0.06) | (0.18) | (9227.17) | (0.01) | (146.81) | (389.25) |

Standard errors of the mean are given in parentheses below mean scores.

## Table II

**Results for Model in Equation (1)by Risk and ∇DPS Level (2004)**
**1995-96 to 2003-04**

| Model Term | Group I Low Risk/ Low Dividend (20 firms) | Group II Low Risk/ High Dividend (34 firms) | Group III High Risk/ Low Dividend (35 firms) | Group IV High Risk/ High Dividend (22 firms) |
|---|---|---|---|---|
| CONSTANT | 0.055*** | 0.081*** | 0.021 | 0.023 |
| | (0.017) | (0.017) | (0.013) | (0.019) |
| ∇MARKET | 0.058* | -0.026 | 0.070** | 0.202*** |
| | (0.035) | (0.052) | (0.031) | (0.062) |
| ∇ASSETS | 0.101 | 0.184*** | 0.114** | 0.593*** |
| | (0.054) | (0.067) | (0.051) | (0.097) |
| ∇DEBT | -0.063 | -0.008 | 0.041 | -0.230** |
| | (0.057) | (0.030) | (0.040) | (0.105) |
| ∇SHARES | -0.004 | -0.250** | -0.042 | -1.011*** |
| | (0.072) | (0.108) | (0.100) | (0.283) |
| ∇PROFIT | 0.086 | 0.107 | -0.079 | 0.116*** |
| | (0.190) | (0.145) | (0.054) | (0.021) |
| AR(1) estimate | 0.470** | 0.317** | 0.242** | -0.064 |
| Resid std error | 0.147 | 0.195 | 0.185 | 0.240 |

*p<.10 **p<.05 ***p<.01
Standard errors are given in parentheses below parameter estimates.

## Table III–Group 1

**Results for Model in Equation (1) for Low Risk/Low ∇DPS Firms (2004)**
**Five-Year Moving Time Span**

| Term | 1995-96 to 1999-00 | 1996-97 to 2000-01 | 1997-98 to 2001-02 | 1998-99 to 2002-03 | 1999-00 to 2003-04 |
|---|---|---|---|---|---|
| CONSTANT | 0.075*** | 0.077*** | 0.067*** | 0.054*** | 0.032 |
| | (0.023) | (0.023) | (0.017) | (0.016) | (0.019) |
| ∇MARKET | 0.124** | 0.116** | 0.044 | 0.040 | -0.030 |
| | (0.050) | (0.052) | (0.046) | (0.044) | (0.042) |
| ∇ASSETS | 0.099 | 0.120 | 0.079 | 0.095 | 0.120 |
| | (0.083) | (0.081) | (0.075) | (0.079) | (0.089) |
| ∇DEBT | -0.072 | -0.108 | -0.073 | -0.057 | -0.054 |
| | (0.091) | (0.072) | (0.069) | (0.063) | (0.064) |
| ∇SHARES | -0.013 | -0.030 | -0.050 | -0.178 | -0.194 |
| | (0.078) | (0.083) | (0.079) | (0.145) | (0.200) |
| ∇PROFIT | 0.183 | 0.103 | 0.133 | 0.167 | 0.007 |
| | (0.349) | (0.347) | (0.250) | (0.195) | (0.205) |

*p<.10 **p<.05 ***p<.01
Standard errors are given in parentheses below parameter estimates.

## Table IV–Group 2

**Results for Model in Equation (1) for Low Risk/High VDPS Firms (2004)**
**Five-Year Moving Time Span**

| Term | 1995-96 to 1999-00 | 1996-97 to 2000-01 | 1997-98 to 2001-02 | 1998-99 to 2002-03 | 1999-00 to 2003-04 |
|---|---|---|---|---|---|
| CONSTANT | 0.017 | 0.033* | 0.029 | 0.086*** | 0.118*** |
| | (0.022) | (0.018) | (0.018) | (0.019) | (0.025) |
| ∇MARKET | -0.022 | 0.006 | -0.068 | -0.116* | -0.044 |
| | (0.076) | (0.067) | (0.065) | (0.062) | (0.069) |
| ∇ASSETS | 0.284*** | 0.236*** | 0.237*** | 0.043 | 0.081 |
| | (0.085) | (0.077) | (0.078) | (0.082) | (0.097) |
| ∇DEBT | 0.026 | 0.029 | 0.039 | 0.012 | 0.007 |
| | (0.044) | (0.041) | (0.039) | (0.044) | (0.042) |
| ∇SHARES | -0.304** | -0.287** | -0.289** | -0.145 | -0.286* |
| | (0.144) | (0.127) | (0.125) | (0.130) | (0.158) |
| ∇PROFIT | 0.342 | 0.359 | 0.319 | 0.012 | -0.020 |
| | (0.273) | (0.229) | (0.208) | (0.155) | (0.156) |

*p<.10 **p<.05 ***p<.01
Standard errors are given in parentheses below parameter estimates.

## Table V–Group 3

**Results for Model in Equation (1) for High Risk/Low VDPS Firms (2004)**
**Five-Year Moving Time Span**

| Term | 1995-96 to 1999-00 | 1996-97 to 2000-01 | 1997-98 to 2001-02 | 1998-99 to 2002-03 | 1999-00 to 2003-04 |
|---|---|---|---|---|---|
| CONSTANT | 0.060*** | 0.040*** | 0.008 | -0.008 | -0.018 |
| | (0.010) | (0.013) | (0.021) | (0.022) | (0.022) |
| ∇MARKET | 0.084** | 0.032 | 0.0002 | 0.082* | 0.092* |
| | (0.034) | (0.035) | (0.078) | (0.047) | (0.048) |
| ∇ASSETS | 0.069 | 0.071 | 0.068 | 0.272** | 0.276** |
| | (0.047) | (0.052) | (0.096) | (0.105) | (0.113) |
| ∇DEBT | 0.033 | 0.054 | 0.027 | -0.032 | -0.017 |
| | (0.041) | (0.045) | (0.116) | (0.080) | (0.073) |
| ∇SHARES | -0.148* | -0.090 | 0.025 | -0.109 | -0.134 |
| | (0.083) | (0.085) | (0.287) | (0.152) | (0.197) |
| ∇PROFIT | 0.158 | 0.242*** | -0.065 | -0.098 | -0.090 |
| | (0.158) | (0.059) | (0.015) | (0.064) | (0.067) |

*p<.10 **p<.05 ***p<.01
Standard errors are given in parentheses below parameter estimates.

## Table VI–Group 4

**Results for Model in Equation (1) for High Risk/High ∇DPS Firms (2004)**
**Five-Year Moving Time Span**

| Term | 1995-96 to 1999-00 | 1996-97 to 2000-01 | 1997-98 to 2001-02 | 1998-99 to 2002-03 | 1999-00 to 2003-04 |
|---|---|---|---|---|---|
| CONSTANT | 0.067*** | 0.059** | 0.013 | -0.010 | 0.014 |
| | (0.018) | (0.026) | (0.021) | (0.035) | (0.029) |
| ∇MARKET | 0.082* | 0.059 | 0.055 | 0.145 | 0.332*** |
| | (0.044) | (0.069) | (0.078) | (0.106) | (0.112) |
| ∇ASSETS | 0.189** | 0.174* | 0.443*** | 0.625*** | 0.884*** |
| | (0.074) | (0.094) | (0.096) | (0.146) | (0.155) |
| ∇DEBT | -0.122* | -0.122 | -0.284** | -0.246 | -0.347* |
| | (0.069) | (0.103) | (0.116) | (0.167) | (0.197) |
| ∇SHARES | -0.486** | -0.310 | -0.758*** | -1.107** | -1.495*** |
| | (0.194) | (0.226) | (0.287) | (0.478) | (0.499) |
| ∇PROFIT | 0.414* | 0.158*** | 0.112*** | 0.113*** | 0.126*** |
| | (0.232) | (0.019) | (0.015) | (0.022) | (0.026) |

*p<.10 **p<.05 ***p<.01
Standard errors are given in parentheses below parameter estimates.

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