

CEO DUALITY IN THE PAPER AND FOREST PRODUCTS INDUSTRY

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Abstract

Every firm makes an important organization structural decision about whether or not to have a CEO that also oversees the board of directors. CEO duality refers to the situation when the CEO of a firm is also chairman of the board of directors. Powerful arguments have been made by academic researchers and practitioners on the advantages and disadvantages of CEO duality. This study investigates the impact of CEO duality on the market value of the firm by examining the evidence from the Paper and Forest Products industry, over the period 1988-1992. The results suggest that firms with a dual CEO have superior performance in terms of margins and productive utilization of assets which is reflected in a higher market value of the firm.

INTRODUCTION

A firm is said to have a dual CEO when the CEO functions simultaneously as the chairman of the board. CEO duality has received considerable attention in the literature on corporate governance and firm strategy (e.g. Alibrandi 1985; Anderson and Anthony, 1986; Geneen, 1984; Levy, 1981; Steckmest, 1982; Vance, 1983). Much of this attention arises from the belief that CEO duality would make a difference to firm performance and corporate governance. There is controversy surrounding how CEO duality affects the firm. Interest groups that oppose CEO duality such as shareholder activist groups, and corporate governance watchdogs suggest that CEO duality may adversely affect firm performance because the duality structure would reduce the board's ability to govern, which is its primary function. According to Harold Geneen, former CEO and Chairman of ITT, "If the board of directors is really there to represent the interests of the stockholders, what is the chief executive doing on the board? Doesn't he have a conflict of interest? He's the professional manager. He cannot represent the shareholders and impartially sit in judgment on himself. He should not." (1984b:29) When the chairman of the board and the CEO is the same person, it becomes more difficult to hold the chief executive officer of the firm accountable for his/her actions and consequently firm performance might suffer. Fama and Jensen (1983) suggest that CEO duality "signals the absence of separation of decision management and decision control" which would cause "the organization to suffer in the competition for survival." CEO duality has been blamed for the poor performance of firms such as Sears, Westinghouse, General Motors and IBM (White and Ingrassia, 1992).

In defense of CEO duality, Anderson and Anthony (1986) argue that it provides "a single focal point for company leadership" with a potentially clearer organization mission and strategy. According to this viewpoint CEO duality lends stability and continuity to the organization which in turn would lead to superior firm performance.

The relationship between CEO duality and firm performance has been studied to a limited extent by researchers, with conflicting results (Chaganti, Mahajan and Sharma, 1985; Rechner and Dalton, 1989, 1991; Pi and Timme, 1993; Boyd, 1994). Although there is some evidence that CEO duality is associated with reduced levels of Board control (Boyd, 1994), the relationship between duality and firm performance is not well understood. The purpose of this research is to investigate the relation between CEO duality and the market value of the firm. We use for our sample firms in the paper and forest products industry.

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Industry Profile

The paper and forest products industry is a large, natural resource based industry which derives most of its forest-related revenues from wood-based products. Both vertical and horizontal integration are found in the industry. The industry employed 1.8 million people in 1993 which is about 10% of all employment in manufacturing industries. The industry accounted for \$121 billion in value-added by manufacturing and shipped \$275 billion in products in 1993. It also accounted for \$10 billion in new capital expenditures. This data indicates that this industry makes a significant contribution to the U.S. economy. Firms analyzed in this paper are large firms involved in the production of paper and allied products as well as lumber and wood products.

CEO Duality And Firm Performance

Rechner and Dalton (1991) examine the performance between firms with dual and non-dual CEOs over the period 1978 to 1983. They use return on assets (*ROA*), return on equity (*ROE*) and profit margin (*MARGIN*) as their measures of performance in trying to distinguish between duality and non-duality firms. They find results that are not entirely consistent, and report that in periods with high financial returns (1978-1980) the non-duality firms outperformed the duality firms. The difference in performance was less significant in 1981-1983 when returns were more modest. Pi and Timme (1993) find that in the banking industry, over the 1987-1990 period, non-duality firms outperformed duality firms. Contrary to these studies Chaganti, Mahajan and Sharma (1985) while comparing 21 bankrupt firms with 21 surviving firms in the retailing industry, find no differences as a function of CEO duality. There is to our knowledge no published investigation of CEO duality in the Paper and Forest Products industry. By focusing on firms within a single industry, this study does not suffer from a problem of industry differences obfuscating the results, which is a common problem in studies that use cross sectional samples. The focus on a single industry, ensures a comparison of 'apples with apples' and not 'apples with oranges'. This makes the results clearer and more robust. This paper is an improvement over prior studies on CEO duality because it does not merely study the relation between CEO duality and accounting measures of performance. Instead it focuses on the relation between CEO duality and the managerial goal of maximizing firm value.

RESEARCH HYPOTHESES

There is almost unanimous agreement among all managerial economists and corporate finance texts, that the goal of the firm and its managers should be the maximization of firm value. This study examines the relationship between CEO duality and firm value. Current empirical research on CEO duality, offers no unambiguous evidence that CEO duality positively or negatively impacts firm value. Therefore, the null hypothesis of this study is that CEO duality has no impact on firm value.

An alternate hypothesis based on viewpoint supported by Anderson and Anthony (1986), Stoeberl and Sherony (1985) and Alexander, Fennell and Halpern (1993), is that CEO duality would be positively related to the market value of the firm since non-duality would dilute the power of top management and increase the probability of conflict between management and the board of directors. Potential rivalry between the Chairman of the Board and the CEO may confuse organizational direction and may restrict the freedom of the CEO in planning and executing firm strategy.

Another alternate hypothesis is based on the agency viewpoint supported by arguments put forward by Fama and Jensen (1983), Vance (1983) and Jarrell, Brickley and Netter (1988). According to this viewpoint, boards of directors would be unable to effectively control managers where there is considerable managerial influence over the board. Under conditions of CEO duality, the CEO also serves as Chairman of the Board and therefore the Board of Directors would be unable to effectively discipline and exercise control over the CEO who also functions as its leader. The hypothesis based on this view would suggest that CEO duality is negatively related to firm performance and firm value.

SAMPLE AND METHODOLOGY

A preliminary sample of firms was obtained from the Value Line Investment Advisory Database which lists thirty one companies within the Paper and Forest Products industry. The Disclosure database was searched for proxy statements containing information about CEO duality. Only the firms which had complete data for the five year period 1988-1992

were retained in the sample. A firm was classified as having a duality structure if the positions of Chairman of the Board and Chief Executive Officer of the firm were held by the same person. Financial data on firms in the sample was obtained from the Compustat tapes. Complete financial data and data on top management structure was available for the entire five year period for eighteen firms. Five years of data for eighteen firms provides 90 firm-years of data on each research variable used in the analysis. The dual CEO structure is apparently favored in the Paper and Forest Products Industry with the dual CEO structure being chosen over the non-dual in the ratio 1.57:1. Of the eighteen firms in the sample eleven firms had a dual CEO while seven had a non-dual CEO.

The investigation into the characteristics and performance of the duality firms compared to the non-duality firms begins with simple descriptive statistics on a wide spectrum of financial variables. Return on assets (*ROA*), return on equity (*ROE*), and profit margin (*MARGIN*) are used to measure performance. Annual growth in sales (*SALSGRTH*) is used to measure the firm's growth. The natural log of the market value of equity (*LOGMVAL*) is a combined market measure of firm size and firm performance. Firm size is also measured by the book value of assets (*ASSET*). The debt ratio (*LEV*) and the annual percentage change in debt (*LEVCH*) are measures of the firm's capital structure. The firm's current ratio, i.e., the ratio of current assets to current liabilities (*LIQUID*) is used as a measure of its liquidity and effective deployment of its resources into productive uses. The price earnings ratio (*PE*) is a combined market measure of firm risk and the growth rate of the firm's earnings.

All the above-mentioned variables are compared between the two groups using t-tests for difference of means. This is followed by a correlation analysis performed to select independent variables to be included in a linear regression model. The linear regression analysis models the relationship between CEO duality and the market value of firm.

RESULTS

Table 1 presents the mean and median values over the 1988-1992 period for the variables chosen to portray the financial profile of the duality and non-duality firms. There are interesting differences between the two groups of firms. The return on equity for dual CEO firms is higher at 12.06% compared to 5.69% for non-duality firms. The return on assets however is only slightly higher for dual CEO firms (4.05% for non-duality and 4.8% for non-duality firms). The profit margin (*MARGIN*) is higher for duality firms (16.30%) and lower for non-duality firms (13.45%). The average annual growth in sales (*SALSGRTH*) is also higher for duality firms at 5.20% compared to 0.79% for non-duality firms. The mean value for *LOGMVAL* is 21.4986 (an average market value of equity of \$2600 million approximately) for duality firms and 19.8668 (an average market value of equity of \$620 million approximately) for non-duality firms. The book value of assets (*ASSET*) is about five times higher for duality firms at \$5710 million compared to \$1150 million for non-duality firms.

TABLE 1
Descriptive Statistics And Results Of t-test On Difference Of Means

Variable	Mean		Median		Mean Difference Duality Minus Non-Duality	t-statistic	Prob > T
	Duality	Non-Duality	Duality	Non-Duality			
<i>ROA</i>	0.0480	0.0405	0.0448	0.0417	0.0075	0.5999	0.5511
<i>ROE</i>	0.1206	0.0569	0.1131	0.0626	0.0637	1.8983	0.0610
<i>MARGIN</i>	0.1630	0.1345	0.1638	0.1402	0.0285	1.8052	0.0766
<i>SALSGRTH</i>	0.0520	0.0079	0.0348	0.0155	0.0441	1.6044	0.1142
<i>LOGMVAL</i>	21.4986	19.8668	21.5676	20.3808	1.6318	8.1044	0.0001
<i>ASSET</i>	5710.0339	1150.2125	4697.7110	875.8999	4559.8214	9.2438	0.0001
<i>LEV</i>	0.3474	0.2417	0.3305	0.2439	0.1057	4.0641	0.0001
<i>LEVCH</i>	0.2439	-0.0517	0.0923	-0.0050	0.2956	2.7950	0.0064
<i>LIQUID</i>	1.5521	1.9978	1.4166	1.8956	-0.4457	-3.3393	0.0012
<i>PE</i>	6.1091	14.9004	8.5813	8.6765	-8.7913	-0.6598	0.5122

ROA = return on assets; *ROE* = return on equity; *MARGIN* = profit margin; *SALSGRTH* = annual percentage growth in sales; *LOGMVAL* = natural log of the market value of equity; *ASSET* = book value of assets; *LEV* = debt ratio; *LEVCH* = annual percentage change in debt; *LIQUID* = ratio of current assets to current liabilities; *PE* = price earnings ratio.

The leverage ratios indicate duality firms had on average more debt than non-duality firms in the 1988-1992 period. The mean debt ratio is 34.74% for duality firms and only 24.17% for non-duality firms. The average annual percentage change in debt was 24.39% for duality firms and -0.0517% for non-duality firms. The current ratio which measures liquidity is lower for duality firms at 1.552 compared to 1.998 for non-duality firms. The higher leverage of duality firms increases their financial risk, which combined with their lower liquidity helps to explain the lower price earning ratio for duality firms. The average *PE* ratio for duality firms is lower at 6.109 compared to 14.90 for non-duality firms.

Table 1 also presents the mean differences for the chosen research variables along with the t-statistics and p-values for the t-tests. The profit margin (*MARGIN*) is significantly higher for the duality CEO firms (p-value 0.0766). The return on equity (*ROE*) is significantly higher (p-value 0.0610), but the difference between the return on assets (*ROA*) is not statistically significant. This result is not surprising considering the differences in leverage between the two groups. The debt ratio of the duality class group is higher (p-value < 0.0001), and so is the change in leverage (p-value 0.0064). The higher leverage of the dual CEO firms obviously gives a boost to its *ROE*.

The growth in sales (*SALSGRTH*) for the dual CEO firms is higher (p-value 0.01142), and the same pattern is observed for *ASSET* (p-value < 0.0001). The market value of equity is significantly higher for dual CEO firms (p-value for *LOGMVAL* is less than 0.0001), but the difference in the price earnings ratios (*PE*) is not statistically significant (p-value 0.5122).

A regression analysis is performed to investigate the impact of CEO duality on the market value of the firm. The t-tests suggested variables such as return on equity, leverage, leverage change and margin might help explain the difference in the market values of the duality and non-duality firms. Some of these variables may be correlated with each other and if they are, they should not be simultaneously included in the regression equation. Doing so would result in multicollinearity. Results of a correlation analysis are shown in Table 2.

TABLE 2
Correlation Analysis

	<i>ROE</i>	<i>MARGIN</i>	<i>SALSGRTH</i>	<i>LEV</i>	<i>LEVCH</i>	<i>LIQUID</i>	<i>ASSET</i>	<i>DUMMY</i>	<i>LOGMVAL</i>
<i>ROE</i>	1.00000	0.58286	0.70125	0.00311	0.56321	0.06718	0.06071	0.19943	0.15425
<i>MARGIN</i>		1.00000	0.50244	-0.30315	0.07752	0.11345	-0.05639	0.20480	0.28436
<i>SALSGRTH</i>			1.00000	0.08482	0.40061	-0.02905	0.15762	0.18033	0.25329
<i>LEV</i>				1.00000	0.50182	-0.31788	0.47393	0.39753	0.31167
<i>LEVCH</i>					1.00000	-0.13313	0.24831	0.25859	0.19236
<i>LIQUID</i>						1.00000	-0.54135	-0.33536	-0.61343
<i>ASSET</i>							1.00000	0.62790	0.72284
<i>DUMMY</i>								1.00000	0.69689
<i>LOGMVAL</i>									1.00000

ROE = return on equity; *MARGIN* = profit margin; *SALSGRTH* = annual percentage growth in sales; *LOGMVAL* = natural log of the market value of equity; *ASSET* = book value of assets; *LEV* = debt ratio; *LEVCH* = annual percentage change in debt; *LIQUID* = ratio of current assets to current liabilities; *PE* = price earnings ratio; *DUMMY* = dummy variable for CEO duality. Dummy = 1 for a duality firm and 0 otherwise.

Table 3 presents the results of the regression analysis. The dependent variable is *LOGMVAL* which is the natural logarithm of the market value of the firm. *LOGMVAL* is chosen over the raw market value measure since it is found to provide a better fit and the logarithmic transformation of the independent variable overcomes potential problems with heteroschedasticity in the dependent variable. The first regression model (Model 1) contains research variables that were found to be significant in the t-tests in explaining the differences between duality and non-duality firms, excluding variables that are highly correlated with one another. For example both *LEV* and *LEVCH* cannot be included because they are highly correlated, and Model 1 uses *LEV* to measure capital structure differences between duality and non-duality

firms.¹ Similarly *ROE*, *SALSGRTH* and *MARGIN* are highly correlated, so only one of these is introduced in the regression equation. In model 1 *ROE* is used to measure firm performance. A dummy variable (*DUMMY*) is used to represent the duality status of the firms. *DUMMY* has a value of one if the firm has CEO duality status and it has a value of zero if the firm has non-duality status. The F-statistic for Model 1 is 40.306 (p-value < 0.0001) and the adjusted R-square of the model is 0.6907. The high r-squared value indicates that the model has a good fit overall. An examination of the t-statistics for the significance of the coefficients of the independent variables shows that the coefficients of *LIQUID*, *ASSET*, and *DUMMY* are significant (p-values < 0.0002). The coefficients of *ASSET*, and *DUMMY* are positive suggesting that the higher the values of these variables, the higher the market value of the firm. In other words, the larger the firm the greater the market value of the firm. Furthermore, the presence of a duality status is positively related to the market value of the firm. The coefficient of *LIQUID* is significant but negative suggesting that firms with lower liquidity consistent with levels of safety have higher market values. This is logical for lower liquidity ratios could imply that firms are productively investing their cash instead of holding it in liquid assets with a lower rate of return. The coefficients of *ROE* and *LEV* and not significant in the regression suggesting that they are not as valuable as the other research variables in predicting firm value.

TABLE 3
Results Of Regression Analysis To Measure Impact
Of CEO Duality On Market Value Of The Firm

Variable	Model 1	Model 2	Model 3
<i>INTERCEPT</i>	21.113874 (0.0001)	20.325409 (0.0001)	20.313503 (0.0001)
<i>ROE</i>	0.563391 (0.2145)		
<i>MARGIN</i>		4.789176 (0.0001)	4.812399 (0.0001)
<i>LEV</i>	-0.944675 (0.1320)	-0.035006 (0.9521)	
<i>LIQUID</i>	-0.588814 (0.0001)	-0.616197 (0.0001)	-0.615860 (0.0001)
<i>ASSET</i>	0.000109 (0.0002)	0.000119 (0.0001)	0.000118 (0.0001)
<i>DUMMY</i>	0.942349 (0.0001)	0.683610 (0.0002)	0.680793 (0.0001)
F Stat	40.306	54.240	68.604
Overall P value	0.0001	0.0001	0.0001
Adjusted R-Squared	0.6907	0.7494	0.7524

ROE = return on equity; *MARGIN* = profit margin; *ASSET* = book value of assets; *LEV* = debt ratio; *LIQUID* = ratio of current assets to current liabilities; *DUMMY* = dummy variable for CEO duality. *DUMMY* = 1 for a duality firm and 0 otherwise.

A second regression presented in Model 2 uses *MARGIN* instead of *ROE* to measure firm performance. The F-statistic for Model 2 is 54.24 with a p-value less than 0.0001. The adjusted r-square is 0.7494. The r-square value indicates that the model is a good fit. The coefficient of *MARGIN* is positive and significant (p-value < 0.0001). The coefficients of *ASSET*, and *DUMMY* are also positive and significant as they are in Model 1. The coefficient of *LIQUID* is negative and

¹Very similar results are obtained using *LEVCH* instead of *LEV* in the regression equation.

significant ($p\text{-value} < 0.0001$) as it is in Model 1. Model 3 is a parsimonious version of Model 2 after dropping the non-significant research variable *LEV*. The p -values of the coefficients of all the independent variables in Model 3 are below 0.0001. The coefficients have the same sign that they do in Model 2. The results obtained from Model 3 are entirely consistent with the results of Model 2. The F-statistic for Model 3 is 68.604 with a p -value less than 0.0001. The adjusted r -square is 0.7524. The r -square value indicates that the model fits the data well.

SUMMARY AND CONCLUSIONS

The major finding of this study is that in the Paper and Forest Resources Industry, CEO duality is positively associated with the market value of the firm. Firm size and the firm's profit margins are also important variables in explaining firm value in this industry. The bigger firms with the fatter margins appear to do better in the marketplace over all. This finding should come as no surprise at all to researchers and practitioners. It appears that size perhaps lends the firm some muscle in the market place which enables it to earn bigger margins. It is noteworthy and interesting that a firm's liquidity position is also a determinant of its success in the marketplace. While a certain threshold of liquidity may be necessary for safety and to keep the wheels of business spinning, it appears too much liquidity can be a drawback. Firms that cut back on their holdings of liquid assets and employ them in more productive assets, seem to contribute more towards achieving a higher market value for the firm.

The findings on CEO duality are particularly interesting and is the focal point of this research. The findings lend support to the viewpoints expressed by Anderson and Anthony (1986), Stoeberl and Sherony (1985) and Alexander, Fennell and Halpern (1993). It appears that in the Paper and Forest Products industry, the firms with duality status performed better overall in the 1988-1992 period. This finding might help mitigate some fears among shareholders, the government, regulatory institutions and corporate governance watchdogs and investors such as CALPERS over CEO duality and lack of board independence. While CEO duality may indeed reduce board independence, it may not necessarily imply that the firms with duality status would perform worse than their peers. On the other hand firms with CEO duality may indeed benefit from having strong consistent leadership at the top, and may avoid some costs of conflicts between the CEO and the board. When combined with other ingredients for success such as firm size, etc., CEO duality may help provide the firm with consistent vision and strong leadership necessary for success. An interesting avenue for future research in this area would be to examine CEO duality in relation to firm value in other industry groups and in different time periods.

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